IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., **PLAINTIFFS**

V. **Civil Action No. 4:22-cv-00062-SA-JMV**

STATE BOARD OF ELECTION COMMISSIONERS, et al., **DEFENDANTS**

PLAINTIFFS' MOTION TO PARTIALLY EXCLUDE DR. DAVID A. SWANSON AS AN EXPERT

COME NOW the Plaintiffs, Dyamone White, Derrick Simmons, Ty Pinkins, and Constance Olivia Slaughter Harvey-Burwell ("Plaintiffs"), by and through counsel, and file this motion to exclude Dr. Swanson as an expert under Federal Rule of Evidence 702 on the topics of electoral-map drawing and ecological inference analysis and in support thereof offer the following:

1. In two reports produced over the course of expert discovery in this case, Dr. Swanson purports to offer opinions on electoral map drawing and on ecological inference analysis of voting behavior in Mississippi.

2. The Court should exclude certain portions of the expert testimony put forward by Defendant's expert, Dr. David A. Swanson, and correspondingly limit the topics on which he may testify at trial because he admits he is neither an expert in electoral map drawing or in voting behavior, nor does he have the relevant knowledge, publications, or experience that might make him an expert in these areas.

3. Dr. Swanson concededly has no training, study, background, or experience in electoral map drawing or compliance with the traditional districting principles used by electoral

map drawers; he admits that much of the mapping analysis that he included in his initial report was not even conducted by him or even verified by him.

4. Dr. Swanson concededly is not a political scientist and lacks sufficient specialized training, experience, or knowledge to offer an expert opinion on the analysis of turnout by race in Mississippi proffered by Plaintiffs' expert using the ecological inference technique. He also admits that he did not attempt to replicate the results of that ecological inference analysis.

5. Under these circumstances, Rule 702 provides no basis for Dr. Swanson to properly offer expert testimony on electoral map drawing or ecological inference analysis of voting behavior.

6. Plaintiffs adopt and incorporate by reference, as if fully and completely set forth herein, the arguments authorities set forth in the Memorandum of Law in Support of Plaintiffs' Motion to Partially Exclude Defendants Expert, being filed contemporaneously herewith.

7. In further support of their motion, Plaintiffs respectfully submit the following:

Exhibit "A" Transcript of Deposition of Dr. David A. Swanson

Exhibit "B" Expert Report of Dr. Swanson

Exhibit "C" Surrebuttal Report of Dr. Swanson

Exhibit "D" Expert Report of Plaintiffs' Expert William Cooper

Exhibit "E" Expert Report of Plaintiffs' Expert Dr. Traci Burch

Exhibit "F" Rebuttal Report of Plaintiffs' Expert Dr. Burch

Exhibit "G" Transcript of Dr. Bonneau Deposition

Exhibit "H" Dr. Orey Expert Report

Exhibit "I" Responsive Declaration of William Cooper

WHEREFORE, PREMISES CONSIDERED, the Plaintiffs respectfully request that the Court grant the Plaintiffs' motion and any other relief as may be just and proper.

THIS the 27th day of October, 2023.

Respectfully submitted,

/s/ Jonathan K. Youngwood
SIMPSON THACHER & BARTLETT LLP
Jonathan K. Youngwood (Miss. Bar No. 106441)
425 Lexington Avenue
New York, NY 100017
(212) 455-2000
jyoungwood@stblaw.com

* Admitted *pro hac vice*

ACLU FOUNDATION
Ari J. Savitzky*
Sophia Lin Lakin*
Ming Cheung*
125 Broad Street, 18th Floor
New York, New York 10004
(212) 549-2500
asavitzky@aclu.org
slakin@aclu.org
mcheung@aclu.org

AMERICAN CIVIL LIBERTIES UNION
OF MISSISSIPPI FOUNDATION
Joshua Tom (Miss. Bar No. 105392)
101 South Congress Street
Jackson, MS 39201
(601) 354-3408
JTom@aclu-ms.org

SOUTHERN POVERTY LAW CENTER
Jade Olivia Morgan (Miss. Bar No. 105760)
Leslie Faith Jones (Miss. Bar No. 106092)
111 East Capitol Street, Suite 280
Jackson, MS 39201
(601) 948-8882
jade.morgan@splcenter.org
leslie.jones@splcenter.org

Bradley E. Heard*
Ahmed Soussi*
Sabrina Khan*
150 E Ponce de Leon Avenue, Suite 340
Decatur, GA 30030
(470) 521-6700
bradley.heard@splcenter.org
ahmed.soussi@splcenter.org
sabrina.khan@splcenter.org

Attorneys for Plaintiffs

CERTIFICATE OF SERVICE

I, Jonathan Youngwood, hereby certify that on October 27, 2023, I electronically filed the foregoing with the Clerk of the Court using the ECF system which sent notification of such filing to all parties on file with the Court.

/s/ Jonathan K. Youngwood
Jonathan Youngwood

Deposition of David Arthur Swanson, Ph.D.

White v. State Board of Election Commissioners

October 5, 2023

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IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
Greenville Division

DYAMONE WHITE, et al.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	No. 4:22-cv-00062-SA-JMV
	)	
STATE BOARD OF ELECTION COMMISSIONERS, et al.,	)	
	)	
Defendants.	)	
	)	

DEPOSITION UPON ORAL EXAMINATION

OF

DAVID ARTHUR SWANSON, Ph.D.

714 LAKEWAY DRIVE
BELLINGHAM, WASHINGTON

DATE TAKEN: October 5, 2023

REPORTED BY: Evelyn M. Adrean, RPR, CCR 22009424

A P P E A R A N C E S:

FOR PLAINTIFF:

ARI SAVITZKY, ESQUIRE
American Civil Liberties Union
125 Broad Street, 18th Floor
New York, New York 10004
212-549-2681
asavitzky@aclu.org

LESLIE F. JONES, ESQUIRE
AHMED K. SOUSSI, ESQUIRE (Appearing remotely)
Southern Poverty Law Center
400 Washington Avenue
Montgomery, Alabama 36104
334-956-8200
leslie.jones@splcenter.org
ahmed.soussi@splcenter.org

JONATHAN K. YOUNGWOOD, ESQUIRE (Appearing remotely)
Simpson Thacher & Bartlett, LLP
425 Lexington Avenue
New York, New York 10017
212-455-3539
jyoungwood@stblaw.com

NOAH GIMBEL, ESQUIRE (Appearing remotely)
Simpson Thacher & Bartlett, LLP
900 G Street NW
Washington, DC 20001
202-636-5505
noah.gimbel@stblaw.com

FOR DEFENDANTS:

MICHAEL B. WALLACE, ESQUIRE
Wise Carter Child & Caraway, P.A.
600 Heritage Building, 401 East Capitol Street
Jackson, Mississippi 39201
601-968-5534
mbw@wisecarter.com

A P P E A R A N C E S: (Continued)

GERALD L. KUCIA, ESQUIRE (Appearing remotely)
REX MORRIS SHANNON, III, ESQUIRE (Appearing remotely)
Mississippi Attorney General's Office
500 High Street, Suite 1200
Jackson, Mississippi 39205
601-359-3680
gerald.kucia@ago.ms.gov
rex.shannon@ago.ms.gov

ALSO PRESENT;

Alexandra Hough

DEPOSITION OF DAVID ARTHUR SWANSON, Ph.D.

EXAMINATION INDEX

EXHIBIT INDEX

BELLINGHAM, WASHINGTON; OCTOBER 5, 2023

8:57 a.m.

DAVID ARTHUR SWANSON, Ph.D., witness herein, having been first duly sworn on oath, was examined and testified as follows:

E X A M I N A T I O N

BY MR. SAVITZKY:

Q. Good morning, Dr. Swanson.

A. Good morning.

Q. Good to see you today. So I introduced myself already, but I'm Ari Savitzky. I'm an attorney for the ACLU. I represent the plaintiffs in this matter. Do you understand that?

A. Yes.

Q. And can you state your full name for the record and spell it?

A. David Arthur Swanson, D-a-v-i-d, A-r-t-h-u-r, S-w-a-n-s-o-n.

Q. All right. And I'll sort of briefly go over some of the ground rules for deposition. The court reporter just swore you in, you're going to be under oath, means you're swearing to the truthfulness and accuracy of your answers. Do you understand that?

A. Yes.

Q. And the oath that you just took has the same

effect as if you were testifying in court. Do you understand that?

A. Yes.

Q. And as you can see, we have the court reporter here, she's transcribing your answers. It's really important to answer audibly so that your answers can be recorded on the transcript. So no nodding or shaking your head. Do you understand that?

A. I do.

Q. And I'm going to do my best to wait until you're finished with an answer, and I would ask you to sort of wait until I'm finished giving a question before you start speaking. Does that sound fair?

A. It does.

Q. All right. I'm going to ask questions, your job is to answer the question and you have to answer the questions unless you're instructed not to answer them by your attorney. Do you understand that?

A. I do.

Q. Okay. And it's important that we understand each other. We're going to have a conversation, we're going to talk about a lot of different topics. If you don't understand a question, let me know, try to rephrase it so we can understand each other. Does that make sense?

A. Yes.

Q. Okay. And if you need to take a break at any time, just let me know. The only thing I ask is, if there's a question pending, if I've asked you a question, let's finish the question before we take a break. Okay?

A. Sounds good.

Q. And if you realize at any time you gave an answer that wasn't accurate, wasn't complete, just let me know so that we can get that corrected on the record. Okay?

A. Will do.

Q. Any questions about any of the instructions that I've given here?

A. No.

MR. WALLACE: Did we just have somebody else chime in?

MS. JONES: Make sure they're on the record.

MR. SAVITZKY: I don't know. Do we want to have everyone who's on the Zoom announce themselves for the record at this point?

MR. YOUNGWOOD: Jonathan Youngwood with Simpson Thacher & Bartlett.

MS. HOUGH: Hi, this is Alexandra Hough, that's H-o-u-g-h, here on behalf of the plaintiffs.

MR. SAVITZKY: Anybody else on the Zoom who we haven't registered yet?

THE REPORTER: I think I got the others.

MR. SAVITZKY: Okay.

BY MR. SAVITZKY:

Q. And Dr. Swanson, is there any reason that you can't provide complete and accurate testimony here today?

A. Not that I know of.

Q. Are you taking any medications or drugs that might impact your ability to give complete and accurate testimony?

A. I don't think so.

MR. SAVITZKY: All right. Let's start by talking about your background. And actually before we do that, even, I'm just going to mark as Exhibit 1 the notice of deposition just so we have it in the record. So I'll mark as Exhibit 1. This is just the notice of deposition for today's deposition. I'll put it right there if you'd like to examine it. There's a copy for you as well.

MR. WALLACE: Is this a copy for me?

MR. SAVITZKY: This is a copy that you can look at, but no need to ask any questions about it, I just wanted to mark it in the record.

Now what I am going to mark as Exhibit 2 and hand to you is a copy of the report that you submitted January 2023. And this one is for you, and here's a copy for you, Mr. Wallace.

MR. WALLACE: Now, that's stamped. Ultimately, that goes with the court reporter; right?

MR. SAVITZKY: Correct, yes.

MR. WALLACE: Uh-huh.

MR. SAVITZKY: So the stamped is for the court reporter.

BY MR. SAVITZKY:

Q. So just taking a look at that stamped copy that I handed you, is that -- does that look like a copy of your January 2023 report?

A. It does.

Q. And just looking at Appendix 6 which is on page 136 of this document, just confirm that that's your CV?

A. It is my CV that was current as of the time I submitted this.

Q. Any updates that you want to make to your CV while we're talking about it?

A. I think there are more publications I have and there may be some other things, but I don't think it's anything substantial.

Q. What's your current job?

A. My current job is, I'm retired from the University of California Riverside, I have a .25 full time equivalent faculty position with Portland State University's population research center.

Q. And is that population research center in a particular department or is it an independent center?

A. It's in the School of Urban Public Affairs, or whatever the name is of the school right now.

Q. And your academic career, fair to say you're a demographer?

A. Yes. Thank you.

Q. What is demography?

A. It's a study of populations, could be either human or nonhuman, wildlife, insects.

Q. Do you study human demography or the demography of other species?

A. Humans.

Q. And would you say that you are an applied demographer? What kind of demography do you --

A. I have a broad range of interests, many people call me applied, but I do academic work as well.

Q. And what type of analysis do you do as a demographer? How do you analyze human populations?

A. I usually take on what the major focuses are that demographers use, and one is on the size of a

population, second is on the geographic distribution of the population, third is on the population composition, fourth is on the components of population change for building migration, mortality, and the fifth is on the determinants and consequences of population change.

Q. Would it be fair to say that your research is focused on the areas of social demography and population health?

A. I'm probably more focused on methods other than social demography and population health, but I've covered those fields.

Q. Okay. Just one second. Have you ever held an appointment in a political science department in any institution?

A. No.

Q. And just looking we'll turn to page 147 of your resumé -- or your CV, excuse me. That's where the list of publications begins. Just let me know when you're there.

A. I'm there.

Q. Just looking at this list of publications, fair to say that most of them are about studying human populations, population change, and forecasting?

A. That's fair. I do have a book that has just been published today that's basically on population

health. It's called Socio-Demographic Perspectives on the COVID-19 Pandemic. It's an edited book I did with my colleague Rich Verdugo.

Q. Congratulations on the publication.

A. Thanks.

Q. And so that book is about social demography as it relates to the COVID --

A. It would be more on health demography, but it also covered methods, how to look at and estimate COVID infections very early on when you don't have the ability to use a real complex model with lots of data input requirements.

Q. Okay. So let's talk about some of the tools and methods that you use in your research. Well, why don't you tell me about the tools and methods that you use as a demographer?

A. I use most of the standard tools that demographers use, so I'll use life tables, for example, I'll do different modeling techniques, regression type techniques, so that's where it spills over into the statistical area largely and that is in common with a lot of other social science fields, we use those kinds of methods.

Q. Do you use software in your research?

A. I do.

Q. What kind of software tools do you typically use?

A. The major one I use is called NCSS, it's an acronym. It stands for Number Cruncher Statistical System.

Q. How long have you been using NCSS?

A. Since about 1980, '82.

Q. Do you ever use SPSS?

A. Not for many years.

Q. You have used it in the past?

A. I have.

Q. Ever used Stata?

A. Never.

Q. Do you ever use the R programming language?

A. No.

Q. Do you use any other programming languages?

A. Visual Basic. I have a minor in math, computer science, so I know how to program in languages that are long gone like PL/1, Fortran. Visual Basic is probably the most current one.

Q. How often does your work involve coding in Visual Basic?

A. I've just been working on a project right now that involves using some Visual Basic coding.

Q. Do you ever use any GI S programs?

A. I don't implement them, if that's what you're asking. Yeah, I don't do shape files or I don't do GIS work myself.

Q. You don't work with any geographical mapping software?

A. No.

Q. Don't work with Maptitude?

A. No.

Q. Don't work with ArcGIS?

A. No.

Q. Do you use survey data in your research?

A. Yes, I have.

Q. What are some examples of the survey data that you've used?

A. Well when I was at Pacific Lutheran University, I ran a small institute, and we did annual surveys of Pierce County, so I was responsible for going out and contracting with a private vendor to actually conduct the surveys and supervise them, put the questionnaires together. When I worked on the Yucca Mountain high -level nuclear waste repository, I was responsible for surveys that were done of people that were in the impact area, so --

Q. Sorry, go ahead. Finish your --

A. That's okay. Go ahead.

Q. Those are surveys that you conducted?

A. Yes.

Q. Do you ever work with survey data that has been gathered by others?

A. I have.

Q. Do you ever work with ACS, American Community Survey --

A. I do.

Q. -- data?

A. Wrote a book on that -- or a section of a book for the ACS when that first started coming out, was part of the pilot study programs for the ACS.

Q. Do you ever use voter rolls in your work?

A. Not until I started doing expert witness work. Or looked at them, but I don't use them.

Q. You don't use voter rolls in your work?

A. No.

Q. And you said when you started doing expert work --

A. Witness work in areas like redistricting, in the case we're talking about now. I'm aware more of voter rolls, but I haven't actually used it -- yeah, there's actually one exception. I did a volunteer survey for Kitsap County, Washington that was in regard to some issue that was going to be on the ballot. And

the people I worked with that was probably now defunct, the Kitsap County Sun, which is a newspaper, had access to voting rolls. So we were calling people who registered voters.

Q. And when did you conduct this Kitsap County, Washington survey?

A. Early 1990s, late 1980s.

Q. And so other than that instance, you haven't used voter rolls in your work?

A. That's correct.

Q. Ever use ecological inference analysis?

A. I have.

Q. Tell me about your use of ecological inference.

A. It's not the guaranteeing program, but I've used ecological inferences in -- one of the publications I have, actually. It's in the Journal Demography, and it takes a state level regression method for estimating life expectancy at birth and applies it to subcounty areas. And that, in fact, would be ecological inference because you went from a higher level of aggregation to lower levels of aggregation. And the paper involved doing a test of its accuracy.

Q. And you mentioned it's not Gary King's method?

A. That's correct.

Q. So it's not the R x C method?

A. That's correct.

Q. Is it a homogenous precinct type analysis that you did?

A. It's a regression analysis. And people can use multilevel regression analyses to do things that are very similar to ecological analysis.

Q. And other than that -- and was that just one example? Have you used ecological inference analyses in other instances in your work?

A. There my be. That's one I can recall.

Q. And as you sit here, can you recall any others?

A. Not offhand.

Q. In your research, have you studied voting behavior?

A. No.

Q. Have you published any scholarly work on voting behavior?

A. No.

Q. Any scholarly work on voter turnout?

A. No.

Q. Have you published any political science journals?

A. Not that I can think of. There might be some journals with the term "political" in it, but I can't recall for sure.

Q. And we'll talk about CES, Cooperative Election Survey studies -- data later, but have you ever used that CES study before this case?

A. No.

Q. Were you familiar with the CES before your involvement in this case?

A. No.

Q. Have you ever drawn an electoral map before?

A. No.

Q. And I'm looking at pages 6 and 7 of your report. I'll let you take a second to get there. This is your --

A. This is the report of January you're talking about again?

Q. Yes, correct. The one that's been marked, I believe, as Exhibit 2. You sort of summarize here some of the expert work and some of the other references in your CV; is that right?

A. That's correct.

Q. And you say that you played an active role in the development of redistricting, a manual for practitioners, analysts, and citizens. Do I have that right?

A. That's correct.

Q. What was the role that you played in the

development of that?

A. I reviewed the work that Peter Morrison and Tom Bryan did, the authors of that book. I helped them with some questions on how to do methods.

Q. And what parts of the -- of that work did you review?

A. I can't remember. I -- basically the whole book, but I concentrated especially on some of the measurement issues.

Q. And you provided comments?

A. I did.

Q. You're not credited as an author of the book?

A. No.

Q. You're mentioned in the front matter and the dedication and acknowledgments?

A. I believe that's true.

Q. That's not a peer-reviewed publication, is it?

A. Every book I've been associated with goes through a review process that's set up by the publisher. So in a sense, it's a peer-review process. They internally will go out and ask reviewers. You know, I served as a series editor of Applied Demography for Springer Publications, and if we get a proposal, it goes out to review to other people. So in a sense it's peer reviewed, but not in the same manner that people think

of as academic journal peer reviews.

Q. So the redistricting title was not peer reviewed in the same way as an academic journal?

A. No. But it's a Springer publication, I believe, so it went through some sort of review process.

Q. And you're not aware of what their review process was, if any, for this particular title?

A. I'm just aware that they are likely to have sent it out for a review to at least one, probably two, other people to look at it before they even accepted the proposal, and they may have done it sometime during the whole process where they're putting it together. You'd have to ask the editors at -- the people in charge of it at Springer, for example.

Q. But you don't know, that's your assumption?

A. Well it's more than an assumption because I can see some of the paperwork that flows back and forth. So I know they're reviewing it, but exactly the details, I don't know.

Q. You saw the paperwork for -- with respect to this redistricting title?

A. I think I did. I see it for almost every time that's ever come through my hands when I do it for Springer, so I'm guessing that's the case.

Q. So let's talk about your prior expert work, and

we can stay looking at pages 7 and 8 of your January report Exhibit 2 where you list some of that work. It's also, I think, on page 187 of your CV, but this synapsis that you have here will do just fine.

Looking at some of the on-the-stand testimony that you list, these mostly involved instances where you testified about population forecasting; is that right?

A. Some -- one, two, three, at least three of them did.

Q. I see a case about water rights in Arizona, life expectancy, patient populations. None of the cases you list here are voting rights or voting-related cases; right?

A. That's correct.

Q. You never testified in a voting rights case before?

A. That's correct.

Q. And do you know whether the court in the cases or the courts, I should say, in the cases that you testified in previously credited your testimony?

A. What does "credited" mean?

Q. Do you know whether they viewed it favorably, they relied on it in coming to their decision?

A. Well, I was sworn in as an expert witness in

the case where I did testify, so I assume they used it in some manner.

Q. You don't know which manner they used it in?

A. No.

Q. Okay. And looking at some of these cases that you have listed here, you indicate there's some cases where you produced -- and actually, let's look at page 8 where you say: "I produced expert reports as a consultant of potential expert witness in other court cases." You have a list of those here on page 8. None of these are voting-related cases?

A. That's correct.

Q. And you never submitted a report in any voting-related case?

A. That's correct.

Q. And then on page 8, paragraph 9 you say you served as a consultant to Bryan GeoDemographics, BGD, in regard to certain redistricting cases. Do I have that right?

A. You do.

Q. What is Bryan GeoDemographics?

A. It's a company owned and operated by Tom Bryan. He calls it a boutique consulting company based near Richmond or in Richmond, Virginia.

Q. What is your role as a consultant for Bryan

GeoDemographics?

A. It varies. He -- when Tom Bryan contacts me, it's usually about questions about a method.

Q. What kind of questions would he contact you with?

A. I'd have to look up to remember them all, but typically involve methods, statistical and otherwise, sometimes demographic measures, sometimes summary-type measures.

Q. What's an example?

A. I'd have to think about one off the top of my head. I believe I've worked with him on doing some statistical things. And they may have -- occur in the book that he and Peter did too. But I haven't thought about in a while, so off the top of my head I can't remember what they were.

Q. And you said you've been working as a consultant with Bryan GeoDemographics since about 2021?

A. Give or take that's correct.

Q. And you mentioned four cases here in paragraph 9 for which you serve as a consultant to Bryan GeoDemographics, two of them are Caster versus Merrill and Singleton versus Morrill; is that right?

A. Yes. Whatever's listed. And I don't remember the cases. I know they're -- I just put them down in my

vitae once I send reports to Tom and he told me what the cases were.

Q. And do you know that those are cases involving Alabama's congressional districting from the 2020 cycle?

A. Not offhand I wouldn't.

Q. What did you do as a consultant in those cases?

A. Generally, Tom would ask me questions about a method, and I would respond to them and try and give him advice.

Q. Did you conduct any analysis of Alabama's black belt as part of your consulting on those cases?

A. No.

Q. Did you conduct any analysis on the gulf coast area of Alabama as part of your analysis in those cases?

A. Not in those cases, but I've done work on -- with an attorney in Texas that looked at the effects of the oil spill where we looked at all the gulf coast, and part of that involved gulf coast populations, but it wasn't a voting rights case.

Q. And you -- do you draw any electoral maps or review any electoral maps in your consulting in the Caster and Singleton case?

A. Not that I recall. I certainly didn't draw any. Usually the questions that Tom asks me are about is this an appropriate statistical method to use in this

test? If it's a t-test, for example, should I use the equal variance assumption or the unequal variance assumption? If I use regression after I've transformed variables, what would I do? So those are the types of questions I typically help with him.

Q. And so, for example, he would take the analysis that he'd done, take it to you and say, does this methodology look right to you?

A. Sometimes they're even in advance of that. He'd ask me what kind of advice would you give me on some technique to use. And I stress I'm probably not the only one he's asking for advice.

Q. And you know that Mr. Bryan and Bryan GeoDemographics were working to defend the electoral maps that were challenged in those Alabama cases?

A. That I do know.

Q. And do you know how the Court decided those cases?

A. No.

Q. Do you know whether the Court determined that the congressional districts in Alabama -- or the challenged congressional districts in Alabama was likely unlawful?

A. No. I don't follow the court cases.

Q. Do you know whether the Court in those cases

credited the analysis and testimony that Bryan provided?

A. I don't know.

MR. SAVITZKY: And I just want to mark now -- what exhibit are we on?

MS. JONES: 3.

MR. SAVITZKY: Just going to mark as Exhibit 3, this is the Singleton case. And I'll hand this copy to you and this copy to you, Mr. Wallace.

MR. WALLACE: Very good.

MR. SAVITZKY: And take a peek over my copy.

BY MR. SAVITZKY:

Q. And you can turn to page -- excuse me. Let's turn to page 1007. The pages are marked in the top right corner. And just let me know when you're there.

A. I'm there.

Q. And just looking at that first -- it's right in the top left, the Court says: "We're concerned about numerous other instances in which Mr. Bryan offered an opinion without a sufficient basis or in some instances any basis." Did I read that accurately?

A. Yes.

Q. And the Court lists various instances. And then looking at that time the next page, page 1008, the last sentence of the first full paragraph, the Court says that: "Mr. Bryan overstated his opinions, offered

testimony without a sufficient basis, cited material that he had not reviewed, offered opinions at the preliminary injunction hearing that he had not offered in his reports." Is that --

MR. WALLACE: Go ahead and read the whole sentence instead of paraphrasing from the middle. That's a form objection.

MR. SAVITZKY: That's fine. We can do that.

BY MR. SAVITZKY:

Q. The Court said in that last sentence: "Although the schedule might have limited Mr. Bryan's ability to perform some work that he otherwise might have performed, it did not cause him to overstate his opinions, offer testimony without a sufficient basis, cite material that he had not reviewed, or offer opinions at the preliminary injunction hearing that he had not offered in his reports." Did I read that accurately?

A. You did.

Q. And then looking at the last sentence in the last paragraph, last full paragraph, I should say, on that same page, the Court says: "Because Mr. Bryan consistently had difficulty defending both his methods and his conclusions and repeatedly offered opinions without a sufficient basis and because we observed

internal inconsistencies in his testimony on important issues, we find that his testimony is unreliable." Did I read that right?

A. You did.

MR. SAVITZKY: And just for completeness, I'm also going to mark as Exhibit 4 the Caster case. And here is your copy. And Mr. Wallace there's a copy for you.

BY MR. SAVITZKY:

Q. And just looking at the Caster case we can turn to pages 52 and 53 of the document. And we don't have to reread it all, but I just want you to confirm for me that --

MR. WALLACE: Can I stop you and ask: I'm trying to find the pagination here. You've got these -- are you looking at the asterisks, the --

MR. SAVITZKY: No. The pagination is right at the bottom of the page.

MR. WALLACE: Oh, I see where we are. Okay. Give me those numbers again, please?

MR. SAVITZKY: It's just starting at page 52.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. And I just want to confirm that this is

verbatim the same statements are in the Caster opinion as well. So starting in the first full paragraph in the seconds column on page 52: "We're concerned about numerous other instances in which Mr. Bryan offered an opinion about a sufficient basis or in some instances any basis." Same statement?

A. Where are you reading?

Q. On page 52, last part of the first full paragraph.

A. That would be paragraph 60?

Q. No. Just on the second column, the first full paragraph of the second column on page 52.

A. The one that starts out "separate"?

Q. Correct. And the last -- after the citation there: "We are concerned about numerous instances in which Mr. Bryan offered an opinion without a sufficient basis or in some instances any basis."

A. I see that. I do.

Q. Okay. And then moving to the next page, page 53, same statement that we read from the Singleton opinion, this is in the second to the last paragraph in the first column. "Although the schedule might have limited Mr. Bryan's ability to perform some work that he otherwise might have performed, it did not cause him to overstate his opinion, offer testimony without a

sufficient basis, cite material that he had not reviewed, or offer opinions at the preliminary injunction hearing that he had not offered in his reports." Same statement as before; and that's right?

A. That is.

Q. Okay. And then just looking at the next page, page 54, last sentence of the first paragraph there, again same conclusion: Mr. Bryan consistently had difficulty defending his methods and his conclusions, repeatedly offered opinions without a sufficient basis, and concluding that his testimony is unreliable; right?

A. I read that.

Q. Okay. So let me ask you another question: Do you know whether the supreme court ended up ruling in an appeal in the Singleton and Caster cases?

A. I do not.

Q. Do you know whether William Cooper, plaintiff's mapping expert in this case, the White case, drew any of the plaintiff's illustrative maps in the Alabama cases?

A. I don't recall. I don't know.

Q. Do you recall conducting any analysis in Mr. Cooper's maps in the Alabama cases?

A. No.

Q. Would you dispute that a panel of three medical judges in the Singleton case found that the plans that

Mr. Cooper drew in Alabama were consistent with traditional districting principles?

A. I'm not in a position to dispute or not dispute it.

Q. And we can just look back at Exhibit 4, which you should still have in front of you -- excuse me, Exhibit 3 in the Singleton case here. And I just want to look at page 1016 this time. Excuse me, 1015.

MR. WALLACE: 15?

MR. SAVITZKY: Sorry, 16.

MR. WALLACE: 16.

MR. SAVITZKY: Strike that. That's all right. We don't have to do that.

BY MR. SAVITZKY

Q. And you said you didn't know whether the supreme court reviewed these decision?

A. I believe -- I knew that it went to the supreme court, but I just don't follow whatever they did with it. And I may have heard from Tom about it, but that didn't stick in my head.

MR. SAVITZKY: And we can now mark as 5, this is the supreme court's decision reviewing those Alabama -- Alabama decisions. Copy for Mr. Wallace. I'm looking at page 15 on the bottom of this document, second column, first full paragraph. Let me know when

you're there.

MR. WALLACE: All right. This is page 15 of Westlaw print-off and it's somewhere.

MR. SAVITZKY: Second column.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. So first of all just in the first full sentence in that second column, that Caster plans to rely on illustrative maps produced by expert Bill Cooper. Do I have that right?

A. Are you asking me?

Q. Yes.

A. Yes, that's what it says.

Q. And then looking at that next paragraph, says: "The District Court agreed, found Cooper's testimony highly credible commended Cooper for working hard to give equal weight to all traditional districting criteria." Do I have that right?

A. That's what I read.

Q. And then the last -- and actually, we'll continue on. The next sentence: "The Court also explained that Alabama's evidence of racial predominance in Cooper's maps was exceedingly thin. Alabama's expert Thomas Bryan testified he never reviewed the exhibits to Mr. Cooper's report and never reviewed one of the

illustrative plans that Cooper submitted." That's right?

A. It is.

Q. And just skipping a sentence going to: "By his own admission, Bryan's analysis of any race predominance in Cooper's maps was pretty light. District court did not err in finding that race did not predominate in Cooper's maps in light of the evidence before it." Right?

A. That's what I read, too.

Q. So you also mentioned -- and we can put those aside for now, maybe put them over here if we're not using them. We'll want to hang onto this.

And in fact, just referring back to it, page 8 of your report, you also mention that you worked on the Ardoin case, Robinson v. Ardoin? That's the Louisiana congressional districting case? I'm looking at page 8 of your report.

A. Yes.

Q. Okay. And what did you do as a consultant for Bryan GeoDemographics in that case?

A. I'd have to look back at my records and see what I did, if I have e-mail correspondence. Again, most of these where I would serve as a consultant to him, he'd either contact me via e-mail or call me and

ask me questions about particular methods or ask me for advice on these or something. And I don't recall specifically what it was.

Q. Do you recall how actively involved you were in consulting on the Ardoin case for Bryan GeoDemographics?

A. No.

Q. Do you recall whether you worked on a misallocation analysis?

A. That sounds familiar. I think I did.

Q. And to be clear, you didn't draw any electoral maps in that case?

A. I did not.

Q. Would you say that the analysis in that case from Mr. Bryan reflects your input in your analysis?

A. It may reflect some of my advice that I give to him about misallocation error or how to measure it?

Q. And by the way, for those Alabama cases, Caster and Singleton, would you say that Mr. Bryan's analysis reflects your input in your analysis as well?

A. I don't know.

Q. And you know that Thomas Bryan and Bryan GeoDemographics were working to defend the congressional districts that were challenged on behalf of the State of Louisiana in that case?

A. Yes.

Q. Did you review the Court's decision in the Ardoin case?

A. No.

Q. Do you know whether the Court determined that the challenged congressional district there likely violated the Voting Rights Act?

A. No.

Q. And this is the last one of these, I swear. I'm not going to take that back rather than swear to anything. I'm just going to mark a copy of the Ardoin case. I think we're on Exhibit 6. And --

MR. WALLACE: I'm missing the first page of it. I'm sure I can get it someplace else, but --

MR. SAVITZKY: Happy to.

MR. WALLACE: Did you miss a page?

MR. SAVITZKY: Here, I'll give you my first page. I may have missed one.

BY MR. SAVITZKY:

Q. So would you dispute that the federal judge in the Ardoin case agreed with the plaintiffs and held that the challenged congressional districts there violated the -- likely violated the Voting Rights Act?

A. I don't know what decision the judge made, so I'm not in a position to dispute it or not dispute it.

Q. Do you know whether the Court credited the

analysis that Thomas Bryan and Bryan GeoDemographics provided?

A. I don't know.

Q. And looking at what's been marked as Exhibit 6, and turning to page 824, and we can start just in that first full paragraph. Let me know when you're there. First full sentence: "After observing Bryan on the stand in this case, the Court finds his demeanor was not so problematic as to disqualify him. But the Court found his methodology to be poorly supported, his conclusions carried little, if any, probative value on the question of racial predominance." Did I read that right?

A. You did.

Q. Okay. And then in the next paragraph, the Court discusses how Bryan opined that race was a prevailing factor in the design of plaintiff's illustrative plans based on his "index of misallocation" which purports to flag areas where a disproportionate share of the black population was grouped into a majority, minority district."

Is that the misallocation analysis that we were talking about before?

A. Yeah, I'm sure what I helped him with was in regard to how do you measure misallocation.

Q. Okay. And then looking at the next paragraph, the Court says: "Even if this misallocation method is accepted, the factual assumptions upon which his conclusions rest are absent in this case. Hence, Bryan's conclusions are unsupported by the facts and data in this case and thus wholly unreliable." Did I read that right?

A. You did.

Q. And then moving to the next column, first full paragraph, concluding, the Court says: "Finally, the Court finds that Bryan's analysis lacks rigor and thoroughness which further undermines the reliability of his opinions." Do I have that right?

A. You do.

Q. And in the last sentence: "For the foregoing reasons, the Court gives very little weight to Bryan's analysis and conclusions." Is that right?

A. It is.

Q. Okay. Now, the last case you mentioned -- and we can put that one away as well. Put it right here. Thank you.

So the last case is McConchie versus the State Board of Elections that you listed. Is that an Illinois redistricting case?

A. I think that was Illinois.

Q. Do you know what the legal issue is in that case?

A. No.

Q. Do you know whether it involved the Voting Rights Act or racial votes dilution?

A. I don't.

Q. Do you remember anything about what the case was about?

A. No. Seriously, I don't.

Q. Do you remember anything about the analysis that you did for Mr. Bryan?

A. I'd have to look back at my records and see what questions he asked me.

Q. So as I understand it, the issue in that case is whether it violated the federal constitution for Illinois to use ACS population estimates to draw their legislative districts rather than waiting for the 2020 census to come out. Does that sound right to you?

A. It does sound familiar.

Q. And the issue was that because ACS estimates are estimates and not full measures of the population as with the census, that was a one person, one vote problem, it couldn't be sure that you had one person, one vote allocation for population across the districts. Does that sound right?

A. I don't know how people viewed a sample based estimate compared to the census and how they used it. That part I don't know.

Q. But based on what you recall, it wasn't a case about racial vote dilution or racial representation?

A. I don't recall.

Q. So in the three cases where -- well, let me strike that.

You do understand that the Caster and the Singleton and Robinson cases are about racial vote dilution?

A. I believe that's the case.

Q. So in the three cases where you consulted for Bryan GeoDemographics that you know involved racial vote dilution, in each one of those cases the Court did not credit the Bryan GeoDemographics analysis; right?

A. That's what appears to be the case based on what you read.

Q. Now, in your January report looking on to page 10 -- you have it if you want to look at it -- you say: "Because of its expertise and experience, I have used the services of Bryan GeoDemographics which under my direction has assembled data, maps, and other work product." So you use Bryan GeoDemographics to assemble data, maps, and work product for your report in this

case?

A. I'm sorry, where are you at?

Q. Oh, I'm sorry. Paragraph 10 on page 8. That's my -- my mistake. Just the next paragraph from what we were talking about: "Because of its experience and expertise, I've used the services of Bryan GeoDemographics to assemble data, maps, and other work product." For this case for your report in this case, yes?

A. Yes.

Q. And just looking -- I mean, I looked at the maps in your report, they tend to have produced by Bryan GeoDemographics legends or notes at the bottom; is that right?

A. That's correct.

Q. So who actually created those maps and other tables that are indicated as being produced by Bryan GeoDemographics in your report?

A. They were -- they were done under a request from me to -- I would -- could use a table or a graph or something like this to put together in my report.

Q. And then Thomas Bryan created them?

A. Yes.

Q. And what information did you give him to instruct him to create the report?

A. I gave him a general picture of what I wanted to see in a table or a graph, and then he produced it using probably the Public Law 94171 data or whatever else was involved in it.

Q. Do you know what software he used to create --

A. Maps.

Q. To create the maps, yeah.

A. I think he uses map -- or the -- what's the company in Redlands, California -- Arcinfo. I believe that's what he used I'm pretty sure he uses things from that group.

Q. Do you know what software he used to create any data tables that he created for you for these purposes?

A. He usually uses Excel.

Q. Is this work that you could have done yourself?

A. Most of it involves really large files, and he's adept at bashing around data and big files and using parts of Excel that I don't use routinely like pivot tables. So I probably could have done it but it would have been a learning curve for me to get to that point and also assemble all the data and have it together. So it was much easier to work through Tom.

Q. Did he also provide substantive comments or analysis on the types of analysis that you were doing for your report?

A. No.

Q. Do you know whether any of the methods that you used are the same methods that he used in the Louisiana or Alabama cases?

A. I'd have to look at the reports to see.

Q. Could any of the reports -- analyses that you've done be characterized as a misallocation analysis similar to what Mr. Bryan did in Louisiana?

A. I can't recall using a misallocation index.

Q. Did Bryan GeoDemographics run the compactness analyses that you use in your report?

A. He produced the Excel tables that produced numbers for that.

Q. And did he actually produce the compactness scores that you used?

A. The scores, yeah. He's got that, I think, written up in various ways so he can produce them pretty quickly.

Q. Looking back at your resumé, and I'm to turn to page 159 of your report. Just a couple more items. I don't want to -- it's a long resumé, I know. On page 158 you list some non-refereed articles. And one of them is an internet article from around the time of the 2020 election called: Is Being Republican a Risk to One's Health and the Health of Others? Do you see that?

A. I do.

MR. SAVITZKY: And I'm just going to mark a copy of that as Exhibit 7.

MR. WALLACE: This on page 159?

MR. SAVITZKY: Correct.

MR. WALLACE: Okay.

MR. SAVITZKY: Let me just confirm that for you. Oh, you know what, it's on page 160, third one from the bottom. It's a long list of non-refereed articles that we have here. And we're marking this article as Exhibit 7.

BY MR. SAVITZKY:

Q. And in this article, you looked at heavily Democrat and Republican counties and you compared per capita case race of COVID?

A. They were counties that had voted one way or another in the presidential election.

Q. And your finding was that: Per capita, the cases of COVID in areas that voted heavily Republican were higher and they were increasing even though they were sort of more sparsely populated?

A. That's correct.

Q. And you concluded that this finding: "Supports the view that residents of those areas are ill disposed to outside mandates to self isolate, practice social

distancing, and wear masks possibly due to misinformation they consumed from conservative media outlets."

A. Yes.

Q. And you concluded: "Our take is that political orientations should be considered along with other factors likely to generate COVID-19 cases. So along with testing and its accuracy, data suppression, potential superspreader venues, population density, rates of interaction, age, race, and ethnicity and gender, we believe that being Republican or being in proximity to them could be a very real risk factor."

A. That's correct.

Q. And you still agree that being a Republican could be considered a risk to your own health and that of others with respect to COVID?

A. It was at that point in time. Whether is it now, I'd have to go back and research it again. But it definitely appeared to be the case when we did that research.

Q. Okay. And just one other article, one of these non-refereed articles, and we'll mark that as Exhibit 8. This is an article from a publication called Zócalo entitled: Is Hawaii a Racial Paradise. Do you recall this article?

A. I do.

Q. This is, I think, a forum -- sort of internet forum set of articles. And your article's on page 5 of this document, if you want to turn to it. And it's specifically entitled: "Compare Hawaii and Mississippi." Do I have that right?

A. It is.

Q. And in your article, you note that Hawaii has a very high proportion of people who identified as multiracial, where as Mississippi has a lowest proportion of people who identify as multiracial; is that right?

A. That is.

Q. And you note that Hawaii has the highest life expectancy, and Mississippi has one of the lowest or the lowest?

A. That's correct.

Q. And you note that Mississippi is well below the U.S. average in terms of people with bachelor's degrees?

A. Yes.

Q. And you note that Hawaii has less poverty than the national average and Mississippi has significantly higher levels of poverty?

A. Yes. And I'd say that that was as of the date I did the article, so things may have changed. But

you're reading this correctly for the dates that I had the data.

Q. You don't have any reason to think that that's changed since this article was published?

A. I don't know.

Q. You don't have any to reason to think that it's changed?

A. I haven't looked at the question since then, so I don't know.

Q. And you ask -- and this is in this last paragraph -- "What is it about these two states that relates the number of multiracial people and health, education, and income levels?" Right?

A. I do.

Q. And you say: "Historically, both states were dominated by a small social economic elite, primarily made up of white plantation owners. But in Hawaii, this domination occurred in the late 19th century whereas in Mississippi, it was already part of the political fabric when the territory was admitted to statehood in 1817." Right?

A. That's correct.

Q. And you continue: "Racism and labor exploitation existed in Hawaii but they were neither as extreme nor as embedded as they were in Mississippi

where slavery preceded anti-miscegenation pro laws." Right?

A. Correct.

Q. And you still agree that the embedded history of extreme racism and exploitation contribute to socioeconomic deficits that we see in Mississippi today?

A. Yes.

Q. And we can put this one away as well. That one, too. Thanks very much.

So let's talk about this case. You understand that this deposition relates to litigation brought under Section 2 the of Voting Rights Act?

A. I don't know what section of the Voting Rights Acts it is, but I understand it's a case about voting rights.

Q. Okay. When did you first learn about this case?

A. A year ago.

Q. How did you learn about it?

A. Mr. Wallace contacted me.

Q. Did you and Mr. Wallace know each other previously?

A. No.

Q. Just curious. What is your understanding of the claims brought by the plaintiffs in this case?

A. You'd have to be more specific about what it is you're asking me, because I don't follow the question exactly.

Q. What do you understand the plaintiffs to be challenging about the Mississippi Supreme Court?

A. What they seem to be challenging is the counties that are within district 1 specifically.

Q. What is your understanding about why the plaintiffs would like district 1 to be configured differently?

A. I believe -- are you asking me specifically about Dr. Burch's report?

Q. I'm asking generally about the claims in the case. I mean, your reviewed Dr. Campbell's report; right?

A. Yes. I spent more time with Dr. Burch's report.

Q. You reviewed Dr. Cooper's report?

A. I did.

Q. Excuse me. Mr. Cooper's report?

A. Yeah, Mr. Cooper.

Q. Wouldn't want to unnecessarily promote Mr. Cooper.

Having read a few reports in the case -- and did you read the complaint that was filed in this case

by the plaintiffs?

A. Probably, but I don't recall.

Q. So I'm just asking you: What's your understanding of why the plaintiffs think that district 1 should be redrawn?

A. I think it's because they -- the idea is that there should be a -- either a higher majority or a straight-out majority of black voters in the district.

Q. And what is your understanding of why plaintiffs think that district should be redrawn so that there's a higher majority or a straight-out majority of black voters in district 1?

A. I guess it would have to do with some understanding of how black or white or other people vote.

Q. What's your understanding of what the term "vote dilution" means?

MR. WALLACE: That really is a legal opinion, and I'll object to it for that reason. He can answer.

Q. You can provide your understanding if you have one.

A. I don't know.

Q. What's your understanding of what "racially polarized voting" means?

A. My understanding is that white people might tend to vote in a block, black people might tend to vote in a block, Chinese people might tend to vote in a block, Japanese American might tend to vote in a block, American Indians might to tend to vote in a block, etcetera.

Q. And so you would agree that if voting in a particular area is racially polarized, black voters are usually not going to be able to elect a candidate they want to elect unless they form a majority in that area?

MR. WALLACE: Object as facts -- object on the basis based on facts not in evidence. I was trying to think whether it was bad law or bad facts, but I object to the form because it's probably both.

Q. You can answer the question.

A. I don't know the answer to it.

Q. Let me ask it again. You would agree based on your understanding of what racially polarized voting is, that if you have an area where there is racially polarized voting, black voters will usually not be able to elect the candidate that they're voting for unless they form a majority of the population in that district?

A. Well I think what you're asking me is a research question, so I can't offer an answer off the top of my head without actually researching some

specific condition.

Q. Let me ask it one other way. If white voters are usually voting for one candidate and black voters are usually voting for the other candidate and both white and black voters are voting cohesively, then in an area where voters are supposed to be either white or black, where black voters are the minority, they're usually going to lose the election?

MS. WALLACE: Object to the form of the question as seeking legal opinion on the meaning of both "usually" and "cohesively." But you may answer.

A. I don't know.

Q. You understand you're being proffered as an expert in this case?

A. I understand that.

Q. What are you an expert in?

A. Demography.

Q. You're not an expert electoral mapping drawing?

A. That's correct.

Q. And you're not an expert in voting behavior?

A. That's correct.

Q. Do you know what the duties of an expert in a federal law suit are?

MR. WALLACE: Well, I'm going to object to the form of that as being a legal opinion. But he may

answer.

A. Does it vary by judge or court?

Q. Well let me ask it this way: Do you think that an expert is supposed to be objective?

A. That I believe. I think an expert should be objective.

Q. And when did you first learn you were going to give a deposition in this case?

A. Not too long ago. Mr. Wallace might be able to give an answer on that one. I can't recall.

Q. Unfortunately, I'm not deposing Mr. Wallace.

A. Well, I -- a month ago? A week ago? I don't recall. Certainly wasn't a year ago.

Q. And without going into the substance of any conversations that you had with your attorneys, what did you do to prepare for today's deposition?

A. I went back and reviewed the surrebuttal report I prepared.

Q. How long did you spend preparing for today's deposition?

A. Since I knew about being deposed, probably several hours.

Q. Did you meet with anyone?

A. Other than Mr. Wallace?

Q. Other than Mr. Wallace.

A. No.
Q. You met with Mr. Wallace?
A. Yes.
Q. Again without asking you about the substance of any conversations you had, about how many times did you meet with Mr. Wallace?
A. This morning, yesterday.
Q. Did you review any documents -- and I'm sorry, was that your complete answer, was this morning and yesterday?
A. I believe so. We maybe talked on the phone or e-mail, but I can't recall that. But in terms of personally talking to him about it.
Q. Did you review any documents to prepare for this deposition?
A. You asked me that question.
Q. And you mentioned your surrebuttal. Anything else that you reviewed?
A. Not that I really read or reviewed.
Q. Did you take any notes during any of the meetings or known calls that you had to prepare for this deposition?
A. No.
Q. Did you take any notes when you were reviewing documents to prepare the for deposition?

A. Not that I recall.

Q. Did you do any highlighting or margin note writing in any documents as you prepared for this deposition?

A. I generally don't review printed documents because the printer at my house doesn't work, well -- I'm serious. So what I generally do is look at things on-line.

Q. And you didn't make any marginal notes in any digital documents you were reviewing?

A. No.

Q. I'm also in the faulty printer club, so I feel your pain on that one.

Did you bring any documents with you to today's deposition.

A. No.

Q. Okay. I'd like to spend some time talking about the January report that we've been looking at starting with the demographic analysis that you conducted.

MR. WALLACE: Well at this point, I'm going to state our position -- and it depends on what you're looking at. The court order authorizes you to examine him on the surrebuttal report. I don't doubt that there are some things in the first report which may be

inextricably connected to the second report, so, you know, I'll take it up an issue at a time. But we do believe this is a deposition on the surrebuttal report. And with that, you may proceed.

MR. SAVITZKY: Thank you, Mr. Wallace. And, you know, we understand your position. Obviously, this came up at the last deposition as well. And, you know, we disagree and think this is our opportunity to take a deposition of defendant's experts, but we can hash that out another time, and your object is certainly noted.

BY MR. SAVITZKY:

Q. So with that, still looking at your January report you should have in front of you, and it's marked as Exhibit 2, I just wanted to get one point out of the way. You say a few times in your report, paragraph 13, for example, that Mr. Cooper argues -- "argues that Mississippi's Supreme Court district 1 is a minority black district at 49.3 percent." You can look at paragraph 13 of your report to confirm that you say this. It is, I believe, the second full sentence. You characterize Mr. Cooper as arguing that district 1 is a minority black district at 49.3 percent?

A. I do. I write that in here.

Q. And you actually at paragraph 33, you say it again, you say: "Plaintiffs are relying on the any part

black voting age population of the district to characterize district 1 as being minority black."

A. Yes.

Q. And in paragraph 39 you say -- you characterize: "The claim that plaintiffs are making is that district 1 'is a minority district' in need of remediation."

A. Yes.

Q. Did you read Mr. Cooper's October report?

A. I did.

Q. Did you review the exhibits to the report?

A. I did.

MR. SAVITZKY: So I just want to mark the October report now. This'll be Exhibit 9. Here's a copy. One for Mr. Wallace.

BY MR. SAVITZKY:

Q. And just looking at page 19 of Cooper's October report, just at the very top of the page, let me know when you're there.

A. I'm there.

Q. He says: "District 1 is only a 4 percentage point plurality BVAP district; right?

A. Yes, it does say that.

Q. And that is the statement that you're pointing to when you say that Cooper argues that Mississippi

Supreme Court district 1 is a minority black district?

MR. WALLACE: That's that fist question you've asked him since I stated my objections, and I object to it as being outside the scope of the order. He may answer.

A. Yes.

Q. So what Mr. Cooper says he doesn't say minority, he says plurality; he says it's plurality black district; right?

A. He says that.

Q. So you think that paragraph 13 and those other references in your report should be corrected?

A. But 49.29 percent is not a majority.

Q. Right. But Mr. Cooper doesn't characterize it as a minority black district, he characterizes it at a plurality black district; right?

A. You're correct.

Q. But you say Mr. Cooper "argues that Mississippi Supreme Court district 1 is a minority black district at 49.3 percent?

A. I did.

Q. He doesn't argue that, does he?

A. That would be up to you. When someone says it's 49.29 percent, that to me is a statement that's a minority.

Q. Are a minority and a plurality the same thing?

A. A minority is when you're less than half, depending on what the situation is. And to me, that's a minority.

Q. A plurality would imply that you're the -- well, strike that. We'll leave it there.

You don't dispute that the voting age population based on the census is the traditional standard for measuring population for purposes of drawing an electoral map?

MR. WALLACE: Objection as asking for a legal opinion. He may answer.

A. I believe that's the case.

Q. And then you look at American Community Survey data as well to analyze the demographics of the population in Mississippi in your report; right?

A. Yes.

Q. And, I mean, we can, I think, starting at paragraph 39 of your report, if you'd like a place to look, but -- and you -- strike that.

Unlike data from the census, the America Community Survey is an estimate; right?

A. It is. It's a sample-based estimate.

Q. Did you use the 2016, 2020 special tabulation of the ACS?

A. I believe that's the case. I'd have to look at the actual report to see what I used, but that's the most likely one.

Q. And you say that using ACS estimates of CVAP or citizens voting age population, the existing district 1 is majority black CVAP; right?

A. I believe that's the case. Can you point me to the paragraph so I can see it?

Q. Yeah. I believe it's on paragraph 39.

A. Yes.

Q. Do you think that the existing district 1 is reasonably configured?

MR. WALLACE: Objection as calling for a legal conclusion, but he may answer.

A. I don't know. And the sense of configured, in what manner? Geographically? Socially? Spacially? Road-wise? Communication?

Q. Is existing district 1 compact?

A. I'd have to look at the data to, again, recall if that's the case.

Q. Did you analyze the compactness and other metrics of district 1 in conducting your opinions in your January report?

A. I haven't looked at this report for quite a while that you're bringing up, so I'd have to go back

and review it. I didn't review it prior to this deposition.

Q. And you don't conclude anywhere in your report that the black population of Mississippi is not sufficiently numerous and geographically compact to allow for one black majority supreme court district?

A. Again, I'd have to stress I'd have to go back and look at the report because I haven't looked at it or thought about it in a while.

Q. I mean, you're welcome to review the conclusions if you want or --

A. If you want me to now, I can.

Q. The question is whether you concluded anywhere that the black population in Mississippi is not sufficiently numerous and geographically compact to support one majority black supreme court district?

MR. WALLACE: Object to the form because sufficiently numerous geographically compact requires all kinds of legal conclusions.

A. And my answer, again, is I'd have to go back and review all those since I -- I didn't do that prior to this deposition.

Q. You don't conclude that it's not possible to draw a compact majority black supreme court district in Mississippi?

MR. WALLACE: Same. Objection he my answer.

A. I don't have a conclusion about that at this point in time because it's not in my head.

Q. But you don't conclude that in your report anywhere?

A. I'd have to look back at the report to review it. I don't know. As I said, I haven't looked at this report for quite a while, so I can't recall exactly what's in it.

Q. So when calculating demographics of the different districts, you also do some analysis to adjust for prison population. Do you recall that?

A. I do.

Q. And that's starting at paragraph 46 of your report. And you conduct this analysis by subtracting the current populations of some of Mississippi's prisons from the CVAP that you've calculated; right?

A. I believe that's the case, but I'd have to look specifically again at it to recall because I don't recall off the top of my head.

Q. Well, feel free to refresh yourself by looking at paragraph 46 and neighboring paragraphs if you need to before we proceed. And let me know when you're ready.

A. I've looked at it.

Q. Okay. So you do this analysis of prison populations by subtracting the current populations of some of Mississippi's prison facilities from the CVAP that you've calculated; right?

A. Yes.

Q. And specifically, you look at the three largest prison facilities in the state of Mississippi; right?

A. I believe those are the three largest, yes.

Q. And you calculate the current population of those three facilities that we looked at as 7,000 people?

A. Can you point to me where the -- where I've got the number in there?

Q. Yeah. I'm looking at Table III E-1 on page 25.

A. And then what you're looking at is the right hand total where it has 2,996 in private prisons and 4,050 in regional correction facilities to say it's approximately 7,000?

Q. So that's right.

A. That's correct.

Q. And just to be clear, the count that you have here is a partial count of the population of incarcerated persons in Mississippi, right, you didn't include every incarcerated person?

A. Such as in county jails and the like?

Q. Sure.

A. That's correct.

Q. And your analysis shows that there is a higher -- and I'm quoting you know according to paragraph 48, you say: "There's a higher proportionate number of black prisoners in the three major prisons in Mississippi than white prisoners overall and by gender." Right?

A. Yes.

Q. And that table that we were looking at, Table III E-1 indicates that black Mississippians are about 60 percent of the prison population even though they are more like 36 percent of the voting age population?

A. That's an accurate characterization.

Q. And you know that in Mississippi, people with a qualifying felony are disenfranchised for life not merely when they are incarcerated?

A. I knew they were disenfranchised, I did not necessarily know it was for life, but I suspect I think I somehow knew that, yeah.

Q. And you don't try to estimate the number of persons who are unable to vote, who are disqualified from voting because of a qualifying felony conviction but who are no longer incarcerated; right?

A. That's correct.

Q. And you say, I think, on paragraph 36: "There's no practical way to measure or locate these demographically by district in a meaningful way."

A. That's correct. I stated that.

Q. Did you review Mr. Cooper's rebuttal report from February of 2023?

A. I believe I did, but I'd have to look at his report again to refresh my memory.

MR. SAVITZKY: And we can mark that as well. And we're on Exhibit 10. Here you are. And Mr. Wallace. Okay.

BY MR. SAVITZKY:

Q. And looking at page 5 of this rebuttal report, paragraph 9, Mr. Cooper discusses the study showing that the total disenfranchised population based on qualifying felony convictions in Mississippi that were rendered between 1994 and 2017 is 56,000. Do you see that?

A. I do.

Q. And do you have any reason to dispute that?

MR. WALLACE: Now I will object as being outside of the scope of the court order, but he may answer.

Q. Do you have any reason to dispute that?

A. The only thing I question is, are they all in Mississippi.

Q. Otherwise, you have no reason to dispute that's an accurate assessment of the number --

A. I have no reason to dispute that's an accurate assessment.

Q. And looking at the next paragraph, Mr. Cooper says -- and sorry, one other point here before I move on. Mr. Cooper says that of that 56,000, black Mississippians account for over 60 percent of that number?

MR. WALLACE: Same objection. He may answer.

Q. Any reason to dispute that?

A. Again, I'd have to go look at the exact data that he pulled or other sources to answer it fully, but I have no reason at this point to dispute it.

Q. It's actually quite consistent with the number that you found, isn't it?

A. It is.

Q. And that 56,000 represents convictions from the 23 year period 1994 to 2017?

A. I believe that's correct.

Q. And so Mr. Cooper then says in the next paragraph, paragraph 10 on page 6 in his rebuttal report: "It's clearly within the realm of possibility that after factoring in felony convictions going back to

1948, two additional 23-year periods, the adjusted eligible black CVAP for voters in district 1 may drop below 50 percent." Do you dispute that that's within the realm of possibility?

MR. WALLACE: Same objection. He may answer.

A. Many things are in the realm of possibly. But again, the question is how many people may have migrated out of Mississippi or died.

Q. So --

A. All those numbers.

Q. So you agree that it's possible that 51 percent CVAP once you adjust for all the persons who may have a qualifying felony conviction, it could be under 50 percent?

MR. WALLACE: Same objection. He may answer.

A. It could be either way depending on if they're still alive or where they live.

Q. So that's a yes, it could be under 50 percent prison adjusted CVAP?

A. That is a yes but it's qualified with the follow-up study as I mentioned earlier, to follow up on people who are in prison, discover where they're living now, are they in Mississippi or out of Mississippi, are

they alive? Are they dead? That may affect the answer.

Q. You would agree that people -- that there are likely people who were convicted of a qualifying felony in 1960, 1970, still alive today?

MR. WALLACE: Same objection. He may answer.

A. Yeah, that's -- that's a possibility, yeah. It's also a possibility that people from other states may have moved there, there are a lot of possibilities. This is a research question, as I stress.

Q. Understood. So just briefly, I want to look at a different part of your demographic analysis. I want to turn back to paragraph 34 of your report. You mention -- well, let me just read it. You say: "A useful way to look at the distribution of WNH" -- white non Hispanic -- "total and any part black total population across the three districts is to use the coefficient of variation." Do I have that right?

A. You do.

Q. And the coefficient of variation is the standard deviation of the voting age population of the three districts divided by the total voting age population?

A. Not the total, the mean.

Q. Divided by the mean?

A. That's correct.

Q. And you say: "The coefficient of variation shows the extent of variation relative to the mean."

A. It's normalized. That's what the term is, because you could have one population that has a really high mean if you're comparing it to another population that has a low mean. And what you want to do is divide the means into the standard deviation so you get a relative basis for comparison.

Q. And you say you do this for total but also white VAP, black VAP, and you say: "This shows that white total is four times higher than that same per VAP and black total is five times -- approximately five times higher than that same VAP which serves to confirm that white total and black total population are less equally distributed across the three districts in total VAP."

A. And remind me what paragraph --

MR. WALLACE: Which paragraph are we in?

MR. SAVITZKY: Paragraph 34.

MR. WALLACE: 34?

MR. SAVITZKY: Last sentence.

BY MR. SAVITZKY:

Q. You say looking at the data in this manner confirms that: "White non Hispanic total and any part

black total population are less equally distributed across the two districts than the total voting age population." Right?

A. That's correct.

Q. Is that another way of saying that black and white populations are not evenly distributed across Mississippi geography?

A. It would be.

Q. And you would agree that large numbers of high black VAP population are generally distributed north and south along the Mississippi River in Mississippi?

MR. WALLACE: Now I'm going to object to that for the same objection. He may answer.

A. I -- if you're asking me what my -- I would call it a research of hypothesis. It's a good question to ask as a starting point, but it's something you'd have to investigate.

Q. And let's just briefly -- let's put a pin in this page, but turn to page 96 -- excuse me, not page 96, paragraph 96 of your report on page 49. And just -- the second sentence of that paragraph, just take a look at that and let me know when you're ready.

A. And it's paragraph 99?

Q. Paragraph 96, second sentence. Just take a look and let me know when you're ready .

(Witness reviewing exhibit.)

A. Yes.

Q. You would agree that large numbers -- "Large numbers of high percent any part black VAP population are generally distributed north and south along the Mississippi River; right?

A. Yes.

Q. Now having worked in Mississippi, studied Mississippi demographics, you sort of know that's true just from looking at the map and knowing the population, there's a substantial amount of black population concentrated in the Mississippi Delta and the capital region; right?

MR. WALLACE: Same objection, but he may answer.

A. Yes.

Q. And that's why it's not especially difficult to draw majority black supreme court districts and include the Mississippi Delta and the capitol regions?

MR. WALLACE: Same objection plus the objection that is asking for a legal conclusion. But he may answer.

A. I don't draw a congressional district, so I'm not in a position to really answer that question.

Q. And you don't draw supreme court districts,

either?

A. Yeah, that's correct.

Q. So let's talk about the traditional districting principles. And we're now in a section of your report starting at paragraph 56, page 29. Are you familiar with the principles that electoral map drawers consider in drawing an electoral map?

A. Somewhat.

MR. WALLACE: Objection as to form as not explaining what an electoral map drawer is.

Q. Do you understand that an electoral map drawer is a person who draws electoral maps?

A. I do.

MR. WALLACE: With political authority or sitting in his basement with a pad? Can you be more specific.

Q. So you rely in your report on a few different sources to discern the principles that a person drawing an electoral map would consider; right?

A. Yes.

Q. One of the sources you rely on is a report from the congressional research service, it discusses principles for congressional redistricting?

A. I believe that's the case, yes.

MR. SAVITZKY: And we'll just mark that. We

are on Exhibit 11. Copy for you. Copy for Mr. Wallace.

BY MR. SAVITZKY:

Q. This is the report that you cite in your January report? Just confirming, this is the report that you looked at.

A. Give me a second here. I'm still trying to organize the main report you were going through --

Q. Sure, sure.

A. -- so I can find things when we go back to it again.

Q. And that's why, because we will certainly go back here.

And this congressional research service report is one of the sources that you relied on in your January report too?

A. It is.

Q. And according to this report, and we can see on page 3, page 3 of the document there -- the pagination is at the bottom. That's front matter. There we go. And just looking there, the report lists some of the principles that map -- electoral map drawers consider; right?

A. It does.

Q. And according to this source that you relied on, those principles include assuring population

equality among districts within the same state. You agree that's one of the principles to be considered?

A. That's one of the principles listed.

Q. You agree that's one of the principles listed as traditional criteria for drawing electoral maps?

A. That's what it says here, yes.

Q. And another one that's listed is protecting racial and language minorities from vote dilution while at the same time not promoting racial segregation?

A. Yes.

Q. And another principle is promoting geographic compactness and contiguity when drawing districts?

A. Yes, sir.

Q. And another principle is minimizing the number of split political subdivisions and communities of interests within districts?

A. Yes.

Q. And another principle is preserving historic stability in the cores of previous districts?

A. Yes.

Q. And then looking at this list, the list indicates that some of the considerations are more widely adopted than others; right?

A. In terms of?

Q. How many states require them, how many states

have adopted them, there are little parentheticals after each one that say how many states consider --

A. Yes, there's a different number of states listed after some of these.

Q. So contiguity appears to be expressly embraced as a required consideration by 22 states but core retention by only 7?

A. Correct.

Q. So when it's discussed in paragraph 58 and 59 of your January report, you also relied -- and we can put this one to the side, but we may refer back to it again. You also relied on another multistate survey of traditional districting principles from the National Conference of State Legislators; right?

A. Point me to that paragraph where I state that, please?

Q. Sure. This is Footnote 21 on paragraph 58, says: "The National Conference of State Legislatures is widely recognized, the nation's independence objective and bipartisan authority of redistricting matters published a series of principles that reflect traditional districting principles that have both informed -- that have been both informed by and adopted by many states." You cite the report in the footnote, continue on, and you say: "This guidance from the NCSL

is the basis of any assessment I make as an expert of individual states or organizations, criteria, and redistricting principles." Right?

A. Yes.

Q. So this NCSL guidance is the basis for your assessment of the compliance of an electoral map with traditional districting principles?

A. I use it as a guideline.

Q. A guideline to assess compliance with traditional districting principles?

A. I use it as what's considered to use such as core, retention, and so on, yes.

MR. SAVITZKY: And we can just mark that next, Exhibit 12. Copy, copy. Okay.

BY MR. SAVITZKY:

Q. And just looking at the list of considerations discussed right on this first page and then the bullets, seems like a similar list of criteria to the one that we just discussed; right?

A. It does.

Q. And so looking at right up on the first page, we see the second paragraph, first sentence: "All states must comply with the federal constitutional requirements related to population and antidiscrimination." Right?

A. I see that.

Q. And then we say -- or we see: "In addition to population equality, Section 2 of the Voting Rights Act prohibits plans to intentionally or inadvertently discriminate on the basis of race which would dilute that minority vote."

A. I see that.

Q. So then you agree those are considerations that should be guidelines in assessing compliance of a map with traditional districting principles?

MR. WALLACE: Objection. Again is asking for a legal opinion. But he can respond.

A. My -- my answer is: I use these as guidelines.

Q. You use them as guidelines in forming any opinions that you form about the compliance of the plans offered in this case with traditional districting principles?

A. Yes.

Q. And the NCSL report then says: "Well beyond that, states are allowed to adopt their own redistricting criteria or principles for drawing plans; right?

A. Yes.

Q. And then at paragraph 59 of your report -- I think paragraph 59 of your report is basically a

verbatim recitation of the bottom of this first page of the NCSL report?

A. I believe it -- that's where I found the materials so that's cited in there. Is that the case?

Q. Yeah. It's -- it's certainly cited in the footnote so I'm not trying to play gotcha. I just want to make sure this is basically what, you know, what you have done here in your report you say the traditional redistricting principles that have been adopted by many states, and then you list --

A. Yes.

Q. -- the principles and the descriptions thereof from the NCSL report?

A. Yes.

Q. And those include compactness?

A. Yes.

Q. And they include contiguity?

A. Yes.

Q. An include preservation of counties in political subdivisions?

A. Yes.

Q. They include preservation of communities of interest?

A. Yes.

Q. And they include maintaining the cores of prior

districts to the extent possible?

A. Yes.

Q. And they include avoiding incumbent pairings?

A. Yes.

Q. And then the NCSL report goes on to indicate that different states have adopted sort of different subsets of these criteria; right?

A. Yes. I believe that's the case.

Q. And we can look at page 10 of this document.

MR. WALLACE: In Exhibit 12?

MR. SAVITZKY: Correct.

MR. WALLACE: Okay.

Q. And we can see Mississippi is included there. And just looking at the NCSL description of the criteria adopted for redistricting of Mississippi, core retention is not one of the criteria that the NCSL report that you relied on identifies as being adopted in Mississippi; right?

A. We're in Exhibit 12; correct?

Q. Yes, page 10.

A. Thank you. And your question was?

Q. My question is: Core retention is not one of the criteria that the NCSL report that you relied on says that Mississippi has adopted for redistricting?

A. What I read here is require compact contiguous,

preserve political subdivision, preserve communities of interest.

Q. And core retention is not one of the criteria that Mississippi has adopted according to the NCSL report that you rely on?

A. That would be correct.

Q. And now looking at paragraph 60 of your report -- and I think it's possible we'll rely on this again, but we can put the NCSL report up for now.

Looking at paragraph 60 of your report, you say: "Mississippi code Section 53101," which also cited in the NCSL report, "expressly identified a few criteria for legislative districts." Right?

A. Yes.

Q. And in your report, you summarized the statute is requiring the districts be compact, contiguous, and preserve political subdivisions; right?

A. Yes.

MR. WALLACE: Object to the form as saying "districts." It actually says "legislature districts." But he may answer.

Q. And just looking at the language that you quote in the block vote right below paragraph 60, would you agree it's a pretty strong emphasis on county lines in that language?

MR. WALLACE: Object to the form. But he can answer if he can.

A. It reads: "Districts shall be structured as far as possible and within constitutional standards along county lines."

THE REPORTER: Sir, if you slow down, please.

A. It reads: 60B, districts shall be structured as far as possible and within constitutional standards along county lines, if county lines are fractured, then election district lines shall be followed as nearly as possible."

Q. So this statute that you point to places the emphasis on following county lines?

A. That's how I would read that.

Q. And you also in the last sentence of paragraph 60 which is the top of page 31, you also identify communities of interest, preserving communities of interest as a relevant consideration in drawing districts in Mississippi.

A. Yes.

Q. And again just looking at that statute you block quote there, core retention is not mentioned in Mississippi's statute as one of the districting criteria in Mississippi?

A. Correct.

Q. And you would agree that in considering the different traditional districting principles drawing a map, and electoral map drawer is going to have to balance some of these different principles and considerations?

MR. WALLACE: Object to form once again for failure to identify electoral map drawer and asking for legal conclusions. But you may -- and also being waylaid under the court order. But subject to all those objections, he may answer.

A. That would appear to be the case to me.

Q. Sometimes if you're putting a map -- an electoral map together, you're going to have to make tradeoffs between these different principles.

A. You have to make tradeoffs in anything we do in life, correct.

Q. Including these principles, which --

A. Since it's such a generalized idea, I think that you'd have to do that with these principles.

Q. And would you agree that different map drawers could employ different approaches, make different tradeoffs and each draw a map that in the end is consistent with the set of principles we've been talking about?

MR. WALLACE: Same objection as the last one. He may answer.

A. In principle, that could happen.

Q. So let's talk about the different criteria that we've been discussing one by one starting with population equality. Why do you think population equality, in your understanding, is an important consideration in drawing an electoral map?

MR. WALLACE: Same objections. He may answer.

A. Well as one example, if you had 500 people in an area, you don't want to put 499 of them in one and 1 person in the other and then equal -- have some sort of equal representation, whatever government form it would be.

Q. Ever heard the expression one person, one vote before?

A. I have.

Q. Population equality implements that principle; is that right?

A. I believe so.

Q. And looking at Table III.D.1 on page 17 of your report -- let me know when you're there?

A. I'm sorry.

Q. You report the population of the existing

supreme court districts, these are the current districts in Mississippi, right, the VAP. Do you see that?

A. I do. I wouldn't say a report, the population per se. These are subsets of the population in Mississippi.

Q. Well you report the VAP in that first column for each --

A. That's correct.

Q. -- of the three districts, the voting age population. And you say in a footnote, Footnote 14 that your numbers correspond to the numbers in Mr. Cooper's report with respect to the demographics of the districts?

A. I do.

Q. And just generally, you don't anywhere indicate that there's any discrepancy between the numbers that Mr. Cooper reports based on the census and the numbers that you report based on the census?

A. I'd have to look through the full report, but I believe that's the case.

Q. Now, you don't report population deviations for each of these districts; right?

A. In the sense of?

Q. You don't report how different the VAP of each district is from the ideal population size or mean

population size for all the districts?

MR. WALLACE: Objection. Comparing VAP to mean total population size or some other mean population size?

Q. The VAP of the district to -- to mean or ideal VAP of the district.

MR. WALLACE: All right. Objection as to -- as based on a faulty legal theory. I don't think there's a requirement for equality in VAP. But go ahead, he may answer.

A. In -- so I'm not sure what you're getting at, but in one sense, comparing deviations in the sense of how much a number may vary from a mean across a number of categories or districts, that's what your asking?

MR. SAVITZKY: You know what, I'll strike that. Mr. Wallace makes a good point.

BY MR. SAVITZKY:

Q. You don't report population deviations to the districts in terms of total population from the ideal districts size?

A. Well, I'm not sure what the ideal district size is. I mean in that sense, are you talking about a mean or an average taken across a number of units?

Q. If there were equally populated districts, you don't report the deviation of these districts from the

size of what an -- what an equally divided --

A. Thank you for clarifying that. Yeah, I understand. No, I don't.

Q. You would agree that looking at that population deviation is something that map drawers take into account to asses that equal population principle that we've been talking about?

MR. WALLACE: Same objection as before. He may answer.

A. I -- it may depend on the situation.

Q. And we talked about that book that you -- that Mr. Bryan and Mr. Morrison had written called Redistricting, do you recall that?

A. Yes, I do.

Q. Is that another source that you relied on to think about the different principles that mappers consider?

A. I probably have looked through the book, again, when I was looking at this, but I don't recall specifically if I did.

Q. And let's just mark that. So this is Exhibit 13, Redistricting, a Manual for Analysts, Practitioners, Citizens, published as we discussed earlier by Springer.

MR. WALLACE: This is exhibit which?

MR. SAVITZKY: 13.

MR. WALLACE: 13.

BY MR. SAVITZKY:

Q. Okay. And I just want to turn to page 47 of this document here. And you let me know when you're ready.

A. I'm there.

Q. And we see on page 47 that the authors list some of the same criteria that we've been talking about; right?

A. I do.

Q. And they say: "Substantial equality of population has come to mean that the population difference between the largest and smallest districts, the total deviation may not exceed 10 percent of the average district population." Do you see that?

A. Yes.

Q. Do you agree with Mr. Morrison and Mr. Bryan that for purposes of drawing an electoral map, substantial quality of population means trying to stay within a plus or minus 5 percent of the ideal of average district size?

MR. WALLACE: Objection as to asking for a legal conclusion and for being outside the scope of the court order. But he may answer.

A. I look at this as another guideline.

Q. You agree it's a reasonable approach to implementing the consideration of equal population?

A. Well, it seems to be an approach to doing it, yes.

Q. And by the way, the next one that Mr. Bryan and Mr. Morrison mention is minority representation?

A. I see that.

Q. Okay. So looking back at your Table III.D.1 on page 17 of your report -- and I understand this is only VAP -- it does look like, at least looking at VAP for now --

A. And where was that again?

Q. This is on page 17 of your report.

A. Thank you.

Q. And just looking at VAP, it looks like district 2, almost 800,000 people district 1, 715,000. So there's a significant difference in total voting age population; right?

A. I read that district 1 as being 7,000 -- 716,000, not 715,000.

Q. Right. So -- but there's a significant about 80,000 person delta between the size of those two districts in terms of VAP?

A. There's a difference of approximately 80,000

people.

Q. And looking at Mr. Cooper's October report which is Exhibit 9, if we could pull that back out. Here it is. So looking over at Mr. Cooper's October report --

A. Thank you.

Q. -- page 19, Figure 8, let me know when you're there.

A. I'm there.

Q. So Mr. Cooper does report total population in these districts in Figure 8; right?

A. Yes.

Q. And Mr. Cooper also reports the percent deviation from the ideal district size or mean district size or mean district size; right?

A. If he calculated it, that would be the case.

Q. And you don't dispute that looking at Mr. Cooper's Figure 8, the population deviation under the current scheme of supreme court districts is greater than plus or minus 5 percent?

MR. WALLACE: All right. Same objections as before. Asking for a legal conclusion, not authorized by the court order, and in addition, not relevant to any issue raised in the complaint. But he may answer.

A. The -- there's one deviation that's minus 5.39

percent, and one -- another one that's plus 5.07 percent.

Q. So then the population deviation range for the existing supreme court district plan is greater than plus or minus 5 percent?

MR. WALLACE: Same series of objections. He may answer.

A. Slightly greater than plus or minus 5 percent.

Q. And that's sort of made sense when you consider these districts haven't been changed since 1987?

MR. WALLACE: Same series of objections. He may answer.

A. I'm not equipped to answer other than looking at what the population history is over the same period of time.

Q. And you reviewed Mr. Cooper's October report?

A. Yes.

Q. You reviewed the population statistics that he provided for the illustrative plans?

A. Yes. And again, as I stressed, I haven't looked at those in a long time, so I'm not going to be able to speak off the top of my head. So if we refer to them, it might help refresh my memory.

Q. Okay. Well looking at page 27 of Mr. Cooper's report which provides both a map and those population

statistics for illustrative plan one?

A. And the page number was?

Q. Page 27?

A. Thank you.

Q. And looking there, you wouldn't dispute that Cooper's illustrative plan 1 brings the population deviation down under plus or minus 5 percent; right?

MR. WALLACE: Same series of objections. He may answer.

A. In what he labels a table as Figure 11, he has district 1 as a minus 3.14 percent, district 3 as plus 3.02 percent.

Q. So you wouldn't dispute that he brings the population deviation down below plus or minus 5 percent with his illustrative plan 1?

A. Three percent is less than 5 percent.

Q. But the range is down by four points overall?

A. Yes.

Q. And then looking at illustrative plan 2, page 30, you wouldn't dispute that for illustrative plan 2, the population deviation is cut down to less than 3 percent total?

MR. WALLACE: Same series of objections. You may answer.

Q. Plus or mine about point-and-a-half?

A. In figure 14, he shows district 1 at minus 1.59 percent, district 2 at 1.05 percent, and district 3 at 0.53 percent.

Q. So would you agree that illustrative plan two significantly reduces account population deviation from the existing plan?

A. I would not use the term "significant" necessarily. It reduces it.

Q. And then looking at the figures for least change plan 1 on page 34, same questions. Has Mr. Cooper for this plan reduced the population deviation for the supreme court districts below that plus or minus that 5 percent threshold?

MR. WALLACE: Same objections. He may answer.

A. In district 1, he has minus 4.65 percent, district 2, 1.2 percent, district three, 3.44 percent.

Q. So the total deviation there is less than plus or minus 5 percent?

A. It is.

Q. And then look at just the next page, we have those figures for lease change plan 2, and again Mr. Cooper has reduced the deviation range below plus or minus 5 percent?

MR. WALLACE: Same objections. He may

answer.

A. You're talking about Figure 18?

Q. Correct.

A. I have to ask a question why he's labels tables and figures, but -- that's odd.

Q. Back to you.

A. I'll answer it, just -- hard to look at a table that's labeled as a figure. Okay. So here he has district 1 at minus 2.55 percent, district 2 is at 5.70 percent, district 3 is minus .2 -- 2.51 percent.

Q. So deviation range is less than plus minus 5 percent?

A. Well, in two of them.

Q. The total range -- I would say total range is less than 10 percent?

A. You're talking about going from minus 2.5 percent to 5 percent, yes.

Q. Correct.

A. Yes.

Q. Okay. So with respect to the traditional redistricting principle of population equality, Mr. Cooper's plans all improve on the existing plan?

MR. WALLACE: Same series of objections. He may answer.

A. His plans show ranges that generally are below

plus or minus 10 percent.

Q. Plus or minus 5 percent?

A. Plus or minus 5 percent not exclusively, but generally.

Q. And just in terms of the idea of weighting every vote equally, one person, one vote Mr. Cooper's plans tends to weight every vote more equally than the existing plan?

MR. WALLACE: Same series of objections. He may answer.

A. These are not voters, it's a total population.

Q. They -- that is correct. Mr. Cooper's plans tend to weight the representation of persons in Mississippi more equally than the existing plan?

MR. WALLACE: Same objection and the question is what does "representation" mean. But he may answer if he understands it.

A. I don't understand it.

Q. Mr. Cooper's plans adhere more closely to the ideal of every person having an equal share of representation?

MR. WALLACE: Objection. And he may answer.

A. Mr. Cooper's plan shows the -- as you're discussing, the ranges in terms of deviations from ideals which I think are calculated by the means. Is

that correct?

Q. As I understand it.

A. Yeah. So if he's calculating the mean, he's showing less deviation. Now, let me ask you a question. Would it be better to use the mean or the median?

Q. I'm not going to answer your question while we're on the record.

A. Yes. So there's -- and part of the issue about using means is, what's the different between a mean and a median? What does one of them do that the other one doesn't? It's a question -- it's not fair to ask you the question, I understand. But it's a question that you can see that I'm asking in general. Why use a mean? Means are subject to outliers. If you've got outliers in certain districts, it's going to weight the mean this way or the other way. So one question you could ask of all this entire analysis is: Why not use the mean. That's my point.

Q. Do you know whether courts in evaluating compliance with the principle of population equality use mean or median or what metric they use?

A. I do not, not. I can tell you as a demographer, in certain cases I would use a median much more than I'd use a mean. It depends on what's going on with outliers and observations and what the distribution

looks like. If you have a skewed distribution, I would -- and if you want to say this represents kind of the average, I would select a median over a mean, probably.

Q. I'm tempted to ask you one question because it is interesting.

A. It is. Please ask.

Q. Well, I just -- I mean on the question of one person, one vote which is, as we discussed, the ideal that's -- that is implemented, would a median not -- would the use of a median to determine equal population among districts not lead to situations where districts were unequally populated?

MR. WALLACE: He opened this, so I'll let him answer that.

A. It's possible. What I would tend to look at and with any kind of averages like this is, I would look at what the distributions look like for them and then maybe even display both of them. They might give you supporting answers, they might give you different answers.

Q. But relying on the mean allows you to ensure that the actual population of each district is as equal as possible?

A. Again, that's one way to measure what averages

are. In not every case does it represent, you know, where the bulk of the people are. If you've got something that's an extreme outlier -- income is a classic -- a whole bunch of people have low incomes, one person has a real high income, what does it do to the mean? It drives it way up. So if you're saying here's the mean income but 85 percent of the people are below that mean, does that really characterize the whole set of people?

And that's what gets back to my question about maybe it's better to use the median in some of these cases. So that's why I have a difficult time kind of answering some of your questions that it's -- are they -- is more equal to do this, because it would, I think, would require some more research, and that research would involve looking at different types of averages. And whether or not courts use it, I don't know the answer to that.

Q. So you think it would be appropriate to use the median population of each district to assess whether population equality is --

A. I would look at it as a -- possibly along means and different types of means. There might be a need for a harmonic mean. I don't know the answers in advance. I look at is as a research question. Do you follow me?

I'm not saying one's better than the other, but it may be the case -- again, depending on the distributions, if you have a distribution where people are really clustered around one point, a mean is probably going to be good, and if symmetrical, the distribution. If you have a skewed distribution, it's not symmetrical, then it may be the means is better. But it's a case by case situation where you have to evaluate what the data are showing you.

Q. So let's move on to the next districting principle. Minority vote dilution, you would agree consistent with the sources you relied on that we've discussed already that protecting against minority vote dilution is another consideration that an electoral map drawer has to think about?

MR. WALLACE: Objection to vagueness, objection as to asking for a legal conclusion, objection as to being outside the scope of the court order. But he may answer.

A. I'm not sure what a given map drawer would do. But I think vote dilution would be a consideration and something to do with redistricting.

Q. For example, the congressional research service report that you cite said protecting racial language minorities from vote dilution is a consideration to be

taken into account?

A. Yes.

Q. And you would agree that the existing Supreme Court district 1 is 49.3 percent black voting age population?

A. I believe that's the case. Point me to where it's at in here again since I haven't reviewed this report in a long time.

Q. Well, we can look at Mr. Cooper's report on page 17. I believe those numbers are accurate. Page 16, excuse me.

A. Thank you.

Q. Statistics of the current plan.

A. I'm here. So the question was?

Q. The question was: You'd agree that the black voting age population of the current district 1 is 49.3 percent, 49.29?

A. In 2020 it's 49.29 in district 1.

Q. Uh-huh. And you would agree -- and we can look at those numbers -- for example, on page 27 of Mr. Cooper's report, we start talking about the numbers to the illustrative plans. You would agree that Mr. Cooper's plans increase the black voting age population of district 1?

A. Are you talking about Figure 11?

Q. Figure 11, Figure 13, the figures we talked about.

A. In --

Q. Mr. Cooper's plans all increase the black voting age population of district 1?

A. In figure 7, it shows district 1 in 2020 as having 49.29 percent; in Figure 11, illustrative plan 1, 2020 census, it shows district 1 with a percent 18 plus black, which I'm assuming is the voting age population, just stated a different way, is 55.31 percent.

Q. So Mr. Cooper's illustrative plan 1 increases the black voting age population of the district by just 6 points?

A. That's correct.

Q. And looking at Figure 14 on page 30, illustrative plan 2 increases the black voting age population of the district by a little under 5 points?

A. You're asking about district 2 now?

Q. District 1. Excuse me.

A. In district, Figure 14 shows it as being 54.19 percent.

Q. All right. So 4.9 percent increase in black voting age population from 49.29; right?

A. It's an increase from that, yes.

Q. A 4.9 percent increase?

A. Approximately, yes.

Q. So we talked earlier about racially polarized voting. Assuming the existence of cohesive racially polarized voting patterns, increasing the black voting age population at district by 5 or 6 points is going to give black voters in that district a better chance of electing their preferred candidate; right?

MR. WALLACE: Objection to the form, objection as to being outside the scope of any report, and objection as to being outside the scope of the court's order. But he may answer if he can.

A. Could you give me more hypotheticals on it? Would this be assuming that all the race groups vote as a block, for example?

Q. Correct. Assuming block voting by black voters, block voting by white voters for different candidate, if you increase the black voting age population by 5 or 6 points as Mr. Cooper does, black voters are going to have a better chance at electing their preferred candidates?

MR. WALLACE: Same objections. He may answer.

A. So you're -- all else equal?

Q. Yeah.

A. Everything else equal, that's how you're asking

the question. In block voting, etcetera, etcetera, would appear that that would be the case.

Q. Now let's talk about contiguity. You don't dispute that all the illustrative plans outlined in Mr. Cooper's reports are contiguous, do you?

MR. WALLACE: Same set of objections. He may answer.

A. I'd have to go back and look at what he did since I haven't reviewed this report and looked at it for months until today.

Q. What is "contiguity" in your understanding?

A. It would -- meaning that you're trying to retain some kind of existence over time as you go through time.

Q. If I --

A. The characteristics would remain the same, there's continuity. It's not an abrupt change.

MR. WALLACE: I think he asked about the contiguity not continuity.

Q. Correct.

A. In that sense, it means geographic location of people separated from one another.

Q. Correct.

A. Or units separated from one another.

Q. Correct. And in terms of geographic

contiguity, all the districts in all Mr. Cooper's plans are contiguous; right?

A. I'd have to look, but I believe that's the case. What you're asking is, there's not a county, say, in northeast Mississippi that's isolated and part of a district 1, for example.

Q. Yeah. He didn't, like, just show Chickasaw County in district 1 or something?

A. That's correct.

Q. Okay. Same as the enacted plan, also contiguous?

A. I believe that's the case, yeah.

Q. So let's talk about compactness. Paragraph 72 of your report, page 38. If you can turn there, that would be advisable. You say: "Compactness is a tool that can be used in redistricting to compare the relative compactness of existing districts against new districts to determine whether the new districts entail minimal or large-scale changes from the existing districts."

A. And that's paragraph 72?

Q. Yes.

A. Thank you.

Q. Starting with the words "compactness is a tool."

A. I'm there.

Q. You say: "Compactness is tool a that can be used in redistricting to compare the relative compactness of existing districts against new districts to determine whether the new districts entail minimum or large-scale changes from the existing districts."

A. Corrects.

Q. What is the basis for that characterization of what compactness is?

MR. WALLACE: Same objection as being outside the scope of the court's order, but he may answer.

A. In the sense of the legal requirements, what compactness is, or some other kind of definition?

Q. I just -- where did you get this characterization of compactness that you offer up here?

A. Are you asking me -- I'd have to go back and look at my notes as to where I got it. It's not on the top of my head. As I said, I haven't looked at this report in months.

Q. What does it mean to say that "compactness is a tool that can be used in redistricting to compare the relevant compactness of districts"?

A. In that sense, it means how spread out are they.

Q. When you say "compactness is a tool," are you referring to the different compactness metrics like Reock and Polsby-Popper and Schwartzberg?

A. That's one of the ways of looking at it, what the summary measures are that it might be.

Q. Would you agree that compactness is a term that refers to whether a district is regularly shaped?

MR. WALLACE: Same objection plus legal conclusion, he may answer.

A. Yes.

Q. And looking at a passage from the CRS report that's Exhibit 11 -- do we still have that around here? It should be under -- oh, right here. There we go.

Looking back at Exhibit 11, page 11, let me know when you're there.

A. I am.

Q. Okay. That report from the CRS that you relied upon says: "From the geographic perspective, compactness is usually defined by reference shapes, e.g. most compact shape is a circle, followed by a square, a rectangle or references to geographic measures such as geographic dispersion perimeter measures or population measures." Do you agree with that?

A. Yes. It's consistent with what I answered before, how distributed our points are.

Q. And as you understand it, are there different ways that someone evaluating a map can know whether a district is sufficiently compact?

A. You named some of the measures.

MR. WALLACE: Same objections as before. And person's evaluating a map is completely vague. If you're talking about a judge, I object to asking for a legal conclusion. You may answer.

A. There are different measure for summarizing what compactness is, as you listed before.

Q. And there's no one particular method that's the best method for assessing compactness?

A. That was my understanding looking at the different measures, they each have their own strengths and weaknesses. So in that sense, you're certain to look at things like averages.

Q. So, for example, in paragraph 73, you say: "There's no professional consensus on the right measure and every widely used measure works differently?

A. Correct.

Q. So there's no one definitive measure of compactness?

A. From the standpoint from what I could tell looking at the literature, yes, that appears to be the case.

Q. And Mr. Cooper in his responsive report on page 8 -- and we can look at it or not, but I'll read you the quote and you can --

A. Just read it, sure.

Q. But he says: "Redistricting experts and map drawers commonly employ an eyeball test to assess whether a plan is reasonably compact." Do you agree with Mr. Cooper's statement there?

A. I don't know what map drawers do commonly.

Q. Because you're not a map drawer?

A. Or -- that's correct.

Q. You don't evaluate maps?

A. Well, I don't know -- I don't know if people who evaluate maps use an eyeball test or not routinely. I don't know the answer to that.

Q. You're not familiar with the eye test or the eyeball test for measure compactness?

A. What would the eyeball test be?

Q. The eye test?

A. You're just looking at somebody's -- how much does it vary from being a circle, for example?

Q. Yeah. You're just looking with your eye to assess the visual compactness of a district.

A. I can understand people doing that, use a lot of visual assessments in all sorts of things, but

whether that goes to the point where you're actually going to say or use that in something or whether or not you're going to use a metric, I don't know the answer to that.

Q. And let's just pull up what's been marked as Exhibit 13. This is that text that Mr. Bryan and Mr. Morrison wrote. And do you still have that, Exhibit 13?

A. Yeah, somewhere.

MR. WALLACE: I'll give him mine if you can give me the page number.

MR. SAVITZKY: Page 48.

MR. WALLACE: Okay.

MR. SAVITZKY: And you tell me when you're there.

THE WITNESS: Thank you.

BY MR. SAVITZKY:

Q. Do you see there's a paragraph about compactness there?

A. I do.

Q. And the last sentence says: "No one method is best and the colloquial eyeball test of a district's appearance and function may be germane."

A. I see that.

Q. So having reviewed the text written by

Mr. Morrison and Mr. Bryan, would you agree that the eyeball test is one measure that is used to asses the compactness of a district?

MR. WALLACE: Same objection as asking for a legal conclusion and being outside the scope of the order. The he may answer.

A. And again, what I would stress is that they wrote that as one possibility, but whether or not I agree with the eyeball test being germane is not necessarily my opinion. I tend to look more at metrics than eyeball test, but I understand there's a need for things like that when you're -- when you don't have good measures or you're initially looking at a project and you need something qualitative to start off with. So it goes back to my answer being I'm not sure if it's germane or useful or not or whether or not map drawers use it all the time.

Q. Okay. Is it fair to say that a mapper who has drawn many plans, a person who draws electoral maps and has drawn many plans and looked at many districts is going to sort of develop a better sense of whether a district is compact visually?

MR. WALLACE: Objection to the vagueness and in addition to not knowing who a map drawer is, not knowing what "better" is.

A. I can't answer that question. I don't know.

Q. Is it fair to say that someone who reviews more electoral districts is going to develop a sense of whether a district is more or less visually compact?

MR. WALLACE: Same objection. He may answer.

A. And my answer again is I don't know.

Q. On page 38, Footnote 29 of your report, you cite a lecture by Gary King called "How to Measure Legislative District Compactness If You Only Know It When You See It." Is that something that you rely on?

A. And that's footnote?

Q. 29.

MR. WALLACE: 29 on page 38.

MR. SAVITZKY: Yep.

A. Yes, I recall. Let me look at what I actually put in the text for that. Specifically, that says: "In contrast, academics have shown that compactness has multiple dimensions and have generally many conflicting measures."

Q. And let's just mark as Exhibit 14 this is the web page here. And looking at the one, two, three -- third sentence -- the second sentence too. Well actually, take a look at it and then let me try to ask a summary question. Let me know when you've read the

first couple sentences.

A. Okay.

Q. So basically what they are saying is that academics have developed many very complex measurements of compactness but courts and other observers see compactness as a sort of simple visual you-know-it-when-you-see-it-type test. And they say both of those are right, there are many complex and multidimensional tests of compactness, but there is also what they say is a particular unit dimensional ordering that represents a common understanding of compactness in the law across people. Am I accurately summarizing what King is saying here?

A. And then he goes on to say that he's developing a statistic model that predicts with high accuracy what that is, yes.

Q. Based on this unidimensional sort of common understanding that he's discerned?

A. Yes.

Q. And I just -- it's actually -- we're not going to spend too much more time on it, but it totally's fascinating. Did you look to the slides for the lecture that King did?

A. I'd have to -- I don't recall. Like I said, this is -- it's so long ago I did the report, I can't

remember what I looked at now or not.

Q. So I'm just going to mark the lecture slides as Exhibit 15 here. And again, I don't want to spend a ton if time on it because this is a long, long lecture, but if you can -- I'll point you to the page. At 424, there is a series of illustrating --

A. Yes.

Q. -- this unidimensional --

A. Uh-huh.

Q. -- you know it when you see it --

A. Uh-huh.

Q. -- metric; right?

MR. WALLACE: Page 4 --

MR. SAVITZKY: It's marked 424 at the bottom.

MR. WALLACE: 4, slash, 24?

MR. SAVITZKY: Correct.

MR. WALLACE: Okay. I was looking for 424. Okay.

Q. So you go down and each one is a click, you click, click, click through --

A. Yeah.

Q. -- we see as we move through, once we see all four districts there, this unidimensional ordering. All under the header: "A simple single compactness

dimension that you know when you see." Right? And as we go on and see the text below, it says dimension is intuitive; right?

A. That's what he states.

Q. Okay. And looking at this, does this give you a sense of what the eyeball test is?

MR. WALLACE: Well objection to the extent the eyeball test is a legal test in which he has no expertise. But if he has an opinion on this report subject to the fact that it's contrary to the court's or order, he may answer.

Q. And setting aside from whatever it might mean as a legal matter, just --

A. I have an opinion.

Q. Yeah, go ahead.

A. So if you look at the four figures on one of these and since they all say 4/24, I'll have to point this out to you.

Q. Yes, I see it.

A. Okay. Suppose that the eyeball test I'm looking at the first figure on the left, to the second figure to the right of it, they're somewhere dissimilar. If I look at the figure on the left to the far figure on the far right, they're very dissimilar. So these are kind of simple examples of what could take place. Is

figure -- the third one to the right really different than the fourth one to the right? Is it more or less compact? Just eyeballing, it might be difficult to say. And again, these are examples that he put up to illustrate the point he's trying to make.

So in some cases, it may be that the eyeball test doesn't work, and I could point to each of these examples right here. Is the figure, the third most right one really more compact than the fourth most right one? You know, there would be questions from people about that. And as you get closer and closer, instead of having these discreet illustrations, if you had more of a continuous model and you're getting closer and closer to the one on the far right, which one is more or less compact? It would be hard to answer, wouldn't it?

Q. So looking at -- so would you agree if you're visually with your eyes, you can make gross distinctions but perhaps not fine distinctions?

A. Or it may be the case that if you've got something as extreme as what's on the far left here as he examples and what's on the far right, then you can say yes, it looks like the one on the far left is very much more compact than the other ones. And there's going to other cases where I think the eyeball test is going to be difficult to measure that.

Q. All right. And Mr. Cooper states -- now we're looking at -- going back to page 8 of his responsive report. This one we can definitely -- if you want to keep a copy for later, it is a quite fascinating lecture, but --

A. Thank you.

Q. Mr. Cooper states at page 8 of his rebuttal report which I believe is Exhibit 10, which you should have it there, he says --

A. I've got 9. Bear with me.

Q. Yes.

A. Thank you. And where on Exhibit 10 are we going?

Q. Page 8.

A. Thank you.

Q. And he says: "Using the eyeball test, the illustrative plans and the least changed plans, I have drawn are reasonably compact." And you are not claiming to dispute that statement, are you?

MR. WALLACE: Objection as to being outside the bounds of the court's order, but he may answer.

A. And I was not asked to review this after he wrote this report, so I can't give you an answer whether or not I dispute at this point or -- or not at this point. I have to go back and reanalyze what he did.

Q. I mean, you testified earlier that you did review Mr. Cooper's rebuttal report.

A. Yes, but I was not asked to actually do something with it, to actually analyze it. Do you follow me? So I looked at it, I read it, but I was not tasked with or asked to go on and say something back in regard to it.

Q. And as you sit here now, you're not disputing that statement?

A. I can neither dispute or not dispute it at this point. Again, it's a research question, and I wasn't asked to do that.

Q. Well, I'm asking you as you sit here now, do you dispute the statement Mr. Cooper makes that under the eyeball test, the plans he drew are reasonably compact?

A. And again, I stress that since I haven't looked at what he's arguing here with sufficient time ahead of it to know, I can't answer that question directly.

Q. Well, given that you're not saying you do dispute it, can I take that to mean that you're not currently disputing it?

A. I -- I'm not saying that. I don't have an opinion at this time on it. Would that be better?

Q. That'll do.

A. Okay.

Q. So getting back to the compactness analysis that you did, we'll talk more about your report. In your report, you analyze compactness cores of the illustrative plan supreme court districts that Mr. Cooper drew, and you concluded that they are less compact than the existing plan. Is that generally --

A. I believe that's the case, yes.

Q. And you mentioned earlier this is -- Bryan GeoDemographics did this analysis new?

A. They did at my request, computed the scores, put data together, that's correct.

Q. And as far as you know, they used the ArcGIS or ArcView program?

A. I'm pretty sure that's what Tom Bryan used.

Q. Were you able to verify the results that they provided to you?

A. In what manner?

Q. I mean did you independently verify the results that they gave you with respect to the compactness scores of the district?

A. You mean go ask somebody else who does GIS to see if that's the case?

Q. Sure, or do it yourself.

A. I'm not capable of doing it myself in that

regard since I didn't run GIS programs. And no, I didn't go ask anybody else to go review it.

Q. And just looking at pages 40 to 43, we have these various tables. Did you design these tables in this layout here or did Bryan?

A. I asked him to put these together and then -- and give me information on them in regard to all these measures of doing that, and that's what he did.

Q. So Bryan GeoDemographics put these Excel tables together?

A. At my request, yes.

Q. And after reviewing these various compactness scores, you didn't conclude that the illustrative plans are insufficiently compact in terms of adhering to traditional districting principles, did you?

MR. WALLACE: Objection to asking for a legal conclusion on what's insufficient. But he may answer.

A. That's correct. Insufficient is not something I can speak to. They're just different from what the existing plans were.

Q. You're not offering an expert opinion on whether the illustrative plans compactness scores are insufficient to meet traditional districting principles?

MR. WALLACE: Objection on -- objection to

the extent traditional districting principles may be incorporated into the law, and I'm not sure how much that is, but I think you're still asking him for a legal opinion. But he may answer.

A. Yeah, and insufficient is -- they're -- the "scores" are not as good on average as the score of the existing plan is my recollection on these in looking at it. Whether or not that means insufficiency, I don't know.

Q. You didn't offer -- you're not offering any expert opinion that the compactness scores for the illustrative plans mean that the districts plans are not compact?

MR. WALLACE: Objection to vagueness, but he may answer.

A. And again my answer is, they're -- the scores in the sense of compactness are not as compact as what's in the existing plan.

Q. You didn't consider whether the compactness scores of the illustrative plans are within the normal or acceptable range of compactness for an electoral districting map?

MR. WALLACE: Objection to vagueness as to normal and acceptable, but he may answer.

A. I did not.

MR. SAVITZKY: And I'm now going to mark -- where are we at -- 16. We're on the second binder. I'm now going to mark as Exhibit 16 a paper called "Redrawing the Map on Redistricting" which was cited in Mr. Cooper's rebuttal report. There you go, copy for Mr. Wallace.

MR. WALLACE: 16, you said?

MR. SAVITZKY: Yes.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. So in looking at page 8 of Exhibit 16, we can see that what the authors of this report did in their Table 5 is, they looked at the mean compactness scores for congressional districts in every state. This is following the 2010 redistricting cycle.

A. What are the page numbers?

Q. They are in very light gray at the bottom of the page.

A. Oh, wow.

MR. WALLACE: There's something there.

A. I see it okay. And you're asking about page 8?

Q. Yeah.

A. The table, not the Figure 5.

Q. Correct. Table 5, exactly.

A. Table 5.

Q. Exactly. So looking at this table, we can see in that the last round of congressional districting, the mean Polsby-Popper score for congressional districts in Mississippi was 23.33; is that right?

A. I'm trying to go down and find Mississippi. I see it. Thank you. So they're ordered by rank of score. Okay. 23.33.

Q. Is that right?

A. Yes.

Q. And the mean Schwartzberg score is 4758, .4758?

A. 47.58, yes.

Q. And the mean Convex Hull score is 76.84?

A. Yes.

Q. And I just want to note for the record that these are presented as whole numbers rather than fractions, but I -- usually, I see them presented as fractions between 0 and 1 or decimals between 0 and 1, but I think we understand that we're referring to the same range of between 0 and 1 or in this case between 0 and 100; is that right?

A. I'd have to look to know that that's the case, but I believe you, you have no reason to tell me otherwise; right?

Q. Yeah. And then just looking at the Reock score, we have mean Reock score of 38 --

A. That's correct.

Q. -- 08? Right. So you didn't look at some type of benchmark like this to assess the compactness scores for Mr. Cooper's illustrative districts?

A. I did not.

Q. And just turning back to what again I think has been marked as Exhibit 10, Mr. Cooper's responsive -- or rebuttal report, that's right, Exhibit 10. Or actually, we can look at your report at page 40. You list the scores for illustrative district 1 right here or for all of it, illustrative --

MR. WALLACE: Hang on. What page in --

MR. SAVITZKY: Page 40 of your January report. And do keep what we marked as Exhibit 16 handy because I want to just do a little quick head-to-head look.

BY MR. SAVITZKY:

Q. So looking at the scores, what I want to do is compare the mean compactness scores for Cooper's illustrative district 1 and mean compactness scores for the Mississippi congressional districts that we were looking at on page 8 of Exhibit 16.

A. So we're comparing the supreme court district scores to the congressional district scores.

Q. Yes. Mean, mean. Exactly.

MR. WALLACE: All right. Let me objection to the relevance of comparing a document -- a document prepared by an expert witness with a plan ordered by the United States District Court for the Southern District of Mississippi, because Mississippi in 2012 was governed by a plan written by Judge Kalley (phonetic), Judge Wingate, and Judge Bramlette.

Q. And I'll ask the question of the witness: You don't have any reason to think that the congressional districting plan that was put into place in Mississippi after the 2010 cycle was insufficiently compact or didn't comply with traditional districting principles, do you?

A. I don't have an opinion on that.

Q. Okay. And what Mr. Cooper says when he cites this report that we've introduced as Exhibit 16 is: "Even in terms of compactness scores, the plans that I've drawn are superior to many congressional districting plans drawn in the past decade." That's the statement in his report.

MR. WALLACE: And where it is in his report?

MR. SAVITZKY: On pages 8 to 9, paragraph 19.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. So now looking at that, just looking at the scores, the mean compactness scores that you report on page 40 in Table III F.7.a and comparing those to the mean compactness scores for this Mississippi congressional district, we see Polsby-Popper score of Cooper's illustrative plan 1 as .27 mean, so that's a little higher than .23?

MR. WALLACE: Objection to relevance and objection as being outside the scope of the court's order. But he may answer if he can.

Q. You would agree that that Polsby-Popper scores are pretty similar?

A. Given that they -- for supreme court districts compared to congressional districts.

Q. Yeah.

A. They look fairly similar.

Q. And the Convex Hull scores, also very similar, Cooper's plan is just a little bit higher but basically identical, .78 versus .6784?

MR. WALLACE: Same objections. He may answer.

A. I see the mean score Convex Hull here for Mississippi as being in the congressional district, 76.84.

Q. Yep.

A. -- and then for Cooper's illustrative plan, I see it at 78.

Q. So Cooper's a little higher, but basically identical?

A. It's a little higher.

Q. Okay. And Reock, it's a littler lower, 37 for Cooper's illustrative 1, .348 for the congressional districting plan --

A. Yes.

Q. -- right? So if you were to use Mississippi congressional districts from last cycle as a benchmark, Cooper's plans are in line with that benchmark?

MR. WALLACE: Same objections, but he may answer.

A. It's difficult to say when you're crossing districts like this and -- are they crossing points in time as well whether or not they're suitable benchmarks?

Q. But assuming that the benchmark is suitable, they're comparable?

A. It's a big assumption you're asking me to make without knowledge of exactly, you know, all the details in here. But if you want me to say everything else being equal, again, and assuming that it's all the same, they're comparable.

Q. Okay. And looking at -- now we'll look at Cooper's responsive report page 10, Figure 1. Mr. Cooper does a compactness analysis, looks head -- the head-to-head comparison between the existing plan and the illustrative plan 1. Do you see that in Figure 1?

A. I do.

Q. And with respect to the mean compactness, you would agree that existing supreme court plan and illustrative plan 1 are .01 apart on the Polsby-Popper score; right?

A. Yes.

Q. And they're .01 apart on Convex Hull; right?

A. Yes.

Q. Cooper's a little higher on Convex Hull, existing is a little higher on Polsby-Popper?

A. Yes.

Q. You would agree that a .1 difference is basically identical?

A. It depends on the contexts.

Q. Okay. You would agree they're substantially similar?

A. Again, depends on the context. You know, if you're looking at this from -- if you're doing a sample, really large samples may have a very small difference in

some measure you're looking at like income, and $10 is enough to say it's different. So I'm saying it depends on the context.

Q. In the context of evaluating compactness scores like Polsby-Popper and Convex Hull, you would agree that a difference of .01 is negligible?

A. In general, that's what I agree with, yes. So in that context, yes.

Q. Great. And on the Reock -- oh, sorry. And on the Schwartzberg metric, the plans are exactly identical?

A. Yes.

Q. So the two plans are either exactly or essentially the same on three different metrics of compactness?

A. Yes.

Q. And then with respect to the Reock score, the mean Reock score for the existing plan is better at .51 versus .36?

A. It's higher, yes.

Q. Higher. Excuse me. But you don't conclude that Reock is a better or more appropriate metric than any of these other metrics, do you?

A. One of the ways to look at them, because of all these issues about it is to start looking at doing some

of an average of all the measures too since they all have their strengths and weaknesses.

Q. Are you aware of any instance in which the different compactness metrics have been and or blended together?

A. Some of the work I've done, yes.

Q. In the work that you've done, you averaged or blended together compactness metrics like Polsby-Popper, Reock, and Convex Hull?

A. Or taking averages of them. Is that in this report that I did? I'm just asking? Since I haven't looked at it in a long time, I just asking if I did that.

Q. I mean, I'll represent to you that I don't recall your doing that in your report.

A. Okay. Then I may not have done it in is this report.

Q. Are you aware of any other person analyzing compactness of district maps who's tried to blend or average together the different metrics?

A. Yeah, I think Tom Bryan has.

Q. When did he do that?

A. I don't recall, but I think he has.

Q. Okay. And looking at Figure 2 on the same page of Mr. Cooper's report, he conducts a head-to-head

comparison between existing district 1 and illustrative plan district 1, right, so now he's looking at the mean scores but at the compactness score for district -- district 1 in particular?

A. Yes.

Q. And identical Polsby-Popper scores for both districts; right?

A. Yes.

Q. And on two of the remaining metrics, Convex Hull and original Schwartzberg, the illustrative plan district 1 is more compact than existing district 1; right?

A. It has higher scores in the Convex Hull and lower score in the original Schwartzberg.

Q. Has a lower score. Okay. Kind of got -- so just stepping back, fair to say that on some of the metrics, Mr. Cooper's illustrative plan one performs better and on some of the metrics, the existing plan performs better?

A. In the sense of --

MR. WALLACE: Objections -- same objections. He may answer.

A. Yes.

Q. So let's talk about political subdivision splits. You agree that all of Mr. Cooper's illustrative

plans are drawn entirely on whole counties?

A. I'd have to refresh my memory and look at his report, but I believe that was the case.

Q. You agree that necessarily because there are no county boundaries split, the number of county splits is zero?

A. Correct.

Q. And you agree the number of precinct or election districts splits also necessarily zero?

A. Since they're all within the same county, yes.

Q. And so in terms of that metric of county and precinct splits, plans are identical, existing plan, Cooper's illustrative plans, all of them zero county splits, zero precinct splits; right?

A. Correct.

Q. Let's talk about communities of interest. What's your understanding of a community of interest?

MR. WALLACE: Objection to the extent you're asking for a legal opinion, but he may answer the question. Oh, and it's out of the court order, but everything has been so far, so he may answer that.

A. So there's a definition. Do I have it in the report somewhere of -- of that community of interest? Is it in the report.

Q. I'm not sure as I sit here whether you provide

a comprehensive definition in your report but --

A. And I don't recall if I did or didn't since I haven't looked at it in a long time.

Q. I mean, I ask you as someone who of offering analysis of --

A. So in general if you're asking me off the top of head what it means, "community of interest," it represents a lot of shared social and other characteristics, economic characteristics.

Q. You would agree it, basically, is a community, a group of people that share some common resource or interest or priority?

A. Or social -- social, economic, and other cultural characteristics, yes.

Q. Got it. You would agree there are many ways to define a community of interest?

A. There could be, yes.

Q. So like a city or town could be a community of interest?

A. I guess it depends on the composition that's their -- what criteria someone's specifically looking at.

Q. It could be a region or a group with a shared history or culture?

A. It could be.

Q. Could be a region or a group of people with shared policy interests or shared needs?

A. It could be. But I'd look at all those as possible dimensions of something that could be even broader if you're looking at community of interest.

Q. So -- and is it fair to say when we talk about communities of interest in the districting context, the idea is that where reasonable, you should try to group people with common interests in the same district?

MR. WALLACE: Objection as seeking a legal opinion, but he may answer.

A. That's my picture of it.

Q. And I'll represent to you that on page 48 of that redistricting book which has been marked as Exhibit 13, Morrison and Bryan say: "Respecting existing communities of interest is often a proxy for ensuring that people of common interests are grouped within the same district." Does that -- do you agree with that statement?

A. Yes.

Q. Now, you don't analyze communities of interest anywhere in your January report; right?

A. I don't believe so. I'd have to go back and look in the sense of what the cluster analysis I did was.

Q. Setting aside the cluster analysis, which we'll talk about, you don't do any analysis that's relevant to communities of interest?

A. Not that I recall.

Q. And you don't dispute that Mr. Cooper considered Mississippi planning and development district as a community of interest and evaluated that in his report?

A. I believe that he did.

Q. And you don't dispute that a map drawer could consider Mississippi's planning and development district as a community of interest?

MR. WALLACE: Same objection as to meaning of "map drawer." He may answer.

A. It's possible.

Q. As I think you point out in the beginning of your report, Mississippi Supreme Court districts are used for transportation, public service commission, they're used for a number of appointed boards; right?

A. They are.

Q. So whether the interest of Mississippi's various planning and development districts are fractured or not by the designing of a plan could be important for that reason as well?

MR. WALLACE: Objection to the vagueness of

the importance. He may answer.

A. It would be.

Q. So in looking at -- and now we're back on Mr. Cooper's October report, paragraph 35. This is Exhibit 9, I believe, yeah.

MR. WALLACE: Paragraph what?

MR. SAVITZKY: 35.

MR. WALLACE: Okay.

MR. SAVITZKY: And I'll give you the page if that would be helpful. It is page 18. And let me know when you're there. I'll just clear this out.

THE WITNESS: Thank you. I'm there.

BY MR. SAVITZKY:

Q. And we can see on paragraph 35, Mr. Cooper says: "I show in the Figure 6 map" -- and if you want to look at it, it's on me preceding page -- "the 1987 plan splits five of the ten regional planning districts." And then he lists them. You don't dispute that, do you?

A. Let's see. Let me go back here again. So you're talking about Figure 6?

Q. Yeah. Figure 6 is the existing plan overlaid on those planning districts. Mr. Cooper says five of the ten districts -- planning districts are split in the existing plan. You don't dispute that, do you?

A. No.

Q. And he says: "Supreme court district 1 contributes to each one of those splits, South Delta is the only planning district entirely within supreme court district 1." You don't dispute that, do you?

A. No.

Q. And now turning to paragraph 51 of Mr. Cooper's report, that would be on page 26, still on exhibit 9. You don't dispute Mr. Cooper's statements in paragraph 51 that: "Illustrative plan 1 splits two planning districts, North Delta and Central, rather than five as in the 1987 plan?

A. I believe that's correct.

Q. And looking ahead to paragraph 56, you -- on page 31, you don't dispute Mr. Cooper's statement the illustrative plan 2 splits three planning districts rather than five as in the enacted plan?

A. That's correct.

Q. Are you familiar with the Mississippi Delta?

A. The Delta counties, the area?

Q. Or the area that's the region in Mississippi Delta?

A. Yes, I am.

Q. Is it fair to say based on your knowledge of Mississippi that the Delta is a culturally,

historically, demographically, socioeconomically distinct region?

MR. WALLACE: Objection to vagueness and asking for a legal conclusion and being out of time under the court's order, but he may answer.

A. It certainly shares characteristics that are common internally that are not common elsewhere in the state of Mississippi.

Q. And as someone who studied the demographics of Mississippi, you would agree the Delta is culturally, historically, demographically distinct?

A. Of other places in Mississippi?

Q. Yes.

A. Yes.

Q. And I would think it's fair to say that the Mississippi Delta is one of the most culturally, historically, demographically distinct geographic regions in the entire South if not the nation. Would you agree with a that?

MR. WALLACE: Same objection, but he may answer.

A. People in New Orleans might disagree.

Q. Well, one of the most?

A. Yeah.

Q. Would you agree with that?

A. Yeah, I believe it is. Are you talking about a personal opinion as opposed to a professional opinion?

Q. Yeah.

A. Absolutely.

Q. Fair to say based on your knowledge of Mississippi, that the Delta has distinct needs and interests, for example, when it comes to health and education?

MR. WALLACE: Objection as to meaning of distinct in addition to previous objections, but he may answer if he can.

A. It may or may not. There's certain sections of the state that are not in the Delta that may share some of those characteristics and needs in common with Delta counties. So again, I would say it's a research question, not something I can just answer off the top of my head from a professional opinion. As a personal opinion, I would say yes, in general I think there are issues like that that are common to a lot of Delta counties, but they may be common with counties elsewhere in Mississippi too.

Q. But the concentration of those needs in the Delta is somewhat unique?

A. Again, it may be. But part of the issue you're talking about is rural. Are rural areas of really

Northeast Missouri really different in the Delta in terms of some of the needs? That's -- again, I don't know the answer to that off the top of my head of the -- looking at rural areas that are high in poverty that may or may not have the same racial distributions, that may or may not have the same access to resources. So I would suspect while there definitely are distinct areas of interest in the Delta counties, I think they may share some things with the counties elsewhere in the State of Mississippi too.

Q. You'd agree that the Mississippi Delta could be considered a community of interest?

A. It could be. It depends on what kind of criteria you're looking at.

Q. Would you consider it a community of interest?

A. Again, it depends on what someone was asking me. From the ecological standpoint? From the cultural standpoint? From the music standpoint?

Q. Sure.

A. Yeah. It could vary. You know, there are places on the Delta that would share a lot of common history in terms of plantation stuff with the counties over on the Alabama border, for example, and they're not contiguous, they're different. So if you look at the counties in areas of Northeast Mississippi where they

sing not Delta Blues but Hill Blues. You know, they're different styles of music, so --

Q. One aspect of the culturally distinct nature of the Delta?

A. That's one, yeah.

Q. And the existing supreme court plan fractures the Delta?

MR. WALLACE: Objection to the meaning of the word "fractures," but he may answer.

A. I -- it's -- whether or not it fractures the Delta, I can't say.

Q. But we can just look briefly at page 16 of Mr. Cooper's report right there --

A. Sure.

Q. -- and just looking at the map, the Mississippi Delta is divided under the existing supreme court districting plan; is that fair to say?

A. Does page 16 show the supreme court districts in colors, is that what you're saying?

Q. Correct.

A. And under the existing supreme court plan, you're asking me how is it fractured?

Q. I'm asking you if the existing plan divides the Delta.

A. Well, in what sense is divide the Delta? Are

you --

Q. Divides the Delta -- excuse me. The plan divides the Delta between multiple districts?

A. So parts of the North Delta that are in here? In the sense of these are, again, the planning districts that are named in this map? So from a planning district standpoint, the North Delta district is in a separate supreme court district than is the South Delta district.

Q. And just setting aside the planning districts for the moment, are you generally aware of which counties are in the Mississippi Delta, the region, the Mississippi Delta, as you understand it?

A. I do. You're talking about from Tunica down towards Vicksburg generally?

Q. And thinking about that region, that set of counties from Tunica down to Vicksburg, the existing supreme court plan divides that region between different supreme court districts; right?

A. If you're looking from the standpoint of Delta counties, yes.

Q. And we can just turn briefly to Mr. Cooper's illustrative plan 1 on page 27. And just looking at that plan and thinking about the Mississippi Delta region from Tunica Don to Vicksburg, Mr. Cooper's illustrative district 1 unites the Delta in one

district; right?

A. He also had some of the counties that I wouldn't put in the Delta in that district, so it splits off from other areas. I mean, that's what it looks like just looking at his map.

Q. But in terms of the distinct region that we've been talking about, the Mississippi Delta, it is kept together in Mr. Cooper's configuration of the supreme court map; right?

A. You know, I'd have to think about DeSoto County, whether or not it's really a Delta county or not, that he's got on there, but that's one possibility.

Q. Setting aside DeSoto County, the Delta is united in Mr. Cooper's illustrative plan 1?

A. Generally speaking, I would agree to that.

Q. And just looking at page 30 of the report at illustrative plan 2 -- are you on page 30?

A. I am.

Q. And you can see even if you include DeSoto County, the Delta is united in this version of the plan; right?

A. Yeah, it varies again because now Lincoln County is outside of it, and it was inside the Delta initially.

Q. Would you say that Lincoln County is in the

Mississippi Delta?

A. I'd have to look specifically, as I don't know the answer to that, if it's a Delta county or not, if I'd label it that way. I don't know what all the characteristics are in Lincoln County. I can just see looking at the two maps, that's one difference right there.

Q. Lincoln County is south of Vicksburg, isn't it?

A. It's east.

Q. South and east?

A. Yeah.

Q. Okay. All right. Let's talk about core retention. And turning back to your January report, look at Table III.F.5 on page 37 of your January report.

MR. WALLACE: On page what?

MR. SAVITZKY: 37.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. Oh, excuse me. So your core retention analysis begins on page 31, paragraph 62, but let's look at that page 37, and look at that table that you have, it's the core retention analysis by plaintiff's plan. Let me know when you're there.

A. It may be a while since I have so many papers here.

MR. SAVITZKY: When we take a break for lunch, I'll come over and see what I can clean up there. Page 37.

MR. WALLACE: Now you're getting into somebody else's report, that your problem.

THE WITNESS: Yeah, that's it.

MR. WALLACE: Is this yours? We're missing 20 pages of it.

THE WITNESS: It's in here somewhere.

MR. WALLACE: I'll give you mine.

MR. SAVITZKY: Do you mind if I come around and sort things out or --

MR. WALLACE: I can give him mine if you want to get on with --

MS. SAVITZKY: That's fine. Yeah, during the break, we can sort it out.

BY MR. SAVITZKY:

Q. So just looking at Table III.F.5, your analysis is that Cooper's illustrative plan 1 keeps 74.3 percent of Mississippians in the same district as they were in in the existing supreme court plan; right?

A. Yes.

Q. And your analysis is that Cooper's illustrative plan 2 keeps 66.8 percent of Mississippians in the same district as they were in the existing plan; right?

A. Correct.

Q. And you say -- and we don't need to turn, I'll represent to you -- you can turn there if you want. But I'll represent to you in the first instance in paragraph 15 of your report you say: "Core retention for the illustrative plans is low." You use the word "low." Do you recall that?

A. I do.

Q. What's the basis for your opinion that keeping a supermajority of Mississippians in the same district is a low level of core retention?

MR. WALLACE: Objection as being outside the scope of the court's order, but he may answer.

A. It's just the drop-off in the percent of people that are maintained.

Q. Well I guess my question is: Low compared to what?

A. Yeah, that's a good question. Yeah.

Q. I mean, did you compare this level of core retention to --

A. No. And that's the case where just I used my judgment and said it looked low. I was comparing it more and likely to what the existing plan was.

Q. And --

A. So it's lower.

Q. And just -- so what is the basis for your judgment that it's low?

A. It would be comparing it to the existing plans.

Q. Well, the existing plans are a hundred percent the same as the existing plan. So what's your basis for saying that this level core retention is low as opposed to, you know, relatively high? Most of the population is kept in the same district.

A. I hear you. I -- it just looked to me like it was low when you get down to those numbers, that's all. Just it's just my person opinion that it appeared to be low.

Q. Someone else could look and these numbers and say that's a relatively high level of core retention?

A. They could.

Q. Now, in addition to looking at core retention in terms of total population in the same district, you also break down the differences in population assignments by race between the existing plan and the illustrative plans; right?

A. Yes.

Q. And what do you think is the purpose of that analysis?

MR. WALLACE: Same objection as to being outside the scope of the court's order, but he may

answer.

A. Yeah, in the one sense that since the case is about voting rights and specifically about black voting rights, I thought it would be useful to look at that, the issue of race.

Q. So on page 33, just flip back a couple pages. On page 33 top of the page you say -- and this is discusses illustrative plan 1, by way of example, you say: "Only half of the white, non Hispanic population from district 1 is retained, while 76.9 percent of the any part black population is retained." Right?

A. Correct.

Q. So is your point that the population -- is your point that comparatively more white population has moved out of the district? Is that what you're saying?

A. That's what the numbers show in a relative sense, yes.

Q. And what is -- is in your view, the relevance of that in assessing these districts?

MR. WALLACE: Objection as to asking A., out of time; B., asking for a legal opinion. He may answer if he can.

A. It just looks to me like their racial differentiation was different in the sense of what percent of one group is moved out, what percent of the

other group that was moved out or stayed, that's all.

Q. And discussed before that illustrative plan 1, district 1 runs north to south on the western side of the state encompassing the Delta, the counties along the Mississippi River; right?

A. Correct.

Q. And that configuration is different from the sort the Y-shaped configuration of the district 1 where you have a band of counties going east towards Alabama that are also included in existing district 1; right?

A. That's correct. All the districts generally speaking in the existing plans run east to west generally speaking.

Q. So, I guess, doesn't it intuitively make sense that comparatively, more white population would be moved out of the district if you're moving that band of counties stretching east to Alabama out of the district and including the entire Mississippi Delta in the district?

MR. WALLACE: Objection to the vagueness of 'makes sense" in addition to the previous objections, but he may answer if he can.

A. Looking at race as a possible index of things it would mean that some proportion of people may be accustomed to having -- having things in common with

elsewhere are now going to be put into whether they're white or black in places that might have differences. That's all.

Q. I guess I just mean doesn't it sort of make sense that you would see comparatively more white population moved out of the district if you're reconfiguring the district so that while maintaining equal population, you're uniting the Mississippi Delta, which --

MR. WALLACE: Same objection. He may answer.

A. My answer to that in general is that Northern Delta may not have as much in common with the Southern Delta as you think. I'm just pointing out the fact that you're moving differentially people by racial groups around in doing this.

Q. And just looking at page 28 of Mr. Cooper's report, and that's Exhibit 9 just for the record.

A. Page?

Q. Excuse me. Page 28, Figure 12. Let me know when you're there.

A. I'm there.

Q. So just looking at this map, you would agree that this shows illustrative plan 1 overlaying with the boundaries of congressional district 2, current

congressional district 2; is that right?

A. That what it appears to do.

Q. And you would you agree that illustrative plan district 1 was configured similarly to congressional district 2 in the current congressional plan?

MR. WALLACE: Objection, I guess, to the vagueness of "similarly," but he can answer.

A. It is similar.

Q. All. Now, is it -- and you can put that one down for now. Thank you.

So in addition to the illustrative plan, you also did a core retention analysis of the least changed plans. And we're looking now again at your report -- your January report, page 37, that same chart that we were looking that. And that would be the summary table of the core retention analysis. And now looking at the -- and when you're ready --

A. I'm ready.

Q. Looking at least change plans, your analysis is that Cooper's least change plan 1 keeps 92.4 percent of Mississippians in the same district as the existing plan?

A. Yes.

Q. And in least change 2 plan, taking 95.8 percent of Mississippians in the same plan as the existing plan?

A. Yes.

Q. And your analysis is: "The changes in Cooper's least change plans are 'minimal and not substantially differentiated by race and ethnicity'"?

A. Yes, I recall that.

Q. So you would if that somebody wanted to prioritize core retention, Cooper's least change plans would demonstrate that this can be done while creating a majority black voting age population supreme court district 1?

MR. WALLACE objection to the -- objection to the vagueness of "someone," but he can answer the question.

A. That appears to be the case.

Q. And you have no basis to think that core retention is, in fact, a consideration that a Mississippi map drawer would consider?

MR. WALLACE: Objection. Once again, the only map drawer of -- the only map drawer of Mississippi supreme court districts in the last 200 years is the legislature. But he may answer.

A. I -- I don't know.

Q. And just stepping back, do you think it would make sense to consider core retention in drawing -- in redrawing districts that haven't changed for 35 years?

MR. WALLACE: Objection to the vagueness of makes sense, but he may answer.

A. It's a principle regardless of how long they've been around. If you think, you know, these people have something in common to politicians or whatever the case may be that they're voting for, used to going certain places, yeah.

Q. When you say "used to going certain places," what do you mean?

A. Well for example, if you're going to go vote, you know, where the voting place is going to be and things like that.

Q. The supreme court lines don't affect where your polling place is, do they?

A. Well but you're -- if you're now in a new district, that's what I'm getting at, now where your vote is in a different district might be the case.

Q. You mean, you wouldn't vote --

A. If you're moving --

Q. Your ballot would reflect a different district?

A. Yeah, that's what I'm getting at. And it might be that you're not accustomed to people who are running in that district, you don't know the history, things like that; where as in the district you were in, you would. Just bring that up as a possibility.

Q. Looking at paragraph 68 of your report on page 36, you opine that your core retention analysis shows that illustrative plans -- "shows that illustrative plans 1 and 2 are significantly disruptive to large numbers of Mississippians across the state in order to achieve small increase in the percent APB in district 1.

A. Correct.

Q. So in addition to creating -- in addition to increasing the percent APB in district 1 the changes in illustrative plans also decrease the level of population imbalance between the districts from the existing plan; right?

MR. WALLACE: Objection as out of time. He may answer it.

A. I believe that was the case, yes.

Q. And in addition to increasing the percent APB in district 1, it changes in the illustrative plans, also maintains a system with zero county splits and zero precinct splits; right?

A. That's correct.

MR. WALLACE: Same objection.

Q. And in addition to achieving small increases in the percent APB in district 1, the changes in illustrative plans also ensure that there are fewer planning district splits right?

MR. WALLACE: Same objection and relevance but he may answer.

A. That appears to be the case.

Q. And in addition to achieving small increases in the percent APB in district 1, the changes in the illustrative plans also unite the Mississippi Delta as a communities of interest in the single supreme court district; right?

MR. WALLACE: Same objection, but he may answer.

A. If the entire Mississippi Delta is a single community of interest that's a research question that needs to be answered.

Q. And assuming it is, then the answer to my previous question is yes?

A. If -- if that proved to be the case, that there were enough commonalities to say that it is a community of interest, it would be the case.

MR. SAVITZKY: So I want to talk about your cluster analysis next. And I would be, you know, just -- just stepping out of the questioning for a second and in terms of our timing, I would be happy to continue on discussing the January report and the sort of mapping elements and then break and then discuss voter turnout. But if you folks would like to take a

break earlier, we can stop here -- we're at the next stopping place -- or any other time.

MR. WALLACE: Whatever is convenient for Dr. Swanson. We've been going over three hours, but I'm fine, we can break now or later, take your pick.

THE WITNESS: So when would the break about if it's not now?

MR. SAVITZKY: Could be in 20 minutes, in 40 minutes, an hour.

THE WITNESS: I prefer to do it now.

MR. SAVITZKY: Okay. That's why I asked. So let's go off the record, then.

(A break was taken from 12:07 to 1:03 p.m.)

MR. SAVITZKY: Back on the record.

BY MR. SAVITZKY:

Q. Hope you had a good lunch, Dr. Swanson.

A. It was.

Q. Okay. And you and Mr. Wallace didn't talk about the substance of the case during lunch?

THE WITNESS: Did we talk about the substance of the case?

MR. WALLACE: I --

A. We had a long conversation and parts of it were about things like that, but it was like a substantive conversation, so what do you mean by a substantial

conversation?

Q. Without get into the details of your conversation, I just want to make sure there weren't any sort of instructions about testimony or --

A. Oh, no.

Q. -- talking about the sort of -- about the deposition?

A. No. He said -- the only thing he said to me, said to answer questions as truthfully as you can. That's about the instruction level I got.

Q. Noted. And I didn't want to elicit any specific -- that is good advice.

MR. WALLACE: We talked a lot about his Indian cases. If you want to talk about those, they're probably in his CV too.

MR. SAVITZKY: They are in the CV, but I don't want to get into them. All right.

BY MR. SAVITZKY:

Q. So I think what we were -- we were just on the cluster analysis. So sticking with the January report which you should still have in front of you, I'd like to go to page 29 -- or excuse me, page 14, paragraph 19. And before we get into the cluster analysis, just more generally -- tell me when you're on paragraph 29.

A. Yeah.

Q. So you say in paragraph 29: "Compared to the U.S. as a whole, Mississippi is not as diverse in terms of race and ethnicity." Do I have that right?

A. Correct.

Q. And what do you mean when you say "diversity"?

A. The majority racial groups in Mississippi are black and white. And if you look at ethnicity -- and you understand the way the census bureau uses ethnicity as opposed to race; correct?

Q. Yes.

A. So the ethic distribution is not what you'd see in a lot of other states as well.

Q. So your point is that Mississippi is 36 percent black, 56 percent white, relatively low percent of Hispanic folks, so the vast majority of the population is either black or white?

A. Correct.

Q. And where does that definition of diversity come from?

MR. WALLACE: Let me -- asleep at the switch while I was drinking my coffee. This is all outside of the court's order. And with that objection, he may answer.

Q. And where do you get that definition of diversity?

A. Racial diversity is a common one, start looking at what the distribution is of people by race.

Q. Well, would it be fair to say that if we measured diversity by the percentage of nonwhite people, non Hispanic white people, Mississippi would be one of the more diverse states?

A. If all you're looking at is two racial groups, if you categorize and collapse everything into white and nonwhite.

Q. Yes.

A. Then it would be a different story.

Q. And looking at things that way, Mississippi would be one of the more diverse states in the country?

A. Yeah. I -- I have trouble looking at diversity from the standpoint of two categories. I would use the term "distribution" rather than "diversity."

Q. How would you use the term "distribution"?

A. Well, distribution. So if you flip a coin, is it 50:50 or is it an unbiased or a biased coin so it's 60:50? So diversity in my head does not mean that you're looking at what is the distribution between two possible categories. Diversity to me means there's more than one or two categories. Do you follow me?

Q. I do. And so your metric of diversity is how many different categories are represented in the extent

to which the population is distributed among many different categories?

A. Thank you.

Q. Is that accurate?

A. Yes. That's more accurate than I think looking at just two classes of whatever they might be.

Q. Well, whether or not it's more accurate, that's your definition of diversity?

A. Yes.

Q. And if we were to define diversity as what is the percentage of people who are from racial and ethic minority groups, then Mississippi is one of the more diverse states?

A. Then that would be your definition. And that what you just said, if we were to define it, so you could define it that way.

Q. And I know that --

MR. WALLACE: And let me object to form. Isn't somebody, everybody from a racial or ethic group?

MR. SAVITZKY: Minority groups.

MR. WALLACE: Oh, okay.

BY MR. SAVITZKY:

Q. So -- and as someone who studies demographics, reads about demographic issues, would you agree that colloquially when people talk about the word

"diversity," they're generally referring to the amount of people with the presence of members of racial minority groups?

MR. WALLACE: Objection to the vagueness and irrelevance of colloquiality in a law court, but he may answer.

A. I'm not sure what they'd say in terms of diversity in terms of colloquially. It probably varies from region of the U.S. to another region. It certainly would be probably very different in Hawaii than it would be in Hawaii as opposed to in Mississippi or elsewhere. So I'm not sure what to say in terms of a general statement about that.

Q. And looking at Exhibit 10, Mr. Cooper's rebuttal report at paragraph 36. And let me know when you're there. Do you see it?

A. I do.

Q. And do you dispute his assertion that: "As defined by the percentage of the state level population that is not non Hispanic white, Mississippi is the 12th most racially diverse state in the nation?"

MR. WALLACE: You know, objection as to being out of time, but you may answer.

A. I just would not use the term "diversity" in that sense. He can, you know, and he says that whatever

the ranking is and whatever he's computed it on, it's the 12th most racially something in the -- I just wouldn't use the word "diversity."

Q. And so you would not dispute his assertion that" "as defined by the percentage of the state level population that is not non Hispanic white," using that definition of diversity, "Mississippi is the 12th most racially diverse state in the nation?

A. Well, I don't know if it's the 12th most or not. That's another thing I would have to look up, so I don't know the answer to it.

Q. So you're not disputing it?

A. Well, I can't say yes or no. You're asking me to state -- agree with the fact that I'm not sure if it's 12th most racially diverse state in the county. And what year? Are we talking about the 2020 census? The ACS? I mean, there's a lot of places you could measure this from. I'm not trying to be obstructive, but I'm just saying, you know, it's hard for me to answer the statement just off the top of my head like that.

Q. And, I mean, looking at the paragraph, I think Mr. Cooper says that it's looking at census data?

A. Well, it couldn't be 2020 census data, was it? I -- you know, I'm just asking.

Q. Yes, 2020 census data.

A. So he had 2020 census data when he wrote this report?

Q. Yes.

A. Okay.

Q. The report from October of 2022.

A. Okay. I mean, and it could be the case. A lot of information wasn't released that soon, but I'm -- I don't know. But the point is, I don't know if it's the 12th most diverse state in terms of whatever measurement you've got or not because I don't know the source of his data, I don't -- I haven't looked at a ranking like that, so it's -- I can't answer the question. I cannot give you an opinion on it.

Q. Have you ever seen your definition of diversity used as a consideration in the electoral districting context?

MR. WALLACE: Objection. I think it's asking for a legal opinion, maybe it's a legal fact. But I will allow him to answer.

Q. I'm asking, to be clear, what you have personally seen in your life and work in this area. Have you seen this definition of diversity that you proffered used in the electoral districting context?

A. I don't know.

Q. You can't recall any instance of it as you sit here?

A. No, I can't recall.

Q. Does any source that you are aware of as someone who's being proofed as an expert in this case indicates that your definition of diversity is a proper consideration in the electoral districting contest?

MR. WALLACE: Same objection, but he can answer it.

A. So is it -- repeat that one again.

Q. Well, let me ask it this way. We looked at that National Conference of State Legislatures report that you relied on?

A. Okay.

Q. And we looked at that congressional research service report that you relied on; right?

A. Yes.

Q. And we looked at that redistricting monograph that Mr. Bryan and Morrison wrote?

A. Yes.

Q. And did any of those sources indicate that your definition of diversity is an appropriate consideration in the electoral districting context?

A. Not that I recall.

Q. And are you aware of any other sources that

indicate that your definition of diversity is an appropriate consideration for the electoral districting context?

A. Not that I recall.

Q. So if a map drawer -- and I'm asking you this not as a legal conclusion but as someone who's being proffered as an expert in this case -- if a map drawer were to optimize for this definition of diversity that you've laid out there, that would mean they would want to spread the black population among the three districts, right, so that they were maximally -- each district was maximally diverse according to your definition; right?

MR. WALLACE: I adopt your objection to your own question. He can answer it.

A. If you're looking at just a race, that's one way you could do it, but there's other dimensions to population composition beyond race.

Q. Fair enough. And so if a map drawer were trying to optimize for racial diversity which is what you were talking about when you said that Mississippi is not as diverse in terms of race and ethnicity, if you were trying to optimize for racial diversity, you would spread the black population among the different districts?

MR. WALLACE: Same objection. He may answer.

A. You mean in the sense of someone -- like you said, a map drawer is trying to do something and looking for diversity, and all you're looking at is black versus one other racial category.

Q. Yeah. Or ir you're using your definition of diversity to draw districts in Mississippi, if you were trying to implement that definition and optimize for racial diversity, you would spread the black population across the districts so that all of them had black population in them; right?

A. Well, if you're just simply looking at the categories, again, of where I told you white and black, to me that's -- if you're using two categories, it's not a good example of the use of the word "diversity." So you'd want to -- I'd introduce more elements than just black -- distribution of the black population or the white population or the Chinese population across all the countries in Mississippi.

Q. So would you say that your definition of diversity or at least with respect to racial diversity is not really something that an electoral map drawer in Mississippi should factor in?

MR. WALLACE: Same objection as before.

A. I don't know. It depends on the task, I guess. I don't know. I can't speak for other map drawers or any map drawers. I don't know.

Q. Well speaking for yourself and a person who's offering expert opinions about the qualities of electoral maps in this lawsuit, are you saying that one -- that you would consider the racial diversity of different districts in evaluating the districting plans?

A. Along with other measures of diversity, other measures of how human beings vary.

Q. And if you were optimizing for that definition of racial diversity that you described, that would mean drawing three black minority districts; right?

A. Again, I stress that I'm not looking at it just in terms of race. So when looking at the human -- you know, the composition of the population, you're looking, as I did, beyond race and what diversity might represent.

Q. So you don't think it's a good idea to look at racial diversity as you've described it?

A. I didn't say that. I said I would look at things beyond that if I'm looking at diversity.

Q. You wouldn't look just at racial diversity?

A. That's correct.

Q. Okay. So let's -- and just -- let's go to

paragraph 31, which I think we're basically on in your report, your January report, excuse me. This is pages 15 into 16. Just briefly, you know that the supreme court districts are also the districts that are used for various other elective and appointive offices in Mississippi; right?

A. I do.

Q. And what's the relevance of that in your opinion as someone who's being proffered as an expert in this case?

MR. WALLACE: Objection to the extent you're asking him for a legal opinion on relevance, but he may answer.

A. They're important in the sense that they -- that those districts determine a lot of other issues that go on in the state like the institutes of higher learning and appointments of boards and the bar and the bar exam board.

Q. Is it your opinion that having one of the three supreme court districts be majority black voting age population would decrease diversity in state government in Mississippi?

MR. WALLACE: Again, objection as outside the scope of the court's order, but he can answer.

A. And again, I'd stress that my answer is, it's

beyond race and it's not just affecting the government in Mississippi. So I think it's important in that regard whether I was going to use diversity of the population measuring a lot of dimensions.

Q. And just on this point, you're not saying, you're not opining that having one of the three supreme court districts be majority black would decrease diversity in state government?

A. I don't know the answer to that question. I don't know if diverse -- when you say diversity in state government, people who work for the state? What's the question you're asking?

Q. People who are appointed to -- I mean, you --

A. Okay.

Q. We're talking in reference to these various appointed and elected offices.

A. Okay. So you're talking about the appointive offices, not people who are necessarily employes of the State of Mississippi; right?

Q. Right. With respect to those offices that you mentioned in this part of your report, you are not opining that the occupants of those offices will be less diverse if one of the three districts is majority black?

A. I don't know the answer, yeah, and I haven't opined on that, and I'm not in a position to do that

now.

Q. Now, you mentioned The Institute of Higher Learning, and I believe you note in your report that the 12-member body that's appointed by the governor of Mississippi, 4 members for each of the three districts?

A. I believe that's correct. I'd have to look in my record, but I believe that's correct.

Q. Yeah, you say: "In regard to IHL, 4 of the 12-member board of trustees for the state IHL are appointed by the governor from each of the three supreme court districts." Do I have that right?

A. You do.

Q. And you say in paragraph 31, and you mention this again later as well, you say: "The board has a diversity statement."

A. It does.

Q. And you cite Section 102.06 of the board's policy manual, and you say it acknowledges the value of the diversity for Mississippi.

A. Yes.

MR. SAVITZKY: And we'll just mark that. Copy for you, copy for Mr. Wallace.

MR. WALLACE: What number?

MR. SAVITZKY: This is going to be -- oh. Dr. Swanson, could I please that have back? Thank you.

I was quick on the draw there. Here you go, No. 17.

BY MR. SAVITZKY:

Q. This is the IHL board of trustees' policies and bylaws that you reference in your report. And then looking at pages 14 and 15 of this document, we see the diversity statements that you reference there. Let me know when you're there and confirm that that's the diversity statement that you're referencing?

A. I'm there.

Q. Okay. And looking at this statement and especially looking at on page 15, you would agree that the board here adopts a set of goals for higher education in Mississippi --

A. Yes.

Q. -- related to diversity?

A. Yes.

Q. And the goals they adopt are: "One, to increase the enrollment and graduation rate of underrepresented students at our institutions"?

A. Yes.

Q. "Two, to increase the employment of underrepresented individuals in administrative faculty and staff positions?"

A. Yes.

Q. "Three, to enhance the overall educational

experience through infusion of curricular content and cocurricular programming that enhanced multicultural awareness and understanding?"

A. Yes.

Q. "Four, to increase the use of unrepresented professionals, contractors, and other vendors?"

A. Yes.

Q. Fair to say that the diversity goals adopted by IHL focus on representation for "underrepresented individuals"?

A. Yes.

Q. Not necessarily on -- strike that.

In your view, is anything about these goals diminished by changing the supreme court district so that one of them is majority black voting age population.

A. I don't know the answer to that question.

Q. Do you offer any opinion that these goals, these diversity goals, would be diminished in any way by having one of the supreme court districts be majority black?

A. Are you talking about the four points that's you just raised?

Q. Yes.

A. I don't know the answer to that.

Q. You don't offer an opinion on that?

A. Not at this point in time.

Q. And you can put that one aside right in this pile here.

And now let's talk about your cluster analysis going to paragraph 90 of your report, not page 90 --

A. I understand.

Q. -- which I just turned to. All right. So beginning at paragraph 90 of your report, your January report, you conduct what you call a diversity evaluation; right?

A. I do.

Q. And you base that on what you call a cluster analysis; right?

A. Correct.

Q. And you say that you conduct this cluster analysis to evaluate the issue of population diversity?

A. Socio and economic diversity is in that too.

Q. Well just looking at that first paragraph 90, the last sentence, you say --

A. Population diversity, correct.

Q. Right. And to do the cluster analysis, you took county level data on a number of the different indices of health and wellbeing from the 2017

Mississippi Health & Hunger Atlas?

A. I did.

Q. And before we talk about that, why didn't you use ACS data?

MR. WALLACE: All right. Now that you've asked a question, I'm going to ask -- I'm going to object to that as being outside the scope of the Court's order, but he may answer it.

A. It's a consistent set of data which may or may not include some census bureau data in there that goes beyond what you can get from the ACS.

Q. Oh, it includes --

A. It may or may not.

Q. -- the ACS data?

A. It may or may not. I'd have to go back and look, but I'm sure it has census data of some sort in there somewhere, but I have to go back and look and refresh my memory.

Q. Was there a more recent version of the Mississippi Health & Hunger Atlas available?

A. Not when I contacted people at Ole Miss. I got --

Q. And you got -- I'm sorry. Please finish.

A. I got it from people at Ole Miss, my former colleagues.

Q. And as far as you know, they gave you the most recent version?

A. The only version as far as I know.

Q. So you say -- and I think this is in paragraph 93 of your report on page 37, you say: "Health and hunger are correlated with socioeconomic status which in turn in correlated with race." Is that right?

A. Correct.

Q. And so in your view, the health and hunger indices also serve as indices of race and socioeconomic status?

A. They're --

MR. WALLACE: Same objection. He may answer.

A. They're correlated.

Q. Okay. And just looking at the last sentence of this paragraph, you say: "These correlations support the argument that the health and hunger indices also serve as indices of race and socioeconomic status."

A. Correct, right.

Q. And just in layman's terms, is your point that black Mississippians are worse off in terms of health and hunger and other socioeconomic metrics than white Mississippians?

MR. WALLACE: Same objection. He can answer.

A. It was my point that any group is better or worse off in terms of that, just some groups may be higher in some indices and other ones lower in other indices. That's my point.

Q. What do you mean when you say that: "The health and hunger indices also serve as indices of race and socioeconomic status"?

A. Well then in that case, generally speaking, that if you're -- if you score low on one dimension, you're probably going to -- it's going to be correlated with a low score in another dimension.

Q. So -- and specifically, if you score low on the health and hunger indices in that data you looked at, you would also be likely to score low on other indicators of socioeconomic status?

A. Yes.

Q. And you would also be more likely to be black?

A. It depends on the part of the state you're in. There may be parts of the state where you have rural white folks, for example, that would probably score similarly if -- where you're looking at different parts of state. But yeah, in general, I'd say you're probably more likely to be black.

Q. Let's talk about how you created these indices. And I'm looking, for reference -- you can do too if you want, but I'll ask you questions and see if you want to look. I'm looking, for reference, at page 48 in your report in Exhibit III.H.1. To create your need index, you use nine different health need indicators like teen pregnancy and adult obesity; is that right?

A. This is what the people did who put the Hunger Act list together, they -- the need indicators, this is what they created, not me.

Q. Okay. So you used the indices sort of fully formed as provided to you in the Health & Hunger Atlas?

A. Correct.

Q. Okay. So you used a need index from the Health & Hunger Atlas that includes nine different health need indicators like teen pregnancy and adult obesity?

A. I'd have to look to see exactly which ones I used, but in general these were the variables that were available to use as they categorize them from the report. But I don't recall which ones, if all of them I used or some that were specific. So we need to go through that.

Q. Well, let me ask you this: Do you know how these different indices were constructed by the folks who put together the Health & Hunger Atlas?

A. They wrote it up in the hunger atlas, and I don't recall off the top of my head what they said. I'd have to go back and review the atlas.

Q. And do you know the source of the different metrics that they include in these indices?

A. You'd have to go back and look at the -- it's in there. They have it documented.

Q. Do you know that the sources that they used for these indices are reliable?

A. My general impression in my memory based on the work they did and the people who did it, I don't think they would pick indices and data that were from sources that were not reliable. But if you're asking if I went back and independently verified it for myself, I didn't.

Q. Do you know why they created this particular index of metrics?

A. I think it has to do with looking up Mississippi. So again, if you -- you need to look at their report to see what they say in terms of what the goals exactly of the report were.

Q. And so you actually use a number of indices. You have a need index, you also have a hunger -- sorry, you have a health need index, and you also have a hunger need index ; right?

A. Well when you say I have, those, again, are how

they classified the indicators they used. So I would say those -- this is a description of what they have in the report and how they categorized it.

Q. So you used the Health & Hunger Atlas's need index and its hunger -- or excuse me, their -- yes, their need index -- their health need index, excuse me, and their hunger need index, you used both of those for your diversity analysis?

A. Yes. I'd have to go back and see if I actually pulled off the individual elements of each index or used the index, because I don't recall off the top of my head what I did. Do you follow me? I can't recall now that if I used the index in itself or if I used the individual indicators in there as part of the cluster analysis.

Q. So you don't know whether you used all the different indicators that are listed here?

A. As I said, the last time I read this report was months and months ago, so I've haven't thought about it until today when you started asking me questions on it. So I need go back and look at how I aggregated. So the basics of that, I -- I would need to go back and review what I did for it to see what's in there.

Q. You say: "These two indices form the input for the cluster analysis."

A. Okay. Then -- then that's what it has, these two indices. Where are you at?

Q. I'm looking the second to the last sentence in paragraph 94.

A. Then that's what I did.

Q. And when you say "these two indices," you're referring to the need index which includes both health indicators and hunger indicators, and the second one is the performance index which includes health and hunger indicators; right?

A. Yes.

Q. And so you took all these different indicators from these two indices, and those are the inputs for your cluster analysis?

A. Well, let's look at Appendix 2, because it says I list them in Appendix 2. J.

Q. And that would be starting at page 94 of your report? Excuse me, page 93.

A. Thank you.

Q. Yep.

A. Now I can see it. Yeah, I used their indices in need and the performance indices. Thank you.

Q. And again, you didn't select these different indicators, you just used the two indices that the Health & Hunger Atlas people put together?

A. That's correct.

Q. Someone could have selected a different set of indicators to measure health and hunger in Mississippi?

A. Well if there are data available, I guess they could have and want to construct it.

Q. You could have constructed one out of ACS data?

A. I don't think you're going to get SNAP enrollment and primary care physicians for 100,000 food-insecure individuals, you know, whatever else may be in here that's necessarily in ACS data. You may or may not. But if you did, you'd have to go to a lot of different reports to find it. And if that's what you're asking me, and you may end up having to use ACS data from different time points.

Q. And to be clear, I'm not trying to knock you for, you know --

A. Yeah, I understand.

Q. -- for not doing that, I'm just -- I want to make sure this isn't the one definitive set of indicators that one could use to measure health and hunger, this is the one that the Mississippi Health & Hunger Atlas people happened to choose; right?

A. That's correct. And relates directly to Mississippi. And in that sense, it was convenient in the sense that it's all assembled in one place and

relates to the State of Mississippi?

Q. Now, how does this -- how do these indicators help you measure population diversity?

A. From the correlations that I described there in the report. If you go back to what you just read about --

Q. Well --

A. -- in paragraph 93.

Q. Uh-huh. So when you say population diversity, you mean diversity with respect to health and hunger needs and issues?

A. And they're correlated with other forms of diversity such as race and socioeconomic status.

Q. And you say that this analysis: "Enables us to understand the geographic distribution of population diversity beyond the raw percent any part black for each county."

A. Yes.

Q. So doesn't it only enable us to understand the geographic distribution of this particular definition of diversity that you've constructed using the Health & Hunger Atlas indices?

MR. WALLACE: Object to the form as being outside of the scope of the court's order, but he may answer.

A. And to the extent, again, that they're correlated with these other socioeconomic indicators including race, I would say they represent a reasonable index for doing that.

Q. And your unit of analysis in conducting this cluster analysis is the county; right?

A. Correct.

Q. So what you're seeing is the distrubution of high or low need counties among the different districts; right?

A. Correct.

Q. So I think you'd agree with me that there are some counties in Mississippi that are small in population and some that are very large in population; right?

A. The needs -- I think you'd have to took at the report again, and I don't believe they're biased by the number of people in the county, I believe the need indicators are set up, and you can see it in here where they're talking about percentages and rates. So in a sense you're trying to be dimensionalist, you're certainly going to have a lot more people one category, say, in Hinds County than you would in some other smaller county. But when you start looking at things like rate, it means they're trying to be dimensionalist.

Q. But I guess my point is just in terms of what we can take from your analysis, it doesn't speak to the distribution of population across the districts, it speaks to distribution of counties with certain characteristics across the districts?

A. It speaks to the distribution of these indicators across counties, and what that speaks to going beyond the -- back to paragraph 93 is the correlation that they have with socioeconomic and racial categories.

Q. Now, you could have designed some cluster analysis that looks at the distrubution of population; right?

A. How would you do that? Could you give me an example?

Q. Looking at the number of people with particular health needs or hunger needs?

A. Well that's what this does, but it looks at, again, rates not numbers, so attempts to make it dimensionalist so you're not affected by what the population size is in a given county.

Q. Right. And you -- but you could have looked at the number of people as opposed to the rates that you're seeing in the particular need?

A. Well, the number if people would be affected by

the population counts in the counties then.

Q. Right. But your analysis looking at the distribution of the counties of particular rates doesn't indicate whether one supreme court district has a very large county with high need and therefore there are more unhealthy or hungry people in that district?

MR. WALLACE: Object as being out of the time and argumentative, but you may answer.

A. Yeah. Well my take is if you're looking at an index of need, it's indicating need. And I think that my take on reading the report that the folks put together is that they did a good job of putting those things together. They had good arguments. And I would direct you to go read their report to see whether or not you think it's reliable.

Q. And so in terms of the analysis you did, you sort of grouped counties together into three groups, high need, high performance, which means there's a lot of health and hunger need, but also fairly strong access to services or resources; is that --

A. Correct.

Q. -- right?

A. Correct.

Q. And then you have a medium need, medium performance group, and that's about half the counties in

the state fall into that group?

A. Correct.

Q. Fair to say those counties are maybe a little bit better off in the sense that somewhat less health and hunger need?

A. Than in cluster 3, the high need, low performance.

Q. And that's what I was getting to.

A. Yeah.

Q. You also have the high need, low performance set of counties which means there's a lot of health and hunger need, but not a lot of resources or access to resources. Do I have that right?

A. You do.

Q. So those counties are the worst off?

A. Yes.

Q. And just looking at that map on page 50 of your report, those high need, low performance counties are in purple; is that right?

A. Yes.

Q. And fair to say that many of them are in the Mississippi Delta?

A. Well, let's count them up. If you're -- when you say "many," you mean a majority or --

Q. Looks like about half. You can count them.

A. Well if you count Tunica, Coahoma, Washington, they're -- those are definitely -- Bolivar, Sharkey, Issaquena, those are definitely Delta counties, correct? They're not there. So I'm not sure it's even half, but it's somewhere around that number.

Q. And then the balance of your analysis is basically looking at the distribution of these counties in each of the supreme court districts; right?

A. Correct.

Q. And so looking at page 52 of your report, Exhibit III-H-3X-c which is a little bar chart at the bottom, you show that about half of the high need, low performance counties are in district 3 under the existing --

A. Yes.

Q. -- map. And then the other half are divided between districts 1 and 2?

A. Yes.

Q. And again, because what you're doing is looking at the percentage of counties in each district, the counties you used in the analysis -- and some counties are larger than others, we don't actually know whether district 3 or district 2 or district 1 has more hungry or unhealthy people in it compared to the other --

A. Well, if you did that comparison, as I answered

you before, you're obviously going to have, given that all else is equal, in a county with a larger population, you're going to have more in that county of a particular characteristic. Hence, they used rates in an attempt to make it dimensionalist so it is comparable. Is the rate higher in one county or another regardless of the population size.

Q. But I guess my question is, you know, the unit of analysis here is the county --

A. Yes.

Q. -- but now you're looking at the distribution of counties in the supreme court districts and making what I understand to be a statement about the population diversity in the supreme court districts; right?

A. That would be correct. But in this sense what you're looking at are the dimensionalist rates that represent those populations. So if you look at it from the standpoint of where are needs the highest and the performance the lowest, and you center correlated again with socioeconomic status and race, that's what you're looking at with maps.

Q. And I guess what I'm trying to understand is, looking at the existing plan, you see about half of the counties you identified as high need and low performance in district 3, but if they're all very small counties;

and meanwhile district 1, you have a smaller percentage of those counties, but Hinds County's in district 1. It may be that there's more health and hunger need in district 1?

A. Well there's always going to be a higher need in a county that has a higher population. That's not what I looked at.

Q. But the supreme count districts have not equal but similar populations?

A. I hear what you're saying. And what this does is look at it from a similar perspective. When you're looking at the rates across there, okay, what -- regardless of what population size is, what do the rates look like at a county level?

Q. Well, couldn't you aggregate the counties and actually look at the rates among the population as a whole?

A. Let's see. Why would I do that?

Q. So that you can compare the populations of the different districts. If I want to look at teen pregnancy or obesity rates or SNAP rates, I could aggregate the information for each county up to the district level, and I could see which of these districts has higher rate of SNAP use.

A. Now I see what you're getting at. Okay. So

yeah, if I had the data. And I didn't have the raw data to be able to do that with the data are and the report are given rates by county. So without knowing what all the numbers are in there, I'd have to go reconstruct and put them up at the district level. That's what you're asking --

Q. Yes.

A. -- and I didn't do that.

Q. And you didn't do that?

A. That's correct.

Q. So -- and without doing that, you can't speak to the similarity or difference of the districts in terms of those different metrics?

MR. WALLACE: Objection. Same objection as before and objection as to vagueness, can't speak to the differences, did you say? I'm -- I lost your meaning.

A. I think I follow your meaning. But the point is, I looked at counties.

Q. So --

A. And if you reaggregate the lines by county, you're starting to see from the county perspective what the numbers are by that is you can tell.

Q. And looking at page 55, we're looking at illustrative plan 1, same bar chart. And you say that under this illustrative plan 1: "The majority of the

high need, low performance counties are now in district 1 under Cooper's illustrative plan 1."

A. Yes.

Q. And that -- again, that makes sense because as we've discussed, illustrative district 1 includes all the Mississippi Delta, all the counties north, south along the Mississippi River, and a lot of the high need, low performance counties, some of which are very small in population, are in that area.

A. So as you asked before, it means it's correlated with race and socioeconomic status, an indicator of that.

Q. And the result -- I mean, your analysis shows that what -- one of the things that Mr. Cooper's map does is that more of these counties with that high level of need and low level of resources are being grouped together in district 1?

A. Correct.

Q. So Mr. Cooper's illustrative plan 1 is grouping together counties with similar socioeconomic needs and interests?

A. And making it less diverse.

Q. But you agree he's grouping together counties with similar socioeconomic needs and interests?

A. I just said that.

Q. And then just same question looking at your page 58, again, you're showing 69 percent of the counties in that high need, low performance category are in district 1 under illustrative plan 2; is that right?

A. That's correct.

Q. And again, what we're seeing is that Cooper illustrative plan 2 in grouping together counties with similar socioeconomic needs and interests?

A. Making it less diverse, yes.

Q. And we talked about community of interest before. From a map drawing perspective -- I ask you this as a person who is being proffered as an expert in this case -- what do you think is more in line with those districting principles that we discussed earlier? What --

MR. WALLACE: Well, I'm -- go ahead. Let me let you finish your question. I thought you had, and then you kept going so pardon me.

Q. What do you think is more in line with the districting principles we discussed earlier, grouping together areas that share common needs and interests or grouping areas together in a way that maximizes the diversity and spread of those interests among different defenses?

A. To answer that question --

MR. WALLACE: Let me get my objection in. He's asking for -- first of all, he's vague; second of all, he's asking for legal opinions; and third of all, it's outside the scope of court's order. And having said that, you may continue your answer.

A. As you said earlier, it -- there's a lot of tradeoffs when you're looking at different metrics and measurements in doing this. And that might be one of the tradeoffs you're looking at.

Q. And having looked at some of those districting principles and offered opinions about them in your expert report in this case, what do you think is more consistent with the principles that are reflected in the Congressional Research Service Report, Redistricting Manual, National Conference of State Legislatures?

MR. WALLACE: Same objection.

A. They emphasize more of the issues I think you're getting at as opposed to the diversity issue.

Q. They emphasis grouping together areas with common interests and needs?

MR. WALLACE: Same objection. He may answer.

A. Yeah. And I would again go -- aren't all those groupings -- again, I use them as a guideline, but aren't they generally for congressional districts; is

that the case?

Q. The National Conference of State Legislatures report that you cited related to considerations for state legislative and other districts as well, didn't it?

A. That -- I mean, when I say congressional, that's what I meant, state and federal. I don't think there's anything in there about a supreme court district.

Q. Right. And the Redistricting Manual from Morrison and Bryan, is that similarly applicable?

A. Well again, I -- how many -- I didn't see things specifically on supreme court cases in those materials, so that's why I used them as a guideline.

Q. And is there something about supreme court districts that makes this diversity metric that you're discussing more relevant than the legislature district?

A. Well, you read it yourself --

MR. WALLACE: Same objection. He may answer.

A. You heard from the IHL, said their -- one of the goals is to be more diverse.

Q. I mean, did anything in the IHL statement describe diversity in the way that you are discussing it now?

A. One of -- the lead-in statement before it listed the four points talked about cultural diversity. And so cultural diversity covers a lot of ground.

Q. Other than the IHL policies and bylaws that we discussed, is there any other reason why this diversity metric?

A. Well there's --

MR. WALLACE: Same objection. You may answer.

A. There was the court case that I saw too on it.

Q. The court case that used the word "diversity"?

A. Yes.

Q. And you don't know as you sit here whether that court case was using the word "diversity" in the way that you mean the word "diversity"?

A. I do not know.

Q. Anything else?

A. Not that I can think of at this time.

Q. So let's talk about your analysis of polling places, and turning to the paragraph 81 of your report. Starting at paragraph 81, you have a voting age population polling place spacial analysis?

A. Correct.

Q. And in paragraph 81 you ask: "What are the differences in proximity, the differences in distance,

and the distance of black voting age population to current polling stations compared to all voting age population, and in a particular, white non Hispanic voting age population." Is that right?

A. Correct.

Q. And you say: "My hypothesis for this question was that if the black voting age population were being systematically disenfranchised by the State of Mississippi, a symptomatic indicator of that would be seeing fewer of them close to polling places and more of them of a greater distance from polling places."

A. Correct.

Q. How did you form that hypothesis?

A. Just in general knowing what propensity, close to things, mean.

Q. Can you say more about that?

A. Yeah. So for example, I've done studies of where graduates from high school go to college in the State of Washington, and propensity is a big indicator of it. So many of the freshman or transfer students who go to Western Washington here in Bellingham, Washington are from Western Washington, they're not from Southeast Washington. Many of the students who --

MR. WALLACE: Did you mean "propensity" or "proximity"? I'm looking at your --

A. Yeah, proximity. I'm sorry. Thank you. So that's what I mean. So, you know, if you're close to something, you're probably more likely to be able to do it or go there. And there's not -- I can't cite all the literature off the top of my head, but there's a lot of literature, probably in marketing and a lot of other fields it's that. That's one of the reasons why does Target site stores in certain places.

Q. Would you agree the decision to leave your family for the first time and go to college somewhere close to home rather than far away when you're away four years is a little different than whether or not you're going to go vote on a Tuesday; right?

A. But it's a little different than deciding whether you're going to go buy gasoline or clothes too, but as I said, there's -- without being able to speak to it all in my head, there's a lot of literature on how relatively close you are to things that triggers whether or not you're taking advantage or doing it. That's the point. So yeah, there is a lot of variation of why people are doing it, but you're close to something is a determinant of whether or not you do it.

Q. When you put up a Target store, there's a big Target logo and a big sign that says Target on it; right?

A. As far as I know there is, yeah.

Q. But there isn't one on a polling place, is there?

A. No. And I just said there's a lot of differences in all these things, but the -- is the word propinquity? That might be it. How close you are to things is one of the determinants of whether or not you take advantage or use them or don't. It's not the only thing, but it's one of them.

Q. But you would have to know where something is in order to -- in order for that logic to apply?

A. Well I guess you could stumble across it if you're doing a random search.

Q. On a polling location, you'd have to stumble upon it on a Tuesday in November; right?

A. Do they move around all the time?

Q. Well, that's my next question. Do you know who decides polling locations in Mississippi?

A. No, I don't.

Q. So when you say that --

A. It's probably at the county level, but I'm, you know, just saying I don't know.

Q. So when you say that polling place proximity could be evidence of systematic disenfranchisement, that's despite the fact that locations of polling places

is decided, you would think, at a local level?

A. Yes.

Q. And do you know whether there are racial disparities in access to vehicles in Mississippi that might affect the ability of Mississippians to get to the polls on election day?

MR. WALLACE: Same objection. You may answer.

A. There might be, but people are people, so there may be different ways to overcome some of those disparities.

Q. Well -- and just looking at Mr. Cooper's responsive declaration, Exhibit 10, paragraph 34 --

A. In exhibit?

Q. It's Exhibit 10, but it's paragraph 34 of the responsive declaration. I just want to make sure you're looking at the responsive declaration.

A. That's Exhibit 9. This is 12.

Q. We want Exhibit 10.

MR. WALLACE: This one?

MR. SAVITZKY: You've got it.

BY MR. SAVITZKY:

Q. And looking at paragraph 34 --

A. Yes.

Q. -- Mr. Cooper says: "Statewide, 10 percent of

black households do not have a car versus 4.3 percent of white households."

A. I see it.

Q. Do you have any reason to dispute that?

A. No.

Q. He says: "The racial disparity expands to 12 percent versus 4.5 percent in the Delta region." Any reason to dispute that?

A. No.

Q. Do you know if there are racial disparities between who has the type of job where they can get off work and vote on a Tuesday in Mississippi?

A. I do not know.

Q. Based on the discussion we've had about socioeconomic indicators, is it likely that black Mississippians are less likely to be able to take off work and vote on a Tuesday?

A. I'd look at it as a research question.

Q. Do you know whether there are racial disparities in Mississippi in terms of single-parent households that might affect the ability to get to the polls and vote on a Tuesday in light of work and childcare obligations?

A. Differentially than other population racial groups? Is that what you're asking me?

Q. Correct. Are there more black single-parent households than white single-parent households in Mississippi?

A. I don't know exactly if that's the case or not.

Q. And just looking at that exhibit that we just -- looking at Mr. Cooper's responsive report in paragraph 33, he says: "Other voters may have responsibilities that make it impossible to walk. 51.4 percent of the black female head of households with children live in poverty compared to 37.4 percent of their white counterparts." Any reason to dispute that?

A. Does he give a source? Again, I don't have any reason to dispute it, but I just wonder what the sources are and how consistent they are, that's all.

Q. I can represent to you that it's all ACS data.

A. Okay. And then the question is, again, you know, the sample sizes and whether or not they're statistically different. So if you just pull things off the ACS and start comparing them, depending on where you're at and depending what the census bureau does, I would prefer not to answer that until I actually saw the size of the sample, what the margins of errors are on it, because it may be the case in some of these comparisons that there's no statistically different -- significant difference. Do you follow me? So I don't

know in advance, just asked -- if you're asking about the state as a whole and that's what he's arguing, for the state as a whole, then it may be the case there is one.

Q. And by the way did you do a test of significance, a T-test or something else to look at your analysis of polling place proximity?

A. No.

Q. By the way, do you know if there are racial disparities in Mississippi in terms of how long people have to wait to vote at the polls in Mississippi?

A. I don't know.

MR. SAVITZKY: And we can mark right now -- it's a little out of order, but this is just where it is. This is Dr. Burch's rebuttal report, marking it as Exhibit 18. There should be a copy for you, Mike, but I'm not seeing it. Give you mine.

BY MR. SAVITZKY:

Q. And looking at pages 12 to 13 of Dr. Burch's rebuttal report -- let me know when you're there.

A. I see it.

Q. Looking at the bottom, she says: "Further analysis of the CES which I report shows that among validated Mississippi voters, 18.9 percent of white voters report they waited for more than 30 minutes to

vote compared to 40.7 percent of black voters." Any reason to despite that?

A. Yeah, there is.

Q. Any reason other than the criticisms of the CES that we'll talk about presently?

A. That I don't know. But definitely I'd start with CES.

Q. All right. And we'll get to that. And hang on to -- you can put Dr. Burch's rebuttal aside, but don't get let it get too far.

So you can't say whether the various racial disparities we talked about including the ones that are reflected in ACS might negate any theoretical advantage in terms of polling place proximity for black Mississippians?

A. If you're asking me right off the top of my head, my answers were, I think, pretty consistent saying for the most part, some of them are research questions, so they have to be looked into in order to answer the full question.

Q. And looking at paragraph 82 of your report, you say: "While each of Mr. Cooper's illustrative and least change plan increases the percent of the black population in district 1, I want to know if the increases he achieved came at the expense of black voter

proximity to the polls." What do you mean by that?

MR. WALLACE: Same objection as to outside the scope of the court's order, but he may answer.

A. Yeah, it looks on average if you change the counties around and you're moving black populations around, what does it look like in terms of proximity to the polls.

Q. Well, why would putting different counties into supreme court districts change the proximity to the polling places which are intra county?

A. Yeah. Well, it's a question I asked.

Q. Well, I guess my question is: How could it possibly change the proximity of people to polling places to put them in one supreme court district or another if all the supreme court districts are made up of whole counties?

A. It's a question that I asked. So -- and again, I stress that I don't know exactly where the -- how they were placed initially.

Q. Would you agree that whether a county is in one supreme court district or another doesn't have any bearing on where your polling place is?

A. That I don't know.

Q. You say: "If Mr. Cooper's plans increase the number and proportion of blacks but he moved close poll

proximity blacks out of district 1 and moved distant poll proximity blacks into district 1, one could argue that the actual impact of such plans would be to increase black voter disenfranchisement and risk fewer blacks actually turning out to vote."

A. Yes.

Q. What is the basis -- what is your basis for suggesting that changing the supreme court lines to draw a black majority district would increase black voter disenfranchisement and risk fewer blacks actually turning out to vote?

A. Well maybe that the average citizen's in a county, not in supreme court district 1, is different than a county that is in supreme court district 1 that has moved out of it. So for example, what -- pick a county. In every county in every state are the polling distances for any given population exactly the same, they probably vary. So urban areas are probably in a closer proximity, correct, would you agree, than you would be in rural areas. So that's one example of how they might change. So even there it's at county level, it may be the case that by moving them around, you've now put people that were on average farther away from a voting poll into this new district.

Q. Did you do any analysis to demonstrate that

so-called close poll proximity blacks are more likely to vote than so-called distant poll proximity blacks?

A. No.

Q. Now in your report, did you ever go back and answer the question that you posed and offer an opinion or a conclusion about whether the actual impact of Mr. Cooper's illustrative plans would be to increase black voter disenfranchisement and risk fewer blacks actually turning out to vote?

A. I'd have to look in the report again, so I don't recall off the top of my head if I did.

Q. It's not that many paragraphs, if you want to just take a quick look.

A. Sure, I'll look here.

Q. It's the section between paragraphs 81 --

A. Or even in the executive summary.

Q. -- or 89.

A. Yeah. I'm looking at the executive summary. Paragraph, what was it, 9?

Q. 81 through 89 is your discussion of this issue.

A. Thank you.

(Witness reviewing exhibit.)

A. So no, I didn't look at it by district, I looked it on average for the state as a whole.

Q. So you didn't go back and look at what you

called "the question" of whether the increases Cooper achieved came at the expense of black voter proximity to the polls?

A. That's correct, I did not. Thank you.

Q. Now let's talk about the analysis that you did. How did you go about calculating the voting age population living within a half mile of their polling place?

A. Let's see how it's described here. This is done using the geospacial stuff that Tom Bryan has access to, and I asked him to give me ideas about how far people were from polling places. So when he got the list of where they were located, then he could do the GIS magic with VAPs and VAP by race within certain distances of those places. So that's how they're done.

Q. So Bryan GeoDemographics did this analysis?

A. Oh, absolutely. Yeah.

Q. What parameters did you give them?

A. Just what I told you. I said that I'd like to see what the distances are to polling places and, you know, if it's -- do you want to do categories on it that make sense or if you want just give me average distances, and we discussed it a bit, and I said, yeah, those look good in terms of what percent might be within a quarter mile, half mile, up to a mile or so. And that

was done in conjunction with the data that were available, how hard it was to assemble it and do it.

Q. And did you count the population of any census block that contains a polling place as living within a half mile of the polling place?

A. I can't remember the exact details and how it was done. When you're looking at census blocks, that's the lowest geography you get and there are ways that I know in GIS you split those using different algorithms. And that's likely what he did to do it, but I don't recall the details.

Q. And the census block can be larger than a mile around; right?

A. It can, depending what the population of where it's at, what makes up natural boundaries for one.

Q. So if you count on the population of the census block containing polling places, living within a half mile of that polling place, some of the people in that census block might actually live more than a half mile away from the polling place?

A. But again, I stress that there are algorithms I know GIS people use that will try and accommodate that so you're not just doing something that gross. Do you follow me? And what they do exactly, I don't know.

Q. And you don't know what Bryan GeoDemographics

did in this case?

A. I don't.

Q. You don't know whether he used an algorithm to make that distinction between people in the census block that are actually within the half mile and people who are actually outside the half mile?

A. I don't.

Q. And let's just look at Mr. Cooper's responsive report. Again, it's Exhibit 10. You should have it?

A. On report 9 or 10?

Q. 10.

A. Thank you.

Q. I'm a little concerned that your Exhibit 10 has gone missing here.

MR. WALLACE: I have a 10 if you need it.

THE WITNESS: Thank you.

MR. SAVITZKY: Do you have it?

MR. WALLACE: Yeah. Tell me what paragraph you want.

MR. SAVITZKY: I'm looking at page 12.

BY MR. SAVITZKY:

Q. And what Mr. Cooper does here in Figure 4 is, shows the census blocks which are in blue and then the half mile radii which are the circles there. So you can see there's significant amounts of those census blocks

that are outside the half mile radius of the polling place; right?

A. Correct. I can see that.

Q. Okay. And did you review Mr. Cooper's analysis in his report of this polling place proximity analysis that you did?

A. I remember reading through this and putting it aside.

Q. All right. And just starting at paragraph 24 on page 11 of Mr. Cooper's responsive report, Mr. Cooper used geospacial analysis to calculate that actually 26.3 percent of black voters live within a half mile of their polling place; right?

A. That's what it says here in paragraph 24.

Q. And do you dispute his analysis?

A. I've got no reason to dispute or not dispute it.

Q. And Mr. Cooper conducted -- after conducting this analysis said that the Bryan GeoDemographics analysis erroneously does count the entire VAP living in a given census block as being half mile from a polling place?

MR. WALLACE: Where does he say that?

Q. Paragraph 25.

MR. WALLACE: It's in 25?

A. Yeah, I saw it.
Q. Okay.
A. That's what he says.
Q. And you don't have any reason to dispute that?
A. Not at this time.
Q. All right. So just a few questions about socioeconomic analysis performed by Mr. Cooper and Dr. Burch. Looking at Exhibit 9, Mr. Cooper's October report and beginning on page 36, Mr. Cooper analyzes the socioeconomic profiles of the State of Mississippi using five year ACS data. Let me know when you're there.
A. I'm there.
Q. You don't dispute any of his analysis with respect to the ACS data there?
A. Let me read through this. So it appears it's from the 2021 ACS data, singular data for the State of Mississippi. Okay. No, I have no reason to dispute that those are numbers he took from the single year 2021 ACS data.
Q. Thank you. And by the way, just because it came up earlier, looking at the top of page 37, it does like seem you get SNAP participation rates with the ACS?
A. It looks like it, yes.
Q. And in paragraph 64 of his report on page 36, Mr. Cooper says: "In Mississippi, African Americans

trail non Hispanic whites across most key indicators of socioeconomic wellbeing." Do you dispute that?

A. Based on what's in the ACS, no.

Q. And in paragraph 66 and 67 of Mr. Cooper's report, there's the last two paragraphs, he explains that he reviewed and prepared charts of the same ACS data for counties and municipalities and that socioeconomic disparities by race also exist at the county and municipal levels throughout Mississippi. Do you dispute that?

A. Well, that's one where because it's at the county level and because of the sizes, I'd want to look at what the margins of error are before I made those statements. I trust it at the state level that the margins of error are sufficiently small, it's not an issue, but you see it down some of the counties, it could be.

Q. You dispute that the ACS data reflects those disparities?

A. That I don't dispute, it's just a matter of how you interpret it and if -- if the margins of error, if they're 90 percent margin of error overlap the mean of the other group, then there's no statistically significant difference. So you can't make the statement. Do you follow me?

Q. Understood. And setting aside whether or not -- setting aside any issues with respect to the sub sample size for counties or municipalities, with respect to ACS data for Mississippi, you don't dispute that that is what the ACS data is --

A. No, I don't have any reason to believe Mr. Cooper put down other data in there other than what he took out of it.

Q. And let's now mark -- we did it a little out of order because her rebuttal is already marked, but the -- mark Dr. Burch's report now as Exhibit 19.

A. I've got this piece of paper handed to me with nothing on it. I don't know what it is.

Q. That's Dr. Burch's rebuttal report.

A. Okay.

MR. WALLACE: Have we got one marked?

MR. SAVITZKY: Should be 18. Here's 19.

THE WITNESS: Here's 18.

MR. SAVITZKY: Okay.

THE WITNESS: That was just some other piece of paper, same thing, I guess. Okay. That's.

MR. WALLACE: We do have 19 for me? I've got 18.

MR. SAVITZKY: 19 for you, 19 for me. All right. We all have 18 and 19 which we'll be looking at

more presently.

BY MR. SAVITZKY:

Q. But just for now looking at what's been marked as Exhibit 19, on pages 3 through 10 of this report, Dr. Burch analyzes educational markers like student test scores and school district segregation, education attainment by race. You don't dispute her analysis of racial disparities in education in Mississippi on that front?

MR. WALLACE: Objection to being outside the scope of the court's order, but he may respond if he can.

A. In general, no. I'd have to look at some of the details on where she got the data and what she's pulling off to make a definitive statement. But in general, no.

Q. And looking at pages 10 to 13 of this report, starting at page 10, Dr. Burch analyzes racial disparities with respect to income, poverty and wealth looking at, for example, household income, access to a car, poverty, unemployment.

A. I mean, again, I --

MR. WALLACE: He didn't ask a question yet.

Q. You don't dispute her analysis of those racial disparities with respect to income and poverty?

MR. WALLACE: And I have the same objection to that question, and he may answer it.

A. The answer is, there's no reason for me to dispute what she's found from the current population survey --

Q. And I believe --

A. -- American Community Survey, and so on.

Q. And looking at pages 13 to 16, Dr. Burch discusses racial disparities in housing, for example, home ownership, looking at ACS data there for home ownership by race. You don't dispute her analysis of racial disparities with respect to housing in Mississippi?

MR. WALLACE: Same objection. He may answer.

A. Well, I don't -- I haven't -- I'm not looking at her analysis in depth, but I don't dispute the data she got from the American Community Survey as being reasonably accurate. The same from the Current Population Survey for the state as a whole.

Q. Or for example, I'm just drilling down on page 16, the last sentence, last two sentences in her report, she says: "The 2019 report by the Mississippi Home Corporation, a state entity, found that black people in Mississippi were denied mortgage loans more

frequently and faced discrimination in rental markets."

MR. WALLACE: Where is that?

MR. SAVITZKY: This is the second to the last sentence in the second to the last paragraph on page 16 of Exhibit 19, Dr. Burch's October report.

MR. WALLACE: All right. Same objection. He may answer.

A. No. I've got no reason to dispute it.

Q. And she goes on, she says: "Other studies have also shown that black Mississippi applicants faced discrimination in home lending, discriminatory practices affect ability of black renters to find rental housing in Mississippi." And that's from the National Fair Housing Compliance, DOJ?

MR. WALLACE: Same objection. He may answer.

A. My answer is the same as the last time.

Q. No dispute?

A. No dispute.

Q. Okay. And looking at pages 16 through 18 of Dr. Burch's report, she discusses racial disparities with respect to health, for example, in heart disease, access to healthcare, access to a primary doctor, health insurance. You don't dispute her analysis of racial disparities with respect to health in Mississippi?

MR. WALLACE: Same objection. He may answer.

A. If she's summarizing the data that is shown in the tables given the sources that they're from, I have no reason to dispute it.

Q. And looking at pages 18 to 20 of her report, Dr. Burch analyzes racial disparities with respect to criminal justice. And like you, she looks at the racial makeup of the correctional facility populations and, just looking at her chart here on page 19, looks like she got a very similar result to you in terms of 60 percent of the prison population being black?

MR. WALLACE: Same objection. He may answer.

A. And again, based on the fact that her analysis are really descriptive, verbal descriptions of what's in the tables, I have no reason to dispute it.

Q. You don't dispute the political science literature discussed in Dr. Burch's report that voting participation is generally correlated with socioeconomic wellbeing?

MR. WALLACE: Same objection, and perhaps outside the range of a demographer's expertise, but he may answer.

A. Given my knowledge of it, I don't dispute it.

Q. You don't dispute that this letter -- this literature shows generally that when a person has more education, more income, more health, they're more likely to vote and participate in politics?

A. In general, I think that's -- I agree with that.

Q. And in light of that general rule, it would be a reasonable hypothesis that if there was racial minority group in a jurisdiction that had less socioeconomic wellbeing, less education, less income, less health, they would have lower levels of voting and participation?

MR. WALLACE: Same objection. But he may answer.

A. And my answer to that again is that it depends on what racial group and what part of country and when and where you're looking at it. It's a research question.

Q. In light of -- let me ask it differently, then.

It would be a reasonable hypothesis in light of that general rule that the correlation between socioeconomic wellbeing and voting and political participation, that black voters in Mississippi who have less socioeconomic wellbeing, less income, less education, less health, less access to housing would

have lower levels of voting and political participation?

MR. WALLACE: Same objection. He may answer.

A. Again, it's -- it's not an easy question to answer from the standpoint of it's still pretty general. So it may be that certain areas of the state, people who are in exactly the same condition vote at a much higher rate than people very similar, exact same characteristics elsewhere.

Q. Well my question is: Given all of this information that we just discussed that you don't dispute from the ACS, from other reputable sources showing the racial disparities across many different indicators and given the political science literature that you don't dispute that socioeconomic wellbeing and voting are correlated, it would be a reasonable hypothesis that black voters in Mississippi vote less and participate less than white voters in Mississippi?

MR. WALLACE: Same objection, and he may answer.

A. And that's a reasonable hypothesis.

Q. So let's now -- well first of all, I think we're done talking about Mr. Cooper's reports at this point, so we can move those to the side if that'll make things a little easier for you before we start our next

set of questions. And these ones can go to the side as well, actually. And do you have Exhibit 10? Are we still --

MR. WALLACE: I've got 10 if he doesn't.

MR. SAVITZKY: We'll re-mark it if we have to.

MR. WALLACE: Is Cooper No. 10?

MR. SAVITZKY: Yes.

MR. WALLACE: Yeah, I've got it. You don't have it over there, is your problem; right? She doesn't have it.

MR. SAVITZKY: Yeah, we'll -- it's floating around here somewhere.

MR. WALLACE: We'll check it later.

BY MR. SAVITZKY:

Q. So with that, I want to talk about the voter turnout piece of this in your analysis of voter turnout in Mississippi starting with the current population survey.

A. And is that from the initial report or from another report? Are you talking about the report that we've been talking about here that you've given me, this one? That's what we're talking about?

Q. I'm actually going to -- I'm talking about your surrebuttal -- we'll eventually talk about your

surrebuttal.

A. Okay.

MR. SAVITZKY: In fact, this is a great time to mark your surrebuttal report. Hold on. All right. So I'm now going to mark as Exhibit 20, I believe.

MS. JONES: Yes.

MR. SAVITZKY: Your -- oh, this isn't your surrebuttal report. I'm sorry. Bear with me.

(Pause in the proceedings.)

MR. SAVITZKY: Well --

MR. WALLACE: Tell you what, I have to go check out of the hotel. You can keep digging while I'm checking out of the hotel. I'll be back in, you know, ten minutes, and maybe you will have found it by then.

MR. SAVITZKY: Thanks. Let's go off the record.

(A break was taken from 2:31 to 2:55 p.m.)

MR. SAVITZKY: Back on the record. So we were marking Exhibit 20 which is your surrebuttal report. That's marked for you here. Mr. Wallace, a copy. And I have that here. Okay.

BY MR. SAVITZKY:

Q. Now, before we sort of get into numbers and dig into the details, let's start with the CPS. What is the CPS?

A. The Current Population Survey?

Q. Yeah.

A. It's a regular survey that's done by the census bureau. It's large scale survey, it has supplements in it, so one of the supplements is a demographic supplement.

Q. Is it done by the census bureau?

A. It's -- it's probably done for other agencies, but the census bureau is the one that does a lot of survey research, so the CPS is technically done, I think, by the census bureau.

Q. And the CPS includes a voting and registration supplement?

A. That's one of the supplements.

Q. And that includes questions about whether the respondent's registered and voted?

A. Yes.

Q. And no one goes back and asks the respondents -- or sorry, strike that.

No one goes back and checks whether the respondents actually are registered to vote.

A. As far as I know, they don't.

Q. No one goes back and checks if the respondents actually voted?

A. Just like everything else that's in there, they

don't go back and check are you really this age? Are you really this ethnicity? Yeah, so as far as I know, it's -- they pretty much take the respondents' words as given.

Q. It's purely a survey, there's no sort of external validation process?

A. You mean in the sense of the answers --

Q. Correct.

A. -- they've given?

Q. The veracity of the answers are not externally validated?

A. That's what I understand the case to be, correct.

Q. And then looking at your January report still and a page 70, you have a table, Table IV.A.2 where you looked at Mississippi voting by race and ethnicity using CPS data; is that right?

A. Yes.

Q. And based on the data, you conclude that black turnout in Mississippi in 2020 was 72.9 percent and white turnout was 69.8 percent?

A. Correct.

Q. And this CPS data is the primary basis for your conclusion that blacks vote at higher rates than whites in Mississippi as a whole?

A. It is.

Q. And looking at this table, you conclude overall that the -- that 70 percent of Mississippians voted, 70.3 percent, I suppose, of Mississippians voted in the 2023 election?

A. Yes.

Q. And you agree, as you set out in your table in that total voted column, that 70.3 percent turnout would mean that 1.531 million people voted in Mississippi in 2020?

A. Yes.

Q. And just looking at Dr. Burch's rebuttal report which was previously marked as Exhibit 18, and turning to page 2 of that report --

A. So we're on 18 again --

Q. Yeah.

A. -- or 20.

Q. 18. Right here. You have it right here.

And looking just at page 2, second full paragraph Dr. Burch says: "The official vote count certified by the Mississippi Secretary of State show that only 1,313,759 votes were cast or present, highest participation rate in Mississippi in the November 2020 election." Do you dispute that?

A. No.

Q. So the CPS overstates the level of turnout in Mississippi by about 200,000 people, 1.531 million versus 1.313 million?

A. Given the years where this is done and the fact it's Mississippi, that appears to be the case.

Q. I'm sorry, I just want to make sure, is that answer qualified somehow?

A. Well it's qualified with the data that are used to do it. In that sense, are the CPS data exactly for the same year that the turnout data are for and things like that.

Q. Right. And so --

A. That's all the qualifications I'm making.

Q. So with respect to the 2020 election --

A. Yes.

Q. -- and comparing that number from the official vote count by the Mississippi Secretary of State, and the CPS estimate you derived from the 2020 general election turnout, the CPS overstates the level of turnout by about 200,000?

A. Yes.

Q. And you agree, and you stated this at paragraph 149 of your report, page 83, that there is a "likelihood of overreporting on the CPS voting and registration supplement."

MR. WALLACE: I'm not sure I -- apparently, he didn't hear a question, and I don't think I did either.

Q. You agree that there's a likelihood of overreporting on the CPS voting and registration supplement?

A. I do.

Q. And that -- meaning that when the respondents get the survey questions to the CPS, when they overreport, we mean they tend to say they registered or they voted even when they aren't registered or didn't vote?

A. That's how I'd interpret overreporting.

Q. And looking at paragraph 148 of your report on page 83, you would agree that this issue of overreporting of political participation is present with any survey data related to voting?

MR. WALLACE: This is in his original report?

MR. SAVITZKY: Correct.

MR. WALLACE: Here it is.

A. It could be. I don't know enough about every survey that's ever done to say whether or not they do it, so of the ones I'm familiar with like the CPS, it's looks like they overreport.

Q. Right. And you say this caveat -- this is the last sentence -- last sentence of this paragraph: "This caveat would not only apply to the SSRC survey data but also the CPS, the APS, any other survey in the United States that includes questions on voter registration" --

A. And I stress it's a caveat. But again, we don't know exactly what's going on, but I'd be careful if I was looking at voter registration survey information and voting information.

Q. And you wouldn't dispute that the CPS itself says that respondent misreporting is a source of error in the CPS estimates?

A. Absolutely I would not dispute that.

Q. And looking at paragraph 148 that we've been looking at of your January report, you say with some citations to the literature that: "While both blacks and whites tend to overreport voter registration, blacks may do so at higher rates -- at a higher rate that white as is also the case with voting."

A. Correct.

Q. And in the bibliography of your report, you cite some literature going into detail on this, a 2021 piece called: Vote Overreporting While Black: Identifying the Mechanism Behind Black Survey Respondents Vote Overreporting. And let's just grab

that and mark it as Exhibit 21. Copy, copy. This is the piece that was in your bibliography mark it as Exhibit 21.

You reviewed this article in putting your report together?

A. I did.

Q. And looking at page 3, I think right at the top -- just let me know when you're there.

A. That's the paragraph that starts: "Overreporting among African Americans"?

Q. Correct. And the next sentence is: "Perhaps one of the most consistently documented aspect of overreporting is that African Americans overreport at higher rates than whites."

A. That's correct.

Q. Do you agree with that assessment?

A. Yes. Based on the evidence I've seen.

Q. And in her rebuttal report, Dr. Burch also pointed to another 2022 article by Ansolabehere and Fraga and Shaffner in American -- I think it's in American Politics Research specifically about overreporting on the CPS. Do you recall that?

A. No. I have to look at it, but it sounds familiar, so --

MR. WALLACE: It's in here, 18.

THE WITNESS: Thank you. And where is it? What page was it?

MR. SAVITZKY: Well I was going to mark the actual article, but I can -- I can refer you to the -- so it's cited on page 3, Footnote 6 of her report. She says: "New research shows not only does the CPS overestimate turnover for all groups, it does so differentially by race such that it consistently overestimates black turnout even more than white turnout."

A. Yes.

Q. And she cites in an article that I'm now going to mark as Exhibit 22 entitled The Current Population Survey Voting and Registration Supplement Overstates Minority Turnout.

MR. WALLACE: Where is this cited?

MR. SAVITZKY: This is cited in Footnote 6 of Dr. Burch's rebuttal report.

BY MR. SAVITZKY:

Q. Do you agree that this is a paper by a reputable political scientist in an academic journal for the discipline?

A. Well I don't know them personally, so if you want me to attest to their reputations, I'm assuming they're reputable, but yes, I agree that this is a --

this is an article by academics that's published in an academic peer-reviewed journal.

Q. I'm just looking at the summary text on page 1 there, it says: "We compare CPS estimates to official voter turnout records from 2008 to 2018, document consistent significant discrepancies that call into question the reliability of CPS turnout statistics." Do you see that?

A. I do.

Q. And it states: "Specifically, the CPS overestimates black and Hispanic turnout relative to non Hispanic whites whether relying on turnout rates as a shared, eligible citizens or the racial ethnic composition of the voting population." Do I have that right?

A. You do.

Q. And they say: "Sampling error in commonly used adjustments to CPS estimates do not account for or correct the bias."

A. All of it, correct.

Q. And just looking at their conclusion in the last page -- or excuse me, on page, I think, 4 -- oh, no, it's on page 5, excuse me, of the document, yeah, conclusion, states: "The author suggests that CPS should conduct a voter validation study akin to those

undertaken by other surveys." Do you see that?

A. I do.

Q. You agree with that?

A. I do.

Q. And they say: "In the meantime, we suggest that analysts uses caution when making inferences about variation and turnout rates by racial or ethnic groups." Right?

A. They do.

Q. Do you agree with their assessment?

A. I think for the research at this point in time, I think their assessment is well taken.

Q. So given the fact that the top line CPS estimate of voting in Mississippi shows overreporting by about 200,000 -- I think it's 12 percent overage -- it would be a reasonable hypothesis that this overreporting would in particular overstate black turnout?

A. That would be a reasonable hypothesis.

Q. So let's go back to your conclusion. You conclude based on the CPS that blacks vote at higher rates than whites in Mississippi as a whole?

A. That's correct.

Q. As we discussed, setting aside the issue of overreporting, just assuming the CPS is reliable for the moment, your analysis of the CPS data for 2020 shows a

3 point difference between black and white turnout rates, 72.9 versus 69.8; right?

A. Correct.

Q. So even a modest racial differential in overreporting on the CPS would mean that black turnout would, in fact, be lower than white turnout?

MR. WALLACE: Object to vagueness of "modest," but you may answer.

A. It could be.

Q. Particularly given of the fact that you have overreporting at the level of 200,000 voters?

A. It could be.

Q. And you didn't run any type of t-test on those two numbers 72.9, 69.8 to determine whether there's a significant difference between them, did you?

A. That's correct. I did not.

Q. And actually looking at that table we looked at before on page 70 of your report?

A. This is my original report?

Q. Yeah, your January report. Thank you. Table IV.A.2?

A. Yes.

Q. You report a margin of error for some of these numbers --

A. Yes.

Q. -- 4.1 for white non Hispanic turnout and 4.8 for black turnout; right?

A. That's correct.

Q. And what does the margin of error mean in this context?

A. The margin of error means that the percentage points can go up and down over the mean, the percentage which is the type of mean on that. So as I recall, the -- unlike the ACS, I think the CPS does 95 percent confidence intervals, I believe. I could be wrong, but -- so what this is stating, then, is saying that we're 95 percent certain that the true amount is within plus or minus 4.8 percent of 72.9.

Q. So fair to say that, again, just setting aside the overreporting issue for the moment, assuming, you know, the veracity of the responses, the real number for self reported black turnout in Mississippi on the CPS could be as low as 68.1 percent?

A. It could be if you're looking at the -- if you want to look at a 95 percent confidence interval. So if you look at it that way, there's a range of numbers and we say we're 95 percent certain that it -- it's a range estimate rather than a point estimate.

Q. And what the CPS is telling us is that the confidence interval is between 68.1 percent and 77.7?

A. Give or take, yeah, that's what it's telling us. And I believe it is a 95 percent confidence interval.

Q. And then looking at the white turnout number of 69.8 percent, margin of error there is 4.1; meaning that, again, setting aside overreporting, assuming the veracity of the responses, the real white turnout number could be as high as 73.9 percent, and that would be within the confidence interval for the survey?

A. Yes.

Q. So 68.1, the lower bound of the confidence interval for black turnout is lower than 69.8, the mean white turnout number?

A. Yes.

Q. And 73.9, the high bound of that confidence interval for white turnout is higher than 72.9, the mean level of estimation of black turnout?

A. Absolutely.

Q. So these confidence intervals for black turnout and white turnout in the CPS substantially overlap?

A. Yes, they overlap. The upper end of one extends across the mean of the other one and vice versa. In that sense, they overlap.

Q. I mean, they don't overlap by just a little bit, the mean of one is within the confidence interval

of the other?

A. That's what I just said, I thought.

Q. But not just over -- in other words, they don't just -- it's not simply that the upper bound of one and the lower bound of other cross a little bit, the mean are within the confidence interval?

A. That's the important part. It's not the confidence interval themselves that overlap, it's do they cross over the mean of the other independent sample.

Q. And when the confidence intervals of the two means overlap, that can indicate that the difference between the two numbers is not statistically significant?

A. It's indistinguishable, that's correct.

Q. And would you say that these numbers are not statistically --

A. From a statistical standpoint, that's correct.

Q. So -- but your conclusion wasn't that black voters and white voters vote at statistically similar rates based on the CVS?

A. That's correct.

Q. Your conclusion was that blacks vote at higher rates?

A. Yes.

Q. But the CPS only supports the conclusion that blacks and whites vote at statistically similar rates?

A. Yeah. If you take that into account, and in this case I took the point estimates at face value because it's a relatively large sample, even though the confidence intervals, one end overlap the mean. But that's correct, you're absolutely correct.

Q. So let's talk about the CES. You would agree that Dr. Burch in her rebuttal report analyzes turnout using alternate data sources other than CPS, they're not purely survey based?

A. Yes.

Q. And one of those is the CES, the Cooperative Election Survey?

A. Correct.

Q. Actually, it's -- excuse me. It's Cooperative Election Study?

A. Study, I think that's correct.

Q. As you say in paragraph 11 of your surrebuttal report which has been marked as Exhibit 20, you agree the CES "has been available and has been used by experts in the field for many years."

A. That's paragraph 11?

Q. Correct.

A. Yeah, I'm pretty sure I said that in paragraph

11. Yes, I did.

Q. And you agree with that still?

A. Yes.

Q. And you would agree that one aspect of the CES is that political participation by voters who respond to the CES is independently validated?

A. Yes.

Q. So I want to discuss how the CES works to make sure we're on the same page. And let's mark at this point the technical documentation that you refer to in your surrebuttal report, and we'll need one more sticky, if you don't mind. Are we at 23?

MS. JONES: Yes.

MR. SAVITZKY: I'm marking as Exhibit 23 Guide to the 2020 Cooperative Election Study. And this is the guide that you were looking at and referencing in your surrebuttal report?

A. It is.

Q. Now you agree that with the CES, the first step is that there's a preelection survey of adults that includes demographic questions; right?

A. Yes.

Q. And in Mississippi, 462 adults responded to that survey?

A. Yes.

Q. And in a 95 percent confidence level with a 5 percent margin of error, a sample size of 384 is going to be representative of population of -- the population of Mississippi?

A. In general I would say that, but you've got another -- it's another set of qualifications that goes with it just like they would go with the CPS and particularly the CES. And that's involves the weighting.

Q. So setting aside weighting and talking only about whether or not the sample size is sufficient to be representative, a sample size of over 384 will be sufficiently large to be representative?

A. It depends on the purpose when you say that. So I'll go slightly into lecture mode here, if that's okay. So it depends on what's going to be important in terms of confidence intervals and how willing you are to live with error. So a sample size of 25, because it's under what's called large sample theory might be sufficient to answer questions for something and, you know, they can deal with the confidence interval as they come. When you generally get up to a sample size of around 400, the rule of thumb is that with that, you can say you're 95 percent certain you're within plus or minus 5 percentage points of what the true number is

excluding all sources of other issues. But in general, that's the case.

So when you say it's representative, a sample, any sample, as long as it's taken scientifically is designed to be representative of the population it's taken from. That, I think, you clearly understand. So the sample size simply makes your ability to refine where the point estimates are and in general as long as there's no change in variation, standard deviations, you can then start to reduce the confidence intervals so you're more certain where the actual true number lies in the population when you're trying to infer to it.

So in that sense, every scientific sample should be representative, I mean, that's the whole goal. And what in particularly is important when it's representative is the variation. What you want is not so much the mean in the sample to be the same as the population mean, what you want out of the sample ideally is that the variation of the sample if not exactly the same, is very similar to what you get in the variation of the population.

Q. And that's why you use weighting; once you have a sufficient sample size, you also need to do weighting to make sure that the sample accurately reflects all the different attributes of the population?

A. Yeah, I would not probably not describe it as exactly that, but what you're trying to do is say, look, we know we don't have enough people in this particular category, you know, race, socioeconomic, age, whatever it might be category, and so we know -- and they may be differentially representative in the sample, so we're going to say here's something that we think is a population that would fit to it. So it's post ratification that's -- again, I'll go into slight lecturing mode.

So you may have a sample survey and 60 percent of -- in a telephone survey, 60 percent of the respondents say yes to a question. It turns out that 60 percent of the population's female, 40 percent is male, and all 60 percent of the -- 60 of the females would say yes and all males would say no. So you've got to readjust it -- do you follow me -- so that you've got the right estimate of what you think the population estimates are, because when you do that, then it looks like it's going to be 50:50. And that's what weighting attempts to do.

Q. And we'll talk a little bit more about weighting, but I want to -- in terms of sample size -- and I believe it's the Krejcie and Morgan, you know, formula originally, but we agree that once you get up

above 400, you should have a sufficient number of respondents?

A. But again, what I stress in that regard is that what you're doing is, you're -- you can make a statement such as I'm 95 percent certain that I'm within plus or minus 5 percentage points of what might be the case. If you get up to 800, you can say I'm 99 percent certain. So what it does is, it reduces the uncertainty around the point estimate that you've gotten and the range estimate.

Q. And I think we're totally on the same page, let me restate the question just for clarity.

For purposes of being able to speak to something with 95 percent confidence and with a 5 percent margin of error, once you get to 400 or more respondents on a survey, you will have a sufficient number of respondents to speak to the question at that level of confidence?

A. Given that the survey was done on a scientific, you know, random selection basis, given that you don't have a whole lot of bias in the survey, given that people -- there's not a lot of differential nonreporting at the personal level, etcetera, etcetera, etcetera, all else being equal, yes.

Q. Okay. And just looking briefly at Dr. Burch's

surrebuttal report which I think is -- oh, her rebuttal report, excuse me, which is Exhibit 18, and looking at page 4, Footnote 12 --

MR. WALLACE: Page 4, Footnote 12.

MR. SAVITZKY: Yep.

BY MR. SAVITZKY:

Q. Let me know when your there.

A. I'm there.

Q. You would agree that 462 respondents sample for Mississippi is above the minimum sample size to detect small effects, co D equals .2 with a standard level of statistical power pointing -- in a significance level of .05?

A. I agree, as I just said, when it's above that number, then you've got a 95 percent chance of your confidence -- your confidence intervals as stated, I'm 95 percent certain that the estimate that we're getting is plus or minus 5 percent of what the true number of the population is.

Q. And you wouldn't dispute Dr. Burch's characterization that this number, that 462 is above the minimum sample size to attack small effect at that level of statistical power and significance?

A. Yeah, I would dispute that because there may be small effects that that sample is not going to pick up

that large. Do you follow me? There could be really minimal differences that are important in a certain situation where a sample size of 400 is not large enough to detect that it's a statistically significant difference. So in that sense, it depends on the context. And if you're asking about the context in which we're talking about voting survey, then it probably is adequate. I think that's a question you wanted to ask me.

Q. Yes. And specifically in the context of analyzing voting by race in Mississippi?

A. Yes. And I would qualify my answer again, everything else being equal, it should be.

Q. So getting back to how the CES is done, we talked about the first round of questions. Then there's a second postelection wave of questions that are asked of the same respondents in a postelection second set of questions; right?

A. Yes.

Q. And the postelection wave, post wave of questions includes questions about whether or not the person voted?

A. Yes.

Q. Not every voter responds to the second wave?

A. That's correct.

Q. Most of them do.

A. (Nods head.)

Q. And then in addition to the data from these two waves of survey questions, there's also vote validation information that is added to the dataset --

A. Correct.

Q. -- for all the respondents; right?

A. I believe that's correct, for all the respondents.

Q. And the validation is done using state voter history databases to check whether voters are registered and whether according to their vote history they actually voted?

A. Yes.

Q. And we can look at the CES documentation which was marked as Exhibit 23?

A. Yes, it's over here. I've got it.

Q. Looking at page 19 at the vote validation variables, we can see -- so one of the variables is CL voter status which reflects whether the voter is registered; and if that's missing, then there was no match on their registration record. Does that sound right?

A. I think so.

Q. And then if you have CL 2020 GVM which is

whether the respondent voted in the 2020 general election; right?

A. And how they voted.

Q. And their method of voting?

A. Yes.

Q. And if there's no data for that variable, then they were not validated as having voted?

A. It's unknown, I believe, is what they put in there.

Q. They say: "If missing, respondent did not have a report of voting."

A. Yes.

Q. Okay. And you would agree with the statement on page -- the next page, page 20 of the documentation, if a person has any nonmissing value for CL 2020 and GVM, they have a validated vote record for that election?

A. Correct.

Q. And you would agree that this validation procedure was performed for every survey respondent whether or not they responded to the second wave questions?

A. That's what the study states.

Q. You would agree that the validation was performed whether or not they say they voted?

A. That's what they state, so I have no reason to disagree with what they state they did.

Q. And so you'd expect in the data, there are some respondents who did not answer the second wave of the survey but can be and were validated as being registered and having voted in the 2020 election?

A. Yes, that could happen.

MR. SAVITZKY: And just for completeness, why don't we now mark two more exhibits. I didn't end up marking Krejcie and Morgan, but I could. So what I'm going to mark here, first with Exhibit 24, I'm going to mark -- so I'm going to mark Exhibit 24, and you can just look at that. That is the raw data, not every variable, the selection variables, otherwise, the raw data for the Mississippi CES.

BY MR. SAVITZKY:

Q. Can you just check that, see if you have any reason to dispute that, and you can also confirm that it has 462 rows.

A. I confirm that.

Q. Okay. And I'm also marking as Exhibit 25 same exact data but this one just for ease of use, we have re-coded the raw data with the equivalent textual information so it's legible to work with.

A. Okay.

Q. Okay. And we can see in these columns there's a variable that says: "Took post," do you see that?

A. Yes.

Q. Which means that they took the post wave survey?

A. Yes.

Q. And then for those who didn't -- who have a no for took post, they also have an N/A for their weight in the common post weight weighting; right?

A. I see that.

Q. And we can see the CL voter status and CL 2020 GVM information is there as well?

A. I do.

Q. Okay. And take my copy out too.

And just to confirm what we were talking about earlier, looking at row 60, which is on the second page --

A. Of Exhibit 25, right.

Q. -- of Exhibit 25, we can see this row 60 is a respondent who did not take the postelection survey; right?

A. Yes.

Q. And they're not weighted in the post weight weighting metrics; right?

A. That's correct.

Q. But if we look at whether they're registered and whether they voted, they're active and they had a validated vote; right?

A. Yes.

Q. And if we look at row 108 on the next page, another example, took post N/A, not weighted, if we look at common post weight and VV weight?

MR. WALLACE: What number are we on now?

THE WITNESS: 108.

MR. WALLACE: 108. Okay.

Q. Right, took post N/A, no weighting in common post weight and VV weight; right?

A. Correct.

Q. But active with a registration record, and their vote was validated?

A. Correct.

Q. I could actually go through a bunch of these, but if I represented to you there are 29 such records overall of voters who didn't take the post wave survey but whose votes were validated, would you dispute that?

A. I believe you.

Q. All right. So we may -- we my use these again, we'll just set them aside for now.

So the last part of the CES I want to make sure we're square on is the weighting system, and we

started talking about this a little already. Generally speaking, you would agree that weighting is used to make statistics computed from the data more representative of the population.

A. That's the idea, yes.

Q. And you would agree that using weights is more or less ubiquitous in survey-based research?

A. It is.

Q. ACS is weighted? CPS is weighted.

A. (Nods head.)

Q. You would agree that if the sample is not self weighted, it's a good idea to use weights as often as possible?

A. I don't know if I can say that about any case, but if you want to -- if you know the -- or have reason to believe the sample is not representative of the population in the sense you're talking about and that it is a scientifically drawn random, even if it's a complex random sample, then in general the idea would be you'd want to use weights but you want to make sure the weights represented the population in question too.

Q. And as you explain in your report: "The basic idea of weighting in a survey is, you're assigning weights to each of the responses in order to have the attributes of the sample population more actively mirror

the attributes of the overall population."

A. Correct.

Q. And for the CES -- and we can look at page 16 of that technical documentation that I believe was marked as Exhibit 23 -- you would agree the CES samples were weighted to match the distributions of the 2019 ACS on gender, age, race, Hispanic origin, and education level?

A. And where's this?

Q. This is on page 16.

A. Thank you.

MR. WALLACE: 16? Okay. I thought you said 19.

MR. SAVITZKY: 16.

BY MR. SAVITZKY:

Q. Last sentence of the first paragraph: "The CES sample was weighted to match the distributions in the 2019 ACS on gender, age, race, Hispanic origin, and education level."

A. Yes.

Q. All right. And that is the set of weights that are used for the common weight and common post weight --

A. Yes.

Q. -- systems. And then there's another set of weights that was created, the VV weight and VV weight

post that's only for respondents for whom there was a validated voter registration number; right?

A. Yes.

Q. And those were matched to the demographic attributes of registered voters according to the 2020 CPS?

A. Yes.

Q. Now staying on page 16 of this technical documentation that we're looking at and looking down the page, we can see the four weighting variables that we talked about earlier; right?

A. We can.

Q. Common weight, common post weight, VV weight, VV weight post?

A. Yes.

Q. And the idea is that because we have common and VV weights that represent the whole population of adults versus with the VV weights, only those with a validated registration record, and then we have post versions that should be used when talking about the second wave questions?

A. Correct.

Q. Because the population that answer the second wave is slightly different, so you need to use different weights to true them up to either the ACS in the face of

common most weight or the CPS in the case of VV wave post?

A. Correct.

Q. And just continuing to refer to this discussion of weighting in the technical documentation, you would agree that the common weights are meant to ensure that the sample is representative of all adults in Mississippi in this case?

A. Yes.

Q. And the VV weights are meant to ensure the samples are representative of all adult registered voters?

A. Yes.

Q. And you would agree, as I think they say in the technical documentation, common weight should be used when you're characterizing the behavior of all adults?

A. Yes.

Q. And you would agree that common post weight should be used when characterizing the behavior of all adults but referring to variables from the second postelection wave of questions?

A. That would be the ones who actually voted or -- right? They responded to the second wave, that's a better way to say it, and reported whether they voted or not.

Q. So you should use common post weight when referring to all adults but looking at responses to the second wave questions?

A. Yes.

Q. And you would agree that VV weight should be used when characterizing the behavior only of registered voters in Mississippi?

A. Yes.

Q. And you'd agree that VV weight post should be used for characterizing the behavior of only registered adults and also looking through results of those second wave, post wave questions?

A. Yes.

Q. And just sticking with the VV weights for a moment, you would agree that by definition, the VV weights exclude people who were not independently validated as being registered to vote?

A. I believe that's the case, yes.

Q. Meaning that those responses were given a weight of zero, so when you apply the VV weight variable, they're not counted?

A. I believe that's correct.

Q. So if someone reported on the second wave of questions that they had voted but in fact they weren't even registered, that would be an instance of

overreporting; right?

A. Yes.

Q. But that instance of overreporting wouldn't show up if you used a VV post, it would be excluded from the sample?

A. It could be, yes.

Q. Well --

A. Yes. Well, if that's the weight you're using, giving the weight of zero, that's what you're saying.

Q. Yes.

A. Yes.

Q. So if you applied VV weight post, you would exclude that instance of overreporting?

A. Yes.

Q. And that's because VV weight post only includes people who were independently validated as registered?

A. Yes.

Q. And so if there are racial disparities in who was validated is registered in the first instance, those would all be masked when you use VV weight as well?

A. They could well be masked, yes, depending on how many people were not carried forward into survey, but they could be, yes.

Q. Well when you use VV weight or VV wait post, you're only looking at voters who have a validated

registration?

A. I understand that. But the issue is how many of the initial sample were not followed up in that part of the survey. Do you follow me? So if it's a pretty high number, then you would be having some problems; if it's not so high a number, you may not be.

Q. I guess my question is: If there are racial disparities in who is registered to vote and you use VV weight such that people who aren't registered to vote with a validated registration are taken out, you're not going to pick up those disparities?

A. Right. On a visual basis, yes.

Q. And another item on the CES generally, in looking at page 17 of this technical documentation, there's a sort of discussion under the heading Accuracy of the CES Sample with some discussion about validating the sampling done in the CES by comparing survey results to actual election results. Do you see that?

A. I do.

Q. And the authors say: "In the large sample, the CES allows us to validate sampling by comparing the state level samples within the survey with the actual election results."

A. I do.

Q. You dispute that?

A. No.

Q. And the authors conclude that: "Overall the results from these analyses demonstrate the CES is a reliable source of data on voting at both the national and state level." Do you dispute that?

A. That's their conclusion. I don't dispute it.

Q. So let's look at your surrebuttal report, which we marked as Exhibit 20? Is that right?

MS. JONES: Yes.

Q. And looking at paragraph 11 of your report, you say: "Generally speaking, when a survey sample is being used to analyze extremely small populations, the largest sample possible is most beneficial." Right?

A. Correct.

Q. Do you contend that Dr. Burch analyzed an extremely small population in looking at black voter turnout and white voter turnout in Mississippi?

A. When you look at the black voters, they're in the 462 sample set, it starts to look small, yes.

Q. Do you know how many black respondents there are of that 462?

A. I'd have to go back and look.

Q. If I represented to you that it's 160 respondents who were black?

A. That's sounds correct, yeah.

Q. And is that an extremely small sample size?

A. Well it depends again on the context of what you're trying to do and what you need for confidence intervals and margins of error and all that. So it's hard, again, in general to say this is an extremely small sample size or not. So in the context of this, it may be the fact, and as I looked at it, that it could be that it's a small sample.

Q. Well just to be clear, you don't see it's a small sample, you say: "When a survey sample is being used to analyze extremely small populations." Do you contend that black voters in Mississippi are an extremely small population?

A. No. The statement there is general. But what goes on with the -- when you're using this, if you start to get -- for example, if you're looking at Dr. Burch's analysis, so let's look at somebody who might be, let's say, black of a certain age, they're eligible to vote, what their educational attainment is, you're starting to drop the sample size down. So from the 462, you're starting to go get down to small numbers.

Q. And did Dr. Burch analyze behavior by black voters in a particular subregion with particular educational and socioeconomic characteristics?

A. Well for the sake of Mississippi, she did.

Q. She looked at black voters in Mississippi?

A. Yes. And that was the point I'm just making. Given the state as a whole, you can get down to small sample sizes.

Q. And I just want to be clear. You're not saying that black voters in Mississippi are an extremely small population?

A. No, I'm not.

Q. And you say -- and maybe this is getting to what you were saying before -- "Rare populations that have unique combinations and characteristics tend to have high weights that carry the risk of significant and may disproportionally impact any statistic using those respondents."

A. That's correct. And I'll give you an example of it right here in the exhibit you gave me labeled No. 25. Are you ready?

Q. Sure.

A. So let's look at the weights, and let's take Case No. 320. I need a ruler to make sure I'm staying on the same line here.

MR. WALLACE: Maybe this'll get you.

THE WITNESS: Thank you.

A. Let me know when you're ready.

Q. I'm ready.

A. So Case 320. The common weight is 7.2, the common post weight is 14.298, the VV weight is 7.8, and the VV weight post is 6.6. Those are really high weights, and they're indications to me of exactly what I was saying about if you've got weights that high, you get down to subcategories of people that are so small, you're weighting them up really highly. And that's what's going on here.

Q. And I guess my question is: What are the subcategories that you contend that Dr. Burch analyzed?

A. Well if she analyzed anything with these people in it, then they have these weights on it. If she analyzed Case No. 320, and I didn't see anything that said she excluded it, that has a weight of 7.2.

Q. But you agreed previously that we use weights in order to make the surveys more accurate and to true it up to the characteristics of the population?

A. I understand that. But the -- as we said earlier too, there's a lot of tradeoffs in this. And so what you get is, if you've only got one person that fits in certain categories and you have to weight that person by a factor of 7 just on the common weight, it means you're putting a lot of burden on that person. What you've got is an inverted pyramid. So you've got one person representing a whole set of people. And that's

what I mean. Whatever the categories were that they took in detail that they decided they only needed to -- that they need to put a weight that big on the common weight is really representative of the fact that there's a lot of -- and this goes on and on throughout this entire survey. You can see it. I mean, carry this one over, you get into the common post weights for this person, it's 14. This person's representing 14 people. And when you look at the diagnostics on Dr. Burch's logistic regressions, you can start to see that the diagnostics and the differences in the DF betas, they're all indicating that you've got outliers scattered throughout this dataset that if you took one of them out, your results change. And that's what that says, and that's what the meaning of my statement is.

Q. And we'll just get into this, but just to be clear, when you talk about the diagnostics, those are diagnostics that you ran using the VV weight?

A. Or any other weights. But you can see them on here, I just ran the VV weights. But using any other weights, it's going to be very similar. I can tell from experience and looking at weights and running regression, all those diagnostic things are not exclusively logistic regression, they're used throughout all kinds of regression analyses, and I've used them.

You start seeing the matrix Ds, the Cook distances, the DFFITS, the DFBETAs -- I'm sorry for all the acronyms -- you start looking at those things, and you start to see how many of them are fairly large and you go, my goodness, you take -- so here's the simple example. Picture a diagonal -- you know, a 45-degree angle line like this, all right? So you have a regression line, all the data points on it, the R-squared on that's going to be 1, you know, the X variable perfectly predicts the Y variable. You could have an outlier up here in one, okay. And so the regression line, the R-squared is not going to be 1, it's going to be something else. You took that one point out of there, and all of a sudden it's 1. That's what these are indicating to you.

So there's a lot of -- because the case sizes and whatever the categories are that the CES uses are so small, however they did it, age, education, whatever they all are that they weighted up to, whether it's ACS or the CPS, you're looking at these weights like this, my goodness, this -- you're putting a lot of burden -- as I said, it's like an inverse triangle on different people, such that if you took a few of these cases out, you might get a totally different answer. That is major problem I see with using the CES. Whether it's exclusively to Mississippi, I don't know. So all

the arguments about the sample size being sufficient, 462, yes, in general you get what I said, 95 percent confidence plus or minus 5 percent. But you start getting down to these weights -- and it crosses them. Doesn't matter if you use common weights, common post weights, the VV weight, the VV weight post, you're starting to look at things and go, my goodness, what this starts to indicate to me, not only do you get differences in how the FITS are, but how the parameters are. The models can change dramatically, dramatically. Sorry for the lecture mode. That's one of the big issues I see with it.

Q. So -- and by the way, you referenced the CPS and ACS. Those are also weighted?

A. Yeah, they're weighted themselves.

Q. And --

A. And then you're weighting to, you know -- so it's becomes complex. And however all the process was done to get to the point -- and I think the people who put this study together did the best job they could and I don't have any reason -- they weren't trying to bias anything, they're trying to make a good survey that people can use. But the point is, you get to things -- if all the weights were something like .094 and 2 and 1, things like that across the board on all these, that

might be something different.

But my goodness, when you start to see weights like I just noted 7, there's another one. So No. -- I think it's No. 35, 7.39 common weight, 10 on the common post weight, then it's 8 on the VV weight, and it drops way down to 1 on this. I mean, you get all kind of variations in this. And that really affects the models and what you can do with it.

Q. So I understand your opinion that the weights are high.

A. Well, it's not -- the weights are high. It's not my opinion. When you run the diagnostics on the logistic regression analysis, you can see it in the diagnostic information. As I said, what are called the DFBETAs, the differential change in the coefficients in the model, the DFFITS, DFFITS is what it's called, the differential changes in the FITS. In the Cook's distance, how far are you moving away from something. And they all apply, which indicates you've got a lot of instability in the model.

Q. So this is -- you're anticipating my next question. I had one other to ask, I'll go back and ask you, but you run a Cook's distance test?

A. They're all -- all that stuff is in the output that I put on the appendix in my report. It's all

there. I put up -- Dr. Burch did not put any of those diagnostics in her report. All those diagnostics are in my report.

Q. And you ran tests to measure the influence of particular respondents on the survey?

A. They show it. That's what these lines are back here.

MR. WALLACE: What page you're looking?

A. Well, pick one. Pick page 85. You know, I -- let me pick something that's -- let's go to page 77. Are you ready?

Q. Uh-huh.

A. Page 77, top part, look at Case No. 460. So remember, Burch dropped 2 out of her test, right, so she ended up with 460.

Q. Correct. Because those are non citizens.

A. Right. So look across here, it says Cook's distance C and Cook's distance C bar --

Q. Uh-huh.

A. -- do you see those? Look at the numbers on these. And these are not the only ones. These start to indicate to me that with these kinds of distances -- and C means it's specific to. If you take this out, what kind of change do you get -- and the Cook's distance, C bar is an aggregate of it, you're going to start

getting big changes in what the parameters are. And the parameters would be -- let me go to the front where you actually get logistic regression models. Bear with me while I go through page changes here. So where it says here regression coefficients --

MR. WALLACE: Which page?

A. Okay. I'm sorry, page 21.

MR. WALLACE: OKAY.

A. So when you start -- these are the -- basically, this is her model that I replicated. You know, I'd have to look at this in detail. But what I'm talking about is in general, those numbers. And that's what generates the estimates. Is this going to be in category 1, the validated voter or not a validated voter? Those numbers can change dramatically.

And so I -- she didn't provide any of this kind of residual analysis in her report -- let me finish -- and when I ran them, it looked to me like there's a lot of instability in the dataset itself and it probably has to do a lot with the weights. You know, that's just my hypothesis at this point. Such that if you pull certain people out or if something changed smally (sic), you can get a big change on what the model looks like including the parameters, whether or not it's statistically significant, all sorts of issues like

that.

And I didn't see anything in the literature about any of these issues. So when I looked at it myself having had the experience with exactly doing this with every form of regression analysis I run, you start going, my goodness, this -- there's a lot of instability in the dataset itself.

Q. And just looking at page 21 here, what is it here that you were relying on for the statement that if you changed a few of the respondents, you'd get a different result?

A. What I'm saying is, see -- page 21, see where it says odds ratios? Where it says, independent variables, see where it says intercept, black and other race? Those are the variables she used in her model. Then move over, see where the column that says had reduction coefficient, see where it says B and then in parenthesis i, B1, B2, B3. The intercept value is .25, the black coefficient is minus 0.354, the other rates is minus 1.24. These are the ones that generate whether -- this is what generates are you going to be placed in the category of the validated voter or a nonvalidated voter; right? But if you start getting the .25 because you pull out of the real influential places on there, that could change -- I'm just hypothetically making this up

to show you -- that could change to .3 from .25, could change to .4. The minus 5.4 could change -- the point I'm trying to make is, you could get number changes from this that then put something in a different category.

That's what I mean by the dataset looks to me with those kinds of weights -- and when I looked at the residual analysis, that is diagnostics from all the standpoints I know how to look at it from given that you had a multidimensional problem, you've got an issue. Here's another issue. This is called a ROC curve --

MR. WALLACE: Which page?

A. I'm sorry. Page 37. Receiver operating characteristics. Do you follow me where it says rock curves, combined and separate. That diagonal line is if there's no explanation in something as you're going on. What the ROC curve shows you is as you start to get up to certain probabilities of predicting correctly not having a -- what's the term they use, a type 2 error, there's another term they use in the medical profession, but it's a probability -- it's mislabeled. So you're correctly predicting it's going to be head and it turns out to be head. But if you're correctly predicting a head and it turns out to be tails, you've made an error. Do you follow me?

So what you ideally want to see in a ROC

curve relative to this diagonal line is a line that's almost vertical going up from zero here as high as it goes and then goes across like this. What that means is, hey, I can get up to a real high probability of being correct with still maintaining a low probability of it going into the wrong category. And what these ROC curves show to me is that her model is not much different than the diagonal, it's not doing that. At every level, she's getting probability of predicting incorrectly, and she has probabilities of correctly predicting. That to me is not --

Q. Well it's not equal, it's the same. I think in your report you say --

A. If it would be equal, the same, but it is almost the same. You go back to the one point in my report where I said her classification system only gets something like 54, 50 percent.

Q. You said 57 percent.

A. Yeah. That's not very good.

Q. With one variable getting a --

A. Well, her model --

Q. -- heads or tails?

A. -- right -- right there, just her model in general, 57 percent. I could flip a coin and say every time I'm going to flip it, I'm going to get heads. I'm

right 50 percent of the time. And if you look at people who recommend using logistic regression, if you're down to 50.57 your model does correctly, you look at the ROC curves and everything else, it's suggests to me that the model is not very good. And I think it's not that she's necessarily flawed on trying to run logistic regression -- I don't know the answer to that -- but I think it reflects a lot of problems in the stability of the dataset. Does that help?

Q. You don't think that there's any reason why the weighting that was applied by the CES is not accurate in terms of trueing up this sample to the ACS or CPS?

A. Again, I stress the fact when you get down to categories of people. What's their age? What's their race? What's their educational attained? Whatever else they've collected in that survey, that's what they're trying to match back to, all those characteristics in either the CPS or the ACS. And you start getting to also, okay. You have 462 people. How many are black? 167. How many have an educational attainment of -- okay, now you're down to 90. How many have this, you're down to 80. How many have that, you're down to 50, you're down the 40, you're down to 30. You're down to small numbers. And you go, okay, to get it up correctly so we have the right distribution of people relative to

what we see in the ACS or the CPS, we've got to assign a weight. In some cases, they're pretty low, they're not much; but in some cases, in quite a few of them, you've got some tremendous weights when you start looking at them. One person's representing 7 people? And I think one of them that I found when I looked through this earlier had a weight of 14.

Q. But again -- I just want to be clear on this -- you're not saying that weighting is inaccurate in terms of doing what it is supposed to do and conforming the characteristics of the sample to the characteristics of the general --

A. I'm not saying that. The tradeoff in doing that is, you get an unstable model when you're -- because of those weights that -- and I think -- I can't attest to exactly that's the whole problem with it, but when I looked at the diagnostics that I ran and saw what I saw, I'm telling you there's a problem with the model. And my guess is, it reflects the facts that you've got what I would call influential outliers. And those influential outliers are the people with really large weights.

Q. Well, I mean you say that there are indictions of instability in the model, but you also agreed that the CES, I believe we said, is a reliable source of data

on voting at both the national and state level?

A. Did -- when they designed the CES, did they design it necessarily to run with logistic regression? No. What they designed those samples for is, they want to be representative of the population. Researchers are out looking for datasets to use. So when they go out looking for datasets to use, they may not be expressly designed for the datasets we're using. Can I finish? You look like you're yawning because I'm lecturing, or else --

Q. No, no, no.

A. I couldn't tell.

Q. I was opening my mouth. Go ahead.

A. Thank you. So the datasets initially are not designed for that, they're designed to say it's descriptive, here's what we think is going in on the United States or this state or some place at this point in time. The researchers have got to pull those datasets out to use them. And so again, I go back to the point you've got tradeoffs. Yes, we made it so it represents a population and if you look at it just as it is, we think it did a pretty good job. We can say we're 95 percent certain within plus or minus 5 percentage points. Then you go and start to do for a research question or a model building session, and all of a

sudden you realize, I've got weights in here that are 1 person's equal to 14 or 7. Well, that may or may not be a problem until I run something I'm trying to do, and then I'm looking at the diagnostics, as I've shown the examples of, and the diagnostics I ran indicate to me they're -- you've got a lot of instability, and I think it comes -- stems from the weights that are on these relative to the sample size. And it's because you're not using a sample that was designed to be -- all the samples are designed to be somewhat representative of the populations, but they're not necessarily designed for people to run models on.

Q. You talk about running models. You would agree that Dr. Burch did not only conduct a logistic regression analysis but also arithmetically reported the percentage of validated voters based on race in Mississippi?

A. I agree.

Q. And her numbers reporting those arithmetically are the same as the numbers that she obtained through the regression analysis?

A. They -- when you look at the -- when you look at, like, the percent voters on the same, look at it that way, how I would characterize that is, you didn't have to go through the regression analysis to aggregate

back up. She had the data to start with in the beginning. She had it. Just run a simple t-test on it. Do you follow me? You have the ability -- it'd be like saying, okay, I've got household level data, income level, all right, and I also have the income levels of everybody in the household, six people. I'm going to build a model now that accurately estimates what their incomes are, and I'm going to add that up to get the household level data. Why would you go through the individual people if you already got the top. And she could have just done a t-test at the beginning, and I believe had she done so, the results would have said, yes, it looks like there's a higher percentage of white voters than there are black voters that actually went out to vote and all that. But the results are statistically not significant. You can't tell the difference on them because the margins of errors or so wide.

Q. And you didn't run that t-test?

A. I did.

Q. You didn't run t-test on top line numbers --

A. Yes, I did.

Q. -- that she obtained.

A. I didn't put it in my report. If you're asking me if I ran one, I ran one at one point in time and said

to myself why did she run a regression analysis to get back up to this point? Why didn't she just do a t-test?

Q. And you did run a t-est.

A. Yes.

Q. You didn't include it in your?

A. I didn't.

Q. Why not?

A. I just didn't think about it at the time, that it was important.

Q. Can you provide it?

A. I can, yeah.

Q. Okay. And just while we're on the subject, you talk about those four respondents that you identified with those high weights?

A. Well and there's more, I just picked them out just glancing through the set.

Q. And you say they form a potentially influential set of cases in this small sub sample Dr. Burch's used in her analysis?

A. In the entire sample for State of Mississippi, somebody with a weight of 14 or 7, the residual analysis, that is, how good is the model analysis I performed on her logistics model and looking at the logistics model I ran indicate to me that in however you want to look at it, this dataset is such that with those

high weights, you can really create some instability. It's instable, the models you're getting.

Q. And when you say "unstable" or "instability," what do you mean?

A. I mean by this. Again, I'll -- I have to visualize this. So you've got an X by Y grid. So the X values are down here in this dimension that you're using to predict something. This is standard just two variable regression analysis. If you've got a diagonal line this like and all the dots on your observations fit it, you've perfectly predicted Y from X. If one of those dots, though, is non on line, it's up here, it's going to pull the regression line up. It's influential. Everything is along this line and that's way up here, that's an influential observation such that it may say, okay, now you're R-squared, your coefficient of determination is, say, .87 let's say .85, whatever it might -- you pull that observation out, and it's a 1. And the coefficients will change dramatically. I can't visualize that because when you use two variables or three, all of a sudden you're, you know, three space -- two space or three spaces or four space, so you can't see it.

But what I'm saying is, all these diagnostics in there, Cook's distance, DFBETAs,

DIFFITTs, different FITTs, there's saying there's a lot of observations in here that if you take them out, all of a sudden you're going to get some big changes in both the model parameters and how well the data fit according to the model which indicates to me there's a lot of stability in the models. If she decided or someone else decided the people that were pulled out that were not citizens, if for some reason one other thing -- one other person was pulled out that had a high weight, the model would look completely different.

So that's what I mean about I think the dataset itself for Mississippi looks to me that it's not really the best dataset to use to try and develop models.

Q. And understanding -- well, strike that.

Did you take out these four voters you identified or some other respondents and sort --

A. No. Once --

Q. -- of see what the effect would be?

A. No. Once -- well, I can see the effect, see it already in here. It's telling you what the effects are. In general, it's the summary of what you're going to see. You're going to get dramatic changes in them. And I didn't pull them out and do that. Once I looked at the diagnostics, I could see, yes, this is -- these are

not good signs for building a model.

Q. But you're not able to say what the precise effect would be or if you used different weighting, whether you --

A. Well, you could say what the effects are going to be in terms of the diagnostic measures, they're telling you. That's what they indicate. But if I pull them out, then that would be the next step. So I can go ahead and pull them out, but --

Q. You didn't do that?

A. No, I didn't do that. There's a lot of them that would end up pulling out because of the weights in them to start looking at them. And I could use this as a guide to see which ones and see how much they change, but I didn't do that. But the indications are, I'll stress, that you've -- and people read -- talk to somebody else who knows something about regression analysis, if you look at it, they're going to yes, the potential is there that this model could really change in parameters and/or the FITTS, the model estimates of the data or both. And that's not a good sign for a model.

Q. And again, you're referencing model. When you say "model," what you're talking about is using this data in some type of regression?

A. Like the two logistic regression analyses.

Q. But again, Dr. Burch conducted other analyses that were -- with the CS data that were not --

A. Well, then --

Q. -- logistic regression analysis?

A. -- they -- whether or not that affects it, I don't know enough about King's ecological inference model, if that's what you're going to go to next. But that could be the case too. I just don't know enough about that model to diagnose it.

Q. And I wasn't talking about that all -- we'll get into it --

A. Okay.

Q. -- I again mean just sort of her arithmetically calculating voter turnout by race, using the survey responses in the weighting without --

A. As opposed to what she did in her first report wherein she included the population under 18 in her numbers.

Q. Yeah. I mean --

A. She's not made that kind of mistake here in that regard other than the fact she put one county into district 1 that shouldn't have been there and another one out of it. But yeah, it looks to me like she pulled the dataset correctly. And it's not her fault there, it

looks to me it's just a condition of the dataset.

Q. When you say Dr. Burch concluded ignoring the warning found at the CES study guide. "We advise caution when analyzing very small subsamples as random measurement error may lead to faulty inferences about analyzing very small subpopulations."

A. Yeah. And I may not have expressed that in the best way, but what I'm getting at is the fact that what I just said, there's -- some of these categories of people of white, male, age 18 who has a less than a high school education X, Y, Z, and you have the bond (phonetic) to it, all of a sudden you're not at whatever the white count was of voters, you're down to a really small number. And then they're trying to match that either or both to the American Community Survey or the Current Population Survey, and suddenly you've got a really small number -- a sub sample that gets a tremendous weight.

Q. And so if you were analyzing that very small subpopulation like a white, you know, person of a particular age, education, you know, geographic location, etcetera, that's where that warning that you reference would come in?

A. Yeah. And then what happens is, in general when you're modeling, you have those kinds of conditions

because weights are set on those small categories, the subcategories, and you start seeing, okay, I can see it. Whatever the categories were for that person, the fact that you've got a weight of 14 or 7 or 9, says you're dealing now with really small sub samples that are part of your larger sample, and it's going to affect what you're going to do because they've got these weights on them.

Q. But that isn't what this warning from the study guide is talking about; right? They're talking about when you analyze the very small subpopulation, when you break it out of the survey, not the mere fact that that subpopulation is included among the larger population that you're looking at?

A. Well, you know, it's hard to say. These people run models, don't they, they built the study, you just cited one of them in a study you showed me. They're building models. So maybe they understand those issues and maybe the way they worded it was not so great, and what they're talking about is, you need to be careful because of these issues, and that's their way of saying that. I can't speak to them. You'd have to ask them.

Q. So you don't know whether their meaning was the one that you're interpreting?

A. Right. Or both. You know, the way you're

interpreting or both, yeah, I don't know.

Q. And just looking at the page that you're referencing there when you look at that, this is on page 23 of the study guide.

A. Of their study guide.

Q. Of their study guide --

A. Right.

Q. -- right.

A. Where they say be careful of the subcategories --

Q. Correct.

A. -- that's what I'm referencing.

Q. And they then say: "Follow the link for more information about this issue," and they cite an article. Did you look at that article?

A. Yeah, I can't remember if I did or not, no.

MR. SAVITZKY: Well, let's mark it. Getting down to the end here.

MR. WALLACE: On that subject, we started before 9:00, we took out a little less than an hour for lunch, and about ten minutes for me to check out. So giving you those breaks, I think we're done by 5:00. If you count it differently, let me know.

MR. SAVITZKY: You tell me.

MS. JONES: One hour and 11 minutes. So

almost one hour, ten minutes.

THE WITNESS: That's 5:00.

MS. JONES: And that's a rough.

MR. SAVITZKY: Yeah, so probably closer to 5:20-something but --

MR. WALLACE: No. We started before 9:00, but, you know, if you get there and we've got one question left, that's one thing. If you're starting a new subject, we're going home.

MS. JONES: So we -- can we go off the record to talk about time?

MR. SAVITZKY: Let's go off the record for one second.

(Discussion held off the record.)

MR. SAVITZKY: Back on the record. And I'll mark as Exhibit 26 the article that's linked there in the study guide.

A. Yeah.

Q. And you looked at this article?

A. Let me refresh my memory. I did.

(Witness reviewing exhibit.)

A. And in general, this article, again, goes to, I think, the definition of small sample sizes, subsamples that you were describing. But the fact that these people also built models in the same vein as logistic

models would suggest to me that they might even be saying in there even though it's not stated that precisely that you need to be careful using some of these data because of the weights. I mean, I found it amazing, and I can't say I read every page exactly, but I don't recall seeing a super warning anywhere in this dataset about the fact you may run into high rates, really large weights, and then being careful to use it. Did I miss something?

Q. No. They represented it or they say they trimmed the weights at 7 for the common and 14 for the post, I think?

A. Yeah, that might be it. That's about it. But those are some big weights in a survey, in my opinion, in my experience as with surveys.

Q. But you're not saying that they're inaccurate based on what they're trying to attribute --

A. No.

Q. -- to the population?

A. No, no.

Q. And just looking at the article that we just marked as Exhibit 26, you would agree that what the authors there talking about and what the warning that you reference in your report is talking about is analyzing the behavior of relatively rare individuals in

a population; in other words, if you were looking at black voters of a certain age, etcetera, etcetera, and looking at that and looking at the behavior of that subpopulation, not the mere presence of the subpopulation in the sample?

A. But -- well that gets to my point. If they're warning about looking at people like that that are really a small sample and that's in your dataset and they have a large weight, they could affect what you're doing to build a model. That goes back to the point I'm making. So maybe that's what they meant. They didn't state it precisely, so I can't speak to what they thought they were saying. But after running the analysis and looking at all this, it sure indicates to me that they've got weights in there that are so large and they're so many people with such large weights that you get a lot of instability in the models you're trying to construct from if you're trying to do regression type models.

Q. If you're trying to do regression-type models?

A. Yes.

Q. But if you're not doing the regression-type models, this instability is less of a concern?

A. I don't know. It depends on the context of what you're trying to do with it. It might be a

concern. For example, if you're doing a t-test and if one of the persons was pulled out of the sample, that makes a difference in the test score, it could make a big difference.

Q. Now turning to Dr. Burch analysis of the CES in her rebuttal report which was marked as 18, Exhibit 18, and looking at page 5, she reports the CS team was able to validate that 53 percent of the respondents voted in the 2020 general election.

A. I don't have it in the front of me, but I believe you if that's what she said.

MR. WALLACE: Which page?

MR. SAVITZKY: Page 5, last paragraph.

Q. And you don't dispute that using the common weight weighting, that's accurate?

A. No, I don't.

Q. And you don't dispute that that's fairly close to the 58.7 percent turnout reported by the secretary of state in the official totals?

A. That's correct. I don't dispute that.

Q. And on page 6 of her rebuttal report, Dr. Burch reports that breaking this -- and this is the first sentence on the top of that page: "Breaking the CES data down further by race, 60 percent of white respondents and 46 percent of black respondents voted in

Mississippi in the 2020 election." Again, you don't dispute that using the common weight weighting, that's accurate?

A. That's correct.

Q. And Dr. Burch reports that she conducted a logit regression analysis, she said: "My regression analysis validated turnout by race, and the CES confirms these percentages finding the same large statistically significant gap between black and white Mississippi voters."

A. That's right. Brings into play all the criticism I have of the dataset when using logistic regression.

Q. But you don't dispute that that is the result of the logit regression analysis run on the data?

A. No, I don't despite that.

Q. And you don't dispute that that matches up with what simply arithmetically calculating the validated voting for black and white voters in the --

A. I don't dispute that.

Q. Okay. And looking at paragraph 29 of your surrebuttal report, you say Dr. Burch does not describe the fit of her model to the data and whether or not any of the assumptions underlying logistic regression, it would suggest the regression model was violated?

A. Correct.

Q. And you don't cite any support for the suggestion that a goodness-of-fit test is required for a binary login analysis?

A. Well it's my oversight, but I assume that anybody who runs a model understands that it should have a good fit if you're going to use it. So that was my mistake in not citing a whole bunch of references saying that you should use it, because my understanding with every researcher, the idea is, you have a model and you should report what it looks like. I just thought that would be common knowledge, so my error.

Q. Would you agree that model diagnostics can create as many problems as they solve?

A. Well depends on --

MR. WALLACE: I guess I'll object to the form, but he my answer.

A. I guess it depends on what the problem is. So if you're trying to build a model to argue something and the diagnostics suggest you don't have a good model, that would be a problem, if you follow what I'm saying. And if you're trying to build a model that's exclusively designed to do something and the model says this is not very good at doing that, it's a problem, if it -- if it means that. You look at the diagnostics and it's going

to create other problems, more generally I would see the problem that's being created and it's telling you you should probably not use this model or look for other variables or use some other different approach.

Q. Would you agree that there's no distributional assumption for a binary logistic model?

A. I can't remember what the distributional assumptions are on binary logistics models, if there are ones or not, I just can't recall if it's assuming some sort of distributional function. And there may be different algorithms through different approaches to logistic regression that do assume them and some that don't.

Q. Would you agree --

A. I don't know the answer to that off the top of my head.

Q. Would you agree that in a model where there's no distributional assumption, it would make less sense to use a goodness-of-fit diagnostic?

A. No, I wouldn't agree to that. I mean, any kind of model would -- this is semi lecture mode. So in any model, you've got -- two out -- you're doing one of two things, really. You're trying to predict something or you're trying to have a causal explanation as best you can with the model what the determinants are on

something. And it -- it looks like she's doing both in some of these models. But basically, it's -- the overall focus is on prediction. And if you're going to predict something, that is, you're going to classify people into one group or another group, then you need to be very careful about how well your model fits. It may be less important if you're focus is on you're trying to explain things. It may be that you've got a really low explanatory power in your model but it's sufficient to say I think this variable, whether or not you've completed high school, has a fairly large effect on what your future income's going to be at age 50. That's a different story. But if you're trying to put -- classify and correctly put things, you better have a model that fits well; otherwise, you get things like where it said right in here where I said classification system's only .57, it's not better than just, you know, randomly tossing a coin and saying every time I'm going to say heads and I'm going to be right 50 percent of the time. And that part is definitely in the literature about saying if you are not well over that, you don't have a very good model. And that's consistent with all the diagnostic things I looked at, that the model is not particularly good.

THE REPORTER: I think we lost everybody on

Zoom.

MR. WALLACE: Hold on.

MR. SAVITZKY: Let's go off for a second.

(Discussion held off the record.)

MR. SAVITZKY: Back on the record.

BY MR. SAVITZKY:

Q. And did you run those model diagnostics yourself?

A. Yes.

Q. That's what you were talking about earlier?

A. Yes. The examples I pointed to are all models I ran. I replicated her model first and then said here, if I put these different weights in, here's what you get.

Q. In your surrebuttal report, you say that Dr. Burch's analysis was wrong because she should have used the -- she should not have used the common weight weighting?

A. Yes, that's what I said.

Q. Do you still agree with that?

A. I -- I might revise that. I think it's still better to have used the weights that I ended up using in the suggesting.

Q. And you said in your report -- and again, if you want to revise that and back off that statement, we

don't have to get into it, but --

A. Yeah. And I just said yes, I think she's not as incorrect as I thought she was initially when I read it.

MR. WALLACE: Let's get what paragraph we're talking about so we know what you're revising.

Q. Let's talk about paragraph 37 in your rebuttal report. You say --

A. Yes.

Q. -- "Because Dr. Burch uses the validation variable in her logistic model, she should have used the common post weight weighting because she's reaching across to the postelection wave with a validation of I voted takes place." Right?

A. Correct.

Q. But as we discussed, the validation is done independently of the postelection wave questioning?

A. That's correct.

Q. There are numerous validated voters, as we went through, who did not answer the postelection wave and who are omitted from common post weight; right?

A. Correct.

Q. So Dr. Burch was not reaching across to the postelection wave, she was analyzing a variable validated voting that applies to the entire sample?

A. That's correct.

Q. And because she was looking at the entire set of 462 or 460 minus the non-citizens respondents, common weight which is used for all adults where none of the variables from the postelection wave of questions being studied was the correct weight to use?

A. That is correct.

Q. And that is what I was referring to which should be corrected.

And turning back to Dr. Burch's rebuttal report on page 6, she then discusses another analysis where she looks into overreporting. And we can --

A. That's Exhibit 18 again?

Q. Correct. So Dr. Burch first looks at -- she concludes that 60 percent of white respondents and 46 percent of black respondents voted in the city based on the CES data, and then she also said: "It's worth noting the CES allows us to examine overreporting of voting." Right? So she looks at what is turnout by race, and she also looks at overreporting; right?

A. I believe that's correct. So we're on page 6; right?

Q. Page 6, the paragraph at the bottom under the chart.

A. Yes, yes.

Q. Right? So she's -- having looked at sort of what are the CES numbers show from (inaudible) she then says we can use this data to examine overreporting of voting by black voters and white voters; right?

A. She states that, yes.

Q. And she says the CES -- excuse me. The CES allows us to examine overreporting of voting by comparing self reported voter turnout to validated voter turnout; right?

A. Correct.

Q. Conceptually that makes sense; right?

A. Yes.

Q. So what she's doing, she's looking at respondents who reported voting in the second wave of questions, and she's seeing how many of those folks were actually independently validated as having voted; right?

A. That's, I believe, what she was doing, yes.

Q. And because this time she's looking at a variable from the postelection wave of questions, she uses the common post weight weighting as she notes in Footnote 22; right?

A. Yes.

Q. Okay. And Dr. Burch reports that 74 percent of white Mississippi respondents who said that they voted in the second wave actually did so according to the

independent validation; right?

A. I believe that's correct, yes.

Q. And you don't dispute that?

A. No.

Q. And she says that by contrast, 57 percent of the black Mississippi respondents who said they voted on the second wave were actually validated?

A. That's correct.

Q. You don't dispute her numbers on that?

A. No.

Q. And you replicated them, actually?

A. Yes.

Q. And you agree that using a common post weight weighting, they're accurate?

A. Yes.

Q. Now, at pages 8 and 9 of your report, your surrebuttal report, you say that: "Rather than using common post weight for this analysis comparing reported voting to validated voting, Dr. Burch should have used VV weighted post." Do you also want to revise that assertion?

A. Yeah, I think she still should have used it, but I think you're correct, that's a mistake I made.

MR. WALLACE: It's on page what?

THE WITNESS: 8 and 9.

MR. WALLACE: Of yours.

THE WITNESS: Correct.

BY MR. SAVITZKY:

Q. Right. And we discussed the VV weights only include people who were independently validated as being registered?

A. Correct.

Q. And that would mean excluding people who were reported -- who reported that they voted on the second wave of survey question but, in fact, weren't registered and didn't vote?

A. Correct.

Q. And if you're trying to detect overreporting, you're going to exclude potentially a lot of overreporting that way?

A. Correct.

Q. And by the way, do you know if there were respondents like that in the sample who reported voting but in fact were not registered and were excluded from the --

A. I believe there were. I would have to go back and look, but I believe there were instances like that.

Q. And we actually -- I mean, can look at them.

A. We can.

Q. Just briefly, we can pull back out what's

Exhibit 25. And just starting with row 29. Tell me when you're ready?

A. I'm ready.

Q. And this is a person who on CC2401, the question whether they voted, they said I definitely voted; right?

A. Yes.

Q. Voter status N/A, no validated vote and the VV weight given the zero weight --

A. Yes.

Q. -- and they are excluded?

A. Yes.

Q. 47 is another one on this page, right, I definitely voted.

A. Yes.

Q. No validated vote, no registration, no weight in the VV weights?

A. That's correct.

Q. And we could go through those. Would you dispute it if I told you there are 45 respondents in the Mississippi sample who said that they voted but whose registration was not independently validated?

A. No, I believe you. I believe that that --

MR. WALLACE: Registration or voting was not validated?

MR. SAVITZKY: Well, neither.

A. Neither, yeah.

Q. You wouldn't dispute that it's 45?

A. No.

Q. And there were 15 instances that you found of overreporting by respondents whose registration was validated?

A. I believe that's correct.

Q. And you discuss in your report how with only I think it was six white voters who over -- registered who overreport and only 9 black voters who overreported, that's a example of the small samples?

A. Exactly.

Q. But in fact, the total numbers of respondents who overreported is not 15, it's 60?

A. But even when you have the denominators in there, I think I -- didn't I perform a t-test there?

Q. Well, you performed a t-test on looking at that six versus 9.

A. Right. But there's not -- there's a denominator in there, that that's the key point. That's the 6 versus 9, so the sample is still small, and it's indistinguishable. It's not just the fact that it's 6 to 9 -- what's the paragraph number? And I can be more accurate on that.

Q. I believe it's paragraph 25.

A. Yes. So the test is not 6 versus 9, it's 6 out of 140 and 9 over 61. That's the test. That's what gives you the percent, that's the mean. And that -- when you ran that test with those numbers, 6 over 140 and 9 over 67 and run a t-test on it, are the means the same, yields the result, you know, with a alpha level of .05 that you cannot distinguish statistically between the two groups.

Q. But as we've established, the numerator and the denominator are all based on the VV weight -- or rather, the enumerator is based on the VV weight, and the denominator is too.

A. Yeah, I think it's consistent in this. I'd have to look at the details of it, but I ran it consistently, I believe. And so when you look at it that way, it just says they're =not statistically significant.

Q. Right. And my point is that you ran that t-test using the weighting that excluded most of the voters who overreported?

A. I'd have to go back and look at it to -- but you may be right.

Q. Well, we just discussed that you used the VV weight?

A. That's correct.

Q. And that we just discussed the VV weight would exclude 45 of the 60 respondents who overreported voting?

A. Yes.

Q. So you ran your t-test on data that excluded most of the people who overreported?

A. And to answer the question -- to answer the question you're asking, I -- we could run it again with the different denominator and see what happens. It may be a different result or the same.

Q. Well, let's answer the question I did ask. You ran your t-test on data that excluded most of the people who overreported voting; right?

A. That could be the case, yes.

Q. I think a yes or no would be proper --

A. Okay. Yes.

Q. -- to be objective. Yes; right?

A. I'll say yes.

Q. Thank you. And you didn't run a t-test on the data using the common weight which would have included most of the overreporting in the sample; right?

A. That's correct.

Q. So you don't know whether the level of overreporting that Dr. Burch reports using the correct

weighting is statistically significant?

A. I don't know.

Q. Almost done with the CES, couple other points.

First, you say in paragraph 28 of your surrebuttal report: "In her use of CES data because it has validated voters, Dr. Burch analysis is again tied to the CPS." Right?

A. Yes.

Q. Dr. Burch didn't use the VV weights in her analysis in the --

A. Then that's incorrect. So it's just tied to the ACS.

Q. So this statement that Dr. Burch's analysis is tied to the CPS is not correct?

A. That's correct.

Q. And turning to pages 7 and 9 of Dr. Burch's rebuttal report. Dr. Burch uses CES data to analyze eduction in voting; right?

A. Where are we?

Q. Starting at page 7 of Dr. Burch's rebuttal report, which I believe is Exhibit 18.

A. Okay.

Q. Are you there?

A. I am.

Q. Okay. And you don't discuss this analysis of

educational -- education voting in your surrebuttal report, do you?

A. But you -- one of her models in the logistic modeling that she did is with this dataset, correct, her model 2?

Q. That's correct.

A. So that I did analyze.

Q. You don't dispute her analysis on page 7, Figure 2 of page 8 that there's a small, not statistically significant gap between black and white validated voter turnout at each educational level?

A. You're talking about what she's got in Figure 2 and Figure 3. No, I'm not disputing that. The only qualification I make to it, again, is even with doing some descriptive statistics, she may run into issues with the weighting if you looked at it. But no, I don't dispute it.

Q. But you don't dispute that her analysis indicates that education is the significant explanatory variable in explaining the difference in turnout between black and white voters?

A. I think she's making a leap of faith in that. Causal analysis is really hard to determine through correlations. They're correlated, but to say it's specifically the causal effect is difficult. And that's

one of the things you run into with regression analysis of any type or even descriptive analysis.

Q. I'm looking at page 16 of her report. I mean, she reports that the P value on education is significant at the .001 level for voting?

A. But even that -- all that does it say the model fits well, doesn't say that that's a consolation.

Q. Understanding, I mean, all we can do in statistics is what we can do here which is to show that there is an extremely good fit between education and voting in Mississippi. You would agree with that?

A. That I agree, that it's a -- it's a parameter that helps fit the data -- the model to the data. So in the statistical sense, when you look at it, if you look at the partial R-squareds and look at the standardized coefficients, which she did not report, then you can see what the effects were. But she failed to report the standardized coefficients.

Q. But you don't dispute that result that she arrives at?

A. Not in that sense, no, I don't dispute it.

Q. And you don't dispute the ACS data which is reflected in the chart here on page 9, educational attainment by race in Mississippi showing a large gap in attainment of bachelor's degree or higher?

A. That's correct. I don't dispute that.

Q. And you don't dispute Dr, Burch's conclusion that: "While black and white people with similar educational backgrounds vote similarly, people with lower educational attainment vote at lower rates overall than people with higher educational attainment"?

A. I don't dispute that.

Q. And you don't dispute her conclusion that: "Black Mississippians are more likely to have lower educational attainment and thus lower voter turnout than white Mississippians"?

A. I don't dispute that.

Q. And --

MR. WALLACE: Objection to the form of "thus," but otherwise he may answer.

Q. And we can go now to the ecological inference analysis in Dr. Burch's report. I think it starts on page 9, so we can just stay where we are for the moment.

Looking at page 9 of Dr. Burch's rebuttal report, she explains that she conducted this ecological inference analysis using of the voter file -- the Mississippi voter file as a dataset to estimate voter turnout by race; right?

A. That's what she says, yes.

Q. You don't disagree with that?

A. No.

Q. So this is not the CES, this is the actual voter history of voters in Mississippi?

A. Yes.

Q. And she aggregated turnout data from the voter file up to the block group level and then married the block group level turnout data with block group level racial demographic data on non Hispanic white population, nonwhite population, and then ran the EI analysis; right?

A. I think her definition of nonwhite included Hispanics who were white among others and Indians. So as she puts in her report, it's nonwhite, so it's not a comparison between white and black. Is that correct?

Q. We can get into it, but yes, she runs the EI between non Hispanic white and other groups --

A. Correct.

Q. -- as a binary; right? And she does that by aggregating up the turnout data and the race data, marrying them together into a dataset that can be used for EI; right?

A. That's correct. And I -- again, I think under the other or nonwhite category, however she described it, she has, for example, people who might -- who say my ethnicity is Hispanic but I'm white racially, and then

she includes every other race, whether they're Choctaw or Chinese or Vietnamese, etcetera, in that group, yes.

Q. And by the way, just looking at page 11, Footnote 31 -- do you see Footnote 31 there?

A. I do.

Q. -- Dr. Burch says: "Performing the analysis with non Hispanic, black alone or a combination and nonblack as reference categories also produces estimates of lower black turnout relevant to nonblack residents both statewide and in the central district." Do you see that?

A. Yes, but it wasn't in her original report, was it?

Q. I mean, it's in the surrebuttal report along with the rest of her EI analysis; right?

A. But that's in the surrebuttal report, that's not the report that I was commenting on. Did she have it in her original report that I comment on, that's what question I'm asking.

Q. She had it in the rebuttal report that you commented on in your surrebuttal report --

A. Yeah.

Q. -- right?

A. Yeah.

Q. Okay. All right. And by the -- well, we'll

get back to it in one second. But going back to the EI analysis. Looking at pages 10 to 11 of Dr. Burch's rebuttal report, she finds a significant racial turnout gap both statewide and in supreme court district 1. Do you agree with that?

A. And that's where?

Q. Page 10, last paragraph: "The estimates obtained using the ecological inference show that there's a statistically significant racial gap in turnout in Mississippi." Right?

A. And where's the results of the statistical test?

Q. I don't -- I'm asking you if that's what she found.

A. Well that's what she says, but where's the result of the statistical test, is my question.

Q. Did you run a statistical test to confirm whether those results are significant?

A. I didn't.

Q. Okay. You had no basis to dispute --

A. Well I can't answer whether or not -- what test she did and how she ran it, so I don't -- I'm not in a position to give an opinion on it right now.

Q. You don't give an opinion on it?

A. That's correct. I don't know whether or not

it's -- I can't agree with it, but I don't have an opinion on it because I didn't run an independent statistical test, and she doesn't show one here, she just says she did.

Q. She reports that her statewide EI analysis shows that the white turnout was 58 percent, nonwhite turnout was 42 percent, 16 point gap?

A. She says that.

Q. And in the central district turnout -- black turnout is 44 percent white turnout 62 percent?

A. She said that.

Q. And by the way, when she runs well -- strike that.

And Dr. Burch says in the next sentence at the top of the page 11: "The statewide and central district estimates for each racial group produced using EI and the CES are realistic given what we know about the actual voter participation statewide in the central district, in other words, they match up with the benchmark reported by the secretary of state." Do you dispute that?

A. Well, I didn't run an EI analysis myself to look at what she did, so I'm not in a position to dispute or not dispute it.

Q. You don't claim that Dr. Burch didn't

accurately report the results of her analysis?

A. No, I'm not claiming that.

Q. With respect to the EI analysis for district 1, you say -- turning to paragraph 43 of your surrebuttal report. You say: "Dr. Burch included Adams County rather than Bolivar County in district 1"?

A. That's correct.

Q. Now assuming that's the case, do you have any reason to think that the inclusion of Adams versus Bolivar would have a material effect on the estimation of turnout by race on a districtwide basis?

A. I don't know the answer to that until I've looked at what the results would be.

Q. You didn't look at the results?

A. I didn't.

Q. Do you know the populations of those two counties are nearly identical 28,000 versus 30,000?

A. No, I didn't.

Q. Did you know they're both black majority counties?

A. No, I didn't.

Q. Would it stand to reason that in a district of 750,000 by voting age population including one similarly-sized majority black county versus another is not going to make a difference in terms of measuring the

districtwide turnout gap using EI?

A. No, I'm not going to agree to that because I don't know what she did in the EI, and I don't know what other factors may have come into play.

Q. But you didn't run an analysis yourself to check?

A. Yes, I didn't.

Q. Have you received any further information about whether or not Dr. Burch conducted -- looked at it with Bolivar instead of Adams?

A. I think she did and sent it on to the attorneys, but Mike and I haven't looked at it.

Q. Do you know what the overall result that she obtained was?

A. No, I don't.

Q. If I told you the result was so similar that we didn't have to change anything in the report, would you dispute that?

A. No, I wouldn't dispute it other than the fact that someone had the wrong county in there.

Q. Right. But you wouldn't dispute that the results don't actually change if I represented that to you?

A. No, I wouldn't.

Q. You also say that because Dr. Burch coded

racial demographic information as white and nonwhite, more specifically not Hispanic white versus non -- non Hispanic white, she is expressing an opinion about white voters relative to nonwhite voters, not an opinion about white voters relative to black voters?

A. Correct.

Q. All right. But you would agree that in Mississippi, the vast majority of nonwhite voters are black?

A. I would.

Q. You would agree that black and white Mississippians together form 96.5 percent of the population of Mississippi?

A. I'd have to look at it, but that sounds about right to me.

Q. Do you contend that the existence of a small number of nonwhite, nonblack Mississippians means that it's not possible to draw inferences about black Mississippians' voting behavior based on the actions of nonwhite Mississippians?

A. The issue I have with it is more why not stay with the black population? Why change the racial definitions for this part of the analysis? That's the problem I have with it.

Q. But given that 4 percent of the state's CVAP is

nonblack or nonwhite or thereabouts, doesn't matter if the turnout in that group is 0 percent or 100 percent?

A. It's a question I can't answer without looking at that data. It might be just as with the cases of some of these observations that are in the CES file where they have large weights, there could be effects that are like that. So offhand, I'm not able to answer that question without looking at the data.

Q. I mean, even if the turnout among that small number of nonblack potential voters who are included in the nonwhite category for purposes of the EI analysis was 0 percent, the implied black turnout rate would go up by 4 percent?

A. Again, it's a question that -- you can ask it as many different ways as you can. My point goes back to: Why didn't she look at black voters in the first place? And to answer the question that you're trying to ask me, it could be that among those 4 percent are cases that are -- that are going to be significant as found in the CES file. So I don't know, so I can't answer the question.

Q. And again, this isn't a survey, this is based on the voter file itself, that's the dataset here.

A. Yeah, and I'm not saying it's from a survey, I'm saying again there's, you know, why switch the

definition? And I can't answer the question without knowing more of it or if I started looking deeper in the analysis, which I haven't done.

Q. And as we discussed, looking again at Footnote 31 of Dr. Burch's report, she actually did look at black versus nonblack turnout, and she found looking again at that footnote that black turnout was estimated to be 42 percent while nonblack turnout was estimated to be 57 percent. Any reason to dispute that?

A. Yeah, and then there's -- again, why is it black versus nonblack, is the question. Why isn't it black versus white?

Q. Right. So the question is: Do you dispute that that's the result that she obtained?

A. I believe that -- I believe whatever the results she's pointing at, I think she's doing as accurately as she can. The issue is white versus black and suddenly we're in white and nonwhite, and then we're in black and nonblack.

Q. Well, having estimated black turnout at 42 percent and having estimated white turnout at 58 percent, can you not look at both the EI analysis and then say she did look at white turnout and black turnout?

A. My question is: Why didn't she do it? You don't have to ask me that question, ask her why she didn't stick with the same categories. I don't know the answer to that.

Q. Right. And --

A. All I can say is that I'm looking at something that says you're looking at these two categories and now suddenly the categories are switched. So it's difficult for me to answer those questions.

Q. Right. My question --

A. Regardless of what the numbers are or anything else, it's why -- why change?

Q. Well, I mean, I understand. But my question is: It seems like she did do that, that looking at the data, she ran the analysis both white versus nonwhite and black Versus nonblack, and so she does provide that information that you're looking for in her report.

A. But it's not direct, it's not white versus black. And that's a problem because that's what most of her analysis and that's what it seems everything in this is based on.

Q. Well, it's the same --

A. No matter how many times you ask me this, that's going to be my same answer. I can tell you right now.

Q. Well, why can you not look --

A. Because it's -- the problem is, why did someone change the categories they're doing an analysis from white to black to now it's nonblack and -- or nonwhite? To me, I don't understand the reasons for the change. And you have to wonder why it was done. And could the categories in the definitions by race in the voter file be different than they are elsewhere? Is that the reason? I don't know. And it could be that -- you know, it could be that there's lots of other issues there, and I'm going on the voter file about race and ethnic definitions that are not brought to the surface here. I don't know the answer to that.

Q. Well again, the dataset for the EI analysis we also discussed, the racial data comes from the census, right, block group level census data on race; right?

A. Yes.

Q. That's the source of the data?

A. Yes.

Q. Okay. So let's --

A. But the source of the data is -- it's the PL94171 data file.

Q. Yes.

A. Yes. Okay.

Q. So understanding that we're using census data,

that it's the same dataset --

A. I understand. But in looking at that, another issue that comes into play that she doesn't mention is, what's the effected differential privacy when you get down to that smaller end, the differential privacy protections that the census bureau has placed on small area data, which I believe are even in the public 94 -- the PL94171 data.

Q. Do you have any reason to think that differential privacy has an effect on the statewide or central districtwide EI analysis of voter turnout by race?

A. When you're aggregating up to smaller levels, up to some point they might. The census bureau will claim that's when you get to the state level or even lower levels that the differences wash out, but I'm not inclined to believe that that's necessarily the case, and they certainly appear at smaller levels of geography.

Q. This isn't something you mention in your report?

A. No.

Q. Is it something you're just thinking about right now?

A. It's -- it is something that I think can have

an effect on it when you start using different datasets like that and go down to small areas, yes.

Q. And setting aside the punitive effect of differential privacy, you would agree that using a single dataset based on Mississippi voter data from the secretary of state and race data from the U.S. census, Dr. Burch measured using EI white turnout and black turnout, and we can compare them?

A. I don't agree with that statement at all, because I don't know what the definitions are in the Mississippi voter dataset, how they might vary, what kind of matches you get between the two. So the -- again, I can go back and answer you why switch from white versus black to white, nonwhite and then black, nonblack. I just don't understand the basis for that.

Q. What do you mean by definition in the Mississippi voter data?

A. Whatever -- how are people defined? Is it self reporting? When -- what are the definitions of race that are in the Mississippi voter data file?

Q. The voter --

A. It's not in there, is it?

Q. I will tell you the voter data --

A. Yeah.

Q. -- In Mississippi does not --

A. Not in there.

Q. Which is why --

THE REPORTER: Gentleman, one at a time, please.

A. That's the point I'm bringing up. So that's not there. So what you're relying on -- totally on the census bureau data for race.

Q. Right.

A. And again, if you've got the sentence data for race, you've got black, you've got white, you've got all the other race categories, why not use them?

Q. We talked about how you used an EI type analysis in the early nineties; right?

A. That's current.

Q. You haven't run an EI analysis since then?

A. No.

Q. Do you have much familiarity with the type of EI analysis that Dr. Burch ran in this case?

A. I can see Beijing type analysis. I looked through what's on the websites and some of the documentation for the -- both the hard version, the easy version of Brinnon (phonetic), and that's what I know. And for example, one of the points I made in my report about it, she didn't report any priors on what the distributions are and assumptions. And that's usually

common in a Beijing analysis.

Q. And --

A. But that still doesn't get to my question. Why, if you've got the data for white and black and why switch the racial categories? I don't understand why she would do that.

Q. Are there reasons why if you're doing an analysis like this, you would not want to include a third group as a very small population?

A. I don't know the answer to that. I just -- my question still is: Why not look at black versus white if you've got the data for it?

Q. How would you go about looking at black versus white?

A. Well, she had it. She's using the ACS; correct? They use those same racial categories, correct, in her EI analysis. That's in there; correct? Where did she get the data for race if it's not from the ACS?

Q. From the U.S. census, from the PL --

A. The PL9R, yeah. My mistake. So from that dataset, they're in there too, white, black, any part black, all those issues. So why switch?

Q. So you're suggesting that the EI analysis could also have been run with many different racial categories

estimating the voter turnout not only of black voters and white voters but also of American Indian voters and, you know, Hispanic voters, understanding --

A. That's not what I'm suggesting. What I'm suggesting is -- and I'm asking the question -- why didn't she run that analysis? Why did she switch the categories from what she did elsewhere in her report where it's white and black? That's what's I don't understand.

Q. Right. And I guess I'm asking: How would you run an EI analysis on more than two variables --

A. It's not running more than two.

Q. -- reference categories?

A. How did she run it -- it's the same thing. Here's white, nonwhite. She ran that; correct?

Q. Correct.

A. Why didn't she run white, black?

Q. Right. And I'm asking the questions, I'm not going to answer them. But you don't -- you don't know -- I think the answer is clearly you don't, but you don't know of reasons why you would want to consolidate voters into two reference groups in order to, for example, not have part of your analysis be on very small numbers of members of a particular racial group that's not white and not black because the effects would be

less accurate?

A. I didn't say she needed to run it on, say, the Cherokee population. I'm saying why didn't she just run white versus black? She didn't do that. She ran white versus, you know, non Hispanic white versus everybody else.

Q. Do you know whether it's possible to do the thing you're suggesting using EI analysis?

A. Why didn't she do it? That's a question I'm asking. I can't answer that question. I don't know what's possible in the EI analysis. My question is: Why didn't she run white versus black? Because everything in the reports up to this point are -- uses those two categories. It's not nonwhite, did you report to me something about, well, here's the nonwhite VAP in a certain county, and they outnumber the white VAP. No. It was all white versus black. So why is it suddenly changing in the EI analysis to a new category of race? That's my question.

Q. And Dr. Burch found that white turnout was 58 percent statewide and 62 percent in district 1?

A. Using the definition of white that she used in the EI analysis?

Q. Non Hispanic white as defined by the census?

A. Yes.

Q. And she found that non Hispanic black alone or in combination turnout was 42 percent statewide and 43 percent in district 1?

A. That's on -- where is that found again?

Q. Footnote 31.

A. That's what she says. But again, why didn't she just put that in her report? And again, down here, it says again it's -- it's black turnout is estimated this while nonblack turnout was this. Why didn't she have black versus white even in this footnote? That's what I don't understand. She has white, nonwhite, and then down here she has black, nonblack. And why the switch? To me, that's mystifying.

Q. But you don't run an EI analysis, so you wouldn't be able to say whether there's an understandable reason to construct your analysis that way?

A. Well, no matter what analysis, I would be running ones I was familiar with or not. The question I would ask is: Why did someone switch these categories in this way? To me, that's -- it's not a good sign. And whether or not it's -- it's okay that the numbers are really small and everything turned out to be the same; if that's the case, why not run it that way instead of do this?

Q. It's not a good sign because you don't understand why she did it?

A. Yes. She doesn't give any explanation. So reading the reports that she does, white, black, white, black, white, black. So when we get to this point, it's white, nonwhite, and even down here in the footnote it's black, nonblack.

Q. Because this is a different analysis, the EI analysis?

A. I understand. But the whole function of the report wasn't to suggest that it's black voters that are turning out at a lower rate than white voters. Isn't that the intent of the entire exercise here? I'm asking you. So all of a sudden, we have black and nonblack and then white and nonwhite.

Q. So it could be that she did it this way to ensure the accuracy of her results?

A. But if that's the case, why would that be more accurate than saying white and black and black and white? I don't know the answer. I can't answer what she did in the analysis. All I can do is read what she said. And what she says is not consistent with things she said elsewhere up to this point in the report she's done.

Q. She constructed a different analysis

differently?

A. That's what it appears to be. That's my question, is, you know, why? Doesn't seem to be the topic.

Q. So just zooming out and talking about your surrebuttal report, how much time did you spend putting that surrebuttal report together?

A. It's quite a bit of time, especially starting to look into the EI analysis which I was not familiar with. So I spent a fair amount of time doing that thinking I don't want to have to learn R to do this, you know, it looks painful. I mean, I started down the path to do it, but then when I started reading the report again and said well, I see Dr. Burch now switched categories, and I -- that to me is a problem right there, I think I'll stop at that point.

Q. And how much time do you think it was total?

A. I'd have to look. It's a lot of hours.

Q. More than 40?

A. I don't know. Maybe. Again I'd have to look. Once I send the hours in, I don't keep track of it.

Q. You sent them in?

A. I have them -- I've got them posted. If you want to look at them, I've got an Excel spreadsheet.

Q. You kept records --

A. Yes.
Q. -- contemporaneous of your hours?
A. Oh, yes. Sure.
Q. Did you do any analyses that you left out of your surrebuttal report? You mentioned a t-test.
A. No. Other than that I did subsequently, as I said, I don't think so.
Q. You did the t-test subsequent to --
A. Well, when I was doing the original analysis, I just didn't put it in the report.
Q. Okay. And you can provide that to us?
A. I can.
Q. And --
MR. WALLACE: We will take that under consideration, and we'll let you know. You've also asked for a piece paper from the other expert and we're in the process, we'll get back to you soon.
MR. SAVITZKY: Thank you.
BY MR. SAVITZKY:
Q. And any -- other than that t-test, any other analysis that you sort of ran but didn't include in the report?
A. No.
Q. How about for your initial report?
MR. WALLACE: Same objection as to being out

of time. He may answer if he remembers.

A. I can't recall running different analysis that are not in the report.

MR. SAVITZKY: Just one second. Can we take three minutes, just go off. Thank you.

MR. WALLACE: Thank you.

(Short recess from 4:55 to 5:08 p.m.)

MR. SAVITZKY: Back on the record.

That concludes my questioning for Dr. Swanson at this point, so --

MR. WALLACE: I have one statement I need to make in response to your question about correcting things at the front end, and if you want me to ask him to swear to it, I will. He has not testified in court in the voting rights case. That was his testimony. It was true, but in an abundance of caution, he has given a deposition in the voting rights case in Louisiana. And I wanted to make sure you knew that -- I suspect you already do, but I wanted to clarify it on the record.

MR. SAVITZKY: And just -- that's in the Ardoin case?

MR. WALLACE: It is Ardoin, isn't it?

THE WITNESS: It is.

MR. SAVITZKY: Congressional redistricting case?

MR. WALLACE: Correct. That all I've got. We will read and sign. And we'll respond to you once we get it.

THE REPORTER: So you're ordering the transcript?

MR. SAVITZKY: Yes, please.

THE REPORTER: And you want a copy, Mr. Wallace?

MR. WALLACE: Oh, yes.

(Deposition concluded at 5:09 p.m.)

(Reading and signing was requested pursuant to FRCP Rule 30(e).)

C E R T I F I C A T E

STATE OF WASHINGTON

COUNTY OF WHATCOM

I, Evelyn M. Adrean, RPR, a Certified Shorthand Reporter in and for the State of Washington, do hereby certify that the foregoing transcript of the deposition of DAVID ARTHUR SWANSON, Ph.D., having been duly sworn on OCTOBER 5, 2023, is true and accurate to the best of my knowledge, skill, and ability. Reading and signing was requested pursuant to FRCP Rule 30(e).

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 20th day of October 2023.

Evelyn M Adrean

EVELYN M. ADREAN, RPR, CCR-WA

Deposition of David Arthur Swanson, Ph.D.

White v. State Board of Election Commissioners

October 5, 2023

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IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
Greenville Division

DYAMONE WHITE, et al.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	No. 4:22-cv-00062-SA-JMV
	)	
STATE BOARD OF ELECTION COMMISSIONERS, et al.,	)	
	)	
Defendants.	)	
	)	

DEPOSITION UPON ORAL EXAMINATION

OF

DAVID ARTHUR SWANSON, Ph.D.

714 LAKEWAY DRIVE
BELLINGHAM, WASHINGTON

DATE TAKEN: October 5, 2023

REPORTED BY: Evelyn M. Adrean, RPR, CCR 22009424

A P P E A R A N C E S:

FOR PLAINTIFF:

ARI SAVITZKY, ESQUIRE
American Civil Liberties Union
125 Broad Street, 18th Floor
New York, New York 10004
212-549-2681
asavitzky@aclu.org

LESLIE F. JONES, ESQUIRE
AHMED K. SOUSSI, ESQUIRE (Appearing remotely)
Southern Poverty Law Center
400 Washington Avenue
Montgomery, Alabama 36104
334-956-8200
leslie.jones@splcenter.org
ahmed.soussi@splcenter.org

JONATHAN K. YOUNGWOOD, ESQUIRE (Appearing remotely)
Simpson Thacher & Bartlett, LLP
425 Lexington Avenue
New York, New York 10017
212-455-3539
jyoungwood@stblaw.com

NOAH GIMBEL, ESQUIRE (Appearing remotely)
Simpson Thacher & Bartlett, LLP
900 G Street NW
Washington, DC 20001
202-636-5505
noah.gimbel@stblaw.com

FOR DEFENDANTS:

MICHAEL B. WALLACE, ESQUIRE
Wise Carter Child & Caraway, P.A.
600 Heritage Building, 401 East Capitol Street
Jackson, Mississippi 39201
601-968-5534
mbw@wisecarter.com

A P P E A R A N C E S: (Continued)

GERALD L. KUCIA, ESQUIRE (Appearing remotely)
REX MORRIS SHANNON, III, ESQUIRE (Appearing remotely)
Mississippi Attorney General's Office
500 High Street, Suite 1200
Jackson, Mississippi 39205
601-359-3680
gerald.kucia@ago.ms.gov
rex.shannon@ago.ms.gov

ALSO PRESENT;

Alexandra Hough

DEPOSITION OF DAVID ARTHUR SWANSON, Ph.D.

EXAMINATION INDEX

EXHIBIT INDEX

BELLINGHAM, WASHINGTON; OCTOBER 5, 2023

8:57 a.m.

DAVID ARTHUR SWANSON, Ph.D., witness herein, having been first duly sworn on oath, was examined and testified as follows:

E X A M I N A T I O N

BY MR. SAVITZKY:

Q. Good morning, Dr. Swanson.

A. Good morning.

Q. Good to see you today. So I introduced myself already, but I'm Ari Savitzky. I'm an attorney for the ACLU. I represent the plaintiffs in this matter. Do you understand that?

A. Yes.

Q. And can you state your full name for the record and spell it?

A. David Arthur Swanson, D-a-v-i-d, A-r-t-h-u-r, S-w-a-n-s-o-n.

Q. All right. And I'll sort of briefly go over some of the ground rules for deposition. The court reporter just swore you in, you're going to be under oath, means you're swearing to the truthfulness and accuracy of your answers. Do you understand that?

A. Yes.

Q. And the oath that you just took has the same

effect as if you were testifying in court. Do you understand that?

A. Yes.

Q. And as you can see, we have the court reporter here, she's transcribing your answers. It's really important to answer audibly so that your answers can be recorded on the transcript. So no nodding or shaking your head. Do you understand that?

A. I do.

Q. And I'm going to do my best to wait until you're finished with an answer, and I would ask you to sort of wait until I'm finished giving a question before you start speaking. Does that sound fair?

A. It does.

Q. All right. I'm going to ask questions, your job is to answer the question and you have to answer the questions unless you're instructed not to answer them by your attorney. Do you understand that?

A. I do.

Q. Okay. And it's important that we understand each other. We're going to have a conversation, we're going to talk about a lot of different topics. If you don't understand a question, let me know, try to rephrase it so we can understand each other. Does that make sense?

A. Yes.

Q. Okay. And if you need to take a break at any time, just let me know. The only thing I ask is, if there's a question pending, if I've asked you a question, let's finish the question before we take a break. Okay?

A. Sounds good.

Q. And if you realize at any time you gave an answer that wasn't accurate, wasn't complete, just let me know so that we can get that corrected on the record. Okay?

A. Will do.

Q. Any questions about any of the instructions that I've given here?

A. No.

MR. WALLACE: Did we just have somebody else chime in?

MS. JONES: Make sure they're on the record.

MR. SAVITZKY: I don't know. Do we want to have everyone who's on the Zoom announce themselves for the record at this point?

MR. YOUNGWOOD: Jonathan Youngwood with Simpson Thacher & Bartlett.

MS. HOUGH: Hi, this is Alexandra Hough, that's H-o-u-g-h, here on behalf of the plaintiffs.

MR. SAVITZKY: Anybody else on the Zoom who we haven't registered yet?

THE REPORTER: I think I got the others.

MR. SAVITZKY: Okay.

BY MR. SAVITZKY:

Q. And Dr. Swanson, is there any reason that you can't provide complete and accurate testimony here today?

A. Not that I know of.

Q. Are you taking any medications or drugs that might impact your ability to give complete and accurate testimony?

A. I don't think so.

MR. SAVITZKY: All right. Let's start by talking about your background. And actually before we do that, even, I'm just going to mark as Exhibit 1 the notice of deposition just so we have it in the record. So I'll mark as Exhibit 1. This is just the notice of deposition for today's deposition. I'll put it right there if you'd like to examine it. There's a copy for you as well.

MR. WALLACE: Is this a copy for me?

MR. SAVITZKY: This is a copy that you can look at, but no need to ask any questions about it, I just wanted to mark it in the record.

Now what I am going to mark as Exhibit 2 and hand to you is a copy of the report that you submitted January 2023. And this one is for you, and here's a copy for you, Mr. Wallace.

MR. WALLACE: Now, that's stamped. Ultimately, that goes with the court reporter; right?

MR. SAVITZKY: Correct, yes.

MR. WALLACE: Uh-huh.

MR. SAVITZKY: So the stamped is for the court reporter.

BY MR. SAVITZKY:

Q. So just taking a look at that stamped copy that I handed you, is that -- does that look like a copy of your January 2023 report?

A. It does.

Q. And just looking at Appendix 6 which is on page 136 of this document, just confirm that that's your CV?

A. It is my CV that was current as of the time I submitted this.

Q. Any updates that you want to make to your CV while we're talking about it?

A. I think there are more publications I have and there may be some other things, but I don't think it's anything substantial.

Q. What's your current job?

A. My current job is, I'm retired from the University of California Riverside, I have a .25 full time equivalent faculty position with Portland State University's population research center.

Q. And is that population research center in a particular department or is it an independent center?

A. It's in the School of Urban Public Affairs, or whatever the name is of the school right now.

Q. And your academic career, fair to say you're a demographer?

A. Yes. Thank you.

Q. What is demography?

A. It's a study of populations, could be either human or nonhuman, wildlife, insects.

Q. Do you study human demography or the demography of other species?

A. Humans.

Q. And would you say that you are an applied demographer? What kind of demography do you --

A. I have a broad range of interests, many people call me applied, but I do academic work as well.

Q. And what type of analysis do you do as a demographer? How do you analyze human populations?

A. I usually take on what the major focuses are that demographers use, and one is on the size of a

population, second is on the geographic distribution of the population, third is on the population composition, fourth is on the components of population change for building migration, mortality, and the fifth is on the determinants and consequences of population change.

Q. Would it be fair to say that your research is focused on the areas of social demography and population health?

A. I'm probably more focused on methods other than social demography and population health, but I've covered those fields.

Q. Okay. Just one second. Have you ever held an appointment in a political science department in any institution?

A. No.

Q. And just looking we'll turn to page 147 of your resumé -- or your CV, excuse me. That's where the list of publications begins. Just let me know when you're there.

A. I'm there.

Q. Just looking at this list of publications, fair to say that most of them are about studying human populations, population change, and forecasting?

A. That's fair. I do have a book that has just been published today that's basically on population

health. It's called Socio-Demographic Perspectives on the COVID-19 Pandemic. It's an edited book I did with my colleague Rich Verdugo.

Q. Congratulations on the publication.

A. Thanks.

Q. And so that book is about social demography as it relates to the COVID --

A. It would be more on health demography, but it also covered methods, how to look at and estimate COVID infections very early on when you don't have the ability to use a real complex model with lots of data input requirements.

Q. Okay. So let's talk about some of the tools and methods that you use in your research. Well, why don't you tell me about the tools and methods that you use as a demographer?

A. I use most of the standard tools that demographers use, so I'll use life tables, for example, I'll do different modeling techniques, regression type techniques, so that's where it spills over into the statistical area largely and that is in common with a lot of other social science fields, we use those kinds of methods.

Q. Do you use software in your research?

A. I do.

Q. What kind of software tools do you typically use?

A. The major one I use is called NCSS, it's an acronym. It stands for Number Cruncher Statistical System.

Q. How long have you been using NCSS?

A. Since about 1980, '82.

Q. Do you ever use SPSS?

A. Not for many years.

Q. You have used it in the past?

A. I have.

Q. Ever used Stata?

A. Never.

Q. Do you ever use the R programming language?

A. No.

Q. Do you use any other programming languages?

A. Visual Basic. I have a minor in math, computer science, so I know how to program in languages that are long gone like PL/1, Fortran. Visual Basic is probably the most current one.

Q. How often does your work involve coding in Visual Basic?

A. I've just been working on a project right now that involves using some Visual Basic coding.

Q. Do you ever use any GI S programs?

A. I don't implement them, if that's what you're asking. Yeah, I don't do shape files or I don't do GIS work myself.

Q. You don't work with any geographical mapping software?

A. No.

Q. Don't work with Maptitude?

A. No.

Q. Don't work with ArcGIS?

A. No.

Q. Do you use survey data in your research?

A. Yes, I have.

Q. What are some examples of the survey data that you've used?

A. Well when I was at Pacific Lutheran University, I ran a small institute, and we did annual surveys of Pierce County, so I was responsible for going out and contracting with a private vendor to actually conduct the surveys and supervise them, put the questionnaires together. When I worked on the Yucca Mountain high -level nuclear waste repository, I was responsible for surveys that were done of people that were in the impact area, so --

Q. Sorry, go ahead. Finish your --

A. That's okay. Go ahead.

Q. Those are surveys that you conducted?

A. Yes.

Q. Do you ever work with survey data that has been gathered by others?

A. I have.

Q. Do you ever work with ACS, American Community Survey --

A. I do.

Q. -- data?

A. Wrote a book on that -- or a section of a book for the ACS when that first started coming out, was part of the pilot study programs for the ACS.

Q. Do you ever use voter rolls in your work?

A. Not until I started doing expert witness work. Or looked at them, but I don't use them.

Q. You don't use voter rolls in your work?

A. No.

Q. And you said when you started doing expert work --

A. Witness work in areas like redistricting, in the case we're talking about now. I'm aware more of voter rolls, but I haven't actually used it -- yeah, there's actually one exception. I did a volunteer survey for Kitsap County, Washington that was in regard to some issue that was going to be on the ballot. And

the people I worked with that was probably now defunct, the Kitsap County Sun, which is a newspaper, had access to voting rolls. So we were calling people who registered voters.

Q. And when did you conduct this Kitsap County, Washington survey?

A. Early 1990s, late 1980s.

Q. And so other than that instance, you haven't used voter rolls in your work?

A. That's correct.

Q. Ever use ecological inference analysis?

A. I have.

Q. Tell me about your use of ecological inference.

A. It's not the guaranteeing program, but I've used ecological inferences in -- one of the publications I have, actually. It's in the Journal Demography, and it takes a state level regression method for estimating life expectancy at birth and applies it to subcounty areas. And that, in fact, would be ecological inference because you went from a higher level of aggregation to lower levels of aggregation. And the paper involved doing a test of its accuracy.

Q. And you mentioned it's not Gary King's method?

A. That's correct.

Q. So it's not the R x C method?

A. That's correct.

Q. Is it a homogenous precinct type analysis that you did?

A. It's a regression analysis. And people can use multilevel regression analyses to do things that are very similar to ecological analysis.

Q. And other than that -- and was that just one example? Have you used ecological inference analyses in other instances in your work?

A. There my be. That's one I can recall.

Q. And as you sit here, can you recall any others?

A. Not offhand.

Q. In your research, have you studied voting behavior?

A. No.

Q. Have you published any scholarly work on voting behavior?

A. No.

Q. Any scholarly work on voter turnout?

A. No.

Q. Have you published any political science journals?

A. Not that I can think of. There might be some journals with the term "political" in it, but I can't recall for sure.

Q. And we'll talk about CES, Cooperative Election Survey studies -- data later, but have you ever used that CES study before this case?

A. No.

Q. Were you familiar with the CES before your involvement in this case?

A. No.

Q. Have you ever drawn an electoral map before?

A. No.

Q. And I'm looking at pages 6 and 7 of your report. I'll let you take a second to get there. This is your --

A. This is the report of January you're talking about again?

Q. Yes, correct. The one that's been marked, I believe, as Exhibit 2. You sort of summarize here some of the expert work and some of the other references in your CV; is that right?

A. That's correct.

Q. And you say that you played an active role in the development of redistricting, a manual for practitioners, analysts, and citizens. Do I have that right?

A. That's correct.

Q. What was the role that you played in the

development of that?

A. I reviewed the work that Peter Morrison and Tom Bryan did, the authors of that book. I helped them with some questions on how to do methods.

Q. And what parts of the -- of that work did you review?

A. I can't remember. I -- basically the whole book, but I concentrated especially on some of the measurement issues.

Q. And you provided comments?

A. I did.

Q. You're not credited as an author of the book?

A. No.

Q. You're mentioned in the front matter and the dedication and acknowledgments?

A. I believe that's true.

Q. That's not a peer-reviewed publication, is it?

A. Every book I've been associated with goes through a review process that's set up by the publisher. So in a sense, it's a peer-review process. They internally will go out and ask reviewers. You know, I served as a series editor of Applied Demography for Springer Publications, and if we get a proposal, it goes out to review to other people. So in a sense it's peer reviewed, but not in the same manner that people think

of as academic journal peer reviews.

Q. So the redistricting title was not peer reviewed in the same way as an academic journal?

A. No. But it's a Springer publication, I believe, so it went through some sort of review process.

Q. And you're not aware of what their review process was, if any, for this particular title?

A. I'm just aware that they are likely to have sent it out for a review to at least one, probably two, other people to look at it before they even accepted the proposal, and they may have done it sometime during the whole process where they're putting it together. You'd have to ask the editors at -- the people in charge of it at Springer, for example.

Q. But you don't know, that's your assumption?

A. Well it's more than an assumption because I can see some of the paperwork that flows back and forth. So I know they're reviewing it, but exactly the details, I don't know.

Q. You saw the paperwork for -- with respect to this redistricting title?

A. I think I did. I see it for almost every time that's ever come through my hands when I do it for Springer, so I'm guessing that's the case.

Q. So let's talk about your prior expert work, and

we can stay looking at pages 7 and 8 of your January report Exhibit 2 where you list some of that work. It's also, I think, on page 187 of your CV, but this synapsis that you have here will do just fine.

Looking at some of the on-the-stand testimony that you list, these mostly involved instances where you testified about population forecasting; is that right?

A. Some -- one, two, three, at least three of them did.

Q. I see a case about water rights in Arizona, life expectancy, patient populations. None of the cases you list here are voting rights or voting-related cases; right?

A. That's correct.

Q. You never testified in a voting rights case before?

A. That's correct.

Q. And do you know whether the court in the cases or the courts, I should say, in the cases that you testified in previously credited your testimony?

A. What does "credited" mean?

Q. Do you know whether they viewed it favorably, they relied on it in coming to their decision?

A. Well, I was sworn in as an expert witness in

the case where I did testify, so I assume they used it in some manner.

Q. You don't know which manner they used it in?

A. No.

Q. Okay. And looking at some of these cases that you have listed here, you indicate there's some cases where you produced -- and actually, let's look at page 8 where you say: "I produced expert reports as a consultant of potential expert witness in other court cases." You have a list of those here on page 8. None of these are voting-related cases?

A. That's correct.

Q. And you never submitted a report in any voting-related case?

A. That's correct.

Q. And then on page 8, paragraph 9 you say you served as a consultant to Bryan GeoDemographics, BGD, in regard to certain redistricting cases. Do I have that right?

A. You do.

Q. What is Bryan GeoDemographics?

A. It's a company owned and operated by Tom Bryan. He calls it a boutique consulting company based near Richmond or in Richmond, Virginia.

Q. What is your role as a consultant for Bryan

GeoDemographics?

A. It varies. He -- when Tom Bryan contacts me, it's usually about questions about a method.

Q. What kind of questions would he contact you with?

A. I'd have to look up to remember them all, but typically involve methods, statistical and otherwise, sometimes demographic measures, sometimes summary-type measures.

Q. What's an example?

A. I'd have to think about one off the top of my head. I believe I've worked with him on doing some statistical things. And they may have -- occur in the book that he and Peter did too. But I haven't thought about in a while, so off the top of my head I can't remember what they were.

Q. And you said you've been working as a consultant with Bryan GeoDemographics since about 2021?

A. Give or take that's correct.

Q. And you mentioned four cases here in paragraph 9 for which you serve as a consultant to Bryan GeoDemographics, two of them are Caster versus Merrill and Singleton versus Morrill; is that right?

A. Yes. Whatever's listed. And I don't remember the cases. I know they're -- I just put them down in my

vitae once I send reports to Tom and he told me what the cases were.

Q. And do you know that those are cases involving Alabama's congressional districting from the 2020 cycle?

A. Not offhand I wouldn't.

Q. What did you do as a consultant in those cases?

A. Generally, Tom would ask me questions about a method, and I would respond to them and try and give him advice.

Q. Did you conduct any analysis of Alabama's black belt as part of your consulting on those cases?

A. No.

Q. Did you conduct any analysis on the gulf coast area of Alabama as part of your analysis in those cases?

A. Not in those cases, but I've done work on -- with an attorney in Texas that looked at the effects of the oil spill where we looked at all the gulf coast, and part of that involved gulf coast populations, but it wasn't a voting rights case.

Q. And you -- do you draw any electoral maps or review any electoral maps in your consulting in the Caster and Singleton case?

A. Not that I recall. I certainly didn't draw any. Usually the questions that Tom asks me are about is this an appropriate statistical method to use in this

test? If it's a t-test, for example, should I use the equal variance assumption or the unequal variance assumption? If I use regression after I've transformed variables, what would I do? So those are the types of questions I typically help with him.

Q. And so, for example, he would take the analysis that he'd done, take it to you and say, does this methodology look right to you?

A. Sometimes they're even in advance of that. He'd ask me what kind of advice would you give me on some technique to use. And I stress I'm probably not the only one he's asking for advice.

Q. And you know that Mr. Bryan and Bryan GeoDemographics were working to defend the electoral maps that were challenged in those Alabama cases?

A. That I do know.

Q. And do you know how the Court decided those cases?

A. No.

Q. Do you know whether the Court determined that the congressional districts in Alabama -- or the challenged congressional districts in Alabama was likely unlawful?

A. No. I don't follow the court cases.

Q. Do you know whether the Court in those cases

credited the analysis and testimony that Bryan provided?

A. I don't know.

MR. SAVITZKY: And I just want to mark now -- what exhibit are we on?

MS. JONES: 3.

MR. SAVITZKY: Just going to mark as Exhibit 3, this is the Singleton case. And I'll hand this copy to you and this copy to you, Mr. Wallace.

MR. WALLACE: Very good.

MR. SAVITZKY: And take a peek over my copy.

BY MR. SAVITZKY:

Q. And you can turn to page -- excuse me. Let's turn to page 1007. The pages are marked in the top right corner. And just let me know when you're there.

A. I'm there.

Q. And just looking at that first -- it's right in the top left, the Court says: "We're concerned about numerous other instances in which Mr. Bryan offered an opinion without a sufficient basis or in some instances any basis." Did I read that accurately?

A. Yes.

Q. And the Court lists various instances. And then looking at that time the next page, page 1008, the last sentence of the first full paragraph, the Court says that: "Mr. Bryan overstated his opinions, offered

testimony without a sufficient basis, cited material that he had not reviewed, offered opinions at the preliminary injunction hearing that he had not offered in his reports." Is that --

MR. WALLACE: Go ahead and read the whole sentence instead of paraphrasing from the middle. That's a form objection.

MR. SAVITZKY: That's fine. We can do that.

BY MR. SAVITZKY:

Q. The Court said in that last sentence: "Although the schedule might have limited Mr. Bryan's ability to perform some work that he otherwise might have performed, it did not cause him to overstate his opinions, offer testimony without a sufficient basis, cite material that he had not reviewed, or offer opinions at the preliminary injunction hearing that he had not offered in his reports." Did I read that accurately?

A. You did.

Q. And then looking at the last sentence in the last paragraph, last full paragraph, I should say, on that same page, the Court says: "Because Mr. Bryan consistently had difficulty defending both his methods and his conclusions and repeatedly offered opinions without a sufficient basis and because we observed

internal inconsistencies in his testimony on important issues, we find that his testimony is unreliable." Did I read that right?

A. You did.

MR. SAVITZKY: And just for completeness, I'm also going to mark as Exhibit 4 the Caster case. And here is your copy. And Mr. Wallace there's a copy for you.

BY MR. SAVITZKY:

Q. And just looking at the Caster case we can turn to pages 52 and 53 of the document. And we don't have to reread it all, but I just want you to confirm for me that --

MR. WALLACE: Can I stop you and ask: I'm trying to find the pagination here. You've got these -- are you looking at the asterisks, the --

MR. SAVITZKY: No. The pagination is right at the bottom of the page.

MR. WALLACE: Oh, I see where we are. Okay. Give me those numbers again, please?

MR. SAVITZKY: It's just starting at page 52.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. And I just want to confirm that this is

verbatim the same statements are in the Caster opinion as well. So starting in the first full paragraph in the seconds column on page 52: "We're concerned about numerous other instances in which Mr. Bryan offered an opinion about a sufficient basis or in some instances any basis." Same statement?

A. Where are you reading?

Q. On page 52, last part of the first full paragraph.

A. That would be paragraph 60?

Q. No. Just on the second column, the first full paragraph of the second column on page 52.

A. The one that starts out "separate"?

Q. Correct. And the last -- after the citation there: "We are concerned about numerous instances in which Mr. Bryan offered an opinion without a sufficient basis or in some instances any basis."

A. I see that. I do.

Q. Okay. And then moving to the next page, page 53, same statement that we read from the Singleton opinion, this is in the second to the last paragraph in the first column. "Although the schedule might have limited Mr. Bryan's ability to perform some work that he otherwise might have performed, it did not cause him to overstate his opinion, offer testimony without a

sufficient basis, cite material that he had not reviewed, or offer opinions at the preliminary injunction hearing that he had not offered in his reports." Same statement as before; and that's right?

A. That is.

Q. Okay. And then just looking at the next page, page 54, last sentence of the first paragraph there, again same conclusion: Mr. Bryan consistently had difficulty defending his methods and his conclusions, repeatedly offered opinions without a sufficient basis, and concluding that his testimony is unreliable; right?

A. I read that.

Q. Okay. So let me ask you another question: Do you know whether the supreme court ended up ruling in an appeal in the Singleton and Caster cases?

A. I do not.

Q. Do you know whether William Cooper, plaintiff's mapping expert in this case, the White case, drew any of the plaintiff's illustrative maps in the Alabama cases?

A. I don't recall. I don't know.

Q. Do you recall conducting any analysis in Mr. Cooper's maps in the Alabama cases?

A. No.

Q. Would you dispute that a panel of three medical judges in the Singleton case found that the plans that

Mr. Cooper drew in Alabama were consistent with traditional districting principles?

A. I'm not in a position to dispute or not dispute it.

Q. And we can just look back at Exhibit 4, which you should still have in front of you -- excuse me, Exhibit 3 in the Singleton case here. And I just want to look at page 1016 this time. Excuse me, 1015.

MR. WALLACE: 15?

MR. SAVITZKY: Sorry, 16.

MR. WALLACE: 16.

MR. SAVITZKY: Strike that. That's all right. We don't have to do that.

BY MR. SAVITZKY

Q. And you said you didn't know whether the supreme court reviewed these decision?

A. I believe -- I knew that it went to the supreme court, but I just don't follow whatever they did with it. And I may have heard from Tom about it, but that didn't stick in my head.

MR. SAVITZKY: And we can now mark as 5, this is the supreme court's decision reviewing those Alabama -- Alabama decisions. Copy for Mr. Wallace. I'm looking at page 15 on the bottom of this document, second column, first full paragraph. Let me know when

you're there.

MR. WALLACE: All right. This is page 15 of Westlaw print-off and it's somewhere.

MR. SAVITZKY: Second column.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. So first of all just in the first full sentence in that second column, that Caster plans to rely on illustrative maps produced by expert Bill Cooper. Do I have that right?

A. Are you asking me?

Q. Yes.

A. Yes, that's what it says.

Q. And then looking at that next paragraph, says: "The District Court agreed, found Cooper's testimony highly credible commended Cooper for working hard to give equal weight to all traditional districting criteria." Do I have that right?

A. That's what I read.

Q. And then the last -- and actually, we'll continue on. The next sentence: "The Court also explained that Alabama's evidence of racial predominance in Cooper's maps was exceedingly thin. Alabama's expert Thomas Bryan testified he never reviewed the exhibits to Mr. Cooper's report and never reviewed one of the

illustrative plans that Cooper submitted." That's right?

A. It is.

Q. And just skipping a sentence going to: "By his own admission, Bryan's analysis of any race predominance in Cooper's maps was pretty light. District court did not err in finding that race did not predominate in Cooper's maps in light of the evidence before it." Right?

A. That's what I read, too.

Q. So you also mentioned -- and we can put those aside for now, maybe put them over here if we're not using them. We'll want to hang onto this.

And in fact, just referring back to it, page 8 of your report, you also mention that you worked on the Ardoin case, Robinson v. Ardoin? That's the Louisiana congressional districting case? I'm looking at page 8 of your report.

A. Yes.

Q. Okay. And what did you do as a consultant for Bryan GeoDemographics in that case?

A. I'd have to look back at my records and see what I did, if I have e-mail correspondence. Again, most of these where I would serve as a consultant to him, he'd either contact me via e-mail or call me and

ask me questions about particular methods or ask me for advice on these or something. And I don't recall specifically what it was.

Q. Do you recall how actively involved you were in consulting on the Ardoin case for Bryan GeoDemographics?

A. No.

Q. Do you recall whether you worked on a misallocation analysis?

A. That sounds familiar. I think I did.

Q. And to be clear, you didn't draw any electoral maps in that case?

A. I did not.

Q. Would you say that the analysis in that case from Mr. Bryan reflects your input in your analysis?

A. It may reflect some of my advice that I give to him about misallocation error or how to measure it?

Q. And by the way, for those Alabama cases, Caster and Singleton, would you say that Mr. Bryan's analysis reflects your input in your analysis as well?

A. I don't know.

Q. And you know that Thomas Bryan and Bryan GeoDemographics were working to defend the congressional districts that were challenged on behalf of the State of Louisiana in that case?

A. Yes.

Q. Did you review the Court's decision in the Ardoin case?

A. No.

Q. Do you know whether the Court determined that the challenged congressional district there likely violated the Voting Rights Act?

A. No.

Q. And this is the last one of these, I swear. I'm not going to take that back rather than swear to anything. I'm just going to mark a copy of the Ardoin case. I think we're on Exhibit 6. And --

MR. WALLACE: I'm missing the first page of it. I'm sure I can get it someplace else, but --

MR. SAVITZKY: Happy to.

MR. WALLACE: Did you miss a page?

MR. SAVITZKY: Here, I'll give you my first page. I may have missed one.

BY MR. SAVITZKY:

Q. So would you dispute that the federal judge in the Ardoin case agreed with the plaintiffs and held that the challenged congressional districts there violated the -- likely violated the Voting Rights Act?

A. I don't know what decision the judge made, so I'm not in a position to dispute it or not dispute it.

Q. Do you know whether the Court credited the

analysis that Thomas Bryan and Bryan GeoDemographics provided?

A. I don't know.

Q. And looking at what's been marked as Exhibit 6, and turning to page 824, and we can start just in that first full paragraph. Let me know when you're there. First full sentence: "After observing Bryan on the stand in this case, the Court finds his demeanor was not so problematic as to disqualify him. But the Court found his methodology to be poorly supported, his conclusions carried little, if any, probative value on the question of racial predominance." Did I read that right?

A. You did.

Q. Okay. And then in the next paragraph, the Court discusses how Bryan opined that race was a prevailing factor in the design of plaintiff's illustrative plans based on his "index of misallocation" which purports to flag areas where a disproportionate share of the black population was grouped into a majority, minority district."

Is that the misallocation analysis that we were talking about before?

A. Yeah, I'm sure what I helped him with was in regard to how do you measure misallocation.

Q. Okay. And then looking at the next paragraph, the Court says: "Even if this misallocation method is accepted, the factual assumptions upon which his conclusions rest are absent in this case. Hence, Bryan's conclusions are unsupported by the facts and data in this case and thus wholly unreliable." Did I read that right?

A. You did.

Q. And then moving to the next column, first full paragraph, concluding, the Court says: "Finally, the Court finds that Bryan's analysis lacks rigor and thoroughness which further undermines the reliability of his opinions." Do I have that right?

A. You do.

Q. And in the last sentence: "For the foregoing reasons, the Court gives very little weight to Bryan's analysis and conclusions." Is that right?

A. It is.

Q. Okay. Now, the last case you mentioned -- and we can put that one away as well. Put it right here. Thank you.

So the last case is McConchie versus the State Board of Elections that you listed. Is that an Illinois redistricting case?

A. I think that was Illinois.

Q. Do you know what the legal issue is in that case?

A. No.

Q. Do you know whether it involved the Voting Rights Act or racial votes dilution?

A. I don't.

Q. Do you remember anything about what the case was about?

A. No. Seriously, I don't.

Q. Do you remember anything about the analysis that you did for Mr. Bryan?

A. I'd have to look back at my records and see what questions he asked me.

Q. So as I understand it, the issue in that case is whether it violated the federal constitution for Illinois to use ACS population estimates to draw their legislative districts rather than waiting for the 2020 census to come out. Does that sound right to you?

A. It does sound familiar.

Q. And the issue was that because ACS estimates are estimates and not full measures of the population as with the census, that was a one person, one vote problem, it couldn't be sure that you had one person, one vote allocation for population across the districts. Does that sound right?

A. I don't know how people viewed a sample based estimate compared to the census and how they used it. That part I don't know.

Q. But based on what you recall, it wasn't a case about racial vote dilution or racial representation?

A. I don't recall.

Q. So in the three cases where -- well, let me strike that.

You do understand that the Caster and the Singleton and Robinson cases are about racial vote dilution?

A. I believe that's the case.

Q. So in the three cases where you consulted for Bryan GeoDemographics that you know involved racial vote dilution, in each one of those cases the Court did not credit the Bryan GeoDemographics analysis; right?

A. That's what appears to be the case based on what you read.

Q. Now, in your January report looking on to page 10 -- you have it if you want to look at it -- you say: "Because of its expertise and experience, I have used the services of Bryan GeoDemographics which under my direction has assembled data, maps, and other work product." So you use Bryan GeoDemographics to assemble data, maps, and work product for your report in this

case?

A. I'm sorry, where are you at?

Q. Oh, I'm sorry. Paragraph 10 on page 8. That's my -- my mistake. Just the next paragraph from what we were talking about: "Because of its experience and expertise, I've used the services of Bryan GeoDemographics to assemble data, maps, and other work product." For this case for your report in this case, yes?

A. Yes.

Q. And just looking -- I mean, I looked at the maps in your report, they tend to have produced by Bryan GeoDemographics legends or notes at the bottom; is that right?

A. That's correct.

Q. So who actually created those maps and other tables that are indicated as being produced by Bryan GeoDemographics in your report?

A. They were -- they were done under a request from me to -- I would -- could use a table or a graph or something like this to put together in my report.

Q. And then Thomas Bryan created them?

A. Yes.

Q. And what information did you give him to instruct him to create the report?

A. I gave him a general picture of what I wanted to see in a table or a graph, and then he produced it using probably the Public Law 94171 data or whatever else was involved in it.

Q. Do you know what software he used to create --

A. Maps.

Q. To create the maps, yeah.

A. I think he uses map -- or the -- what's the company in Redlands, California -- Arcinfo. I believe that's what he used I'm pretty sure he uses things from that group.

Q. Do you know what software he used to create any data tables that he created for you for these purposes?

A. He usually uses Excel.

Q. Is this work that you could have done yourself?

A. Most of it involves really large files, and he's adept at bashing around data and big files and using parts of Excel that I don't use routinely like pivot tables. So I probably could have done it but it would have been a learning curve for me to get to that point and also assemble all the data and have it together. So it was much easier to work through Tom.

Q. Did he also provide substantive comments or analysis on the types of analysis that you were doing for your report?

A. No.

Q. Do you know whether any of the methods that you used are the same methods that he used in the Louisiana or Alabama cases?

A. I'd have to look at the reports to see.

Q. Could any of the reports -- analyses that you've done be characterized as a misallocation analysis similar to what Mr. Bryan did in Louisiana?

A. I can't recall using a misallocation index.

Q. Did Bryan GeoDemographics run the compactness analyses that you use in your report?

A. He produced the Excel tables that produced numbers for that.

Q. And did he actually produce the compactness scores that you used?

A. The scores, yeah. He's got that, I think, written up in various ways so he can produce them pretty quickly.

Q. Looking back at your resumé, and I'm to turn to page 159 of your report. Just a couple more items. I don't want to -- it's a long resumé, I know. On page 158 you list some non-refereed articles. And one of them is an internet article from around the time of the 2020 election called: Is Being Republican a Risk to One's Health and the Health of Others? Do you see that?

A. I do.

MR. SAVITZKY: And I'm just going to mark a copy of that as Exhibit 7.

MR. WALLACE: This on page 159?

MR. SAVITZKY: Correct.

MR. WALLACE: Okay.

MR. SAVITZKY: Let me just confirm that for you. Oh, you know what, it's on page 160, third one from the bottom. It's a long list of non-refereed articles that we have here. And we're marking this article as Exhibit 7.

BY MR. SAVITZKY:

Q. And in this article, you looked at heavily Democrat and Republican counties and you compared per capita case race of COVID?

A. They were counties that had voted one way or another in the presidential election.

Q. And your finding was that: Per capita, the cases of COVID in areas that voted heavily Republican were higher and they were increasing even though they were sort of more sparsely populated?

A. That's correct.

Q. And you concluded that this finding: "Supports the view that residents of those areas are ill disposed to outside mandates to self isolate, practice social

distancing, and wear masks possibly due to misinformation they consumed from conservative media outlets."

A. Yes.

Q. And you concluded: "Our take is that political orientations should be considered along with other factors likely to generate COVID-19 cases. So along with testing and its accuracy, data suppression, potential superspreader venues, population density, rates of interaction, age, race, and ethnicity and gender, we believe that being Republican or being in proximity to them could be a very real risk factor."

A. That's correct.

Q. And you still agree that being a Republican could be considered a risk to your own health and that of others with respect to COVID?

A. It was at that point in time. Whether is it now, I'd have to go back and research it again. But it definitely appeared to be the case when we did that research.

Q. Okay. And just one other article, one of these non-refereed articles, and we'll mark that as Exhibit 8. This is an article from a publication called Zócalo entitled: Is Hawaii a Racial Paradise. Do you recall this article?

A. I do.

Q. This is, I think, a forum -- sort of internet forum set of articles. And your article's on page 5 of this document, if you want to turn to it. And it's specifically entitled: "Compare Hawaii and Mississippi." Do I have that right?

A. It is.

Q. And in your article, you note that Hawaii has a very high proportion of people who identified as multiracial, where as Mississippi has a lowest proportion of people who identify as multiracial; is that right?

A. That is.

Q. And you note that Hawaii has the highest life expectancy, and Mississippi has one of the lowest or the lowest?

A. That's correct.

Q. And you note that Mississippi is well below the U.S. average in terms of people with bachelor's degrees?

A. Yes.

Q. And you note that Hawaii has less poverty than the national average and Mississippi has significantly higher levels of poverty?

A. Yes. And I'd say that that was as of the date I did the article, so things may have changed. But

you're reading this correctly for the dates that I had the data.

Q. You don't have any reason to think that that's changed since this article was published?

A. I don't know.

Q. You don't have any to reason to think that it's changed?

A. I haven't looked at the question since then, so I don't know.

Q. And you ask -- and this is in this last paragraph -- "What is it about these two states that relates the number of multiracial people and health, education, and income levels?" Right?

A. I do.

Q. And you say: "Historically, both states were dominated by a small social economic elite, primarily made up of white plantation owners. But in Hawaii, this domination occurred in the late 19th century whereas in Mississippi, it was already part of the political fabric when the territory was admitted to statehood in 1817." Right?

A. That's correct.

Q. And you continue: "Racism and labor exploitation existed in Hawaii but they were neither as extreme nor as embedded as they were in Mississippi

where slavery preceded anti-miscegenation pro laws." Right?

A. Correct.

Q. And you still agree that the embedded history of extreme racism and exploitation contribute to socioeconomic deficits that we see in Mississippi today?

A. Yes.

Q. And we can put this one away as well. That one, too. Thanks very much.

So let's talk about this case. You understand that this deposition relates to litigation brought under Section 2 the of Voting Rights Act?

A. I don't know what section of the Voting Rights Acts it is, but I understand it's a case about voting rights.

Q. Okay. When did you first learn about this case?

A. A year ago.

Q. How did you learn about it?

A. Mr. Wallace contacted me.

Q. Did you and Mr. Wallace know each other previously?

A. No.

Q. Just curious. What is your understanding of the claims brought by the plaintiffs in this case?

A. You'd have to be more specific about what it is you're asking me, because I don't follow the question exactly.

Q. What do you understand the plaintiffs to be challenging about the Mississippi Supreme Court?

A. What they seem to be challenging is the counties that are within district 1 specifically.

Q. What is your understanding about why the plaintiffs would like district 1 to be configured differently?

A. I believe -- are you asking me specifically about Dr. Burch's report?

Q. I'm asking generally about the claims in the case. I mean, your reviewed Dr. Campbell's report; right?

A. Yes. I spent more time with Dr. Burch's report.

Q. You reviewed Dr. Cooper's report?

A. I did.

Q. Excuse me. Mr. Cooper's report?

A. Yeah, Mr. Cooper.

Q. Wouldn't want to unnecessarily promote Mr. Cooper.

Having read a few reports in the case -- and did you read the complaint that was filed in this case

by the plaintiffs?

A. Probably, but I don't recall.

Q. So I'm just asking you: What's your understanding of why the plaintiffs think that district 1 should be redrawn?

A. I think it's because they -- the idea is that there should be a -- either a higher majority or a straight-out majority of black voters in the district.

Q. And what is your understanding of why plaintiffs think that district should be redrawn so that there's a higher majority or a straight-out majority of black voters in district 1?

A. I guess it would have to do with some understanding of how black or white or other people vote.

Q. What's your understanding of what the term "vote dilution" means?

MR. WALLACE: That really is a legal opinion, and I'll object to it for that reason. He can answer.

Q. You can provide your understanding if you have one.

A. I don't know.

Q. What's your understanding of what "racially polarized voting" means?

A. My understanding is that white people might tend to vote in a block, black people might tend to vote in a block, Chinese people might tend to vote in a block, Japanese American might tend to vote in a block, American Indians might to tend to vote in a block, etcetera.

Q. And so you would agree that if voting in a particular area is racially polarized, black voters are usually not going to be able to elect a candidate they want to elect unless they form a majority in that area?

MR. WALLACE: Object as facts -- object on the basis based on facts not in evidence. I was trying to think whether it was bad law or bad facts, but I object to the form because it's probably both.

Q. You can answer the question.

A. I don't know the answer to it.

Q. Let me ask it again. You would agree based on your understanding of what racially polarized voting is, that if you have an area where there is racially polarized voting, black voters will usually not be able to elect the candidate that they're voting for unless they form a majority of the population in that district?

A. Well I think what you're asking me is a research question, so I can't offer an answer off the top of my head without actually researching some

specific condition.

Q. Let me ask it one other way. If white voters are usually voting for one candidate and black voters are usually voting for the other candidate and both white and black voters are voting cohesively, then in an area where voters are supposed to be either white or black, where black voters are the minority, they're usually going to lose the election?

MS. WALLACE: Object to the form of the question as seeking legal opinion on the meaning of both "usually" and "cohesively." But you may answer.

A. I don't know.

Q. You understand you're being proffered as an expert in this case?

A. I understand that.

Q. What are you an expert in?

A. Demography.

Q. You're not an expert electoral mapping drawing?

A. That's correct.

Q. And you're not an expert in voting behavior?

A. That's correct.

Q. Do you know what the duties of an expert in a federal law suit are?

MR. WALLACE: Well, I'm going to object to the form of that as being a legal opinion. But he may

answer.

A. Does it vary by judge or court?

Q. Well let me ask it this way: Do you think that an expert is supposed to be objective?

A. That I believe. I think an expert should be objective.

Q. And when did you first learn you were going to give a deposition in this case?

A. Not too long ago. Mr. Wallace might be able to give an answer on that one. I can't recall.

Q. Unfortunately, I'm not deposing Mr. Wallace.

A. Well, I -- a month ago? A week ago? I don't recall. Certainly wasn't a year ago.

Q. And without going into the substance of any conversations that you had with your attorneys, what did you do to prepare for today's deposition?

A. I went back and reviewed the surrebuttal report I prepared.

Q. How long did you spend preparing for today's deposition?

A. Since I knew about being deposed, probably several hours.

Q. Did you meet with anyone?

A. Other than Mr. Wallace?

Q. Other than Mr. Wallace.

A. No.
Q. You met with Mr. Wallace?
A. Yes.
Q. Again without asking you about the substance of any conversations you had, about how many times did you meet with Mr. Wallace?
A. This morning, yesterday.
Q. Did you review any documents -- and I'm sorry, was that your complete answer, was this morning and yesterday?
A. I believe so. We maybe talked on the phone or e-mail, but I can't recall that. But in terms of personally talking to him about it.
Q. Did you review any documents to prepare for this deposition?
A. You asked me that question.
Q. And you mentioned your surrebuttal. Anything else that you reviewed?
A. Not that I really read or reviewed.
Q. Did you take any notes during any of the meetings or known calls that you had to prepare for this deposition?
A. No.
Q. Did you take any notes when you were reviewing documents to prepare the for deposition?

A. Not that I recall.

Q. Did you do any highlighting or margin note writing in any documents as you prepared for this deposition?

A. I generally don't review printed documents because the printer at my house doesn't work, well -- I'm serious. So what I generally do is look at things on-line.

Q. And you didn't make any marginal notes in any digital documents you were reviewing?

A. No.

Q. I'm also in the faulty printer club, so I feel your pain on that one.

Did you bring any documents with you to today's deposition.

A. No.

Q. Okay. I'd like to spend some time talking about the January report that we've been looking at starting with the demographic analysis that you conducted.

MR. WALLACE: Well at this point, I'm going to state our position -- and it depends on what you're looking at. The court order authorizes you to examine him on the surrebuttal report. I don't doubt that there are some things in the first report which may be

inextricably connected to the second report, so, you know, I'll take it up an issue at a time. But we do believe this is a deposition on the surrebuttal report. And with that, you may proceed.

MR. SAVITZKY: Thank you, Mr. Wallace. And, you know, we understand your position. Obviously, this came up at the last deposition as well. And, you know, we disagree and think this is our opportunity to take a deposition of defendant's experts, but we can hash that out another time, and your object is certainly noted.

BY MR. SAVITZKY:

Q. So with that, still looking at your January report you should have in front of you, and it's marked as Exhibit 2, I just wanted to get one point out of the way. You say a few times in your report, paragraph 13, for example, that Mr. Cooper argues -- "argues that Mississippi's Supreme Court district 1 is a minority black district at 49.3 percent." You can look at paragraph 13 of your report to confirm that you say this. It is, I believe, the second full sentence. You characterize Mr. Cooper as arguing that district 1 is a minority black district at 49.3 percent?

A. I do. I write that in here.

Q. And you actually at paragraph 33, you say it again, you say: "Plaintiffs are relying on the any part

black voting age population of the district to characterize district 1 as being minority black."

A. Yes.

Q. And in paragraph 39 you say -- you characterize: "The claim that plaintiffs are making is that district 1 'is a minority district' in need of remediation."

A. Yes.

Q. Did you read Mr. Cooper's October report?

A. I did.

Q. Did you review the exhibits to the report?

A. I did.

MR. SAVITZKY: So I just want to mark the October report now. This'll be Exhibit 9. Here's a copy. One for Mr. Wallace.

BY MR. SAVITZKY:

Q. And just looking at page 19 of Cooper's October report, just at the very top of the page, let me know when you're there.

A. I'm there.

Q. He says: "District 1 is only a 4 percentage point plurality BVAP district; right?

A. Yes, it does say that.

Q. And that is the statement that you're pointing to when you say that Cooper argues that Mississippi

Supreme Court district 1 is a minority black district?

MR. WALLACE: That's that fist question you've asked him since I stated my objections, and I object to it as being outside the scope of the order. He may answer.

A. Yes.

Q. So what Mr. Cooper says he doesn't say minority, he says plurality; he says it's plurality black district; right?

A. He says that.

Q. So you think that paragraph 13 and those other references in your report should be corrected?

A. But 49.29 percent is not a majority.

Q. Right. But Mr. Cooper doesn't characterize it as a minority black district, he characterizes it at a plurality black district; right?

A. You're correct.

Q. But you say Mr. Cooper "argues that Mississippi Supreme Court district 1 is a minority black district at 49.3 percent?

A. I did.

Q. He doesn't argue that, does he?

A. That would be up to you. When someone says it's 49.29 percent, that to me is a statement that's a minority.

Q. Are a minority and a plurality the same thing?

A. A minority is when you're less than half, depending on what the situation is. And to me, that's a minority.

Q. A plurality would imply that you're the -- well, strike that. We'll leave it there.

You don't dispute that the voting age population based on the census is the traditional standard for measuring population for purposes of drawing an electoral map?

MR. WALLACE: Objection as asking for a legal opinion. He may answer.

A. I believe that's the case.

Q. And then you look at American Community Survey data as well to analyze the demographics of the population in Mississippi in your report; right?

A. Yes.

Q. And, I mean, we can, I think, starting at paragraph 39 of your report, if you'd like a place to look, but -- and you -- strike that.

Unlike data from the census, the America Community Survey is an estimate; right?

A. It is. It's a sample-based estimate.

Q. Did you use the 2016, 2020 special tabulation of the ACS?

A. I believe that's the case. I'd have to look at the actual report to see what I used, but that's the most likely one.

Q. And you say that using ACS estimates of CVAP or citizens voting age population, the existing district 1 is majority black CVAP; right?

A. I believe that's the case. Can you point me to the paragraph so I can see it?

Q. Yeah. I believe it's on paragraph 39.

A. Yes.

Q. Do you think that the existing district 1 is reasonably configured?

MR. WALLACE: Objection as calling for a legal conclusion, but he may answer.

A. I don't know. And the sense of configured, in what manner? Geographically? Socially? Spacially? Road-wise? Communication?

Q. Is existing district 1 compact?

A. I'd have to look at the data to, again, recall if that's the case.

Q. Did you analyze the compactness and other metrics of district 1 in conducting your opinions in your January report?

A. I haven't looked at this report for quite a while that you're bringing up, so I'd have to go back

and review it. I didn't review it prior to this deposition.

Q. And you don't conclude anywhere in your report that the black population of Mississippi is not sufficiently numerous and geographically compact to allow for one black majority supreme court district?

A. Again, I'd have to stress I'd have to go back and look at the report because I haven't looked at it or thought about it in a while.

Q. I mean, you're welcome to review the conclusions if you want or --

A. If you want me to now, I can.

Q. The question is whether you concluded anywhere that the black population in Mississippi is not sufficiently numerous and geographically compact to support one majority black supreme court district?

MR. WALLACE: Object to the form because sufficiently numerous geographically compact requires all kinds of legal conclusions.

A. And my answer, again, is I'd have to go back and review all those since I -- I didn't do that prior to this deposition.

Q. You don't conclude that it's not possible to draw a compact majority black supreme court district in Mississippi?

MR. WALLACE: Same. Objection he my answer.

A. I don't have a conclusion about that at this point in time because it's not in my head.

Q. But you don't conclude that in your report anywhere?

A. I'd have to look back at the report to review it. I don't know. As I said, I haven't looked at this report for quite a while, so I can't recall exactly what's in it.

Q. So when calculating demographics of the different districts, you also do some analysis to adjust for prison population. Do you recall that?

A. I do.

Q. And that's starting at paragraph 46 of your report. And you conduct this analysis by subtracting the current populations of some of Mississippi's prisons from the CVAP that you've calculated; right?

A. I believe that's the case, but I'd have to look specifically again at it to recall because I don't recall off the top of my head.

Q. Well, feel free to refresh yourself by looking at paragraph 46 and neighboring paragraphs if you need to before we proceed. And let me know when you're ready.

A. I've looked at it.

Q. Okay. So you do this analysis of prison populations by subtracting the current populations of some of Mississippi's prison facilities from the CVAP that you've calculated; right?

A. Yes.

Q. And specifically, you look at the three largest prison facilities in the state of Mississippi; right?

A. I believe those are the three largest, yes.

Q. And you calculate the current population of those three facilities that we looked at as 7,000 people?

A. Can you point to me where the -- where I've got the number in there?

Q. Yeah. I'm looking at Table III E-1 on page 25.

A. And then what you're looking at is the right hand total where it has 2,996 in private prisons and 4,050 in regional correction facilities to say it's approximately 7,000?

Q. So that's right.

A. That's correct.

Q. And just to be clear, the count that you have here is a partial count of the population of incarcerated persons in Mississippi, right, you didn't include every incarcerated person?

A. Such as in county jails and the like?

Q. Sure.

A. That's correct.

Q. And your analysis shows that there is a higher -- and I'm quoting you know according to paragraph 48, you say: "There's a higher proportionate number of black prisoners in the three major prisons in Mississippi than white prisoners overall and by gender." Right?

A. Yes.

Q. And that table that we were looking at, Table III E-1 indicates that black Mississippians are about 60 percent of the prison population even though they are more like 36 percent of the voting age population?

A. That's an accurate characterization.

Q. And you know that in Mississippi, people with a qualifying felony are disenfranchised for life not merely when they are incarcerated?

A. I knew they were disenfranchised, I did not necessarily know it was for life, but I suspect I think I somehow knew that, yeah.

Q. And you don't try to estimate the number of persons who are unable to vote, who are disqualified from voting because of a qualifying felony conviction but who are no longer incarcerated; right?

A. That's correct.

Q. And you say, I think, on paragraph 36: "There's no practical way to measure or locate these demographically by district in a meaningful way."

A. That's correct. I stated that.

Q. Did you review Mr. Cooper's rebuttal report from February of 2023?

A. I believe I did, but I'd have to look at his report again to refresh my memory.

MR. SAVITZKY: And we can mark that as well. And we're on Exhibit 10. Here you are. And Mr. Wallace. Okay.

BY MR. SAVITZKY:

Q. And looking at page 5 of this rebuttal report, paragraph 9, Mr. Cooper discusses the study showing that the total disenfranchised population based on qualifying felony convictions in Mississippi that were rendered between 1994 and 2017 is 56,000. Do you see that?

A. I do.

Q. And do you have any reason to dispute that?

MR. WALLACE: Now I will object as being outside of the scope of the court order, but he may answer.

Q. Do you have any reason to dispute that?

A. The only thing I question is, are they all in Mississippi.

Q. Otherwise, you have no reason to dispute that's an accurate assessment of the number --

A. I have no reason to dispute that's an accurate assessment.

Q. And looking at the next paragraph, Mr. Cooper says -- and sorry, one other point here before I move on. Mr. Cooper says that of that 56,000, black Mississippians account for over 60 percent of that number?

MR. WALLACE: Same objection. He may answer.

Q. Any reason to dispute that?

A. Again, I'd have to go look at the exact data that he pulled or other sources to answer it fully, but I have no reason at this point to dispute it.

Q. It's actually quite consistent with the number that you found, isn't it?

A. It is.

Q. And that 56,000 represents convictions from the 23 year period 1994 to 2017?

A. I believe that's correct.

Q. And so Mr. Cooper then says in the next paragraph, paragraph 10 on page 6 in his rebuttal report: "It's clearly within the realm of possibility that after factoring in felony convictions going back to

1948, two additional 23-year periods, the adjusted eligible black CVAP for voters in district 1 may drop below 50 percent." Do you dispute that that's within the realm of possibility?

MR. WALLACE: Same objection. He may answer.

A. Many things are in the realm of possibly. But again, the question is how many people may have migrated out of Mississippi or died.

Q. So --

A. All those numbers.

Q. So you agree that it's possible that 51 percent CVAP once you adjust for all the persons who may have a qualifying felony conviction, it could be under 50 percent?

MR. WALLACE: Same objection. He may answer.

A. It could be either way depending on if they're still alive or where they live.

Q. So that's a yes, it could be under 50 percent prison adjusted CVAP?

A. That is a yes but it's qualified with the follow-up study as I mentioned earlier, to follow up on people who are in prison, discover where they're living now, are they in Mississippi or out of Mississippi, are

they alive? Are they dead? That may affect the answer.

Q. You would agree that people -- that there are likely people who were convicted of a qualifying felony in 1960, 1970, still alive today?

MR. WALLACE: Same objection. He may answer.

A. Yeah, that's -- that's a possibility, yeah. It's also a possibility that people from other states may have moved there, there are a lot of possibilities. This is a research question, as I stress.

Q. Understood. So just briefly, I want to look at a different part of your demographic analysis. I want to turn back to paragraph 34 of your report. You mention -- well, let me just read it. You say: "A useful way to look at the distribution of WNH" -- white non Hispanic -- "total and any part black total population across the three districts is to use the coefficient of variation." Do I have that right?

A. You do.

Q. And the coefficient of variation is the standard deviation of the voting age population of the three districts divided by the total voting age population?

A. Not the total, the mean.

Q. Divided by the mean?

A. That's correct.

Q. And you say: "The coefficient of variation shows the extent of variation relative to the mean."

A. It's normalized. That's what the term is, because you could have one population that has a really high mean if you're comparing it to another population that has a low mean. And what you want to do is divide the means into the standard deviation so you get a relative basis for comparison.

Q. And you say you do this for total but also white VAP, black VAP, and you say: "This shows that white total is four times higher than that same per VAP and black total is five times -- approximately five times higher than that same VAP which serves to confirm that white total and black total population are less equally distributed across the three districts in total VAP."

A. And remind me what paragraph --

MR. WALLACE: Which paragraph are we in?

MR. SAVITZKY: Paragraph 34.

MR. WALLACE: 34?

MR. SAVITZKY: Last sentence.

BY MR. SAVITZKY:

Q. You say looking at the data in this manner confirms that: "White non Hispanic total and any part

black total population are less equally distributed across the two districts than the total voting age population." Right?

A. That's correct.

Q. Is that another way of saying that black and white populations are not evenly distributed across Mississippi geography?

A. It would be.

Q. And you would agree that large numbers of high black VAP population are generally distributed north and south along the Mississippi River in Mississippi?

MR. WALLACE: Now I'm going to object to that for the same objection. He may answer.

A. I -- if you're asking me what my -- I would call it a research of hypothesis. It's a good question to ask as a starting point, but it's something you'd have to investigate.

Q. And let's just briefly -- let's put a pin in this page, but turn to page 96 -- excuse me, not page 96, paragraph 96 of your report on page 49. And just -- the second sentence of that paragraph, just take a look at that and let me know when you're ready.

A. And it's paragraph 99?

Q. Paragraph 96, second sentence. Just take a look and let me know when you're ready .

(Witness reviewing exhibit.)

A. Yes.

Q. You would agree that large numbers -- "Large numbers of high percent any part black VAP population are generally distributed north and south along the Mississippi River; right?

A. Yes.

Q. Now having worked in Mississippi, studied Mississippi demographics, you sort of know that's true just from looking at the map and knowing the population, there's a substantial amount of black population concentrated in the Mississippi Delta and the capital region; right?

MR. WALLACE: Same objection, but he may answer.

A. Yes.

Q. And that's why it's not especially difficult to draw majority black supreme court districts and include the Mississippi Delta and the capitol regions?

MR. WALLACE: Same objection plus the objection that is asking for a legal conclusion. But he may answer.

A. I don't draw a congressional district, so I'm not in a position to really answer that question.

Q. And you don't draw supreme court districts,

either?

A. Yeah, that's correct.

Q. So let's talk about the traditional districting principles. And we're now in a section of your report starting at paragraph 56, page 29. Are you familiar with the principles that electoral map drawers consider in drawing an electoral map?

A. Somewhat.

MR. WALLACE: Objection as to form as not explaining what an electoral map drawer is.

Q. Do you understand that an electoral map drawer is a person who draws electoral maps?

A. I do.

MR. WALLACE: With political authority or sitting in his basement with a pad? Can you be more specific.

Q. So you rely in your report on a few different sources to discern the principles that a person drawing an electoral map would consider; right?

A. Yes.

Q. One of the sources you rely on is a report from the congressional research service, it discusses principles for congressional redistricting?

A. I believe that's the case, yes.

MR. SAVITZKY: And we'll just mark that. We

are on Exhibit 11. Copy for you. Copy for Mr. Wallace.

BY MR. SAVITZKY:

Q. This is the report that you cite in your January report? Just confirming, this is the report that you looked at.

A. Give me a second here. I'm still trying to organize the main report you were going through --

Q. Sure, sure.

A. -- so I can find things when we go back to it again.

Q. And that's why, because we will certainly go back here.

And this congressional research service report is one of the sources that you relied on in your January report too?

A. It is.

Q. And according to this report, and we can see on page 3, page 3 of the document there -- the pagination is at the bottom. That's front matter. There we go. And just looking there, the report lists some of the principles that map -- electoral map drawers consider; right?

A. It does.

Q. And according to this source that you relied on, those principles include assuring population

equality among districts within the same state. You agree that's one of the principles to be considered?

A. That's one of the principles listed.

Q. You agree that's one of the principles listed as traditional criteria for drawing electoral maps?

A. That's what it says here, yes.

Q. And another one that's listed is protecting racial and language minorities from vote dilution while at the same time not promoting racial segregation?

A. Yes.

Q. And another principle is promoting geographic compactness and contiguity when drawing districts?

A. Yes, sir.

Q. And another principle is minimizing the number of split political subdivisions and communities of interests within districts?

A. Yes.

Q. And another principle is preserving historic stability in the cores of previous districts?

A. Yes.

Q. And then looking at this list, the list indicates that some of the considerations are more widely adopted than others; right?

A. In terms of?

Q. How many states require them, how many states

have adopted them, there are little parentheticals after each one that say how many states consider --

A. Yes, there's a different number of states listed after some of these.

Q. So contiguity appears to be expressly embraced as a required consideration by 22 states but core retention by only 7?

A. Correct.

Q. So when it's discussed in paragraph 58 and 59 of your January report, you also relied -- and we can put this one to the side, but we may refer back to it again. You also relied on another multistate survey of traditional districting principles from the National Conference of State Legislators; right?

A. Point me to that paragraph where I state that, please?

Q. Sure. This is Footnote 21 on paragraph 58, says: "The National Conference of State Legislatures is widely recognized, the nation's independence objective and bipartisan authority of redistricting matters published a series of principles that reflect traditional districting principles that have both informed -- that have been both informed by and adopted by many states." You cite the report in the footnote, continue on, and you say: "This guidance from the NCSL

is the basis of any assessment I make as an expert of individual states or organizations, criteria, and redistricting principles." Right?

A. Yes.

Q. So this NCSL guidance is the basis for your assessment of the compliance of an electoral map with traditional districting principles?

A. I use it as a guideline.

Q. A guideline to assess compliance with traditional districting principles?

A. I use it as what's considered to use such as core, retention, and so on, yes.

MR. SAVITZKY: And we can just mark that next, Exhibit 12. Copy, copy. Okay.

BY MR. SAVITZKY:

Q. And just looking at the list of considerations discussed right on this first page and then the bullets, seems like a similar list of criteria to the one that we just discussed; right?

A. It does.

Q. And so looking at right up on the first page, we see the second paragraph, first sentence: "All states must comply with the federal constitutional requirements related to population and antidiscrimination." Right?

A. I see that.

Q. And then we say -- or we see: "In addition to population equality, Section 2 of the Voting Rights Act prohibits plans to intentionally or inadvertently discriminate on the basis of race which would dilute that minority vote."

A. I see that.

Q. So then you agree those are considerations that should be guidelines in assessing compliance of a map with traditional districting principles?

MR. WALLACE: Objection. Again is asking for a legal opinion. But he can respond.

A. My -- my answer is: I use these as guidelines.

Q. You use them as guidelines in forming any opinions that you form about the compliance of the plans offered in this case with traditional districting principles?

A. Yes.

Q. And the NCSL report then says: "Well beyond that, states are allowed to adopt their own redistricting criteria or principles for drawing plans; right?

A. Yes.

Q. And then at paragraph 59 of your report -- I think paragraph 59 of your report is basically a

verbatim recitation of the bottom of this first page of the NCSL report?

A. I believe it -- that's where I found the materials so that's cited in there. Is that the case?

Q. Yeah. It's -- it's certainly cited in the footnote so I'm not trying to play gotcha. I just want to make sure this is basically what, you know, what you have done here in your report you say the traditional redistricting principles that have been adopted by many states, and then you list --

A. Yes.

Q. -- the principles and the descriptions thereof from the NCSL report?

A. Yes.

Q. And those include compactness?

A. Yes.

Q. And they include contiguity?

A. Yes.

Q. An include preservation of counties in political subdivisions?

A. Yes.

Q. They include preservation of communities of interest?

A. Yes.

Q. And they include maintaining the cores of prior

districts to the extent possible?

A. Yes.

Q. And they include avoiding incumbent pairings?

A. Yes.

Q. And then the NCSL report goes on to indicate that different states have adopted sort of different subsets of these criteria; right?

A. Yes. I believe that's the case.

Q. And we can look at page 10 of this document.

MR. WALLACE: In Exhibit 12?

MR. SAVITZKY: Correct.

MR. WALLACE: Okay.

Q. And we can see Mississippi is included there. And just looking at the NCSL description of the criteria adopted for redistricting of Mississippi, core retention is not one of the criteria that the NCSL report that you relied on identifies as being adopted in Mississippi; right?

A. We're in Exhibit 12; correct?

Q. Yes, page 10.

A. Thank you. And your question was?

Q. My question is: Core retention is not one of the criteria that the NCSL report that you relied on says that Mississippi has adopted for redistricting?

A. What I read here is require compact contiguous,

preserve political subdivision, preserve communities of interest.

Q. And core retention is not one of the criteria that Mississippi has adopted according to the NCSL report that you rely on?

A. That would be correct.

Q. And now looking at paragraph 60 of your report -- and I think it's possible we'll rely on this again, but we can put the NCSL report up for now.

Looking at paragraph 60 of your report, you say: "Mississippi code Section 53101," which also cited in the NCSL report, "expressly identified a few criteria for legislative districts." Right?

A. Yes.

Q. And in your report, you summarized the statute is requiring the districts be compact, contiguous, and preserve political subdivisions; right?

A. Yes.

MR. WALLACE: Object to the form as saying "districts." It actually says "legislature districts." But he may answer.

Q. And just looking at the language that you quote in the block vote right below paragraph 60, would you agree it's a pretty strong emphasis on county lines in that language?

MR. WALLACE: Object to the form. But he can answer if he can.

A. It reads: "Districts shall be structured as far as possible and within constitutional standards along county lines."

THE REPORTER: Sir, if you slow down, please.

A. It reads: 60B, districts shall be structured as far as possible and within constitutional standards along county lines, if county lines are fractured, then election district lines shall be followed as nearly as possible."

Q. So this statute that you point to places the emphasis on following county lines?

A. That's how I would read that.

Q. And you also in the last sentence of paragraph 60 which is the top of page 31, you also identify communities of interest, preserving communities of interest as a relevant consideration in drawing districts in Mississippi.

A. Yes.

Q. And again just looking at that statute you block quote there, core retention is not mentioned in Mississippi's statute as one of the districting criteria in Mississippi?

A. Correct.

Q. And you would agree that in considering the different traditional districting principles drawing a map, and electoral map drawer is going to have to balance some of these different principles and considerations?

MR. WALLACE: Object to form once again for failure to identify electoral map drawer and asking for legal conclusions. But you may -- and also being waylaid under the court order. But subject to all those objections, he may answer.

A. That would appear to be the case to me.

Q. Sometimes if you're putting a map -- an electoral map together, you're going to have to make tradeoffs between these different principles.

A. You have to make tradeoffs in anything we do in life, correct.

Q. Including these principles, which --

A. Since it's such a generalized idea, I think that you'd have to do that with these principles.

Q. And would you agree that different map drawers could employ different approaches, make different tradeoffs and each draw a map that in the end is consistent with the set of principles we've been talking about?

MR. WALLACE: Same objection as the last one. He may answer.

A. In principle, that could happen.

Q. So let's talk about the different criteria that we've been discussing one by one starting with population equality. Why do you think population equality, in your understanding, is an important consideration in drawing an electoral map?

MR. WALLACE: Same objections. He may answer.

A. Well as one example, if you had 500 people in an area, you don't want to put 499 of them in one and 1 person in the other and then equal -- have some sort of equal representation, whatever government form it would be.

Q. Ever heard the expression one person, one vote before?

A. I have.

Q. Population equality implements that principle; is that right?

A. I believe so.

Q. And looking at Table III.D.1 on page 17 of your report -- let me know when you're there?

A. I'm sorry.

Q. You report the population of the existing

supreme court districts, these are the current districts in Mississippi, right, the VAP. Do you see that?

A. I do. I wouldn't say a report, the population per se. These are subsets of the population in Mississippi.

Q. Well you report the VAP in that first column for each --

A. That's correct.

Q. -- of the three districts, the voting age population. And you say in a footnote, Footnote 14 that your numbers correspond to the numbers in Mr. Cooper's report with respect to the demographics of the districts?

A. I do.

Q. And just generally, you don't anywhere indicate that there's any discrepancy between the numbers that Mr. Cooper reports based on the census and the numbers that you report based on the census?

A. I'd have to look through the full report, but I believe that's the case.

Q. Now, you don't report population deviations for each of these districts; right?

A. In the sense of?

Q. You don't report how different the VAP of each district is from the ideal population size or mean

population size for all the districts?

MR. WALLACE: Objection. Comparing VAP to mean total population size or some other mean population size?

Q. The VAP of the district to -- to mean or ideal VAP of the district.

MR. WALLACE: All right. Objection as to -- as based on a faulty legal theory. I don't think there's a requirement for equality in VAP. But go ahead, he may answer.

A. In -- so I'm not sure what you're getting at, but in one sense, comparing deviations in the sense of how much a number may vary from a mean across a number of categories or districts, that's what your asking?

MR. SAVITZKY: You know what, I'll strike that. Mr. Wallace makes a good point.

BY MR. SAVITZKY:

Q. You don't report population deviations to the districts in terms of total population from the ideal districts size?

A. Well, I'm not sure what the ideal district size is. I mean in that sense, are you talking about a mean or an average taken across a number of units?

Q. If there were equally populated districts, you don't report the deviation of these districts from the

size of what an -- what an equally divided --

A. Thank you for clarifying that. Yeah, I understand. No, I don't.

Q. You would agree that looking at that population deviation is something that map drawers take into account to asses that equal population principle that we've been talking about?

MR. WALLACE: Same objection as before. He may answer.

A. I -- it may depend on the situation.

Q. And we talked about that book that you -- that Mr. Bryan and Mr. Morrison had written called Redistricting, do you recall that?

A. Yes, I do.

Q. Is that another source that you relied on to think about the different principles that mappers consider?

A. I probably have looked through the book, again, when I was looking at this, but I don't recall specifically if I did.

Q. And let's just mark that. So this is Exhibit 13, Redistricting, a Manual for Analysts, Practitioners, Citizens, published as we discussed earlier by Springer.

MR. WALLACE: This is exhibit which?

MR. SAVITZKY: 13.

MR. WALLACE: 13.

BY MR. SAVITZKY:

Q. Okay. And I just want to turn to page 47 of this document here. And you let me know when you're ready.

A. I'm there.

Q. And we see on page 47 that the authors list some of the same criteria that we've been talking about; right?

A. I do.

Q. And they say: "Substantial equality of population has come to mean that the population difference between the largest and smallest districts, the total deviation may not exceed 10 percent of the average district population." Do you see that?

A. Yes.

Q. Do you agree with Mr. Morrison and Mr. Bryan that for purposes of drawing an electoral map, substantial quality of population means trying to stay within a plus or minus 5 percent of the ideal of average district size?

MR. WALLACE: Objection as to asking for a legal conclusion and for being outside the scope of the court order. But he may answer.

A. I look at this as another guideline.

Q. You agree it's a reasonable approach to implementing the consideration of equal population?

A. Well, it seems to be an approach to doing it, yes.

Q. And by the way, the next one that Mr. Bryan and Mr. Morrison mention is minority representation?

A. I see that.

Q. Okay. So looking back at your Table III.D.1 on page 17 of your report -- and I understand this is only VAP -- it does look like, at least looking at VAP for now --

A. And where was that again?

Q. This is on page 17 of your report.

A. Thank you.

Q. And just looking at VAP, it looks like district 2, almost 800,000 people district 1, 715,000. So there's a significant difference in total voting age population; right?

A. I read that district 1 as being 7,000 -- 716,000, not 715,000.

Q. Right. So -- but there's a significant about 80,000 person delta between the size of those two districts in terms of VAP?

A. There's a difference of approximately 80,000

people.

Q. And looking at Mr. Cooper's October report which is Exhibit 9, if we could pull that back out. Here it is. So looking over at Mr. Cooper's October report --

A. Thank you.

Q. -- page 19, Figure 8, let me know when you're there.

A. I'm there.

Q. So Mr. Cooper does report total population in these districts in Figure 8; right?

A. Yes.

Q. And Mr. Cooper also reports the percent deviation from the ideal district size or mean district size or mean district size; right?

A. If he calculated it, that would be the case.

Q. And you don't dispute that looking at Mr. Cooper's Figure 8, the population deviation under the current scheme of supreme court districts is greater than plus or minus 5 percent?

MR. WALLACE: All right. Same objections as before. Asking for a legal conclusion, not authorized by the court order, and in addition, not relevant to any issue raised in the complaint. But he may answer.

A. The -- there's one deviation that's minus 5.39

percent, and one -- another one that's plus 5.07 percent.

Q. So then the population deviation range for the existing supreme court district plan is greater than plus or minus 5 percent?

MR. WALLACE: Same series of objections. He may answer.

A. Slightly greater than plus or minus 5 percent.

Q. And that's sort of made sense when you consider these districts haven't been changed since 1987?

MR. WALLACE: Same series of objections. He may answer.

A. I'm not equipped to answer other than looking at what the population history is over the same period of time.

Q. And you reviewed Mr. Cooper's October report?

A. Yes.

Q. You reviewed the population statistics that he provided for the illustrative plans?

A. Yes. And again, as I stressed, I haven't looked at those in a long time, so I'm not going to be able to speak off the top of my head. So if we refer to them, it might help refresh my memory.

Q. Okay. Well looking at page 27 of Mr. Cooper's report which provides both a map and those population

statistics for illustrative plan one?

A. And the page number was?

Q. Page 27?

A. Thank you.

Q. And looking there, you wouldn't dispute that Cooper's illustrative plan 1 brings the population deviation down under plus or minus 5 percent; right?

MR. WALLACE: Same series of objections. He may answer.

A. In what he labels a table as Figure 11, he has district 1 as a minus 3.14 percent, district 3 as plus 3.02 percent.

Q. So you wouldn't dispute that he brings the population deviation down below plus or minus 5 percent with his illustrative plan 1?

A. Three percent is less than 5 percent.

Q. But the range is down by four points overall?

A. Yes.

Q. And then looking at illustrative plan 2, page 30, you wouldn't dispute that for illustrative plan 2, the population deviation is cut down to less than 3 percent total?

MR. WALLACE: Same series of objections. You may answer.

Q. Plus or mine about point-and-a-half?

A. In figure 14, he shows district 1 at minus 1.59 percent, district 2 at 1.05 percent, and district 3 at 0.53 percent.

Q. So would you agree that illustrative plan two significantly reduces account population deviation from the existing plan?

A. I would not use the term "significant" necessarily. It reduces it.

Q. And then looking at the figures for least change plan 1 on page 34, same questions. Has Mr. Cooper for this plan reduced the population deviation for the supreme court districts below that plus or minus that 5 percent threshold?

MR. WALLACE: Same objections. He may answer.

A. In district 1, he has minus 4.65 percent, district 2, 1.2 percent, district three, 3.44 percent.

Q. So the total deviation there is less than plus or minus 5 percent?

A. It is.

Q. And then look at just the next page, we have those figures for lease change plan 2, and again Mr. Cooper has reduced the deviation range below plus or minus 5 percent?

MR. WALLACE: Same objections. He may

answer.

A. You're talking about Figure 18?

Q. Correct.

A. I have to ask a question why he's labels tables and figures, but -- that's odd.

Q. Back to you.

A. I'll answer it, just -- hard to look at a table that's labeled as a figure. Okay. So here he has district 1 at minus 2.55 percent, district 2 is at 5.70 percent, district 3 is minus .2 -- 2.51 percent.

Q. So deviation range is less than plus minus 5 percent?

A. Well, in two of them.

Q. The total range -- I would say total range is less than 10 percent?

A. You're talking about going from minus 2.5 percent to 5 percent, yes.

Q. Correct.

A. Yes.

Q. Okay. So with respect to the traditional redistricting principle of population equality, Mr. Cooper's plans all improve on the existing plan?

MR. WALLACE: Same series of objections. He may answer.

A. His plans show ranges that generally are below

plus or minus 10 percent.

Q. Plus or minus 5 percent?

A. Plus or minus 5 percent not exclusively, but generally.

Q. And just in terms of the idea of weighting every vote equally, one person, one vote Mr. Cooper's plans tends to weight every vote more equally than the existing plan?

MR. WALLACE: Same series of objections. He may answer.

A. These are not voters, it's a total population.

Q. They -- that is correct. Mr. Cooper's plans tend to weight the representation of persons in Mississippi more equally than the existing plan?

MR. WALLACE: Same objection and the question is what does "representation" mean. But he may answer if he understands it.

A. I don't understand it.

Q. Mr. Cooper's plans adhere more closely to the ideal of every person having an equal share of representation?

MR. WALLACE: Objection. And he may answer.

A. Mr. Cooper's plan shows the -- as you're discussing, the ranges in terms of deviations from ideals which I think are calculated by the means. Is

that correct?

Q. As I understand it.

A. Yeah. So if he's calculating the mean, he's showing less deviation. Now, let me ask you a question. Would it be better to use the mean or the median?

Q. I'm not going to answer your question while we're on the record.

A. Yes. So there's -- and part of the issue about using means is, what's the different between a mean and a median? What does one of them do that the other one doesn't? It's a question -- it's not fair to ask you the question, I understand. But it's a question that you can see that I'm asking in general. Why use a mean? Means are subject to outliers. If you've got outliers in certain districts, it's going to weight the mean this way or the other way. So one question you could ask of all this entire analysis is: Why not use the mean. That's my point.

Q. Do you know whether courts in evaluating compliance with the principle of population equality use mean or median or what metric they use?

A. I do not, not. I can tell you as a demographer, in certain cases I would use a median much more than I'd use a mean. It depends on what's going on with outliers and observations and what the distribution

looks like. If you have a skewed distribution, I would -- and if you want to say this represents kind of the average, I would select a median over a mean, probably.

Q. I'm tempted to ask you one question because it is interesting.

A. It is. Please ask.

Q. Well, I just -- I mean on the question of one person, one vote which is, as we discussed, the ideal that's -- that is implemented, would a median not -- would the use of a median to determine equal population among districts not lead to situations where districts were unequally populated?

MR. WALLACE: He opened this, so I'll let him answer that.

A. It's possible. What I would tend to look at and with any kind of averages like this is, I would look at what the distributions look like for them and then maybe even display both of them. They might give you supporting answers, they might give you different answers.

Q. But relying on the mean allows you to ensure that the actual population of each district is as equal as possible?

A. Again, that's one way to measure what averages

are. In not every case does it represent, you know, where the bulk of the people are. If you've got something that's an extreme outlier -- income is a classic -- a whole bunch of people have low incomes, one person has a real high income, what does it do to the mean? It drives it way up. So if you're saying here's the mean income but 85 percent of the people are below that mean, does that really characterize the whole set of people?

And that's what gets back to my question about maybe it's better to use the median in some of these cases. So that's why I have a difficult time kind of answering some of your questions that it's -- are they -- is more equal to do this, because it would, I think, would require some more research, and that research would involve looking at different types of averages. And whether or not courts use it, I don't know the answer to that.

Q. So you think it would be appropriate to use the median population of each district to assess whether population equality is --

A. I would look at it as a -- possibly along means and different types of means. There might be a need for a harmonic mean. I don't know the answers in advance. I look at is as a research question. Do you follow me?

I'm not saying one's better than the other, but it may be the case -- again, depending on the distributions, if you have a distribution where people are really clustered around one point, a mean is probably going to be good, and if symmetrical, the distribution. If you have a skewed distribution, it's not symmetrical, then it may be the means is better. But it's a case by case situation where you have to evaluate what the data are showing you.

Q. So let's move on to the next districting principle. Minority vote dilution, you would agree consistent with the sources you relied on that we've discussed already that protecting against minority vote dilution is another consideration that an electoral map drawer has to think about?

MR. WALLACE: Objection to vagueness, objection as to asking for a legal conclusion, objection as to being outside the scope of the court order. But he may answer.

A. I'm not sure what a given map drawer would do. But I think vote dilution would be a consideration and something to do with redistricting.

Q. For example, the congressional research service report that you cite said protecting racial language minorities from vote dilution is a consideration to be

taken into account?

A. Yes.

Q. And you would agree that the existing Supreme Court district 1 is 49.3 percent black voting age population?

A. I believe that's the case. Point me to where it's at in here again since I haven't reviewed this report in a long time.

Q. Well, we can look at Mr. Cooper's report on page 17. I believe those numbers are accurate. Page 16, excuse me.

A. Thank you.

Q. Statistics of the current plan.

A. I'm here. So the question was?

Q. The question was: You'd agree that the black voting age population of the current district 1 is 49.3 percent, 49.29?

A. In 2020 it's 49.29 in district 1.

Q. Uh-huh. And you would agree -- and we can look at those numbers -- for example, on page 27 of Mr. Cooper's report, we start talking about the numbers to the illustrative plans. You would agree that Mr. Cooper's plans increase the black voting age population of district 1?

A. Are you talking about Figure 11?

Q. Figure 11, Figure 13, the figures we talked about.

A. In --

Q. Mr. Cooper's plans all increase the black voting age population of district 1?

A. In figure 7, it shows district 1 in 2020 as having 49.29 percent; in Figure 11, illustrative plan 1, 2020 census, it shows district 1 with a percent 18 plus black, which I'm assuming is the voting age population, just stated a different way, is 55.31 percent.

Q. So Mr. Cooper's illustrative plan 1 increases the black voting age population of the district by just 6 points?

A. That's correct.

Q. And looking at Figure 14 on page 30, illustrative plan 2 increases the black voting age population of the district by a little under 5 points?

A. You're asking about district 2 now?

Q. District 1. Excuse me.

A. In district, Figure 14 shows it as being 54.19 percent.

Q. All right. So 4.9 percent increase in black voting age population from 49.29; right?

A. It's an increase from that, yes.

Q. A 4.9 percent increase?

A. Approximately, yes.

Q. So we talked earlier about racially polarized voting. Assuming the existence of cohesive racially polarized voting patterns, increasing the black voting age population at district by 5 or 6 points is going to give black voters in that district a better chance of electing their preferred candidate; right?

MR. WALLACE: Objection to the form, objection as to being outside the scope of any report, and objection as to being outside the scope of the court's order. But he may answer if he can.

A. Could you give me more hypotheticals on it? Would this be assuming that all the race groups vote as a block, for example?

Q. Correct. Assuming block voting by black voters, block voting by white voters for different candidate, if you increase the black voting age population by 5 or 6 points as Mr. Cooper does, black voters are going to have a better chance at electing their preferred candidates?

MR. WALLACE: Same objections. He may answer.

A. So you're -- all else equal?

Q. Yeah.

A. Everything else equal, that's how you're asking

the question. In block voting, etcetera, etcetera, would appear that that would be the case.

Q. Now let's talk about contiguity. You don't dispute that all the illustrative plans outlined in Mr. Cooper's reports are contiguous, do you?

MR. WALLACE: Same set of objections. He may answer.

A. I'd have to go back and look at what he did since I haven't reviewed this report and looked at it for months until today.

Q. What is "contiguity" in your understanding?

A. It would -- meaning that you're trying to retain some kind of existence over time as you go through time.

Q. If I --

A. The characteristics would remain the same, there's continuity. It's not an abrupt change.

MR. WALLACE: I think he asked about the contiguity not continuity.

Q. Correct.

A. In that sense, it means geographic location of people separated from one another.

Q. Correct.

A. Or units separated from one another.

Q. Correct. And in terms of geographic

contiguity, all the districts in all Mr. Cooper's plans are contiguous; right?

A. I'd have to look, but I believe that's the case. What you're asking is, there's not a county, say, in northeast Mississippi that's isolated and part of a district 1, for example.

Q. Yeah. He didn't, like, just show Chickasaw County in district 1 or something?

A. That's correct.

Q. Okay. Same as the enacted plan, also contiguous?

A. I believe that's the case, yeah.

Q. So let's talk about compactness. Paragraph 72 of your report, page 38. If you can turn there, that would be advisable. You say: "Compactness is a tool that can be used in redistricting to compare the relative compactness of existing districts against new districts to determine whether the new districts entail minimal or large-scale changes from the existing districts."

A. And that's paragraph 72?

Q. Yes.

A. Thank you.

Q. Starting with the words "compactness is a tool."

A. I'm there.

Q. You say: "Compactness is tool a that can be used in redistricting to compare the relative compactness of existing districts against new districts to determine whether the new districts entail minimum or large-scale changes from the existing districts."

A. Corrects.

Q. What is the basis for that characterization of what compactness is?

MR. WALLACE: Same objection as being outside the scope of the court's order, but he may answer.

A. In the sense of the legal requirements, what compactness is, or some other kind of definition?

Q. I just -- where did you get this characterization of compactness that you offer up here?

A. Are you asking me -- I'd have to go back and look at my notes as to where I got it. It's not on the top of my head. As I said, I haven't looked at this report in months.

Q. What does it mean to say that "compactness is a tool that can be used in redistricting to compare the relevant compactness of districts"?

A. In that sense, it means how spread out are they.

Q. When you say "compactness is a tool," are you referring to the different compactness metrics like Reock and Polsby-Popper and Schwartzberg?

A. That's one of the ways of looking at it, what the summary measures are that it might be.

Q. Would you agree that compactness is a term that refers to whether a district is regularly shaped?

MR. WALLACE: Same objection plus legal conclusion, he may answer.

A. Yes.

Q. And looking at a passage from the CRS report that's Exhibit 11 -- do we still have that around here? It should be under -- oh, right here. There we go.

Looking back at Exhibit 11, page 11, let me know when you're there.

A. I am.

Q. Okay. That report from the CRS that you relied upon says: "From the geographic perspective, compactness is usually defined by reference shapes, e.g. most compact shape is a circle, followed by a square, a rectangle or references to geographic measures such as geographic dispersion perimeter measures or population measures." Do you agree with that?

A. Yes. It's consistent with what I answered before, how distributed our points are.

Q. And as you understand it, are there different ways that someone evaluating a map can know whether a district is sufficiently compact?

A. You named some of the measures.

MR. WALLACE: Same objections as before. And person's evaluating a map is completely vague. If you're talking about a judge, I object to asking for a legal conclusion. You may answer.

A. There are different measure for summarizing what compactness is, as you listed before.

Q. And there's no one particular method that's the best method for assessing compactness?

A. That was my understanding looking at the different measures, they each have their own strengths and weaknesses. So in that sense, you're certain to look at things like averages.

Q. So, for example, in paragraph 73, you say: "There's no professional consensus on the right measure and every widely used measure works differently?

A. Correct.

Q. So there's no one definitive measure of compactness?

A. From the standpoint from what I could tell looking at the literature, yes, that appears to be the case.

Q. And Mr. Cooper in his responsive report on page 8 -- and we can look at it or not, but I'll read you the quote and you can --

A. Just read it, sure.

Q. But he says: "Redistricting experts and map drawers commonly employ an eyeball test to assess whether a plan is reasonably compact." Do you agree with Mr. Cooper's statement there?

A. I don't know what map drawers do commonly.

Q. Because you're not a map drawer?

A. Or -- that's correct.

Q. You don't evaluate maps?

A. Well, I don't know -- I don't know if people who evaluate maps use an eyeball test or not routinely. I don't know the answer to that.

Q. You're not familiar with the eye test or the eyeball test for measure compactness?

A. What would the eyeball test be?

Q. The eye test?

A. You're just looking at somebody's -- how much does it vary from being a circle, for example?

Q. Yeah. You're just looking with your eye to assess the visual compactness of a district.

A. I can understand people doing that, use a lot of visual assessments in all sorts of things, but

whether that goes to the point where you're actually going to say or use that in something or whether or not you're going to use a metric, I don't know the answer to that.

Q. And let's just pull up what's been marked as Exhibit 13. This is that text that Mr. Bryan and Mr. Morrison wrote. And do you still have that, Exhibit 13?

A. Yeah, somewhere.

MR. WALLACE: I'll give him mine if you can give me the page number.

MR. SAVITZKY: Page 48.

MR. WALLACE: Okay.

MR. SAVITZKY: And you tell me when you're there.

THE WITNESS: Thank you.

BY MR. SAVITZKY:

Q. Do you see there's a paragraph about compactness there?

A. I do.

Q. And the last sentence says: "No one method is best and the colloquial eyeball test of a district's appearance and function may be germane."

A. I see that.

Q. So having reviewed the text written by

Mr. Morrison and Mr. Bryan, would you agree that the eyeball test is one measure that is used to asses the compactness of a district?

MR. WALLACE: Same objection as asking for a legal conclusion and being outside the scope of the order. The he may answer.

A. And again, what I would stress is that they wrote that as one possibility, but whether or not I agree with the eyeball test being germane is not necessarily my opinion. I tend to look more at metrics than eyeball test, but I understand there's a need for things like that when you're -- when you don't have good measures or you're initially looking at a project and you need something qualitative to start off with. So it goes back to my answer being I'm not sure if it's germane or useful or not or whether or not map drawers use it all the time.

Q. Okay. Is it fair to say that a mapper who has drawn many plans, a person who draws electoral maps and has drawn many plans and looked at many districts is going to sort of develop a better sense of whether a district is compact visually?

MR. WALLACE: Objection to the vagueness and in addition to not knowing who a map drawer is, not knowing what "better" is.

A. I can't answer that question. I don't know.

Q. Is it fair to say that someone who reviews more electoral districts is going to develop a sense of whether a district is more or less visually compact?

MR. WALLACE: Same objection. He may answer.

A. And my answer again is I don't know.

Q. On page 38, Footnote 29 of your report, you cite a lecture by Gary King called "How to Measure Legislative District Compactness If You Only Know It When You See It." Is that something that you rely on?

A. And that's footnote?

Q. 29.

MR. WALLACE: 29 on page 38.

MR. SAVITZKY: Yep.

A. Yes, I recall. Let me look at what I actually put in the text for that. Specifically, that says: "In contrast, academics have shown that compactness has multiple dimensions and have generally many conflicting measures."

Q. And let's just mark as Exhibit 14 this is the web page here. And looking at the one, two, three -- third sentence -- the second sentence too. Well actually, take a look at it and then let me try to ask a summary question. Let me know when you've read the

first couple sentences.

A. Okay.

Q. So basically what they are saying is that academics have developed many very complex measurements of compactness but courts and other observers see compactness as a sort of simple visual you-know-it-when-you-see-it-type test. And they say both of those are right, there are many complex and multidimensional tests of compactness, but there is also what they say is a particular unit dimensional ordering that represents a common understanding of compactness in the law across people. Am I accurately summarizing what King is saying here?

A. And then he goes on to say that he's developing a statistic model that predicts with high accuracy what that is, yes.

Q. Based on this unidimensional sort of common understanding that he's discerned?

A. Yes.

Q. And I just -- it's actually -- we're not going to spend too much more time on it, but it totally's fascinating. Did you look to the slides for the lecture that King did?

A. I'd have to -- I don't recall. Like I said, this is -- it's so long ago I did the report, I can't

remember what I looked at now or not.

Q. So I'm just going to mark the lecture slides as Exhibit 15 here. And again, I don't want to spend a ton if time on it because this is a long, long lecture, but if you can -- I'll point you to the page. At 424, there is a series of illustrating --

A. Yes.

Q. -- this unidimensional --

A. Uh-huh.

Q. -- you know it when you see it --

A. Uh-huh.

Q. -- metric; right?

MR. WALLACE: Page 4 --

MR. SAVITZKY: It's marked 424 at the bottom.

MR. WALLACE: 4, slash, 24?

MR. SAVITZKY: Correct.

MR. WALLACE: Okay. I was looking for 424. Okay.

Q. So you go down and each one is a click, you click, click, click through --

A. Yeah.

Q. -- we see as we move through, once we see all four districts there, this unidimensional ordering. All under the header: "A simple single compactness

dimension that you know when you see." Right? And as we go on and see the text below, it says dimension is intuitive; right?

A. That's what he states.

Q. Okay. And looking at this, does this give you a sense of what the eyeball test is?

MR. WALLACE: Well objection to the extent the eyeball test is a legal test in which he has no expertise. But if he has an opinion on this report subject to the fact that it's contrary to the court's or order, he may answer.

Q. And setting aside from whatever it might mean as a legal matter, just --

A. I have an opinion.

Q. Yeah, go ahead.

A. So if you look at the four figures on one of these and since they all say 4/24, I'll have to point this out to you.

Q. Yes, I see it.

A. Okay. Suppose that the eyeball test I'm looking at the first figure on the left, to the second figure to the right of it, they're somewhere dissimilar. If I look at the figure on the left to the far figure on the far right, they're very dissimilar. So these are kind of simple examples of what could take place. Is

figure -- the third one to the right really different than the fourth one to the right? Is it more or less compact? Just eyeballing, it might be difficult to say. And again, these are examples that he put up to illustrate the point he's trying to make.

So in some cases, it may be that the eyeball test doesn't work, and I could point to each of these examples right here. Is the figure, the third most right one really more compact than the fourth most right one? You know, there would be questions from people about that. And as you get closer and closer, instead of having these discreet illustrations, if you had more of a continuous model and you're getting closer and closer to the one on the far right, which one is more or less compact? It would be hard to answer, wouldn't it?

Q. So looking at -- so would you agree if you're visually with your eyes, you can make gross distinctions but perhaps not fine distinctions?

A. Or it may be the case that if you've got something as extreme as what's on the far left here as he examples and what's on the far right, then you can say yes, it looks like the one on the far left is very much more compact than the other ones. And there's going to other cases where I think the eyeball test is going to be difficult to measure that.

Q. All right. And Mr. Cooper states -- now we're looking at -- going back to page 8 of his responsive report. This one we can definitely -- if you want to keep a copy for later, it is a quite fascinating lecture, but --

A. Thank you.

Q. Mr. Cooper states at page 8 of his rebuttal report which I believe is Exhibit 10, which you should have it there, he says --

A. I've got 9. Bear with me.

Q. Yes.

A. Thank you. And where on Exhibit 10 are we going?

Q. Page 8.

A. Thank you.

Q. And he says: "Using the eyeball test, the illustrative plans and the least changed plans, I have drawn are reasonably compact." And you are not claiming to dispute that statement, are you?

MR. WALLACE: Objection as to being outside the bounds of the court's order, but he may answer.

A. And I was not asked to review this after he wrote this report, so I can't give you an answer whether or not I dispute at this point or -- or not at this point. I have to go back and reanalyze what he did.

Q. I mean, you testified earlier that you did review Mr. Cooper's rebuttal report.

A. Yes, but I was not asked to actually do something with it, to actually analyze it. Do you follow me? So I looked at it, I read it, but I was not tasked with or asked to go on and say something back in regard to it.

Q. And as you sit here now, you're not disputing that statement?

A. I can neither dispute or not dispute it at this point. Again, it's a research question, and I wasn't asked to do that.

Q. Well, I'm asking you as you sit here now, do you dispute the statement Mr. Cooper makes that under the eyeball test, the plans he drew are reasonably compact?

A. And again, I stress that since I haven't looked at what he's arguing here with sufficient time ahead of it to know, I can't answer that question directly.

Q. Well, given that you're not saying you do dispute it, can I take that to mean that you're not currently disputing it?

A. I -- I'm not saying that. I don't have an opinion at this time on it. Would that be better?

Q. That'll do.

A. Okay.

Q. So getting back to the compactness analysis that you did, we'll talk more about your report. In your report, you analyze compactness cores of the illustrative plan supreme court districts that Mr. Cooper drew, and you concluded that they are less compact than the existing plan. Is that generally --

A. I believe that's the case, yes.

Q. And you mentioned earlier this is -- Bryan GeoDemographics did this analysis new?

A. They did at my request, computed the scores, put data together, that's correct.

Q. And as far as you know, they used the ArcGIS or ArcView program?

A. I'm pretty sure that's what Tom Bryan used.

Q. Were you able to verify the results that they provided to you?

A. In what manner?

Q. I mean did you independently verify the results that they gave you with respect to the compactness scores of the district?

A. You mean go ask somebody else who does GIS to see if that's the case?

Q. Sure, or do it yourself.

A. I'm not capable of doing it myself in that

regard since I didn't run GIS programs. And no, I didn't go ask anybody else to go review it.

Q. And just looking at pages 40 to 43, we have these various tables. Did you design these tables in this layout here or did Bryan?

A. I asked him to put these together and then -- and give me information on them in regard to all these measures of doing that, and that's what he did.

Q. So Bryan GeoDemographics put these Excel tables together?

A. At my request, yes.

Q. And after reviewing these various compactness scores, you didn't conclude that the illustrative plans are insufficiently compact in terms of adhering to traditional districting principles, did you?

MR. WALLACE: Objection to asking for a legal conclusion on what's insufficient. But he may answer.

A. That's correct. Insufficient is not something I can speak to. They're just different from what the existing plans were.

Q. You're not offering an expert opinion on whether the illustrative plans compactness scores are insufficient to meet traditional districting principles?

MR. WALLACE: Objection on -- objection to

the extent traditional districting principles may be incorporated into the law, and I'm not sure how much that is, but I think you're still asking him for a legal opinion. But he may answer.

A. Yeah, and insufficient is -- they're -- the "scores" are not as good on average as the score of the existing plan is my recollection on these in looking at it. Whether or not that means insufficiency, I don't know.

Q. You didn't offer -- you're not offering any expert opinion that the compactness scores for the illustrative plans mean that the districts plans are not compact?

MR. WALLACE: Objection to vagueness, but he may answer.

A. And again my answer is, they're -- the scores in the sense of compactness are not as compact as what's in the existing plan.

Q. You didn't consider whether the compactness scores of the illustrative plans are within the normal or acceptable range of compactness for an electoral districting map?

MR. WALLACE: Objection to vagueness as to normal and acceptable, but he may answer.

A. I did not.

MR. SAVITZKY: And I'm now going to mark -- where are we at -- 16. We're on the second binder. I'm now going to mark as Exhibit 16 a paper called "Redrawing the Map on Redistricting" which was cited in Mr. Cooper's rebuttal report. There you go, copy for Mr. Wallace.

MR. WALLACE: 16, you said?

MR. SAVITZKY: Yes.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. So in looking at page 8 of Exhibit 16, we can see that what the authors of this report did in their Table 5 is, they looked at the mean compactness scores for congressional districts in every state. This is following the 2010 redistricting cycle.

A. What are the page numbers?

Q. They are in very light gray at the bottom of the page.

A. Oh, wow.

MR. WALLACE: There's something there.

A. I see it okay. And you're asking about page 8?

Q. Yeah.

A. The table, not the Figure 5.

Q. Correct. Table 5, exactly.

A. Table 5.

Q. Exactly. So looking at this table, we can see in that the last round of congressional districting, the mean Polsby-Popper score for congressional districts in Mississippi was 23.33; is that right?

A. I'm trying to go down and find Mississippi. I see it. Thank you. So they're ordered by rank of score. Okay. 23.33.

Q. Is that right?

A. Yes.

Q. And the mean Schwartzberg score is 4758, .4758?

A. 47.58, yes.

Q. And the mean Convex Hull score is 76.84?

A. Yes.

Q. And I just want to note for the record that these are presented as whole numbers rather than fractions, but I -- usually, I see them presented as fractions between 0 and 1 or decimals between 0 and 1, but I think we understand that we're referring to the same range of between 0 and 1 or in this case between 0 and 100; is that right?

A. I'd have to look to know that that's the case, but I believe you, you have no reason to tell me otherwise; right?

Q. Yeah. And then just looking at the Reock score, we have mean Reock score of 38 --

A. That's correct.

Q. -- 08? Right. So you didn't look at some type of benchmark like this to assess the compactness scores for Mr. Cooper's illustrative districts?

A. I did not.

Q. And just turning back to what again I think has been marked as Exhibit 10, Mr. Cooper's responsive -- or rebuttal report, that's right, Exhibit 10. Or actually, we can look at your report at page 40. You list the scores for illustrative district 1 right here or for all of it, illustrative --

MR. WALLACE: Hang on. What page in --

MR. SAVITZKY: Page 40 of your January report. And do keep what we marked as Exhibit 16 handy because I want to just do a little quick head-to-head look.

BY MR. SAVITZKY:

Q. So looking at the scores, what I want to do is compare the mean compactness scores for Cooper's illustrative district 1 and mean compactness scores for the Mississippi congressional districts that we were looking at on page 8 of Exhibit 16.

A. So we're comparing the supreme court district scores to the congressional district scores.

Q. Yes. Mean, mean. Exactly.

MR. WALLACE: All right. Let me objection to the relevance of comparing a document -- a document prepared by an expert witness with a plan ordered by the United States District Court for the Southern District of Mississippi, because Mississippi in 2012 was governed by a plan written by Judge Kalley (phonetic), Judge Wingate, and Judge Bramlette.

Q. And I'll ask the question of the witness: You don't have any reason to think that the congressional districting plan that was put into place in Mississippi after the 2010 cycle was insufficiently compact or didn't comply with traditional districting principles, do you?

A. I don't have an opinion on that.

Q. Okay. And what Mr. Cooper says when he cites this report that we've introduced as Exhibit 16 is: "Even in terms of compactness scores, the plans that I've drawn are superior to many congressional districting plans drawn in the past decade." That's the statement in his report.

MR. WALLACE: And where it is in his report?

MR. SAVITZKY: On pages 8 to 9, paragraph 19.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. So now looking at that, just looking at the scores, the mean compactness scores that you report on page 40 in Table III F.7.a and comparing those to the mean compactness scores for this Mississippi congressional district, we see Polsby-Popper score of Cooper's illustrative plan 1 as .27 mean, so that's a little higher than .23?

MR. WALLACE: Objection to relevance and objection as being outside the scope of the court's order. But he may answer if he can.

Q. You would agree that that Polsby-Popper scores are pretty similar?

A. Given that they -- for supreme court districts compared to congressional districts.

Q. Yeah.

A. They look fairly similar.

Q. And the Convex Hull scores, also very similar, Cooper's plan is just a little bit higher but basically identical, .78 versus .6784?

MR. WALLACE: Same objections. He may answer.

A. I see the mean score Convex Hull here for Mississippi as being in the congressional district, 76.84.

Q. Yep.

A. -- and then for Cooper's illustrative plan, I see it at 78.

Q. So Cooper's a little higher, but basically identical?

A. It's a little higher.

Q. Okay. And Reock, it's a littler lower, 37 for Cooper's illustrative 1, .348 for the congressional districting plan --

A. Yes.

Q. -- right? So if you were to use Mississippi congressional districts from last cycle as a benchmark, Cooper's plans are in line with that benchmark?

MR. WALLACE: Same objections, but he may answer.

A. It's difficult to say when you're crossing districts like this and -- are they crossing points in time as well whether or not they're suitable benchmarks?

Q. But assuming that the benchmark is suitable, they're comparable?

A. It's a big assumption you're asking me to make without knowledge of exactly, you know, all the details in here. But if you want me to say everything else being equal, again, and assuming that it's all the same, they're comparable.

Q. Okay. And looking at -- now we'll look at Cooper's responsive report page 10, Figure 1. Mr. Cooper does a compactness analysis, looks head -- the head-to-head comparison between the existing plan and the illustrative plan 1. Do you see that in Figure 1?

A. I do.

Q. And with respect to the mean compactness, you would agree that existing supreme court plan and illustrative plan 1 are .01 apart on the Polsby-Popper score; right?

A. Yes.

Q. And they're .01 apart on Convex Hull; right?

A. Yes.

Q. Cooper's a little higher on Convex Hull, existing is a little higher on Polsby-Popper?

A. Yes.

Q. You would agree that a .1 difference is basically identical?

A. It depends on the contexts.

Q. Okay. You would agree they're substantially similar?

A. Again, depends on the context. You know, if you're looking at this from -- if you're doing a sample, really large samples may have a very small difference in

some measure you're looking at like income, and $10 is enough to say it's different. So I'm saying it depends on the context.

Q. In the context of evaluating compactness scores like Polsby-Popper and Convex Hull, you would agree that a difference of .01 is negligible?

A. In general, that's what I agree with, yes. So in that context, yes.

Q. Great. And on the Reock -- oh, sorry. And on the Schwartzberg metric, the plans are exactly identical?

A. Yes.

Q. So the two plans are either exactly or essentially the same on three different metrics of compactness?

A. Yes.

Q. And then with respect to the Reock score, the mean Reock score for the existing plan is better at .51 versus .36?

A. It's higher, yes.

Q. Higher. Excuse me. But you don't conclude that Reock is a better or more appropriate metric than any of these other metrics, do you?

A. One of the ways to look at them, because of all these issues about it is to start looking at doing some

of an average of all the measures too since they all have their strengths and weaknesses.

Q. Are you aware of any instance in which the different compactness metrics have been and or blended together?

A. Some of the work I've done, yes.

Q. In the work that you've done, you averaged or blended together compactness metrics like Polsby-Popper, Reock, and Convex Hull?

A. Or taking averages of them. Is that in this report that I did? I'm just asking? Since I haven't looked at it in a long time, I just asking if I did that.

Q. I mean, I'll represent to you that I don't recall your doing that in your report.

A. Okay. Then I may not have done it in is this report.

Q. Are you aware of any other person analyzing compactness of district maps who's tried to blend or average together the different metrics?

A. Yeah, I think Tom Bryan has.

Q. When did he do that?

A. I don't recall, but I think he has.

Q. Okay. And looking at Figure 2 on the same page of Mr. Cooper's report, he conducts a head-to-head

comparison between existing district 1 and illustrative plan district 1, right, so now he's looking at the mean scores but at the compactness score for district -- district 1 in particular?

A. Yes.

Q. And identical Polsby-Popper scores for both districts; right?

A. Yes.

Q. And on two of the remaining metrics, Convex Hull and original Schwartzberg, the illustrative plan district 1 is more compact than existing district 1; right?

A. It has higher scores in the Convex Hull and lower score in the original Schwartzberg.

Q. Has a lower score. Okay. Kind of got -- so just stepping back, fair to say that on some of the metrics, Mr. Cooper's illustrative plan one performs better and on some of the metrics, the existing plan performs better?

A. In the sense of --

MR. WALLACE: Objections -- same objections. He may answer.

A. Yes.

Q. So let's talk about political subdivision splits. You agree that all of Mr. Cooper's illustrative

plans are drawn entirely on whole counties?

A. I'd have to refresh my memory and look at his report, but I believe that was the case.

Q. You agree that necessarily because there are no county boundaries split, the number of county splits is zero?

A. Correct.

Q. And you agree the number of precinct or election districts splits also necessarily zero?

A. Since they're all within the same county, yes.

Q. And so in terms of that metric of county and precinct splits, plans are identical, existing plan, Cooper's illustrative plans, all of them zero county splits, zero precinct splits; right?

A. Correct.

Q. Let's talk about communities of interest. What's your understanding of a community of interest?

MR. WALLACE: Objection to the extent you're asking for a legal opinion, but he may answer the question. Oh, and it's out of the court order, but everything has been so far, so he may answer that.

A. So there's a definition. Do I have it in the report somewhere of -- of that community of interest? Is it in the report.

Q. I'm not sure as I sit here whether you provide

a comprehensive definition in your report but --

A. And I don't recall if I did or didn't since I haven't looked at it in a long time.

Q. I mean, I ask you as someone who of offering analysis of --

A. So in general if you're asking me off the top of head what it means, "community of interest," it represents a lot of shared social and other characteristics, economic characteristics.

Q. You would agree it, basically, is a community, a group of people that share some common resource or interest or priority?

A. Or social -- social, economic, and other cultural characteristics, yes.

Q. Got it. You would agree there are many ways to define a community of interest?

A. There could be, yes.

Q. So like a city or town could be a community of interest?

A. I guess it depends on the composition that's their -- what criteria someone's specifically looking at.

Q. It could be a region or a group with a shared history or culture?

A. It could be.

Q. Could be a region or a group of people with shared policy interests or shared needs?

A. It could be. But I'd look at all those as possible dimensions of something that could be even broader if you're looking at community of interest.

Q. So -- and is it fair to say when we talk about communities of interest in the districting context, the idea is that where reasonable, you should try to group people with common interests in the same district?

MR. WALLACE: Objection as seeking a legal opinion, but he may answer.

A. That's my picture of it.

Q. And I'll represent to you that on page 48 of that redistricting book which has been marked as Exhibit 13, Morrison and Bryan say: "Respecting existing communities of interest is often a proxy for ensuring that people of common interests are grouped within the same district." Does that -- do you agree with that statement?

A. Yes.

Q. Now, you don't analyze communities of interest anywhere in your January report; right?

A. I don't believe so. I'd have to go back and look in the sense of what the cluster analysis I did was.

Q. Setting aside the cluster analysis, which we'll talk about, you don't do any analysis that's relevant to communities of interest?

A. Not that I recall.

Q. And you don't dispute that Mr. Cooper considered Mississippi planning and development district as a community of interest and evaluated that in his report?

A. I believe that he did.

Q. And you don't dispute that a map drawer could consider Mississippi's planning and development district as a community of interest?

MR. WALLACE: Same objection as to meaning of "map drawer." He may answer.

A. It's possible.

Q. As I think you point out in the beginning of your report, Mississippi Supreme Court districts are used for transportation, public service commission, they're used for a number of appointed boards; right?

A. They are.

Q. So whether the interest of Mississippi's various planning and development districts are fractured or not by the designing of a plan could be important for that reason as well?

MR. WALLACE: Objection to the vagueness of

the importance. He may answer.

A. It would be.

Q. So in looking at -- and now we're back on Mr. Cooper's October report, paragraph 35. This is Exhibit 9, I believe, yeah.

MR. WALLACE: Paragraph what?

MR. SAVITZKY: 35.

MR. WALLACE: Okay.

MR. SAVITZKY: And I'll give you the page if that would be helpful. It is page 18. And let me know when you're there. I'll just clear this out.

THE WITNESS: Thank you. I'm there.

BY MR. SAVITZKY:

Q. And we can see on paragraph 35, Mr. Cooper says: "I show in the Figure 6 map" -- and if you want to look at it, it's on me preceding page -- "the 1987 plan splits five of the ten regional planning districts." And then he lists them. You don't dispute that, do you?

A. Let's see. Let me go back here again. So you're talking about Figure 6?

Q. Yeah. Figure 6 is the existing plan overlaid on those planning districts. Mr. Cooper says five of the ten districts -- planning districts are split in the existing plan. You don't dispute that, do you?

A. No.

Q. And he says: "Supreme court district 1 contributes to each one of those splits, South Delta is the only planning district entirely within supreme court district 1." You don't dispute that, do you?

A. No.

Q. And now turning to paragraph 51 of Mr. Cooper's report, that would be on page 26, still on exhibit 9. You don't dispute Mr. Cooper's statements in paragraph 51 that: "Illustrative plan 1 splits two planning districts, North Delta and Central, rather than five as in the 1987 plan?

A. I believe that's correct.

Q. And looking ahead to paragraph 56, you -- on page 31, you don't dispute Mr. Cooper's statement the illustrative plan 2 splits three planning districts rather than five as in the enacted plan?

A. That's correct.

Q. Are you familiar with the Mississippi Delta?

A. The Delta counties, the area?

Q. Or the area that's the region in Mississippi Delta?

A. Yes, I am.

Q. Is it fair to say based on your knowledge of Mississippi that the Delta is a culturally,

historically, demographically, socioeconomically distinct region?

MR. WALLACE: Objection to vagueness and asking for a legal conclusion and being out of time under the court's order, but he may answer.

A. It certainly shares characteristics that are common internally that are not common elsewhere in the state of Mississippi.

Q. And as someone who studied the demographics of Mississippi, you would agree the Delta is culturally, historically, demographically distinct?

A. Of other places in Mississippi?

Q. Yes.

A. Yes.

Q. And I would think it's fair to say that the Mississippi Delta is one of the most culturally, historically, demographically distinct geographic regions in the entire South if not the nation. Would you agree with a that?

MR. WALLACE: Same objection, but he may answer.

A. People in New Orleans might disagree.

Q. Well, one of the most?

A. Yeah.

Q. Would you agree with that?

A. Yeah, I believe it is. Are you talking about a personal opinion as opposed to a professional opinion?

Q. Yeah.

A. Absolutely.

Q. Fair to say based on your knowledge of Mississippi, that the Delta has distinct needs and interests, for example, when it comes to health and education?

MR. WALLACE: Objection as to meaning of distinct in addition to previous objections, but he may answer if he can.

A. It may or may not. There's certain sections of the state that are not in the Delta that may share some of those characteristics and needs in common with Delta counties. So again, I would say it's a research question, not something I can just answer off the top of my head from a professional opinion. As a personal opinion, I would say yes, in general I think there are issues like that that are common to a lot of Delta counties, but they may be common with counties elsewhere in Mississippi too.

Q. But the concentration of those needs in the Delta is somewhat unique?

A. Again, it may be. But part of the issue you're talking about is rural. Are rural areas of really

Northeast Missouri really different in the Delta in terms of some of the needs? That's -- again, I don't know the answer to that off the top of my head of the -- looking at rural areas that are high in poverty that may or may not have the same racial distributions, that may or may not have the same access to resources. So I would suspect while there definitely are distinct areas of interest in the Delta counties, I think they may share some things with the counties elsewhere in the State of Mississippi too.

Q. You'd agree that the Mississippi Delta could be considered a community of interest?

A. It could be. It depends on what kind of criteria you're looking at.

Q. Would you consider it a community of interest?

A. Again, it depends on what someone was asking me. From the ecological standpoint? From the cultural standpoint? From the music standpoint?

Q. Sure.

A. Yeah. It could vary. You know, there are places on the Delta that would share a lot of common history in terms of plantation stuff with the counties over on the Alabama border, for example, and they're not contiguous, they're different. So if you look at the counties in areas of Northeast Mississippi where they

sing not Delta Blues but Hill Blues. You know, they're different styles of music, so --

Q. One aspect of the culturally distinct nature of the Delta?

A. That's one, yeah.

Q. And the existing supreme court plan fractures the Delta?

MR. WALLACE: Objection to the meaning of the word "fractures," but he may answer.

A. I -- it's -- whether or not it fractures the Delta, I can't say.

Q. But we can just look briefly at page 16 of Mr. Cooper's report right there --

A. Sure.

Q. -- and just looking at the map, the Mississippi Delta is divided under the existing supreme court districting plan; is that fair to say?

A. Does page 16 show the supreme court districts in colors, is that what you're saying?

Q. Correct.

A. And under the existing supreme court plan, you're asking me how is it fractured?

Q. I'm asking you if the existing plan divides the Delta.

A. Well, in what sense is divide the Delta? Are

you --

Q. Divides the Delta -- excuse me. The plan divides the Delta between multiple districts?

A. So parts of the North Delta that are in here? In the sense of these are, again, the planning districts that are named in this map? So from a planning district standpoint, the North Delta district is in a separate supreme court district than is the South Delta district.

Q. And just setting aside the planning districts for the moment, are you generally aware of which counties are in the Mississippi Delta, the region, the Mississippi Delta, as you understand it?

A. I do. You're talking about from Tunica down towards Vicksburg generally?

Q. And thinking about that region, that set of counties from Tunica down to Vicksburg, the existing supreme court plan divides that region between different supreme court districts; right?

A. If you're looking from the standpoint of Delta counties, yes.

Q. And we can just turn briefly to Mr. Cooper's illustrative plan 1 on page 27. And just looking at that plan and thinking about the Mississippi Delta region from Tunica Don to Vicksburg, Mr. Cooper's illustrative district 1 unites the Delta in one

district; right?

A. He also had some of the counties that I wouldn't put in the Delta in that district, so it splits off from other areas. I mean, that's what it looks like just looking at his map.

Q. But in terms of the distinct region that we've been talking about, the Mississippi Delta, it is kept together in Mr. Cooper's configuration of the supreme court map; right?

A. You know, I'd have to think about DeSoto County, whether or not it's really a Delta county or not, that he's got on there, but that's one possibility.

Q. Setting aside DeSoto County, the Delta is united in Mr. Cooper's illustrative plan 1?

A. Generally speaking, I would agree to that.

Q. And just looking at page 30 of the report at illustrative plan 2 -- are you on page 30?

A. I am.

Q. And you can see even if you include DeSoto County, the Delta is united in this version of the plan; right?

A. Yeah, it varies again because now Lincoln County is outside of it, and it was inside the Delta initially.

Q. Would you say that Lincoln County is in the

Mississippi Delta?

A. I'd have to look specifically, as I don't know the answer to that, if it's a Delta county or not, if I'd label it that way. I don't know what all the characteristics are in Lincoln County. I can just see looking at the two maps, that's one difference right there.

Q. Lincoln County is south of Vicksburg, isn't it?

A. It's east.

Q. South and east?

A. Yeah.

Q. Okay. All right. Let's talk about core retention. And turning back to your January report, look at Table III.F.5 on page 37 of your January report.

MR. WALLACE: On page what?

MR. SAVITZKY: 37.

MR. WALLACE: Okay.

BY MR. SAVITZKY:

Q. Oh, excuse me. So your core retention analysis begins on page 31, paragraph 62, but let's look at that page 37, and look at that table that you have, it's the core retention analysis by plaintiff's plan. Let me know when you're there.

A. It may be a while since I have so many papers here.

MR. SAVITZKY: When we take a break for lunch, I'll come over and see what I can clean up there. Page 37.

MR. WALLACE: Now you're getting into somebody else's report, that your problem.

THE WITNESS: Yeah, that's it.

MR. WALLACE: Is this yours? We're missing 20 pages of it.

THE WITNESS: It's in here somewhere.

MR. WALLACE: I'll give you mine.

MR. SAVITZKY: Do you mind if I come around and sort things out or --

MR. WALLACE: I can give him mine if you want to get on with --

MS. SAVITZKY: That's fine. Yeah, during the break, we can sort it out.

BY MR. SAVITZKY:

Q. So just looking at Table III.F.5, your analysis is that Cooper's illustrative plan 1 keeps 74.3 percent of Mississippians in the same district as they were in in the existing supreme court plan; right?

A. Yes.

Q. And your analysis is that Cooper's illustrative plan 2 keeps 66.8 percent of Mississippians in the same district as they were in the existing plan; right?

A. Correct.

Q. And you say -- and we don't need to turn, I'll represent to you -- you can turn there if you want. But I'll represent to you in the first instance in paragraph 15 of your report you say: "Core retention for the illustrative plans is low." You use the word "low." Do you recall that?

A. I do.

Q. What's the basis for your opinion that keeping a supermajority of Mississippians in the same district is a low level of core retention?

MR. WALLACE: Objection as being outside the scope of the court's order, but he may answer.

A. It's just the drop-off in the percent of people that are maintained.

Q. Well I guess my question is: Low compared to what?

A. Yeah, that's a good question. Yeah.

Q. I mean, did you compare this level of core retention to --

A. No. And that's the case where just I used my judgment and said it looked low. I was comparing it more and likely to what the existing plan was.

Q. And --

A. So it's lower.

Q. And just -- so what is the basis for your judgment that it's low?

A. It would be comparing it to the existing plans.

Q. Well, the existing plans are a hundred percent the same as the existing plan. So what's your basis for saying that this level core retention is low as opposed to, you know, relatively high? Most of the population is kept in the same district.

A. I hear you. I -- it just looked to me like it was low when you get down to those numbers, that's all. Just it's just my person opinion that it appeared to be low.

Q. Someone else could look and these numbers and say that's a relatively high level of core retention?

A. They could.

Q. Now, in addition to looking at core retention in terms of total population in the same district, you also break down the differences in population assignments by race between the existing plan and the illustrative plans; right?

A. Yes.

Q. And what do you think is the purpose of that analysis?

MR. WALLACE: Same objection as to being outside the scope of the court's order, but he may

answer.

A. Yeah, in the one sense that since the case is about voting rights and specifically about black voting rights, I thought it would be useful to look at that, the issue of race.

Q. So on page 33, just flip back a couple pages. On page 33 top of the page you say -- and this is discusses illustrative plan 1, by way of example, you say: "Only half of the white, non Hispanic population from district 1 is retained, while 76.9 percent of the any part black population is retained." Right?

A. Correct.

Q. So is your point that the population -- is your point that comparatively more white population has moved out of the district? Is that what you're saying?

A. That's what the numbers show in a relative sense, yes.

Q. And what is -- is in your view, the relevance of that in assessing these districts?

MR. WALLACE: Objection as to asking A., out of time; B., asking for a legal opinion. He may answer if he can.

A. It just looks to me like their racial differentiation was different in the sense of what percent of one group is moved out, what percent of the

other group that was moved out or stayed, that's all.

Q. And discussed before that illustrative plan 1, district 1 runs north to south on the western side of the state encompassing the Delta, the counties along the Mississippi River; right?

A. Correct.

Q. And that configuration is different from the sort the Y-shaped configuration of the district 1 where you have a band of counties going east towards Alabama that are also included in existing district 1; right?

A. That's correct. All the districts generally speaking in the existing plans run east to west generally speaking.

Q. So, I guess, doesn't it intuitively make sense that comparatively, more white population would be moved out of the district if you're moving that band of counties stretching east to Alabama out of the district and including the entire Mississippi Delta in the district?

MR. WALLACE: Objection to the vagueness of 'makes sense" in addition to the previous objections, but he may answer if he can.

A. Looking at race as a possible index of things it would mean that some proportion of people may be accustomed to having -- having things in common with

elsewhere are now going to be put into whether they're white or black in places that might have differences. That's all.

Q. I guess I just mean doesn't it sort of make sense that you would see comparatively more white population moved out of the district if you're reconfiguring the district so that while maintaining equal population, you're uniting the Mississippi Delta, which --

MR. WALLACE: Same objection. He may answer.

A. My answer to that in general is that Northern Delta may not have as much in common with the Southern Delta as you think. I'm just pointing out the fact that you're moving differentially people by racial groups around in doing this.

Q. And just looking at page 28 of Mr. Cooper's report, and that's Exhibit 9 just for the record.

A. Page?

Q. Excuse me. Page 28, Figure 12. Let me know when you're there.

A. I'm there.

Q. So just looking at this map, you would agree that this shows illustrative plan 1 overlaying with the boundaries of congressional district 2, current

congressional district 2; is that right?

A. That what it appears to do.

Q. And you would you agree that illustrative plan district 1 was configured similarly to congressional district 2 in the current congressional plan?

MR. WALLACE: Objection, I guess, to the vagueness of "similarly," but he can answer.

A. It is similar.

Q. All. Now, is it -- and you can put that one down for now. Thank you.

So in addition to the illustrative plan, you also did a core retention analysis of the least changed plans. And we're looking now again at your report -- your January report, page 37, that same chart that we were looking that. And that would be the summary table of the core retention analysis. And now looking at the -- and when you're ready --

A. I'm ready.

Q. Looking at least change plans, your analysis is that Cooper's least change plan 1 keeps 92.4 percent of Mississippians in the same district as the existing plan?

A. Yes.

Q. And in least change 2 plan, taking 95.8 percent of Mississippians in the same plan as the existing plan?

A. Yes.

Q. And your analysis is: "The changes in Cooper's least change plans are 'minimal and not substantially differentiated by race and ethnicity'"?

A. Yes, I recall that.

Q. So you would if that somebody wanted to prioritize core retention, Cooper's least change plans would demonstrate that this can be done while creating a majority black voting age population supreme court district 1?

MR. WALLACE objection to the -- objection to the vagueness of "someone," but he can answer the question.

A. That appears to be the case.

Q. And you have no basis to think that core retention is, in fact, a consideration that a Mississippi map drawer would consider?

MR. WALLACE: Objection. Once again, the only map drawer of -- the only map drawer of Mississippi supreme court districts in the last 200 years is the legislature. But he may answer.

A. I -- I don't know.

Q. And just stepping back, do you think it would make sense to consider core retention in drawing -- in redrawing districts that haven't changed for 35 years?

MR. WALLACE: Objection to the vagueness of makes sense, but he may answer.

A. It's a principle regardless of how long they've been around. If you think, you know, these people have something in common to politicians or whatever the case may be that they're voting for, used to going certain places, yeah.

Q. When you say "used to going certain places," what do you mean?

A. Well for example, if you're going to go vote, you know, where the voting place is going to be and things like that.

Q. The supreme court lines don't affect where your polling place is, do they?

A. Well but you're -- if you're now in a new district, that's what I'm getting at, now where your vote is in a different district might be the case.

Q. You mean, you wouldn't vote --

A. If you're moving --

Q. Your ballot would reflect a different district?

A. Yeah, that's what I'm getting at. And it might be that you're not accustomed to people who are running in that district, you don't know the history, things like that; where as in the district you were in, you would. Just bring that up as a possibility.

Q. Looking at paragraph 68 of your report on page 36, you opine that your core retention analysis shows that illustrative plans -- "shows that illustrative plans 1 and 2 are significantly disruptive to large numbers of Mississippians across the state in order to achieve small increase in the percent APB in district 1.

A. Correct.

Q. So in addition to creating -- in addition to increasing the percent APB in district 1 the changes in illustrative plans also decrease the level of population imbalance between the districts from the existing plan; right?

MR. WALLACE: Objection as out of time. He may answer it.

A. I believe that was the case, yes.

Q. And in addition to increasing the percent APB in district 1, it changes in the illustrative plans, also maintains a system with zero county splits and zero precinct splits; right?

A. That's correct.

MR. WALLACE: Same objection.

Q. And in addition to achieving small increases in the percent APB in district 1, the changes in illustrative plans also ensure that there are fewer planning district splits right?

MR. WALLACE: Same objection and relevance but he may answer.

A. That appears to be the case.

Q. And in addition to achieving small increases in the percent APB in district 1, the changes in the illustrative plans also unite the Mississippi Delta as a communities of interest in the single supreme court district; right?

MR. WALLACE: Same objection, but he may answer.

A. If the entire Mississippi Delta is a single community of interest that's a research question that needs to be answered.

Q. And assuming it is, then the answer to my previous question is yes?

A. If -- if that proved to be the case, that there were enough commonalities to say that it is a community of interest, it would be the case.

MR. SAVITZKY: So I want to talk about your cluster analysis next. And I would be, you know, just -- just stepping out of the questioning for a second and in terms of our timing, I would be happy to continue on discussing the January report and the sort of mapping elements and then break and then discuss voter turnout. But if you folks would like to take a

break earlier, we can stop here -- we're at the next stopping place -- or any other time.

MR. WALLACE: Whatever is convenient for Dr. Swanson. We've been going over three hours, but I'm fine, we can break now or later, take your pick.

THE WITNESS: So when would the break about if it's not now?

MR. SAVITZKY: Could be in 20 minutes, in 40 minutes, an hour.

THE WITNESS: I prefer to do it now.

MR. SAVITZKY: Okay. That's why I asked. So let's go off the record, then.

(A break was taken from 12:07 to 1:03 p.m.)

MR. SAVITZKY: Back on the record.

BY MR. SAVITZKY:

Q. Hope you had a good lunch, Dr. Swanson.

A. It was.

Q. Okay. And you and Mr. Wallace didn't talk about the substance of the case during lunch?

THE WITNESS: Did we talk about the substance of the case?

MR. WALLACE: I --

A. We had a long conversation and parts of it were about things like that, but it was like a substantive conversation, so what do you mean by a substantial

conversation?

Q. Without get into the details of your conversation, I just want to make sure there weren't any sort of instructions about testimony or --

A. Oh, no.

Q. -- talking about the sort of -- about the deposition?

A. No. He said -- the only thing he said to me, said to answer questions as truthfully as you can. That's about the instruction level I got.

Q. Noted. And I didn't want to elicit any specific -- that is good advice.

MR. WALLACE: We talked a lot about his Indian cases. If you want to talk about those, they're probably in his CV too.

MR. SAVITZKY: They are in the CV, but I don't want to get into them. All right.

BY MR. SAVITZKY:

Q. So I think what we were -- we were just on the cluster analysis. So sticking with the January report which you should still have in front of you, I'd like to go to page 29 -- or excuse me, page 14, paragraph 19. And before we get into the cluster analysis, just more generally -- tell me when you're on paragraph 29.

A. Yeah.

Q. So you say in paragraph 29: "Compared to the U.S. as a whole, Mississippi is not as diverse in terms of race and ethnicity." Do I have that right?

A. Correct.

Q. And what do you mean when you say "diversity"?

A. The majority racial groups in Mississippi are black and white. And if you look at ethnicity -- and you understand the way the census bureau uses ethnicity as opposed to race; correct?

Q. Yes.

A. So the ethic distribution is not what you'd see in a lot of other states as well.

Q. So your point is that Mississippi is 36 percent black, 56 percent white, relatively low percent of Hispanic folks, so the vast majority of the population is either black or white?

A. Correct.

Q. And where does that definition of diversity come from?

MR. WALLACE: Let me -- asleep at the switch while I was drinking my coffee. This is all outside of the court's order. And with that objection, he may answer.

Q. And where do you get that definition of diversity?

A. Racial diversity is a common one, start looking at what the distribution is of people by race.

Q. Well, would it be fair to say that if we measured diversity by the percentage of nonwhite people, non Hispanic white people, Mississippi would be one of the more diverse states?

A. If all you're looking at is two racial groups, if you categorize and collapse everything into white and nonwhite.

Q. Yes.

A. Then it would be a different story.

Q. And looking at things that way, Mississippi would be one of the more diverse states in the country?

A. Yeah. I -- I have trouble looking at diversity from the standpoint of two categories. I would use the term "distribution" rather than "diversity."

Q. How would you use the term "distribution"?

A. Well, distribution. So if you flip a coin, is it 50:50 or is it an unbiased or a biased coin so it's 60:50? So diversity in my head does not mean that you're looking at what is the distribution between two possible categories. Diversity to me means there's more than one or two categories. Do you follow me?

Q. I do. And so your metric of diversity is how many different categories are represented in the extent

to which the population is distributed among many different categories?

A. Thank you.

Q. Is that accurate?

A. Yes. That's more accurate than I think looking at just two classes of whatever they might be.

Q. Well, whether or not it's more accurate, that's your definition of diversity?

A. Yes.

Q. And if we were to define diversity as what is the percentage of people who are from racial and ethic minority groups, then Mississippi is one of the more diverse states?

A. Then that would be your definition. And that what you just said, if we were to define it, so you could define it that way.

Q. And I know that --

MR. WALLACE: And let me object to form. Isn't somebody, everybody from a racial or ethic group?

MR. SAVITZKY: Minority groups.

MR. WALLACE: Oh, okay.

BY MR. SAVITZKY:

Q. So -- and as someone who studies demographics, reads about demographic issues, would you agree that colloquially when people talk about the word

"diversity," they're generally referring to the amount of people with the presence of members of racial minority groups?

MR. WALLACE: Objection to the vagueness and irrelevance of colloquiality in a law court, but he may answer.

A. I'm not sure what they'd say in terms of diversity in terms of colloquially. It probably varies from region of the U.S. to another region. It certainly would be probably very different in Hawaii than it would be in Hawaii as opposed to in Mississippi or elsewhere. So I'm not sure what to say in terms of a general statement about that.

Q. And looking at Exhibit 10, Mr. Cooper's rebuttal report at paragraph 36. And let me know when you're there. Do you see it?

A. I do.

Q. And do you dispute his assertion that: "As defined by the percentage of the state level population that is not non Hispanic white, Mississippi is the 12th most racially diverse state in the nation?"

MR. WALLACE: You know, objection as to being out of time, but you may answer.

A. I just would not use the term "diversity" in that sense. He can, you know, and he says that whatever

the ranking is and whatever he's computed it on, it's the 12th most racially something in the -- I just wouldn't use the word "diversity."

Q. And so you would not dispute his assertion that" "as defined by the percentage of the state level population that is not non Hispanic white," using that definition of diversity, "Mississippi is the 12th most racially diverse state in the nation?

A. Well, I don't know if it's the 12th most or not. That's another thing I would have to look up, so I don't know the answer to it.

Q. So you're not disputing it?

A. Well, I can't say yes or no. You're asking me to state -- agree with the fact that I'm not sure if it's 12th most racially diverse state in the county. And what year? Are we talking about the 2020 census? The ACS? I mean, there's a lot of places you could measure this from. I'm not trying to be obstructive, but I'm just saying, you know, it's hard for me to answer the statement just off the top of my head like that.

Q. And, I mean, looking at the paragraph, I think Mr. Cooper says that it's looking at census data?

A. Well, it couldn't be 2020 census data, was it? I -- you know, I'm just asking.

Q. Yes, 2020 census data.

A. So he had 2020 census data when he wrote this report?

Q. Yes.

A. Okay.

Q. The report from October of 2022.

A. Okay. I mean, and it could be the case. A lot of information wasn't released that soon, but I'm -- I don't know. But the point is, I don't know if it's the 12th most diverse state in terms of whatever measurement you've got or not because I don't know the source of his data, I don't -- I haven't looked at a ranking like that, so it's -- I can't answer the question. I cannot give you an opinion on it.

Q. Have you ever seen your definition of diversity used as a consideration in the electoral districting context?

MR. WALLACE: Objection. I think it's asking for a legal opinion, maybe it's a legal fact. But I will allow him to answer.

Q. I'm asking, to be clear, what you have personally seen in your life and work in this area. Have you seen this definition of diversity that you proffered used in the electoral districting context?

A. I don't know.

Q. You can't recall any instance of it as you sit here?

A. No, I can't recall.

Q. Does any source that you are aware of as someone who's being proofed as an expert in this case indicates that your definition of diversity is a proper consideration in the electoral districting contest?

MR. WALLACE: Same objection, but he can answer it.

A. So is it -- repeat that one again.

Q. Well, let me ask it this way. We looked at that National Conference of State Legislatures report that you relied on?

A. Okay.

Q. And we looked at that congressional research service report that you relied on; right?

A. Yes.

Q. And we looked at that redistricting monograph that Mr. Bryan and Morrison wrote?

A. Yes.

Q. And did any of those sources indicate that your definition of diversity is an appropriate consideration in the electoral districting context?

A. Not that I recall.

Q. And are you aware of any other sources that

indicate that your definition of diversity is an appropriate consideration for the electoral districting context?

A. Not that I recall.

Q. So if a map drawer -- and I'm asking you this not as a legal conclusion but as someone who's being proffered as an expert in this case -- if a map drawer were to optimize for this definition of diversity that you've laid out there, that would mean they would want to spread the black population among the three districts, right, so that they were maximally -- each district was maximally diverse according to your definition; right?

MR. WALLACE: I adopt your objection to your own question. He can answer it.

A. If you're looking at just a race, that's one way you could do it, but there's other dimensions to population composition beyond race.

Q. Fair enough. And so if a map drawer were trying to optimize for racial diversity which is what you were talking about when you said that Mississippi is not as diverse in terms of race and ethnicity, if you were trying to optimize for racial diversity, you would spread the black population among the different districts?

MR. WALLACE: Same objection. He may answer.

A. You mean in the sense of someone -- like you said, a map drawer is trying to do something and looking for diversity, and all you're looking at is black versus one other racial category.

Q. Yeah. Or ir you're using your definition of diversity to draw districts in Mississippi, if you were trying to implement that definition and optimize for racial diversity, you would spread the black population across the districts so that all of them had black population in them; right?

A. Well, if you're just simply looking at the categories, again, of where I told you white and black, to me that's -- if you're using two categories, it's not a good example of the use of the word "diversity." So you'd want to -- I'd introduce more elements than just black -- distribution of the black population or the white population or the Chinese population across all the countries in Mississippi.

Q. So would you say that your definition of diversity or at least with respect to racial diversity is not really something that an electoral map drawer in Mississippi should factor in?

MR. WALLACE: Same objection as before.

A. I don't know. It depends on the task, I guess. I don't know. I can't speak for other map drawers or any map drawers. I don't know.

Q. Well speaking for yourself and a person who's offering expert opinions about the qualities of electoral maps in this lawsuit, are you saying that one -- that you would consider the racial diversity of different districts in evaluating the districting plans?

A. Along with other measures of diversity, other measures of how human beings vary.

Q. And if you were optimizing for that definition of racial diversity that you described, that would mean drawing three black minority districts; right?

A. Again, I stress that I'm not looking at it just in terms of race. So when looking at the human -- you know, the composition of the population, you're looking, as I did, beyond race and what diversity might represent.

Q. So you don't think it's a good idea to look at racial diversity as you've described it?

A. I didn't say that. I said I would look at things beyond that if I'm looking at diversity.

Q. You wouldn't look just at racial diversity?

A. That's correct.

Q. Okay. So let's -- and just -- let's go to

paragraph 31, which I think we're basically on in your report, your January report, excuse me. This is pages 15 into 16. Just briefly, you know that the supreme court districts are also the districts that are used for various other elective and appointive offices in Mississippi; right?

A. I do.

Q. And what's the relevance of that in your opinion as someone who's being proffered as an expert in this case?

MR. WALLACE: Objection to the extent you're asking him for a legal opinion on relevance, but he may answer.

A. They're important in the sense that they -- that those districts determine a lot of other issues that go on in the state like the institutes of higher learning and appointments of boards and the bar and the bar exam board.

Q. Is it your opinion that having one of the three supreme court districts be majority black voting age population would decrease diversity in state government in Mississippi?

MR. WALLACE: Again, objection as outside the scope of the court's order, but he can answer.

A. And again, I'd stress that my answer is, it's

beyond race and it's not just affecting the government in Mississippi. So I think it's important in that regard whether I was going to use diversity of the population measuring a lot of dimensions.

Q. And just on this point, you're not saying, you're not opining that having one of the three supreme court districts be majority black would decrease diversity in state government?

A. I don't know the answer to that question. I don't know if diverse -- when you say diversity in state government, people who work for the state? What's the question you're asking?

Q. People who are appointed to -- I mean, you --

A. Okay.

Q. We're talking in reference to these various appointed and elected offices.

A. Okay. So you're talking about the appointive offices, not people who are necessarily employes of the State of Mississippi; right?

Q. Right. With respect to those offices that you mentioned in this part of your report, you are not opining that the occupants of those offices will be less diverse if one of the three districts is majority black?

A. I don't know the answer, yeah, and I haven't opined on that, and I'm not in a position to do that

now.

Q. Now, you mentioned The Institute of Higher Learning, and I believe you note in your report that the 12-member body that's appointed by the governor of Mississippi, 4 members for each of the three districts?

A. I believe that's correct. I'd have to look in my record, but I believe that's correct.

Q. Yeah, you say: "In regard to IHL, 4 of the 12-member board of trustees for the state IHL are appointed by the governor from each of the three supreme court districts." Do I have that right?

A. You do.

Q. And you say in paragraph 31, and you mention this again later as well, you say: "The board has a diversity statement."

A. It does.

Q. And you cite Section 102.06 of the board's policy manual, and you say it acknowledges the value of the diversity for Mississippi.

A. Yes.

MR. SAVITZKY: And we'll just mark that. Copy for you, copy for Mr. Wallace.

MR. WALLACE: What number?

MR. SAVITZKY: This is going to be -- oh. Dr. Swanson, could I please that have back? Thank you.

I was quick on the draw there. Here you go, No. 17.

BY MR. SAVITZKY:

Q. This is the IHL board of trustees' policies and bylaws that you reference in your report. And then looking at pages 14 and 15 of this document, we see the diversity statements that you reference there. Let me know when you're there and confirm that that's the diversity statement that you're referencing?

A. I'm there.

Q. Okay. And looking at this statement and especially looking at on page 15, you would agree that the board here adopts a set of goals for higher education in Mississippi --

A. Yes.

Q. -- related to diversity?

A. Yes.

Q. And the goals they adopt are: "One, to increase the enrollment and graduation rate of underrepresented students at our institutions"?

A. Yes.

Q. "Two, to increase the employment of underrepresented individuals in administrative faculty and staff positions?"

A. Yes.

Q. "Three, to enhance the overall educational

experience through infusion of curricular content and cocurricular programming that enhanced multicultural awareness and understanding?"

A. Yes.

Q. "Four, to increase the use of unrepresented professionals, contractors, and other vendors?"

A. Yes.

Q. Fair to say that the diversity goals adopted by IHL focus on representation for "underrepresented individuals"?

A. Yes.

Q. Not necessarily on -- strike that.

In your view, is anything about these goals diminished by changing the supreme court district so that one of them is majority black voting age population.

A. I don't know the answer to that question.

Q. Do you offer any opinion that these goals, these diversity goals, would be diminished in any way by having one of the supreme court districts be majority black?

A. Are you talking about the four points that's you just raised?

Q. Yes.

A. I don't know the answer to that.

Q. You don't offer an opinion on that?

A. Not at this point in time.

Q. And you can put that one aside right in this pile here.

And now let's talk about your cluster analysis going to paragraph 90 of your report, not page 90 --

A. I understand.

Q. -- which I just turned to. All right. So beginning at paragraph 90 of your report, your January report, you conduct what you call a diversity evaluation; right?

A. I do.

Q. And you base that on what you call a cluster analysis; right?

A. Correct.

Q. And you say that you conduct this cluster analysis to evaluate the issue of population diversity?

A. Socio and economic diversity is in that too.

Q. Well just looking at that first paragraph 90, the last sentence, you say --

A. Population diversity, correct.

Q. Right. And to do the cluster analysis, you took county level data on a number of the different indices of health and wellbeing from the 2017

Mississippi Health & Hunger Atlas?

A. I did.

Q. And before we talk about that, why didn't you use ACS data?

MR. WALLACE: All right. Now that you've asked a question, I'm going to ask -- I'm going to object to that as being outside the scope of the Court's order, but he may answer it.

A. It's a consistent set of data which may or may not include some census bureau data in there that goes beyond what you can get from the ACS.

Q. Oh, it includes --

A. It may or may not.

Q. -- the ACS data?

A. It may or may not. I'd have to go back and look, but I'm sure it has census data of some sort in there somewhere, but I have to go back and look and refresh my memory.

Q. Was there a more recent version of the Mississippi Health & Hunger Atlas available?

A. Not when I contacted people at Ole Miss. I got --

Q. And you got -- I'm sorry. Please finish.

A. I got it from people at Ole Miss, my former colleagues.

Q. And as far as you know, they gave you the most recent version?

A. The only version as far as I know.

Q. So you say -- and I think this is in paragraph 93 of your report on page 37, you say: "Health and hunger are correlated with socioeconomic status which in turn in correlated with race." Is that right?

A. Correct.

Q. And so in your view, the health and hunger indices also serve as indices of race and socioeconomic status?

A. They're --

MR. WALLACE: Same objection. He may answer.

A. They're correlated.

Q. Okay. And just looking at the last sentence of this paragraph, you say: "These correlations support the argument that the health and hunger indices also serve as indices of race and socioeconomic status."

A. Correct, right.

Q. And just in layman's terms, is your point that black Mississippians are worse off in terms of health and hunger and other socioeconomic metrics than white Mississippians?

MR. WALLACE: Same objection. He can answer.

A. It was my point that any group is better or worse off in terms of that, just some groups may be higher in some indices and other ones lower in other indices. That's my point.

Q. What do you mean when you say that: "The health and hunger indices also serve as indices of race and socioeconomic status"?

A. Well then in that case, generally speaking, that if you're -- if you score low on one dimension, you're probably going to -- it's going to be correlated with a low score in another dimension.

Q. So -- and specifically, if you score low on the health and hunger indices in that data you looked at, you would also be likely to score low on other indicators of socioeconomic status?

A. Yes.

Q. And you would also be more likely to be black?

A. It depends on the part of the state you're in. There may be parts of the state where you have rural white folks, for example, that would probably score similarly if -- where you're looking at different parts of state. But yeah, in general, I'd say you're probably more likely to be black.

Q. Let's talk about how you created these indices. And I'm looking, for reference -- you can do too if you want, but I'll ask you questions and see if you want to look. I'm looking, for reference, at page 48 in your report in Exhibit III.H.1. To create your need index, you use nine different health need indicators like teen pregnancy and adult obesity; is that right?

A. This is what the people did who put the Hunger Act list together, they -- the need indicators, this is what they created, not me.

Q. Okay. So you used the indices sort of fully formed as provided to you in the Health & Hunger Atlas?

A. Correct.

Q. Okay. So you used a need index from the Health & Hunger Atlas that includes nine different health need indicators like teen pregnancy and adult obesity?

A. I'd have to look to see exactly which ones I used, but in general these were the variables that were available to use as they categorize them from the report. But I don't recall which ones, if all of them I used or some that were specific. So we need to go through that.

Q. Well, let me ask you this: Do you know how these different indices were constructed by the folks who put together the Health & Hunger Atlas?

A. They wrote it up in the hunger atlas, and I don't recall off the top of my head what they said. I'd have to go back and review the atlas.

Q. And do you know the source of the different metrics that they include in these indices?

A. You'd have to go back and look at the -- it's in there. They have it documented.

Q. Do you know that the sources that they used for these indices are reliable?

A. My general impression in my memory based on the work they did and the people who did it, I don't think they would pick indices and data that were from sources that were not reliable. But if you're asking if I went back and independently verified it for myself, I didn't.

Q. Do you know why they created this particular index of metrics?

A. I think it has to do with looking up Mississippi. So again, if you -- you need to look at their report to see what they say in terms of what the goals exactly of the report were.

Q. And so you actually use a number of indices. You have a need index, you also have a hunger -- sorry, you have a health need index, and you also have a hunger need index ; right?

A. Well when you say I have, those, again, are how

they classified the indicators they used. So I would say those -- this is a description of what they have in the report and how they categorized it.

Q. So you used the Health & Hunger Atlas's need index and its hunger -- or excuse me, their -- yes, their need index -- their health need index, excuse me, and their hunger need index, you used both of those for your diversity analysis?

A. Yes. I'd have to go back and see if I actually pulled off the individual elements of each index or used the index, because I don't recall off the top of my head what I did. Do you follow me? I can't recall now that if I used the index in itself or if I used the individual indicators in there as part of the cluster analysis.

Q. So you don't know whether you used all the different indicators that are listed here?

A. As I said, the last time I read this report was months and months ago, so I've haven't thought about it until today when you started asking me questions on it. So I need go back and look at how I aggregated. So the basics of that, I -- I would need to go back and review what I did for it to see what's in there.

Q. You say: "These two indices form the input for the cluster analysis."

A. Okay. Then -- then that's what it has, these two indices. Where are you at?

Q. I'm looking the second to the last sentence in paragraph 94.

A. Then that's what I did.

Q. And when you say "these two indices," you're referring to the need index which includes both health indicators and hunger indicators, and the second one is the performance index which includes health and hunger indicators; right?

A. Yes.

Q. And so you took all these different indicators from these two indices, and those are the inputs for your cluster analysis?

A. Well, let's look at Appendix 2, because it says I list them in Appendix 2. J.

Q. And that would be starting at page 94 of your report? Excuse me, page 93.

A. Thank you.

Q. Yep.

A. Now I can see it. Yeah, I used their indices in need and the performance indices. Thank you.

Q. And again, you didn't select these different indicators, you just used the two indices that the Health & Hunger Atlas people put together?

A. That's correct.

Q. Someone could have selected a different set of indicators to measure health and hunger in Mississippi?

A. Well if there are data available, I guess they could have and want to construct it.

Q. You could have constructed one out of ACS data?

A. I don't think you're going to get SNAP enrollment and primary care physicians for 100,000 food-insecure individuals, you know, whatever else may be in here that's necessarily in ACS data. You may or may not. But if you did, you'd have to go to a lot of different reports to find it. And if that's what you're asking me, and you may end up having to use ACS data from different time points.

Q. And to be clear, I'm not trying to knock you for, you know --

A. Yeah, I understand.

Q. -- for not doing that, I'm just -- I want to make sure this isn't the one definitive set of indicators that one could use to measure health and hunger, this is the one that the Mississippi Health & Hunger Atlas people happened to choose; right?

A. That's correct. And relates directly to Mississippi. And in that sense, it was convenient in the sense that it's all assembled in one place and

relates to the State of Mississippi?

Q. Now, how does this -- how do these indicators help you measure population diversity?

A. From the correlations that I described there in the report. If you go back to what you just read about --

Q. Well --

A. -- in paragraph 93.

Q. Uh-huh. So when you say population diversity, you mean diversity with respect to health and hunger needs and issues?

A. And they're correlated with other forms of diversity such as race and socioeconomic status.

Q. And you say that this analysis: "Enables us to understand the geographic distribution of population diversity beyond the raw percent any part black for each county."

A. Yes.

Q. So doesn't it only enable us to understand the geographic distribution of this particular definition of diversity that you've constructed using the Health & Hunger Atlas indices?

MR. WALLACE: Object to the form as being outside of the scope of the court's order, but he may answer.

A. And to the extent, again, that they're correlated with these other socioeconomic indicators including race, I would say they represent a reasonable index for doing that.

Q. And your unit of analysis in conducting this cluster analysis is the county; right?

A. Correct.

Q. So what you're seeing is the distrubution of high or low need counties among the different districts; right?

A. Correct.

Q. So I think you'd agree with me that there are some counties in Mississippi that are small in population and some that are very large in population; right?

A. The needs -- I think you'd have to took at the report again, and I don't believe they're biased by the number of people in the county, I believe the need indicators are set up, and you can see it in here where they're talking about percentages and rates. So in a sense you're trying to be dimensionalist, you're certainly going to have a lot more people one category, say, in Hinds County than you would in some other smaller county. But when you start looking at things like rate, it means they're trying to be dimensionalist.

Q. But I guess my point is just in terms of what we can take from your analysis, it doesn't speak to the distribution of population across the districts, it speaks to distribution of counties with certain characteristics across the districts?

A. It speaks to the distribution of these indicators across counties, and what that speaks to going beyond the -- back to paragraph 93 is the correlation that they have with socioeconomic and racial categories.

Q. Now, you could have designed some cluster analysis that looks at the distrubution of population; right?

A. How would you do that? Could you give me an example?

Q. Looking at the number of people with particular health needs or hunger needs?

A. Well that's what this does, but it looks at, again, rates not numbers, so attempts to make it dimensionalist so you're not affected by what the population size is in a given county.

Q. Right. And you -- but you could have looked at the number of people as opposed to the rates that you're seeing in the particular need?

A. Well, the number if people would be affected by

the population counts in the counties then.

Q. Right. But your analysis looking at the distribution of the counties of particular rates doesn't indicate whether one supreme court district has a very large county with high need and therefore there are more unhealthy or hungry people in that district?

MR. WALLACE: Object as being out of the time and argumentative, but you may answer.

A. Yeah. Well my take is if you're looking at an index of need, it's indicating need. And I think that my take on reading the report that the folks put together is that they did a good job of putting those things together. They had good arguments. And I would direct you to go read their report to see whether or not you think it's reliable.

Q. And so in terms of the analysis you did, you sort of grouped counties together into three groups, high need, high performance, which means there's a lot of health and hunger need, but also fairly strong access to services or resources; is that --

A. Correct.

Q. -- right?

A. Correct.

Q. And then you have a medium need, medium performance group, and that's about half the counties in

the state fall into that group?

A. Correct.

Q. Fair to say those counties are maybe a little bit better off in the sense that somewhat less health and hunger need?

A. Than in cluster 3, the high need, low performance.

Q. And that's what I was getting to.

A. Yeah.

Q. You also have the high need, low performance set of counties which means there's a lot of health and hunger need, but not a lot of resources or access to resources. Do I have that right?

A. You do.

Q. So those counties are the worst off?

A. Yes.

Q. And just looking at that map on page 50 of your report, those high need, low performance counties are in purple; is that right?

A. Yes.

Q. And fair to say that many of them are in the Mississippi Delta?

A. Well, let's count them up. If you're -- when you say "many," you mean a majority or --

Q. Looks like about half. You can count them.

A. Well if you count Tunica, Coahoma, Washington, they're -- those are definitely -- Bolivar, Sharkey, Issaquena, those are definitely Delta counties, correct? They're not there. So I'm not sure it's even half, but it's somewhere around that number.

Q. And then the balance of your analysis is basically looking at the distribution of these counties in each of the supreme court districts; right?

A. Correct.

Q. And so looking at page 52 of your report, Exhibit III-H-3X-c which is a little bar chart at the bottom, you show that about half of the high need, low performance counties are in district 3 under the existing --

A. Yes.

Q. -- map. And then the other half are divided between districts 1 and 2?

A. Yes.

Q. And again, because what you're doing is looking at the percentage of counties in each district, the counties you used in the analysis -- and some counties are larger than others, we don't actually know whether district 3 or district 2 or district 1 has more hungry or unhealthy people in it compared to the other --

A. Well, if you did that comparison, as I answered

you before, you're obviously going to have, given that all else is equal, in a county with a larger population, you're going to have more in that county of a particular characteristic. Hence, they used rates in an attempt to make it dimensionalist so it is comparable. Is the rate higher in one county or another regardless of the population size.

Q. But I guess my question is, you know, the unit of analysis here is the county --

A. Yes.

Q. -- but now you're looking at the distribution of counties in the supreme court districts and making what I understand to be a statement about the population diversity in the supreme court districts; right?

A. That would be correct. But in this sense what you're looking at are the dimensionalist rates that represent those populations. So if you look at it from the standpoint of where are needs the highest and the performance the lowest, and you center correlated again with socioeconomic status and race, that's what you're looking at with maps.

Q. And I guess what I'm trying to understand is, looking at the existing plan, you see about half of the counties you identified as high need and low performance in district 3, but if they're all very small counties;

and meanwhile district 1, you have a smaller percentage of those counties, but Hinds County's in district 1. It may be that there's more health and hunger need in district 1?

A. Well there's always going to be a higher need in a county that has a higher population. That's not what I looked at.

Q. But the supreme count districts have not equal but similar populations?

A. I hear what you're saying. And what this does is look at it from a similar perspective. When you're looking at the rates across there, okay, what -- regardless of what population size is, what do the rates look like at a county level?

Q. Well, couldn't you aggregate the counties and actually look at the rates among the population as a whole?

A. Let's see. Why would I do that?

Q. So that you can compare the populations of the different districts. If I want to look at teen pregnancy or obesity rates or SNAP rates, I could aggregate the information for each county up to the district level, and I could see which of these districts has higher rate of SNAP use.

A. Now I see what you're getting at. Okay. So

yeah, if I had the data. And I didn't have the raw data to be able to do that with the data are and the report are given rates by county. So without knowing what all the numbers are in there, I'd have to go reconstruct and put them up at the district level. That's what you're asking --

Q. Yes.

A. -- and I didn't do that.

Q. And you didn't do that?

A. That's correct.

Q. So -- and without doing that, you can't speak to the similarity or difference of the districts in terms of those different metrics?

MR. WALLACE: Objection. Same objection as before and objection as to vagueness, can't speak to the differences, did you say? I'm -- I lost your meaning.

A. I think I follow your meaning. But the point is, I looked at counties.

Q. So --

A. And if you reaggregate the lines by county, you're starting to see from the county perspective what the numbers are by that is you can tell.

Q. And looking at page 55, we're looking at illustrative plan 1, same bar chart. And you say that under this illustrative plan 1: "The majority of the

high need, low performance counties are now in district 1 under Cooper's illustrative plan 1."

A. Yes.

Q. And that -- again, that makes sense because as we've discussed, illustrative district 1 includes all the Mississippi Delta, all the counties north, south along the Mississippi River, and a lot of the high need, low performance counties, some of which are very small in population, are in that area.

A. So as you asked before, it means it's correlated with race and socioeconomic status, an indicator of that.

Q. And the result -- I mean, your analysis shows that what -- one of the things that Mr. Cooper's map does is that more of these counties with that high level of need and low level of resources are being grouped together in district 1?

A. Correct.

Q. So Mr. Cooper's illustrative plan 1 is grouping together counties with similar socioeconomic needs and interests?

A. And making it less diverse.

Q. But you agree he's grouping together counties with similar socioeconomic needs and interests?

A. I just said that.

Q. And then just same question looking at your page 58, again, you're showing 69 percent of the counties in that high need, low performance category are in district 1 under illustrative plan 2; is that right?

A. That's correct.

Q. And again, what we're seeing is that Cooper illustrative plan 2 in grouping together counties with similar socioeconomic needs and interests?

A. Making it less diverse, yes.

Q. And we talked about community of interest before. From a map drawing perspective -- I ask you this as a person who is being proffered as an expert in this case -- what do you think is more in line with those districting principles that we discussed earlier? What --

MR. WALLACE: Well, I'm -- go ahead. Let me let you finish your question. I thought you had, and then you kept going so pardon me.

Q. What do you think is more in line with the districting principles we discussed earlier, grouping together areas that share common needs and interests or grouping areas together in a way that maximizes the diversity and spread of those interests among different defenses?

A. To answer that question --

MR. WALLACE: Let me get my objection in. He's asking for -- first of all, he's vague; second of all, he's asking for legal opinions; and third of all, it's outside the scope of court's order. And having said that, you may continue your answer.

A. As you said earlier, it -- there's a lot of tradeoffs when you're looking at different metrics and measurements in doing this. And that might be one of the tradeoffs you're looking at.

Q. And having looked at some of those districting principles and offered opinions about them in your expert report in this case, what do you think is more consistent with the principles that are reflected in the Congressional Research Service Report, Redistricting Manual, National Conference of State Legislatures?

MR. WALLACE: Same objection.

A. They emphasize more of the issues I think you're getting at as opposed to the diversity issue.

Q. They emphasis grouping together areas with common interests and needs?

MR. WALLACE: Same objection. He may answer.

A. Yeah. And I would again go -- aren't all those groupings -- again, I use them as a guideline, but aren't they generally for congressional districts; is

that the case?

Q. The National Conference of State Legislatures report that you cited related to considerations for state legislative and other districts as well, didn't it?

A. That -- I mean, when I say congressional, that's what I meant, state and federal. I don't think there's anything in there about a supreme court district.

Q. Right. And the Redistricting Manual from Morrison and Bryan, is that similarly applicable?

A. Well again, I -- how many -- I didn't see things specifically on supreme court cases in those materials, so that's why I used them as a guideline.

Q. And is there something about supreme court districts that makes this diversity metric that you're discussing more relevant than the legislature district?

A. Well, you read it yourself --

MR. WALLACE: Same objection. He may answer.

A. You heard from the IHL, said their -- one of the goals is to be more diverse.

Q. I mean, did anything in the IHL statement describe diversity in the way that you are discussing it now?

A. One of -- the lead-in statement before it listed the four points talked about cultural diversity. And so cultural diversity covers a lot of ground.

Q. Other than the IHL policies and bylaws that we discussed, is there any other reason why this diversity metric?

A. Well there's --

MR. WALLACE: Same objection. You may answer.

A. There was the court case that I saw too on it.

Q. The court case that used the word "diversity"?

A. Yes.

Q. And you don't know as you sit here whether that court case was using the word "diversity" in the way that you mean the word "diversity"?

A. I do not know.

Q. Anything else?

A. Not that I can think of at this time.

Q. So let's talk about your analysis of polling places, and turning to the paragraph 81 of your report. Starting at paragraph 81, you have a voting age population polling place spacial analysis?

A. Correct.

Q. And in paragraph 81 you ask: "What are the differences in proximity, the differences in distance,

and the distance of black voting age population to current polling stations compared to all voting age population, and in a particular, white non Hispanic voting age population." Is that right?

A. Correct.

Q. And you say: "My hypothesis for this question was that if the black voting age population were being systematically disenfranchised by the State of Mississippi, a symptomatic indicator of that would be seeing fewer of them close to polling places and more of them of a greater distance from polling places."

A. Correct.

Q. How did you form that hypothesis?

A. Just in general knowing what propensity, close to things, mean.

Q. Can you say more about that?

A. Yeah. So for example, I've done studies of where graduates from high school go to college in the State of Washington, and propensity is a big indicator of it. So many of the freshman or transfer students who go to Western Washington here in Bellingham, Washington are from Western Washington, they're not from Southeast Washington. Many of the students who --

MR. WALLACE: Did you mean "propensity" or "proximity"? I'm looking at your --

A. Yeah, proximity. I'm sorry. Thank you. So that's what I mean. So, you know, if you're close to something, you're probably more likely to be able to do it or go there. And there's not -- I can't cite all the literature off the top of my head, but there's a lot of literature, probably in marketing and a lot of other fields it's that. That's one of the reasons why does Target site stores in certain places.

Q. Would you agree the decision to leave your family for the first time and go to college somewhere close to home rather than far away when you're away four years is a little different than whether or not you're going to go vote on a Tuesday; right?

A. But it's a little different than deciding whether you're going to go buy gasoline or clothes too, but as I said, there's -- without being able to speak to it all in my head, there's a lot of literature on how relatively close you are to things that triggers whether or not you're taking advantage or doing it. That's the point. So yeah, there is a lot of variation of why people are doing it, but you're close to something is a determinant of whether or not you do it.

Q. When you put up a Target store, there's a big Target logo and a big sign that says Target on it; right?

A. As far as I know there is, yeah.

Q. But there isn't one on a polling place, is there?

A. No. And I just said there's a lot of differences in all these things, but the -- is the word propinquity? That might be it. How close you are to things is one of the determinants of whether or not you take advantage or use them or don't. It's not the only thing, but it's one of them.

Q. But you would have to know where something is in order to -- in order for that logic to apply?

A. Well I guess you could stumble across it if you're doing a random search.

Q. On a polling location, you'd have to stumble upon it on a Tuesday in November; right?

A. Do they move around all the time?

Q. Well, that's my next question. Do you know who decides polling locations in Mississippi?

A. No, I don't.

Q. So when you say that --

A. It's probably at the county level, but I'm, you know, just saying I don't know.

Q. So when you say that polling place proximity could be evidence of systematic disenfranchisement, that's despite the fact that locations of polling places

is decided, you would think, at a local level?

A. Yes.

Q. And do you know whether there are racial disparities in access to vehicles in Mississippi that might affect the ability of Mississippians to get to the polls on election day?

MR. WALLACE: Same objection. You may answer.

A. There might be, but people are people, so there may be different ways to overcome some of those disparities.

Q. Well -- and just looking at Mr. Cooper's responsive declaration, Exhibit 10, paragraph 34 --

A. In exhibit?

Q. It's Exhibit 10, but it's paragraph 34 of the responsive declaration. I just want to make sure you're looking at the responsive declaration.

A. That's Exhibit 9. This is 12.

Q. We want Exhibit 10.

MR. WALLACE: This one?

MR. SAVITZKY: You've got it.

BY MR. SAVITZKY:

Q. And looking at paragraph 34 --

A. Yes.

Q. -- Mr. Cooper says: "Statewide, 10 percent of

black households do not have a car versus 4.3 percent of white households."

A. I see it.

Q. Do you have any reason to dispute that?

A. No.

Q. He says: "The racial disparity expands to 12 percent versus 4.5 percent in the Delta region." Any reason to dispute that?

A. No.

Q. Do you know if there are racial disparities between who has the type of job where they can get off work and vote on a Tuesday in Mississippi?

A. I do not know.

Q. Based on the discussion we've had about socioeconomic indicators, is it likely that black Mississippians are less likely to be able to take off work and vote on a Tuesday?

A. I'd look at it as a research question.

Q. Do you know whether there are racial disparities in Mississippi in terms of single-parent households that might affect the ability to get to the polls and vote on a Tuesday in light of work and childcare obligations?

A. Differentially than other population racial groups? Is that what you're asking me?

Q. Correct. Are there more black single-parent households than white single-parent households in Mississippi?

A. I don't know exactly if that's the case or not.

Q. And just looking at that exhibit that we just -- looking at Mr. Cooper's responsive report in paragraph 33, he says: "Other voters may have responsibilities that make it impossible to walk. 51.4 percent of the black female head of households with children live in poverty compared to 37.4 percent of their white counterparts." Any reason to dispute that?

A. Does he give a source? Again, I don't have any reason to dispute it, but I just wonder what the sources are and how consistent they are, that's all.

Q. I can represent to you that it's all ACS data.

A. Okay. And then the question is, again, you know, the sample sizes and whether or not they're statistically different. So if you just pull things off the ACS and start comparing them, depending on where you're at and depending what the census bureau does, I would prefer not to answer that until I actually saw the size of the sample, what the margins of errors are on it, because it may be the case in some of these comparisons that there's no statistically different -- significant difference. Do you follow me? So I don't

know in advance, just asked -- if you're asking about the state as a whole and that's what he's arguing, for the state as a whole, then it may be the case there is one.

Q. And by the way did you do a test of significance, a T-test or something else to look at your analysis of polling place proximity?

A. No.

Q. By the way, do you know if there are racial disparities in Mississippi in terms of how long people have to wait to vote at the polls in Mississippi?

A. I don't know.

MR. SAVITZKY: And we can mark right now -- it's a little out of order, but this is just where it is. This is Dr. Burch's rebuttal report, marking it as Exhibit 18. There should be a copy for you, Mike, but I'm not seeing it. Give you mine.

BY MR. SAVITZKY:

Q. And looking at pages 12 to 13 of Dr. Burch's rebuttal report -- let me know when you're there.

A. I see it.

Q. Looking at the bottom, she says: "Further analysis of the CES which I report shows that among validated Mississippi voters, 18.9 percent of white voters report they waited for more than 30 minutes to

vote compared to 40.7 percent of black voters." Any reason to despite that?

A. Yeah, there is.

Q. Any reason other than the criticisms of the CES that we'll talk about presently?

A. That I don't know. But definitely I'd start with CES.

Q. All right. And we'll get to that. And hang on to -- you can put Dr. Burch's rebuttal aside, but don't get let it get too far.

So you can't say whether the various racial disparities we talked about including the ones that are reflected in ACS might negate any theoretical advantage in terms of polling place proximity for black Mississippians?

A. If you're asking me right off the top of my head, my answers were, I think, pretty consistent saying for the most part, some of them are research questions, so they have to be looked into in order to answer the full question.

Q. And looking at paragraph 82 of your report, you say: "While each of Mr. Cooper's illustrative and least change plan increases the percent of the black population in district 1, I want to know if the increases he achieved came at the expense of black voter

proximity to the polls." What do you mean by that?

MR. WALLACE: Same objection as to outside the scope of the court's order, but he may answer.

A. Yeah, it looks on average if you change the counties around and you're moving black populations around, what does it look like in terms of proximity to the polls.

Q. Well, why would putting different counties into supreme court districts change the proximity to the polling places which are intra county?

A. Yeah. Well, it's a question I asked.

Q. Well, I guess my question is: How could it possibly change the proximity of people to polling places to put them in one supreme court district or another if all the supreme court districts are made up of whole counties?

A. It's a question that I asked. So -- and again, I stress that I don't know exactly where the -- how they were placed initially.

Q. Would you agree that whether a county is in one supreme court district or another doesn't have any bearing on where your polling place is?

A. That I don't know.

Q. You say: "If Mr. Cooper's plans increase the number and proportion of blacks but he moved close poll

proximity blacks out of district 1 and moved distant poll proximity blacks into district 1, one could argue that the actual impact of such plans would be to increase black voter disenfranchisement and risk fewer blacks actually turning out to vote."

A. Yes.

Q. What is the basis -- what is your basis for suggesting that changing the supreme court lines to draw a black majority district would increase black voter disenfranchisement and risk fewer blacks actually turning out to vote?

A. Well maybe that the average citizen's in a county, not in supreme court district 1, is different than a county that is in supreme court district 1 that has moved out of it. So for example, what -- pick a county. In every county in every state are the polling distances for any given population exactly the same, they probably vary. So urban areas are probably in a closer proximity, correct, would you agree, than you would be in rural areas. So that's one example of how they might change. So even there it's at county level, it may be the case that by moving them around, you've now put people that were on average farther away from a voting poll into this new district.

Q. Did you do any analysis to demonstrate that

so-called close poll proximity blacks are more likely to vote than so-called distant poll proximity blacks?

A. No.

Q. Now in your report, did you ever go back and answer the question that you posed and offer an opinion or a conclusion about whether the actual impact of Mr. Cooper's illustrative plans would be to increase black voter disenfranchisement and risk fewer blacks actually turning out to vote?

A. I'd have to look in the report again, so I don't recall off the top of my head if I did.

Q. It's not that many paragraphs, if you want to just take a quick look.

A. Sure, I'll look here.

Q. It's the section between paragraphs 81 --

A. Or even in the executive summary.

Q. -- or 89.

A. Yeah. I'm looking at the executive summary. Paragraph, what was it, 9?

Q. 81 through 89 is your discussion of this issue.

A. Thank you.

(Witness reviewing exhibit.)

A. So no, I didn't look at it by district, I looked it on average for the state as a whole.

Q. So you didn't go back and look at what you

called "the question" of whether the increases Cooper achieved came at the expense of black voter proximity to the polls?

A. That's correct, I did not. Thank you.

Q. Now let's talk about the analysis that you did. How did you go about calculating the voting age population living within a half mile of their polling place?

A. Let's see how it's described here. This is done using the geospacial stuff that Tom Bryan has access to, and I asked him to give me ideas about how far people were from polling places. So when he got the list of where they were located, then he could do the GIS magic with VAPs and VAP by race within certain distances of those places. So that's how they're done.

Q. So Bryan GeoDemographics did this analysis?

A. Oh, absolutely. Yeah.

Q. What parameters did you give them?

A. Just what I told you. I said that I'd like to see what the distances are to polling places and, you know, if it's -- do you want to do categories on it that make sense or if you want just give me average distances, and we discussed it a bit, and I said, yeah, those look good in terms of what percent might be within a quarter mile, half mile, up to a mile or so. And that

was done in conjunction with the data that were available, how hard it was to assemble it and do it.

Q. And did you count the population of any census block that contains a polling place as living within a half mile of the polling place?

A. I can't remember the exact details and how it was done. When you're looking at census blocks, that's the lowest geography you get and there are ways that I know in GIS you split those using different algorithms. And that's likely what he did to do it, but I don't recall the details.

Q. And the census block can be larger than a mile around; right?

A. It can, depending what the population of where it's at, what makes up natural boundaries for one.

Q. So if you count on the population of the census block containing polling places, living within a half mile of that polling place, some of the people in that census block might actually live more than a half mile away from the polling place?

A. But again, I stress that there are algorithms I know GIS people use that will try and accommodate that so you're not just doing something that gross. Do you follow me? And what they do exactly, I don't know.

Q. And you don't know what Bryan GeoDemographics

did in this case?

A. I don't.

Q. You don't know whether he used an algorithm to make that distinction between people in the census block that are actually within the half mile and people who are actually outside the half mile?

A. I don't.

Q. And let's just look at Mr. Cooper's responsive report. Again, it's Exhibit 10. You should have it?

A. On report 9 or 10?

Q. 10.

A. Thank you.

Q. I'm a little concerned that your Exhibit 10 has gone missing here.

MR. WALLACE: I have a 10 if you need it.

THE WITNESS: Thank you.

MR. SAVITZKY: Do you have it?

MR. WALLACE: Yeah. Tell me what paragraph you want.

MR. SAVITZKY: I'm looking at page 12.

BY MR. SAVITZKY:

Q. And what Mr. Cooper does here in Figure 4 is, shows the census blocks which are in blue and then the half mile radii which are the circles there. So you can see there's significant amounts of those census blocks

that are outside the half mile radius of the polling place; right?

A. Correct. I can see that.

Q. Okay. And did you review Mr. Cooper's analysis in his report of this polling place proximity analysis that you did?

A. I remember reading through this and putting it aside.

Q. All right. And just starting at paragraph 24 on page 11 of Mr. Cooper's responsive report, Mr. Cooper used geospacial analysis to calculate that actually 26.3 percent of black voters live within a half mile of their polling place; right?

A. That's what it says here in paragraph 24.

Q. And do you dispute his analysis?

A. I've got no reason to dispute or not dispute it.

Q. And Mr. Cooper conducted -- after conducting this analysis said that the Bryan GeoDemographics analysis erroneously does count the entire VAP living in a given census block as being half mile from a polling place?

MR. WALLACE: Where does he say that?

Q. Paragraph 25.

MR. WALLACE: It's in 25?

A. Yeah, I saw it.
Q. Okay.
A. That's what he says.
Q. And you don't have any reason to dispute that?
A. Not at this time.
Q. All right. So just a few questions about socioeconomic analysis performed by Mr. Cooper and Dr. Burch. Looking at Exhibit 9, Mr. Cooper's October report and beginning on page 36, Mr. Cooper analyzes the socioeconomic profiles of the State of Mississippi using five year ACS data. Let me know when you're there.
A. I'm there.
Q. You don't dispute any of his analysis with respect to the ACS data there?
A. Let me read through this. So it appears it's from the 2021 ACS data, singular data for the State of Mississippi. Okay. No, I have no reason to dispute that those are numbers he took from the single year 2021 ACS data.
Q. Thank you. And by the way, just because it came up earlier, looking at the top of page 37, it does like seem you get SNAP participation rates with the ACS?
A. It looks like it, yes.
Q. And in paragraph 64 of his report on page 36, Mr. Cooper says: "In Mississippi, African Americans

trail non Hispanic whites across most key indicators of socioeconomic wellbeing." Do you dispute that?

A. Based on what's in the ACS, no.

Q. And in paragraph 66 and 67 of Mr. Cooper's report, there's the last two paragraphs, he explains that he reviewed and prepared charts of the same ACS data for counties and municipalities and that socioeconomic disparities by race also exist at the county and municipal levels throughout Mississippi. Do you dispute that?

A. Well, that's one where because it's at the county level and because of the sizes, I'd want to look at what the margins of error are before I made those statements. I trust it at the state level that the margins of error are sufficiently small, it's not an issue, but you see it down some of the counties, it could be.

Q. You dispute that the ACS data reflects those disparities?

A. That I don't dispute, it's just a matter of how you interpret it and if -- if the margins of error, if they're 90 percent margin of error overlap the mean of the other group, then there's no statistically significant difference. So you can't make the statement. Do you follow me?

Q. Understood. And setting aside whether or not -- setting aside any issues with respect to the sub sample size for counties or municipalities, with respect to ACS data for Mississippi, you don't dispute that that is what the ACS data is --

A. No, I don't have any reason to believe Mr. Cooper put down other data in there other than what he took out of it.

Q. And let's now mark -- we did it a little out of order because her rebuttal is already marked, but the -- mark Dr. Burch's report now as Exhibit 19.

A. I've got this piece of paper handed to me with nothing on it. I don't know what it is.

Q. That's Dr. Burch's rebuttal report.

A. Okay.

MR. WALLACE: Have we got one marked?

MR. SAVITZKY: Should be 18. Here's 19.

THE WITNESS: Here's 18.

MR. SAVITZKY: Okay.

THE WITNESS: That was just some other piece of paper, same thing, I guess. Okay. That's.

MR. WALLACE: We do have 19 for me? I've got 18.

MR. SAVITZKY: 19 for you, 19 for me. All right. We all have 18 and 19 which we'll be looking at

more presently.

BY MR. SAVITZKY:

Q. But just for now looking at what's been marked as Exhibit 19, on pages 3 through 10 of this report, Dr. Burch analyzes educational markers like student test scores and school district segregation, education attainment by race. You don't dispute her analysis of racial disparities in education in Mississippi on that front?

MR. WALLACE: Objection to being outside the scope of the court's order, but he may respond if he can.

A. In general, no. I'd have to look at some of the details on where she got the data and what she's pulling off to make a definitive statement. But in general, no.

Q. And looking at pages 10 to 13 of this report, starting at page 10, Dr. Burch analyzes racial disparities with respect to income, poverty and wealth looking at, for example, household income, access to a car, poverty, unemployment.

A. I mean, again, I --

MR. WALLACE: He didn't ask a question yet.

Q. You don't dispute her analysis of those racial disparities with respect to income and poverty?

MR. WALLACE: And I have the same objection to that question, and he may answer it.

A. The answer is, there's no reason for me to dispute what she's found from the current population survey --

Q. And I believe --

A. -- American Community Survey, and so on.

Q. And looking at pages 13 to 16, Dr. Burch discusses racial disparities in housing, for example, home ownership, looking at ACS data there for home ownership by race. You don't dispute her analysis of racial disparities with respect to housing in Mississippi?

MR. WALLACE: Same objection. He may answer.

A. Well, I don't -- I haven't -- I'm not looking at her analysis in depth, but I don't dispute the data she got from the American Community Survey as being reasonably accurate. The same from the Current Population Survey for the state as a whole.

Q. Or for example, I'm just drilling down on page 16, the last sentence, last two sentences in her report, she says: "The 2019 report by the Mississippi Home Corporation, a state entity, found that black people in Mississippi were denied mortgage loans more

frequently and faced discrimination in rental markets."

MR. WALLACE: Where is that?

MR. SAVITZKY: This is the second to the last sentence in the second to the last paragraph on page 16 of Exhibit 19, Dr. Burch's October report.

MR. WALLACE: All right. Same objection. He may answer.

A. No. I've got no reason to dispute it.

Q. And she goes on, she says: "Other studies have also shown that black Mississippi applicants faced discrimination in home lending, discriminatory practices affect ability of black renters to find rental housing in Mississippi." And that's from the National Fair Housing Compliance, DOJ?

MR. WALLACE: Same objection. He may answer.

A. My answer is the same as the last time.

Q. No dispute?

A. No dispute.

Q. Okay. And looking at pages 16 through 18 of Dr. Burch's report, she discusses racial disparities with respect to health, for example, in heart disease, access to healthcare, access to a primary doctor, health insurance. You don't dispute her analysis of racial disparities with respect to health in Mississippi?

MR. WALLACE: Same objection. He may answer.

A. If she's summarizing the data that is shown in the tables given the sources that they're from, I have no reason to dispute it.

Q. And looking at pages 18 to 20 of her report, Dr. Burch analyzes racial disparities with respect to criminal justice. And like you, she looks at the racial makeup of the correctional facility populations and, just looking at her chart here on page 19, looks like she got a very similar result to you in terms of 60 percent of the prison population being black?

MR. WALLACE: Same objection. He may answer.

A. And again, based on the fact that her analysis are really descriptive, verbal descriptions of what's in the tables, I have no reason to dispute it.

Q. You don't dispute the political science literature discussed in Dr. Burch's report that voting participation is generally correlated with socioeconomic wellbeing?

MR. WALLACE: Same objection, and perhaps outside the range of a demographer's expertise, but he may answer.

A. Given my knowledge of it, I don't dispute it.

Q. You don't dispute that this letter -- this literature shows generally that when a person has more education, more income, more health, they're more likely to vote and participate in politics?

A. In general, I think that's -- I agree with that.

Q. And in light of that general rule, it would be a reasonable hypothesis that if there was racial minority group in a jurisdiction that had less socioeconomic wellbeing, less education, less income, less health, they would have lower levels of voting and participation?

MR. WALLACE: Same objection. But he may answer.

A. And my answer to that again is that it depends on what racial group and what part of country and when and where you're looking at it. It's a research question.

Q. In light of -- let me ask it differently, then.

It would be a reasonable hypothesis in light of that general rule that the correlation between socioeconomic wellbeing and voting and political participation, that black voters in Mississippi who have less socioeconomic wellbeing, less income, less education, less health, less access to housing would

have lower levels of voting and political participation?

MR. WALLACE: Same objection. He may answer.

A. Again, it's -- it's not an easy question to answer from the standpoint of it's still pretty general. So it may be that certain areas of the state, people who are in exactly the same condition vote at a much higher rate than people very similar, exact same characteristics elsewhere.

Q. Well my question is: Given all of this information that we just discussed that you don't dispute from the ACS, from other reputable sources showing the racial disparities across many different indicators and given the political science literature that you don't dispute that socioeconomic wellbeing and voting are correlated, it would be a reasonable hypothesis that black voters in Mississippi vote less and participate less than white voters in Mississippi?

MR. WALLACE: Same objection, and he may answer.

A. And that's a reasonable hypothesis.

Q. So let's now -- well first of all, I think we're done talking about Mr. Cooper's reports at this point, so we can move those to the side if that'll make things a little easier for you before we start our next

set of questions. And these ones can go to the side as well, actually. And do you have Exhibit 10? Are we still --

MR. WALLACE: I've got 10 if he doesn't.

MR. SAVITZKY: We'll re-mark it if we have to.

MR. WALLACE: Is Cooper No. 10?

MR. SAVITZKY: Yes.

MR. WALLACE: Yeah, I've got it. You don't have it over there, is your problem; right? She doesn't have it.

MR. SAVITZKY: Yeah, we'll -- it's floating around here somewhere.

MR. WALLACE: We'll check it later.

BY MR. SAVITZKY:

Q. So with that, I want to talk about the voter turnout piece of this in your analysis of voter turnout in Mississippi starting with the current population survey.

A. And is that from the initial report or from another report? Are you talking about the report that we've been talking about here that you've given me, this one? That's what we're talking about?

Q. I'm actually going to -- I'm talking about your surrebuttal -- we'll eventually talk about your

surrebuttal.

A. Okay.

MR. SAVITZKY: In fact, this is a great time to mark your surrebuttal report. Hold on. All right. So I'm now going to mark as Exhibit 20, I believe.

MS. JONES: Yes.

MR. SAVITZKY: Your -- oh, this isn't your surrebuttal report. I'm sorry. Bear with me.

(Pause in the proceedings.)

MR. SAVITZKY: Well --

MR. WALLACE: Tell you what, I have to go check out of the hotel. You can keep digging while I'm checking out of the hotel. I'll be back in, you know, ten minutes, and maybe you will have found it by then.

MR. SAVITZKY: Thanks. Let's go off the record.

(A break was taken from 2:31 to 2:55 p.m.)

MR. SAVITZKY: Back on the record. So we were marking Exhibit 20 which is your surrebuttal report. That's marked for you here. Mr. Wallace, a copy. And I have that here. Okay.

BY MR. SAVITZKY:

Q. Now, before we sort of get into numbers and dig into the details, let's start with the CPS. What is the CPS?

A. The Current Population Survey?

Q. Yeah.

A. It's a regular survey that's done by the census bureau. It's large scale survey, it has supplements in it, so one of the supplements is a demographic supplement.

Q. Is it done by the census bureau?

A. It's -- it's probably done for other agencies, but the census bureau is the one that does a lot of survey research, so the CPS is technically done, I think, by the census bureau.

Q. And the CPS includes a voting and registration supplement?

A. That's one of the supplements.

Q. And that includes questions about whether the respondent's registered and voted?

A. Yes.

Q. And no one goes back and asks the respondents -- or sorry, strike that.

No one goes back and checks whether the respondents actually are registered to vote.

A. As far as I know, they don't.

Q. No one goes back and checks if the respondents actually voted?

A. Just like everything else that's in there, they

don't go back and check are you really this age? Are you really this ethnicity? Yeah, so as far as I know, it's -- they pretty much take the respondents' words as given.

Q. It's purely a survey, there's no sort of external validation process?

A. You mean in the sense of the answers --

Q. Correct.

A. -- they've given?

Q. The veracity of the answers are not externally validated?

A. That's what I understand the case to be, correct.

Q. And then looking at your January report still and a page 70, you have a table, Table IV.A.2 where you looked at Mississippi voting by race and ethnicity using CPS data; is that right?

A. Yes.

Q. And based on the data, you conclude that black turnout in Mississippi in 2020 was 72.9 percent and white turnout was 69.8 percent?

A. Correct.

Q. And this CPS data is the primary basis for your conclusion that blacks vote at higher rates than whites in Mississippi as a whole?

A. It is.

Q. And looking at this table, you conclude overall that the -- that 70 percent of Mississippians voted, 70.3 percent, I suppose, of Mississippians voted in the 2023 election?

A. Yes.

Q. And you agree, as you set out in your table in that total voted column, that 70.3 percent turnout would mean that 1.531 million people voted in Mississippi in 2020?

A. Yes.

Q. And just looking at Dr. Burch's rebuttal report which was previously marked as Exhibit 18, and turning to page 2 of that report --

A. So we're on 18 again --

Q. Yeah.

A. -- or 20.

Q. 18. Right here. You have it right here.

And looking just at page 2, second full paragraph Dr. Burch says: "The official vote count certified by the Mississippi Secretary of State show that only 1,313,759 votes were cast or present, highest participation rate in Mississippi in the November 2020 election." Do you dispute that?

A. No.

Q. So the CPS overstates the level of turnout in Mississippi by about 200,000 people, 1.531 million versus 1.313 million?

A. Given the years where this is done and the fact it's Mississippi, that appears to be the case.

Q. I'm sorry, I just want to make sure, is that answer qualified somehow?

A. Well it's qualified with the data that are used to do it. In that sense, are the CPS data exactly for the same year that the turnout data are for and things like that.

Q. Right. And so --

A. That's all the qualifications I'm making.

Q. So with respect to the 2020 election --

A. Yes.

Q. -- and comparing that number from the official vote count by the Mississippi Secretary of State, and the CPS estimate you derived from the 2020 general election turnout, the CPS overstates the level of turnout by about 200,000?

A. Yes.

Q. And you agree, and you stated this at paragraph 149 of your report, page 83, that there is a "likelihood of overreporting on the CPS voting and registration supplement."

MR. WALLACE: I'm not sure I -- apparently, he didn't hear a question, and I don't think I did either.

Q. You agree that there's a likelihood of overreporting on the CPS voting and registration supplement?

A. I do.

Q. And that -- meaning that when the respondents get the survey questions to the CPS, when they overreport, we mean they tend to say they registered or they voted even when they aren't registered or didn't vote?

A. That's how I'd interpret overreporting.

Q. And looking at paragraph 148 of your report on page 83, you would agree that this issue of overreporting of political participation is present with any survey data related to voting?

MR. WALLACE: This is in his original report?

MR. SAVITZKY: Correct.

MR. WALLACE: Here it is.

A. It could be. I don't know enough about every survey that's ever done to say whether or not they do it, so of the ones I'm familiar with like the CPS, it's looks like they overreport.

Q. Right. And you say this caveat -- this is the last sentence -- last sentence of this paragraph: "This caveat would not only apply to the SSRC survey data but also the CPS, the APS, any other survey in the United States that includes questions on voter registration" --

A. And I stress it's a caveat. But again, we don't know exactly what's going on, but I'd be careful if I was looking at voter registration survey information and voting information.

Q. And you wouldn't dispute that the CPS itself says that respondent misreporting is a source of error in the CPS estimates?

A. Absolutely I would not dispute that.

Q. And looking at paragraph 148 that we've been looking at of your January report, you say with some citations to the literature that: "While both blacks and whites tend to overreport voter registration, blacks may do so at higher rates -- at a higher rate that white as is also the case with voting."

A. Correct.

Q. And in the bibliography of your report, you cite some literature going into detail on this, a 2021 piece called: Vote Overreporting While Black: Identifying the Mechanism Behind Black Survey Respondents Vote Overreporting. And let's just grab

that and mark it as Exhibit 21. Copy, copy. This is the piece that was in your bibliography mark it as Exhibit 21.

You reviewed this article in putting your report together?

A. I did.

Q. And looking at page 3, I think right at the top -- just let me know when you're there.

A. That's the paragraph that starts: "Overreporting among African Americans"?

Q. Correct. And the next sentence is: "Perhaps one of the most consistently documented aspect of overreporting is that African Americans overreport at higher rates than whites."

A. That's correct.

Q. Do you agree with that assessment?

A. Yes. Based on the evidence I've seen.

Q. And in her rebuttal report, Dr. Burch also pointed to another 2022 article by Ansolabehere and Fraga and Shaffner in American -- I think it's in American Politics Research specifically about overreporting on the CPS. Do you recall that?

A. No. I have to look at it, but it sounds familiar, so --

MR. WALLACE: It's in here, 18.

THE WITNESS: Thank you. And where is it? What page was it?

MR. SAVITZKY: Well I was going to mark the actual article, but I can -- I can refer you to the -- so it's cited on page 3, Footnote 6 of her report. She says: "New research shows not only does the CPS overestimate turnover for all groups, it does so differentially by race such that it consistently overestimates black turnout even more than white turnout."

A. Yes.

Q. And she cites in an article that I'm now going to mark as Exhibit 22 entitled The Current Population Survey Voting and Registration Supplement Overstates Minority Turnout.

MR. WALLACE: Where is this cited?

MR. SAVITZKY: This is cited in Footnote 6 of Dr. Burch's rebuttal report.

BY MR. SAVITZKY:

Q. Do you agree that this is a paper by a reputable political scientist in an academic journal for the discipline?

A. Well I don't know them personally, so if you want me to attest to their reputations, I'm assuming they're reputable, but yes, I agree that this is a --

this is an article by academics that's published in an academic peer-reviewed journal.

Q. I'm just looking at the summary text on page 1 there, it says: "We compare CPS estimates to official voter turnout records from 2008 to 2018, document consistent significant discrepancies that call into question the reliability of CPS turnout statistics." Do you see that?

A. I do.

Q. And it states: "Specifically, the CPS overestimates black and Hispanic turnout relative to non Hispanic whites whether relying on turnout rates as a shared, eligible citizens or the racial ethnic composition of the voting population." Do I have that right?

A. You do.

Q. And they say: "Sampling error in commonly used adjustments to CPS estimates do not account for or correct the bias."

A. All of it, correct.

Q. And just looking at their conclusion in the last page -- or excuse me, on page, I think, 4 -- oh, no, it's on page 5, excuse me, of the document, yeah, conclusion, states: "The author suggests that CPS should conduct a voter validation study akin to those

undertaken by other surveys." Do you see that?

A. I do.

Q. You agree with that?

A. I do.

Q. And they say: "In the meantime, we suggest that analysts uses caution when making inferences about variation and turnout rates by racial or ethnic groups." Right?

A. They do.

Q. Do you agree with their assessment?

A. I think for the research at this point in time, I think their assessment is well taken.

Q. So given the fact that the top line CPS estimate of voting in Mississippi shows overreporting by about 200,000 -- I think it's 12 percent overage -- it would be a reasonable hypothesis that this overreporting would in particular overstate black turnout?

A. That would be a reasonable hypothesis.

Q. So let's go back to your conclusion. You conclude based on the CPS that blacks vote at higher rates than whites in Mississippi as a whole?

A. That's correct.

Q. As we discussed, setting aside the issue of overreporting, just assuming the CPS is reliable for the moment, your analysis of the CPS data for 2020 shows a

3 point difference between black and white turnout rates, 72.9 versus 69.8; right?

A. Correct.

Q. So even a modest racial differential in overreporting on the CPS would mean that black turnout would, in fact, be lower than white turnout?

MR. WALLACE: Object to vagueness of "modest," but you may answer.

A. It could be.

Q. Particularly given of the fact that you have overreporting at the level of 200,000 voters?

A. It could be.

Q. And you didn't run any type of t-test on those two numbers 72.9, 69.8 to determine whether there's a significant difference between them, did you?

A. That's correct. I did not.

Q. And actually looking at that table we looked at before on page 70 of your report?

A. This is my original report?

Q. Yeah, your January report. Thank you. Table IV.A.2?

A. Yes.

Q. You report a margin of error for some of these numbers --

A. Yes.

Q. -- 4.1 for white non Hispanic turnout and 4.8 for black turnout; right?

A. That's correct.

Q. And what does the margin of error mean in this context?

A. The margin of error means that the percentage points can go up and down over the mean, the percentage which is the type of mean on that. So as I recall, the -- unlike the ACS, I think the CPS does 95 percent confidence intervals, I believe. I could be wrong, but -- so what this is stating, then, is saying that we're 95 percent certain that the true amount is within plus or minus 4.8 percent of 72.9.

Q. So fair to say that, again, just setting aside the overreporting issue for the moment, assuming, you know, the veracity of the responses, the real number for self reported black turnout in Mississippi on the CPS could be as low as 68.1 percent?

A. It could be if you're looking at the -- if you want to look at a 95 percent confidence interval. So if you look at it that way, there's a range of numbers and we say we're 95 percent certain that it -- it's a range estimate rather than a point estimate.

Q. And what the CPS is telling us is that the confidence interval is between 68.1 percent and 77.7?

A. Give or take, yeah, that's what it's telling us. And I believe it is a 95 percent confidence interval.

Q. And then looking at the white turnout number of 69.8 percent, margin of error there is 4.1; meaning that, again, setting aside overreporting, assuming the veracity of the responses, the real white turnout number could be as high as 73.9 percent, and that would be within the confidence interval for the survey?

A. Yes.

Q. So 68.1, the lower bound of the confidence interval for black turnout is lower than 69.8, the mean white turnout number?

A. Yes.

Q. And 73.9, the high bound of that confidence interval for white turnout is higher than 72.9, the mean level of estimation of black turnout?

A. Absolutely.

Q. So these confidence intervals for black turnout and white turnout in the CPS substantially overlap?

A. Yes, they overlap. The upper end of one extends across the mean of the other one and vice versa. In that sense, they overlap.

Q. I mean, they don't overlap by just a little bit, the mean of one is within the confidence interval

of the other?

A. That's what I just said, I thought.

Q. But not just over -- in other words, they don't just -- it's not simply that the upper bound of one and the lower bound of other cross a little bit, the mean are within the confidence interval?

A. That's the important part. It's not the confidence interval themselves that overlap, it's do they cross over the mean of the other independent sample.

Q. And when the confidence intervals of the two means overlap, that can indicate that the difference between the two numbers is not statistically significant?

A. It's indistinguishable, that's correct.

Q. And would you say that these numbers are not statistically --

A. From a statistical standpoint, that's correct.

Q. So -- but your conclusion wasn't that black voters and white voters vote at statistically similar rates based on the CVS?

A. That's correct.

Q. Your conclusion was that blacks vote at higher rates?

A. Yes.

Q. But the CPS only supports the conclusion that blacks and whites vote at statistically similar rates?

A. Yeah. If you take that into account, and in this case I took the point estimates at face value because it's a relatively large sample, even though the confidence intervals, one end overlap the mean. But that's correct, you're absolutely correct.

Q. So let's talk about the CES. You would agree that Dr. Burch in her rebuttal report analyzes turnout using alternate data sources other than CPS, they're not purely survey based?

A. Yes.

Q. And one of those is the CES, the Cooperative Election Survey?

A. Correct.

Q. Actually, it's -- excuse me. It's Cooperative Election Study?

A. Study, I think that's correct.

Q. As you say in paragraph 11 of your surrebuttal report which has been marked as Exhibit 20, you agree the CES "has been available and has been used by experts in the field for many years."

A. That's paragraph 11?

Q. Correct.

A. Yeah, I'm pretty sure I said that in paragraph

11. Yes, I did.

Q. And you agree with that still?

A. Yes.

Q. And you would agree that one aspect of the CES is that political participation by voters who respond to the CES is independently validated?

A. Yes.

Q. So I want to discuss how the CES works to make sure we're on the same page. And let's mark at this point the technical documentation that you refer to in your surrebuttal report, and we'll need one more sticky, if you don't mind. Are we at 23?

MS. JONES: Yes.

MR. SAVITZKY: I'm marking as Exhibit 23 Guide to the 2020 Cooperative Election Study. And this is the guide that you were looking at and referencing in your surrebuttal report?

A. It is.

Q. Now you agree that with the CES, the first step is that there's a preelection survey of adults that includes demographic questions; right?

A. Yes.

Q. And in Mississippi, 462 adults responded to that survey?

A. Yes.

Q. And in a 95 percent confidence level with a 5 percent margin of error, a sample size of 384 is going to be representative of population of -- the population of Mississippi?

A. In general I would say that, but you've got another -- it's another set of qualifications that goes with it just like they would go with the CPS and particularly the CES. And that's involves the weighting.

Q. So setting aside weighting and talking only about whether or not the sample size is sufficient to be representative, a sample size of over 384 will be sufficiently large to be representative?

A. It depends on the purpose when you say that. So I'll go slightly into lecture mode here, if that's okay. So it depends on what's going to be important in terms of confidence intervals and how willing you are to live with error. So a sample size of 25, because it's under what's called large sample theory might be sufficient to answer questions for something and, you know, they can deal with the confidence interval as they come. When you generally get up to a sample size of around 400, the rule of thumb is that with that, you can say you're 95 percent certain you're within plus or minus 5 percentage points of what the true number is

excluding all sources of other issues. But in general, that's the case.

So when you say it's representative, a sample, any sample, as long as it's taken scientifically is designed to be representative of the population it's taken from. That, I think, you clearly understand. So the sample size simply makes your ability to refine where the point estimates are and in general as long as there's no change in variation, standard deviations, you can then start to reduce the confidence intervals so you're more certain where the actual true number lies in the population when you're trying to infer to it.

So in that sense, every scientific sample should be representative, I mean, that's the whole goal. And what in particularly is important when it's representative is the variation. What you want is not so much the mean in the sample to be the same as the population mean, what you want out of the sample ideally is that the variation of the sample if not exactly the same, is very similar to what you get in the variation of the population.

Q. And that's why you use weighting; once you have a sufficient sample size, you also need to do weighting to make sure that the sample accurately reflects all the different attributes of the population?

A. Yeah, I would not probably not describe it as exactly that, but what you're trying to do is say, look, we know we don't have enough people in this particular category, you know, race, socioeconomic, age, whatever it might be category, and so we know -- and they may be differentially representative in the sample, so we're going to say here's something that we think is a population that would fit to it. So it's post ratification that's -- again, I'll go into slight lecturing mode.

So you may have a sample survey and 60 percent of -- in a telephone survey, 60 percent of the respondents say yes to a question. It turns out that 60 percent of the population's female, 40 percent is male, and all 60 percent of the -- 60 of the females would say yes and all males would say no. So you've got to readjust it -- do you follow me -- so that you've got the right estimate of what you think the population estimates are, because when you do that, then it looks like it's going to be 50:50. And that's what weighting attempts to do.

Q. And we'll talk a little bit more about weighting, but I want to -- in terms of sample size -- and I believe it's the Krejcie and Morgan, you know, formula originally, but we agree that once you get up

above 400, you should have a sufficient number of respondents?

A. But again, what I stress in that regard is that what you're doing is, you're -- you can make a statement such as I'm 95 percent certain that I'm within plus or minus 5 percentage points of what might be the case. If you get up to 800, you can say I'm 99 percent certain. So what it does is, it reduces the uncertainty around the point estimate that you've gotten and the range estimate.

Q. And I think we're totally on the same page, let me restate the question just for clarity.

For purposes of being able to speak to something with 95 percent confidence and with a 5 percent margin of error, once you get to 400 or more respondents on a survey, you will have a sufficient number of respondents to speak to the question at that level of confidence?

A. Given that the survey was done on a scientific, you know, random selection basis, given that you don't have a whole lot of bias in the survey, given that people -- there's not a lot of differential nonreporting at the personal level, etcetera, etcetera, etcetera, all else being equal, yes.

Q. Okay. And just looking briefly at Dr. Burch's

surrebuttal report which I think is -- oh, her rebuttal report, excuse me, which is Exhibit 18, and looking at page 4, Footnote 12 --

MR. WALLACE: Page 4, Footnote 12.

MR. SAVITZKY: Yep.

BY MR. SAVITZKY:

Q. Let me know when your there.

A. I'm there.

Q. You would agree that 462 respondents sample for Mississippi is above the minimum sample size to detect small effects, co D equals .2 with a standard level of statistical power pointing -- in a significance level of .05?

A. I agree, as I just said, when it's above that number, then you've got a 95 percent chance of your confidence -- your confidence intervals as stated, I'm 95 percent certain that the estimate that we're getting is plus or minus 5 percent of what the true number of the population is.

Q. And you wouldn't dispute Dr. Burch's characterization that this number, that 462 is above the minimum sample size to attack small effect at that level of statistical power and significance?

A. Yeah, I would dispute that because there may be small effects that that sample is not going to pick up

that large. Do you follow me? There could be really minimal differences that are important in a certain situation where a sample size of 400 is not large enough to detect that it's a statistically significant difference. So in that sense, it depends on the context. And if you're asking about the context in which we're talking about voting survey, then it probably is adequate. I think that's a question you wanted to ask me.

Q. Yes. And specifically in the context of analyzing voting by race in Mississippi?

A. Yes. And I would qualify my answer again, everything else being equal, it should be.

Q. So getting back to how the CES is done, we talked about the first round of questions. Then there's a second postelection wave of questions that are asked of the same respondents in a postelection second set of questions; right?

A. Yes.

Q. And the postelection wave, post wave of questions includes questions about whether or not the person voted?

A. Yes.

Q. Not every voter responds to the second wave?

A. That's correct.

Q. Most of them do.

A. (Nods head.)

Q. And then in addition to the data from these two waves of survey questions, there's also vote validation information that is added to the dataset --

A. Correct.

Q. -- for all the respondents; right?

A. I believe that's correct, for all the respondents.

Q. And the validation is done using state voter history databases to check whether voters are registered and whether according to their vote history they actually voted?

A. Yes.

Q. And we can look at the CES documentation which was marked as Exhibit 23?

A. Yes, it's over here. I've got it.

Q. Looking at page 19 at the vote validation variables, we can see -- so one of the variables is CL voter status which reflects whether the voter is registered; and if that's missing, then there was no match on their registration record. Does that sound right?

A. I think so.

Q. And then if you have CL 2020 GVM which is

whether the respondent voted in the 2020 general election; right?

A. And how they voted.

Q. And their method of voting?

A. Yes.

Q. And if there's no data for that variable, then they were not validated as having voted?

A. It's unknown, I believe, is what they put in there.

Q. They say: "If missing, respondent did not have a report of voting."

A. Yes.

Q. Okay. And you would agree with the statement on page -- the next page, page 20 of the documentation, if a person has any nonmissing value for CL 2020 and GVM, they have a validated vote record for that election?

A. Correct.

Q. And you would agree that this validation procedure was performed for every survey respondent whether or not they responded to the second wave questions?

A. That's what the study states.

Q. You would agree that the validation was performed whether or not they say they voted?

A. That's what they state, so I have no reason to disagree with what they state they did.

Q. And so you'd expect in the data, there are some respondents who did not answer the second wave of the survey but can be and were validated as being registered and having voted in the 2020 election?

A. Yes, that could happen.

MR. SAVITZKY: And just for completeness, why don't we now mark two more exhibits. I didn't end up marking Krejcie and Morgan, but I could. So what I'm going to mark here, first with Exhibit 24, I'm going to mark -- so I'm going to mark Exhibit 24, and you can just look at that. That is the raw data, not every variable, the selection variables, otherwise, the raw data for the Mississippi CES.

BY MR. SAVITZKY:

Q. Can you just check that, see if you have any reason to dispute that, and you can also confirm that it has 462 rows.

A. I confirm that.

Q. Okay. And I'm also marking as Exhibit 25 same exact data but this one just for ease of use, we have re-coded the raw data with the equivalent textual information so it's legible to work with.

A. Okay.

Q. Okay. And we can see in these columns there's a variable that says: "Took post," do you see that?

A. Yes.

Q. Which means that they took the post wave survey?

A. Yes.

Q. And then for those who didn't -- who have a no for took post, they also have an N/A for their weight in the common post weight weighting; right?

A. I see that.

Q. And we can see the CL voter status and CL 2020 GVM information is there as well?

A. I do.

Q. Okay. And take my copy out too.

And just to confirm what we were talking about earlier, looking at row 60, which is on the second page --

A. Of Exhibit 25, right.

Q. -- of Exhibit 25, we can see this row 60 is a respondent who did not take the postelection survey; right?

A. Yes.

Q. And they're not weighted in the post weight weighting metrics; right?

A. That's correct.

Q. But if we look at whether they're registered and whether they voted, they're active and they had a validated vote; right?

A. Yes.

Q. And if we look at row 108 on the next page, another example, took post N/A, not weighted, if we look at common post weight and VV weight?

MR. WALLACE: What number are we on now?

THE WITNESS: 108.

MR. WALLACE: 108. Okay.

Q. Right, took post N/A, no weighting in common post weight and VV weight; right?

A. Correct.

Q. But active with a registration record, and their vote was validated?

A. Correct.

Q. I could actually go through a bunch of these, but if I represented to you there are 29 such records overall of voters who didn't take the post wave survey but whose votes were validated, would you dispute that?

A. I believe you.

Q. All right. So we may -- we my use these again, we'll just set them aside for now.

So the last part of the CES I want to make sure we're square on is the weighting system, and we

started talking about this a little already. Generally speaking, you would agree that weighting is used to make statistics computed from the data more representative of the population.

A. That's the idea, yes.

Q. And you would agree that using weights is more or less ubiquitous in survey-based research?

A. It is.

Q. ACS is weighted? CPS is weighted.

A. (Nods head.)

Q. You would agree that if the sample is not self weighted, it's a good idea to use weights as often as possible?

A. I don't know if I can say that about any case, but if you want to -- if you know the -- or have reason to believe the sample is not representative of the population in the sense you're talking about and that it is a scientifically drawn random, even if it's a complex random sample, then in general the idea would be you'd want to use weights but you want to make sure the weights represented the population in question too.

Q. And as you explain in your report: "The basic idea of weighting in a survey is, you're assigning weights to each of the responses in order to have the attributes of the sample population more actively mirror

the attributes of the overall population."

A. Correct.

Q. And for the CES -- and we can look at page 16 of that technical documentation that I believe was marked as Exhibit 23 -- you would agree the CES samples were weighted to match the distributions of the 2019 ACS on gender, age, race, Hispanic origin, and education level?

A. And where's this?

Q. This is on page 16.

A. Thank you.

MR. WALLACE: 16? Okay. I thought you said 19.

MR. SAVITZKY: 16.

BY MR. SAVITZKY:

Q. Last sentence of the first paragraph: "The CES sample was weighted to match the distributions in the 2019 ACS on gender, age, race, Hispanic origin, and education level."

A. Yes.

Q. All right. And that is the set of weights that are used for the common weight and common post weight --

A. Yes.

Q. -- systems. And then there's another set of weights that was created, the VV weight and VV weight

post that's only for respondents for whom there was a validated voter registration number; right?

A. Yes.

Q. And those were matched to the demographic attributes of registered voters according to the 2020 CPS?

A. Yes.

Q. Now staying on page 16 of this technical documentation that we're looking at and looking down the page, we can see the four weighting variables that we talked about earlier; right?

A. We can.

Q. Common weight, common post weight, VV weight, VV weight post?

A. Yes.

Q. And the idea is that because we have common and VV weights that represent the whole population of adults versus with the VV weights, only those with a validated registration record, and then we have post versions that should be used when talking about the second wave questions?

A. Correct.

Q. Because the population that answer the second wave is slightly different, so you need to use different weights to true them up to either the ACS in the face of

common most weight or the CPS in the case of VV wave post?

A. Correct.

Q. And just continuing to refer to this discussion of weighting in the technical documentation, you would agree that the common weights are meant to ensure that the sample is representative of all adults in Mississippi in this case?

A. Yes.

Q. And the VV weights are meant to ensure the samples are representative of all adult registered voters?

A. Yes.

Q. And you would agree, as I think they say in the technical documentation, common weight should be used when you're characterizing the behavior of all adults?

A. Yes.

Q. And you would agree that common post weight should be used when characterizing the behavior of all adults but referring to variables from the second postelection wave of questions?

A. That would be the ones who actually voted or -- right? They responded to the second wave, that's a better way to say it, and reported whether they voted or not.

Q. So you should use common post weight when referring to all adults but looking at responses to the second wave questions?

A. Yes.

Q. And you would agree that VV weight should be used when characterizing the behavior only of registered voters in Mississippi?

A. Yes.

Q. And you'd agree that VV weight post should be used for characterizing the behavior of only registered adults and also looking through results of those second wave, post wave questions?

A. Yes.

Q. And just sticking with the VV weights for a moment, you would agree that by definition, the VV weights exclude people who were not independently validated as being registered to vote?

A. I believe that's the case, yes.

Q. Meaning that those responses were given a weight of zero, so when you apply the VV weight variable, they're not counted?

A. I believe that's correct.

Q. So if someone reported on the second wave of questions that they had voted but in fact they weren't even registered, that would be an instance of

overreporting; right?

A. Yes.

Q. But that instance of overreporting wouldn't show up if you used a VV post, it would be excluded from the sample?

A. It could be, yes.

Q. Well --

A. Yes. Well, if that's the weight you're using, giving the weight of zero, that's what you're saying.

Q. Yes.

A. Yes.

Q. So if you applied VV weight post, you would exclude that instance of overreporting?

A. Yes.

Q. And that's because VV weight post only includes people who were independently validated as registered?

A. Yes.

Q. And so if there are racial disparities in who was validated is registered in the first instance, those would all be masked when you use VV weight as well?

A. They could well be masked, yes, depending on how many people were not carried forward into survey, but they could be, yes.

Q. Well when you use VV weight or VV wait post, you're only looking at voters who have a validated

registration?

A. I understand that. But the issue is how many of the initial sample were not followed up in that part of the survey. Do you follow me? So if it's a pretty high number, then you would be having some problems; if it's not so high a number, you may not be.

Q. I guess my question is: If there are racial disparities in who is registered to vote and you use VV weight such that people who aren't registered to vote with a validated registration are taken out, you're not going to pick up those disparities?

A. Right. On a visual basis, yes.

Q. And another item on the CES generally, in looking at page 17 of this technical documentation, there's a sort of discussion under the heading Accuracy of the CES Sample with some discussion about validating the sampling done in the CES by comparing survey results to actual election results. Do you see that?

A. I do.

Q. And the authors say: "In the large sample, the CES allows us to validate sampling by comparing the state level samples within the survey with the actual election results."

A. I do.

Q. You dispute that?

A. No.

Q. And the authors conclude that: "Overall the results from these analyses demonstrate the CES is a reliable source of data on voting at both the national and state level." Do you dispute that?

A. That's their conclusion. I don't dispute it.

Q. So let's look at your surrebuttal report, which we marked as Exhibit 20? Is that right?

MS. JONES: Yes.

Q. And looking at paragraph 11 of your report, you say: "Generally speaking, when a survey sample is being used to analyze extremely small populations, the largest sample possible is most beneficial." Right?

A. Correct.

Q. Do you contend that Dr. Burch analyzed an extremely small population in looking at black voter turnout and white voter turnout in Mississippi?

A. When you look at the black voters, they're in the 462 sample set, it starts to look small, yes.

Q. Do you know how many black respondents there are of that 462?

A. I'd have to go back and look.

Q. If I represented to you that it's 160 respondents who were black?

A. That's sounds correct, yeah.

Q. And is that an extremely small sample size?

A. Well it depends again on the context of what you're trying to do and what you need for confidence intervals and margins of error and all that. So it's hard, again, in general to say this is an extremely small sample size or not. So in the context of this, it may be the fact, and as I looked at it, that it could be that it's a small sample.

Q. Well just to be clear, you don't see it's a small sample, you say: "When a survey sample is being used to analyze extremely small populations." Do you contend that black voters in Mississippi are an extremely small population?

A. No. The statement there is general. But what goes on with the -- when you're using this, if you start to get -- for example, if you're looking at Dr. Burch's analysis, so let's look at somebody who might be, let's say, black of a certain age, they're eligible to vote, what their educational attainment is, you're starting to drop the sample size down. So from the 462, you're starting to go get down to small numbers.

Q. And did Dr. Burch analyze behavior by black voters in a particular subregion with particular educational and socioeconomic characteristics?

A. Well for the sake of Mississippi, she did.

Q. She looked at black voters in Mississippi?

A. Yes. And that was the point I'm just making. Given the state as a whole, you can get down to small sample sizes.

Q. And I just want to be clear. You're not saying that black voters in Mississippi are an extremely small population?

A. No, I'm not.

Q. And you say -- and maybe this is getting to what you were saying before -- "Rare populations that have unique combinations and characteristics tend to have high weights that carry the risk of significant and may disproportionally impact any statistic using those respondents."

A. That's correct. And I'll give you an example of it right here in the exhibit you gave me labeled No. 25. Are you ready?

Q. Sure.

A. So let's look at the weights, and let's take Case No. 320. I need a ruler to make sure I'm staying on the same line here.

MR. WALLACE: Maybe this'll get you.

THE WITNESS: Thank you.

A. Let me know when you're ready.

Q. I'm ready.

A. So Case 320. The common weight is 7.2, the common post weight is 14.298, the VV weight is 7.8, and the VV weight post is 6.6. Those are really high weights, and they're indications to me of exactly what I was saying about if you've got weights that high, you get down to subcategories of people that are so small, you're weighting them up really highly. And that's what's going on here.

Q. And I guess my question is: What are the subcategories that you contend that Dr. Burch analyzed?

A. Well if she analyzed anything with these people in it, then they have these weights on it. If she analyzed Case No. 320, and I didn't see anything that said she excluded it, that has a weight of 7.2.

Q. But you agreed previously that we use weights in order to make the surveys more accurate and to true it up to the characteristics of the population?

A. I understand that. But the -- as we said earlier too, there's a lot of tradeoffs in this. And so what you get is, if you've only got one person that fits in certain categories and you have to weight that person by a factor of 7 just on the common weight, it means you're putting a lot of burden on that person. What you've got is an inverted pyramid. So you've got one person representing a whole set of people. And that's

what I mean. Whatever the categories were that they took in detail that they decided they only needed to -- that they need to put a weight that big on the common weight is really representative of the fact that there's a lot of -- and this goes on and on throughout this entire survey. You can see it. I mean, carry this one over, you get into the common post weights for this person, it's 14. This person's representing 14 people. And when you look at the diagnostics on Dr. Burch's logistic regressions, you can start to see that the diagnostics and the differences in the DF betas, they're all indicating that you've got outliers scattered throughout this dataset that if you took one of them out, your results change. And that's what that says, and that's what the meaning of my statement is.

Q. And we'll just get into this, but just to be clear, when you talk about the diagnostics, those are diagnostics that you ran using the VV weight?

A. Or any other weights. But you can see them on here, I just ran the VV weights. But using any other weights, it's going to be very similar. I can tell from experience and looking at weights and running regression, all those diagnostic things are not exclusively logistic regression, they're used throughout all kinds of regression analyses, and I've used them.

You start seeing the matrix Ds, the Cook distances, the DFFITS, the DFBETAs -- I'm sorry for all the acronyms -- you start looking at those things, and you start to see how many of them are fairly large and you go, my goodness, you take -- so here's the simple example. Picture a diagonal -- you know, a 45-degree angle line like this, all right? So you have a regression line, all the data points on it, the R-squared on that's going to be 1, you know, the X variable perfectly predicts the Y variable. You could have an outlier up here in one, okay. And so the regression line, the R-squared is not going to be 1, it's going to be something else. You took that one point out of there, and all of a sudden it's 1. That's what these are indicating to you.

So there's a lot of -- because the case sizes and whatever the categories are that the CES uses are so small, however they did it, age, education, whatever they all are that they weighted up to, whether it's ACS or the CPS, you're looking at these weights like this, my goodness, this -- you're putting a lot of burden -- as I said, it's like an inverse triangle on different people, such that if you took a few of these cases out, you might get a totally different answer. That is major problem I see with using the CES. Whether it's exclusively to Mississippi, I don't know. So all

the arguments about the sample size being sufficient, 462, yes, in general you get what I said, 95 percent confidence plus or minus 5 percent. But you start getting down to these weights -- and it crosses them. Doesn't matter if you use common weights, common post weights, the VV weight, the VV weight post, you're starting to look at things and go, my goodness, what this starts to indicate to me, not only do you get differences in how the FITS are, but how the parameters are. The models can change dramatically, dramatically. Sorry for the lecture mode. That's one of the big issues I see with it.

Q. So -- and by the way, you referenced the CPS and ACS. Those are also weighted?

A. Yeah, they're weighted themselves.

Q. And --

A. And then you're weighting to, you know -- so it's becomes complex. And however all the process was done to get to the point -- and I think the people who put this study together did the best job they could and I don't have any reason -- they weren't trying to bias anything, they're trying to make a good survey that people can use. But the point is, you get to things -- if all the weights were something like .094 and 2 and 1, things like that across the board on all these, that

might be something different.

But my goodness, when you start to see weights like I just noted 7, there's another one. So No. -- I think it's No. 35, 7.39 common weight, 10 on the common post weight, then it's 8 on the VV weight, and it drops way down to 1 on this. I mean, you get all kind of variations in this. And that really affects the models and what you can do with it.

Q. So I understand your opinion that the weights are high.

A. Well, it's not -- the weights are high. It's not my opinion. When you run the diagnostics on the logistic regression analysis, you can see it in the diagnostic information. As I said, what are called the DFBETAs, the differential change in the coefficients in the model, the DFFITS, DFFITS is what it's called, the differential changes in the FITS. In the Cook's distance, how far are you moving away from something. And they all apply, which indicates you've got a lot of instability in the model.

Q. So this is -- you're anticipating my next question. I had one other to ask, I'll go back and ask you, but you run a Cook's distance test?

A. They're all -- all that stuff is in the output that I put on the appendix in my report. It's all

there. I put up -- Dr. Burch did not put any of those diagnostics in her report. All those diagnostics are in my report.

Q. And you ran tests to measure the influence of particular respondents on the survey?

A. They show it. That's what these lines are back here.

MR. WALLACE: What page you're looking?

A. Well, pick one. Pick page 85. You know, I -- let me pick something that's -- let's go to page 77. Are you ready?

Q. Uh-huh.

A. Page 77, top part, look at Case No. 460. So remember, Burch dropped 2 out of her test, right, so she ended up with 460.

Q. Correct. Because those are non citizens.

A. Right. So look across here, it says Cook's distance C and Cook's distance C bar --

Q. Uh-huh.

A. -- do you see those? Look at the numbers on these. And these are not the only ones. These start to indicate to me that with these kinds of distances -- and C means it's specific to. If you take this out, what kind of change do you get -- and the Cook's distance, C bar is an aggregate of it, you're going to start

getting big changes in what the parameters are. And the parameters would be -- let me go to the front where you actually get logistic regression models. Bear with me while I go through page changes here. So where it says here regression coefficients --

MR. WALLACE: Which page?

A. Okay. I'm sorry, page 21.

MR. WALLACE: OKAY.

A. So when you start -- these are the -- basically, this is her model that I replicated. You know, I'd have to look at this in detail. But what I'm talking about is in general, those numbers. And that's what generates the estimates. Is this going to be in category 1, the validated voter or not a validated voter? Those numbers can change dramatically.

And so I -- she didn't provide any of this kind of residual analysis in her report -- let me finish -- and when I ran them, it looked to me like there's a lot of instability in the dataset itself and it probably has to do a lot with the weights. You know, that's just my hypothesis at this point. Such that if you pull certain people out or if something changed smally (sic), you can get a big change on what the model looks like including the parameters, whether or not it's statistically significant, all sorts of issues like

that.

And I didn't see anything in the literature about any of these issues. So when I looked at it myself having had the experience with exactly doing this with every form of regression analysis I run, you start going, my goodness, this -- there's a lot of instability in the dataset itself.

Q. And just looking at page 21 here, what is it here that you were relying on for the statement that if you changed a few of the respondents, you'd get a different result?

A. What I'm saying is, see -- page 21, see where it says odds ratios? Where it says, independent variables, see where it says intercept, black and other race? Those are the variables she used in her model. Then move over, see where the column that says had reduction coefficient, see where it says B and then in parenthesis i, B1, B2, B3. The intercept value is .25, the black coefficient is minus 0.354, the other rates is minus 1.24. These are the ones that generate whether -- this is what generates are you going to be placed in the category of the validated voter or a nonvalidated voter; right? But if you start getting the .25 because you pull out of the real influential places on there, that could change -- I'm just hypothetically making this up

to show you -- that could change to .3 from .25, could change to .4. The minus 5.4 could change -- the point I'm trying to make is, you could get number changes from this that then put something in a different category.

That's what I mean by the dataset looks to me with those kinds of weights -- and when I looked at the residual analysis, that is diagnostics from all the standpoints I know how to look at it from given that you had a multidimensional problem, you've got an issue. Here's another issue. This is called a ROC curve --

MR. WALLACE: Which page?

A. I'm sorry. Page 37. Receiver operating characteristics. Do you follow me where it says rock curves, combined and separate. That diagonal line is if there's no explanation in something as you're going on. What the ROC curve shows you is as you start to get up to certain probabilities of predicting correctly not having a -- what's the term they use, a type 2 error, there's another term they use in the medical profession, but it's a probability -- it's mislabeled. So you're correctly predicting it's going to be head and it turns out to be head. But if you're correctly predicting a head and it turns out to be tails, you've made an error. Do you follow me?

So what you ideally want to see in a ROC

curve relative to this diagonal line is a line that's almost vertical going up from zero here as high as it goes and then goes across like this. What that means is, hey, I can get up to a real high probability of being correct with still maintaining a low probability of it going into the wrong category. And what these ROC curves show to me is that her model is not much different than the diagonal, it's not doing that. At every level, she's getting probability of predicting incorrectly, and she has probabilities of correctly predicting. That to me is not --

Q. Well it's not equal, it's the same. I think in your report you say --

A. If it would be equal, the same, but it is almost the same. You go back to the one point in my report where I said her classification system only gets something like 54, 50 percent.

Q. You said 57 percent.

A. Yeah. That's not very good.

Q. With one variable getting a --

A. Well, her model --

Q. -- heads or tails?

A. -- right -- right there, just her model in general, 57 percent. I could flip a coin and say every time I'm going to flip it, I'm going to get heads. I'm

right 50 percent of the time. And if you look at people who recommend using logistic regression, if you're down to 50.57 your model does correctly, you look at the ROC curves and everything else, it's suggests to me that the model is not very good. And I think it's not that she's necessarily flawed on trying to run logistic regression -- I don't know the answer to that -- but I think it reflects a lot of problems in the stability of the dataset. Does that help?

Q. You don't think that there's any reason why the weighting that was applied by the CES is not accurate in terms of trueing up this sample to the ACS or CPS?

A. Again, I stress the fact when you get down to categories of people. What's their age? What's their race? What's their educational attained? Whatever else they've collected in that survey, that's what they're trying to match back to, all those characteristics in either the CPS or the ACS. And you start getting to also, okay. You have 462 people. How many are black? 167. How many have an educational attainment of -- okay, now you're down to 90. How many have this, you're down to 80. How many have that, you're down to 50, you're down the 40, you're down to 30. You're down to small numbers. And you go, okay, to get it up correctly so we have the right distribution of people relative to

what we see in the ACS or the CPS, we've got to assign a weight. In some cases, they're pretty low, they're not much; but in some cases, in quite a few of them, you've got some tremendous weights when you start looking at them. One person's representing 7 people? And I think one of them that I found when I looked through this earlier had a weight of 14.

Q. But again -- I just want to be clear on this -- you're not saying that weighting is inaccurate in terms of doing what it is supposed to do and conforming the characteristics of the sample to the characteristics of the general --

A. I'm not saying that. The tradeoff in doing that is, you get an unstable model when you're -- because of those weights that -- and I think -- I can't attest to exactly that's the whole problem with it, but when I looked at the diagnostics that I ran and saw what I saw, I'm telling you there's a problem with the model. And my guess is, it reflects the facts that you've got what I would call influential outliers. And those influential outliers are the people with really large weights.

Q. Well, I mean you say that there are indictions of instability in the model, but you also agreed that the CES, I believe we said, is a reliable source of data

on voting at both the national and state level?

A. Did -- when they designed the CES, did they design it necessarily to run with logistic regression? No. What they designed those samples for is, they want to be representative of the population. Researchers are out looking for datasets to use. So when they go out looking for datasets to use, they may not be expressly designed for the datasets we're using. Can I finish? You look like you're yawning because I'm lecturing, or else --

Q. No, no, no.

A. I couldn't tell.

Q. I was opening my mouth. Go ahead.

A. Thank you. So the datasets initially are not designed for that, they're designed to say it's descriptive, here's what we think is going in on the United States or this state or some place at this point in time. The researchers have got to pull those datasets out to use them. And so again, I go back to the point you've got tradeoffs. Yes, we made it so it represents a population and if you look at it just as it is, we think it did a pretty good job. We can say we're 95 percent certain within plus or minus 5 percentage points. Then you go and start to do for a research question or a model building session, and all of a

sudden you realize, I've got weights in here that are 1 person's equal to 14 or 7. Well, that may or may not be a problem until I run something I'm trying to do, and then I'm looking at the diagnostics, as I've shown the examples of, and the diagnostics I ran indicate to me they're -- you've got a lot of instability, and I think it comes -- stems from the weights that are on these relative to the sample size. And it's because you're not using a sample that was designed to be -- all the samples are designed to be somewhat representative of the populations, but they're not necessarily designed for people to run models on.

Q. You talk about running models. You would agree that Dr. Burch did not only conduct a logistic regression analysis but also arithmetically reported the percentage of validated voters based on race in Mississippi?

A. I agree.

Q. And her numbers reporting those arithmetically are the same as the numbers that she obtained through the regression analysis?

A. They -- when you look at the -- when you look at, like, the percent voters on the same, look at it that way, how I would characterize that is, you didn't have to go through the regression analysis to aggregate

back up. She had the data to start with in the beginning. She had it. Just run a simple t-test on it. Do you follow me? You have the ability -- it'd be like saying, okay, I've got household level data, income level, all right, and I also have the income levels of everybody in the household, six people. I'm going to build a model now that accurately estimates what their incomes are, and I'm going to add that up to get the household level data. Why would you go through the individual people if you already got the top. And she could have just done a t-test at the beginning, and I believe had she done so, the results would have said, yes, it looks like there's a higher percentage of white voters than there are black voters that actually went out to vote and all that. But the results are statistically not significant. You can't tell the difference on them because the margins of errors or so wide.

Q. And you didn't run that t-test?

A. I did.

Q. You didn't run t-test on top line numbers --

A. Yes, I did.

Q. -- that she obtained.

A. I didn't put it in my report. If you're asking me if I ran one, I ran one at one point in time and said

to myself why did she run a regression analysis to get back up to this point? Why didn't she just do a t-test?

Q. And you did run a t-est.

A. Yes.

Q. You didn't include it in your?

A. I didn't.

Q. Why not?

A. I just didn't think about it at the time, that it was important.

Q. Can you provide it?

A. I can, yeah.

Q. Okay. And just while we're on the subject, you talk about those four respondents that you identified with those high weights?

A. Well and there's more, I just picked them out just glancing through the set.

Q. And you say they form a potentially influential set of cases in this small sub sample Dr. Burch's used in her analysis?

A. In the entire sample for State of Mississippi, somebody with a weight of 14 or 7, the residual analysis, that is, how good is the model analysis I performed on her logistics model and looking at the logistics model I ran indicate to me that in however you want to look at it, this dataset is such that with those

high weights, you can really create some instability. It's instable, the models you're getting.

Q. And when you say "unstable" or "instability," what do you mean?

A. I mean by this. Again, I'll -- I have to visualize this. So you've got an X by Y grid. So the X values are down here in this dimension that you're using to predict something. This is standard just two variable regression analysis. If you've got a diagonal line this like and all the dots on your observations fit it, you've perfectly predicted Y from X. If one of those dots, though, is non on line, it's up here, it's going to pull the regression line up. It's influential. Everything is along this line and that's way up here, that's an influential observation such that it may say, okay, now you're R-squared, your coefficient of determination is, say, .87 let's say .85, whatever it might -- you pull that observation out, and it's a 1. And the coefficients will change dramatically. I can't visualize that because when you use two variables or three, all of a sudden you're, you know, three space -- two space or three spaces or four space, so you can't see it.

But what I'm saying is, all these diagnostics in there, Cook's distance, DFBETAs,

DIFFITTs, different FITTs, there's saying there's a lot of observations in here that if you take them out, all of a sudden you're going to get some big changes in both the model parameters and how well the data fit according to the model which indicates to me there's a lot of stability in the models. If she decided or someone else decided the people that were pulled out that were not citizens, if for some reason one other thing -- one other person was pulled out that had a high weight, the model would look completely different.

So that's what I mean about I think the dataset itself for Mississippi looks to me that it's not really the best dataset to use to try and develop models.

Q. And understanding -- well, strike that.

Did you take out these four voters you identified or some other respondents and sort --

A. No. Once --

Q. -- of see what the effect would be?

A. No. Once -- well, I can see the effect, see it already in here. It's telling you what the effects are. In general, it's the summary of what you're going to see. You're going to get dramatic changes in them. And I didn't pull them out and do that. Once I looked at the diagnostics, I could see, yes, this is -- these are

not good signs for building a model.

Q. But you're not able to say what the precise effect would be or if you used different weighting, whether you --

A. Well, you could say what the effects are going to be in terms of the diagnostic measures, they're telling you. That's what they indicate. But if I pull them out, then that would be the next step. So I can go ahead and pull them out, but --

Q. You didn't do that?

A. No, I didn't do that. There's a lot of them that would end up pulling out because of the weights in them to start looking at them. And I could use this as a guide to see which ones and see how much they change, but I didn't do that. But the indications are, I'll stress, that you've -- and people read -- talk to somebody else who knows something about regression analysis, if you look at it, they're going to yes, the potential is there that this model could really change in parameters and/or the FITTS, the model estimates of the data or both. And that's not a good sign for a model.

Q. And again, you're referencing model. When you say "model," what you're talking about is using this data in some type of regression?

A. Like the two logistic regression analyses.

Q. But again, Dr. Burch conducted other analyses that were -- with the CS data that were not --

A. Well, then --

Q. -- logistic regression analysis?

A. -- they -- whether or not that affects it, I don't know enough about King's ecological inference model, if that's what you're going to go to next. But that could be the case too. I just don't know enough about that model to diagnose it.

Q. And I wasn't talking about that all -- we'll get into it --

A. Okay.

Q. -- I again mean just sort of her arithmetically calculating voter turnout by race, using the survey responses in the weighting without --

A. As opposed to what she did in her first report wherein she included the population under 18 in her numbers.

Q. Yeah. I mean --

A. She's not made that kind of mistake here in that regard other than the fact she put one county into district 1 that shouldn't have been there and another one out of it. But yeah, it looks to me like she pulled the dataset correctly. And it's not her fault there, it

looks to me it's just a condition of the dataset.

Q. When you say Dr. Burch concluded ignoring the warning found at the CES study guide. "We advise caution when analyzing very small subsamples as random measurement error may lead to faulty inferences about analyzing very small subpopulations."

A. Yeah. And I may not have expressed that in the best way, but what I'm getting at is the fact that what I just said, there's -- some of these categories of people of white, male, age 18 who has a less than a high school education X, Y, Z, and you have the bond (phonetic) to it, all of a sudden you're not at whatever the white count was of voters, you're down to a really small number. And then they're trying to match that either or both to the American Community Survey or the Current Population Survey, and suddenly you've got a really small number -- a sub sample that gets a tremendous weight.

Q. And so if you were analyzing that very small subpopulation like a white, you know, person of a particular age, education, you know, geographic location, etcetera, that's where that warning that you reference would come in?

A. Yeah. And then what happens is, in general when you're modeling, you have those kinds of conditions

because weights are set on those small categories, the subcategories, and you start seeing, okay, I can see it. Whatever the categories were for that person, the fact that you've got a weight of 14 or 7 or 9, says you're dealing now with really small sub samples that are part of your larger sample, and it's going to affect what you're going to do because they've got these weights on them.

Q. But that isn't what this warning from the study guide is talking about; right? They're talking about when you analyze the very small subpopulation, when you break it out of the survey, not the mere fact that that subpopulation is included among the larger population that you're looking at?

A. Well, you know, it's hard to say. These people run models, don't they, they built the study, you just cited one of them in a study you showed me. They're building models. So maybe they understand those issues and maybe the way they worded it was not so great, and what they're talking about is, you need to be careful because of these issues, and that's their way of saying that. I can't speak to them. You'd have to ask them.

Q. So you don't know whether their meaning was the one that you're interpreting?

A. Right. Or both. You know, the way you're

interpreting or both, yeah, I don't know.

Q. And just looking at the page that you're referencing there when you look at that, this is on page 23 of the study guide.

A. Of their study guide.

Q. Of their study guide --

A. Right.

Q. -- right.

A. Where they say be careful of the subcategories --

Q. Correct.

A. -- that's what I'm referencing.

Q. And they then say: "Follow the link for more information about this issue," and they cite an article. Did you look at that article?

A. Yeah, I can't remember if I did or not, no.

MR. SAVITZKY: Well, let's mark it. Getting down to the end here.

MR. WALLACE: On that subject, we started before 9:00, we took out a little less than an hour for lunch, and about ten minutes for me to check out. So giving you those breaks, I think we're done by 5:00. If you count it differently, let me know.

MR. SAVITZKY: You tell me.

MS. JONES: One hour and 11 minutes. So

almost one hour, ten minutes.

THE WITNESS: That's 5:00.

MS. JONES: And that's a rough.

MR. SAVITZKY: Yeah, so probably closer to 5:20-something but --

MR. WALLACE: No. We started before 9:00, but, you know, if you get there and we've got one question left, that's one thing. If you're starting a new subject, we're going home.

MS. JONES: So we -- can we go off the record to talk about time?

MR. SAVITZKY: Let's go off the record for one second.

(Discussion held off the record.)

MR. SAVITZKY: Back on the record. And I'll mark as Exhibit 26 the article that's linked there in the study guide.

A. Yeah.

Q. And you looked at this article?

A. Let me refresh my memory. I did.

(Witness reviewing exhibit.)

A. And in general, this article, again, goes to, I think, the definition of small sample sizes, subsamples that you were describing. But the fact that these people also built models in the same vein as logistic

models would suggest to me that they might even be saying in there even though it's not stated that precisely that you need to be careful using some of these data because of the weights. I mean, I found it amazing, and I can't say I read every page exactly, but I don't recall seeing a super warning anywhere in this dataset about the fact you may run into high rates, really large weights, and then being careful to use it. Did I miss something?

Q. No. They represented it or they say they trimmed the weights at 7 for the common and 14 for the post, I think?

A. Yeah, that might be it. That's about it. But those are some big weights in a survey, in my opinion, in my experience as with surveys.

Q. But you're not saying that they're inaccurate based on what they're trying to attribute --

A. No.

Q. -- to the population?

A. No, no.

Q. And just looking at the article that we just marked as Exhibit 26, you would agree that what the authors there talking about and what the warning that you reference in your report is talking about is analyzing the behavior of relatively rare individuals in

a population; in other words, if you were looking at black voters of a certain age, etcetera, etcetera, and looking at that and looking at the behavior of that subpopulation, not the mere presence of the subpopulation in the sample?

A. But -- well that gets to my point. If they're warning about looking at people like that that are really a small sample and that's in your dataset and they have a large weight, they could affect what you're doing to build a model. That goes back to the point I'm making. So maybe that's what they meant. They didn't state it precisely, so I can't speak to what they thought they were saying. But after running the analysis and looking at all this, it sure indicates to me that they've got weights in there that are so large and they're so many people with such large weights that you get a lot of instability in the models you're trying to construct from if you're trying to do regression type models.

Q. If you're trying to do regression-type models?

A. Yes.

Q. But if you're not doing the regression-type models, this instability is less of a concern?

A. I don't know. It depends on the context of what you're trying to do with it. It might be a

concern. For example, if you're doing a t-test and if one of the persons was pulled out of the sample, that makes a difference in the test score, it could make a big difference.

Q. Now turning to Dr. Burch analysis of the CES in her rebuttal report which was marked as 18, Exhibit 18, and looking at page 5, she reports the CS team was able to validate that 53 percent of the respondents voted in the 2020 general election.

A. I don't have it in the front of me, but I believe you if that's what she said.

MR. WALLACE: Which page?

MR. SAVITZKY: Page 5, last paragraph.

Q. And you don't dispute that using the common weight weighting, that's accurate?

A. No, I don't.

Q. And you don't dispute that that's fairly close to the 58.7 percent turnout reported by the secretary of state in the official totals?

A. That's correct. I don't dispute that.

Q. And on page 6 of her rebuttal report, Dr. Burch reports that breaking this -- and this is the first sentence on the top of that page: "Breaking the CES data down further by race, 60 percent of white respondents and 46 percent of black respondents voted in

Mississippi in the 2020 election." Again, you don't dispute that using the common weight weighting, that's accurate?

A. That's correct.

Q. And Dr. Burch reports that she conducted a logit regression analysis, she said: "My regression analysis validated turnout by race, and the CES confirms these percentages finding the same large statistically significant gap between black and white Mississippi voters."

A. That's right. Brings into play all the criticism I have of the dataset when using logistic regression.

Q. But you don't dispute that that is the result of the logit regression analysis run on the data?

A. No, I don't despite that.

Q. And you don't dispute that that matches up with what simply arithmetically calculating the validated voting for black and white voters in the --

A. I don't dispute that.

Q. Okay. And looking at paragraph 29 of your surrebuttal report, you say Dr. Burch does not describe the fit of her model to the data and whether or not any of the assumptions underlying logistic regression, it would suggest the regression model was violated?

A. Correct.

Q. And you don't cite any support for the suggestion that a goodness-of-fit test is required for a binary login analysis?

A. Well it's my oversight, but I assume that anybody who runs a model understands that it should have a good fit if you're going to use it. So that was my mistake in not citing a whole bunch of references saying that you should use it, because my understanding with every researcher, the idea is, you have a model and you should report what it looks like. I just thought that would be common knowledge, so my error.

Q. Would you agree that model diagnostics can create as many problems as they solve?

A. Well depends on --

MR. WALLACE: I guess I'll object to the form, but he my answer.

A. I guess it depends on what the problem is. So if you're trying to build a model to argue something and the diagnostics suggest you don't have a good model, that would be a problem, if you follow what I'm saying. And if you're trying to build a model that's exclusively designed to do something and the model says this is not very good at doing that, it's a problem, if it -- if it means that. You look at the diagnostics and it's going

to create other problems, more generally I would see the problem that's being created and it's telling you you should probably not use this model or look for other variables or use some other different approach.

Q. Would you agree that there's no distributional assumption for a binary logistic model?

A. I can't remember what the distributional assumptions are on binary logistics models, if there are ones or not, I just can't recall if it's assuming some sort of distributional function. And there may be different algorithms through different approaches to logistic regression that do assume them and some that don't.

Q. Would you agree --

A. I don't know the answer to that off the top of my head.

Q. Would you agree that in a model where there's no distributional assumption, it would make less sense to use a goodness-of-fit diagnostic?

A. No, I wouldn't agree to that. I mean, any kind of model would -- this is semi lecture mode. So in any model, you've got -- two out -- you're doing one of two things, really. You're trying to predict something or you're trying to have a causal explanation as best you can with the model what the determinants are on

something. And it -- it looks like she's doing both in some of these models. But basically, it's -- the overall focus is on prediction. And if you're going to predict something, that is, you're going to classify people into one group or another group, then you need to be very careful about how well your model fits. It may be less important if you're focus is on you're trying to explain things. It may be that you've got a really low explanatory power in your model but it's sufficient to say I think this variable, whether or not you've completed high school, has a fairly large effect on what your future income's going to be at age 50. That's a different story. But if you're trying to put -- classify and correctly put things, you better have a model that fits well; otherwise, you get things like where it said right in here where I said classification system's only .57, it's not better than just, you know, randomly tossing a coin and saying every time I'm going to say heads and I'm going to be right 50 percent of the time. And that part is definitely in the literature about saying if you are not well over that, you don't have a very good model. And that's consistent with all the diagnostic things I looked at, that the model is not particularly good.

THE REPORTER: I think we lost everybody on

Zoom.

MR. WALLACE: Hold on.

MR. SAVITZKY: Let's go off for a second.

(Discussion held off the record.)

MR. SAVITZKY: Back on the record.

BY MR. SAVITZKY:

Q. And did you run those model diagnostics yourself?

A. Yes.

Q. That's what you were talking about earlier?

A. Yes. The examples I pointed to are all models I ran. I replicated her model first and then said here, if I put these different weights in, here's what you get.

Q. In your surrebuttal report, you say that Dr. Burch's analysis was wrong because she should have used the -- she should not have used the common weight weighting?

A. Yes, that's what I said.

Q. Do you still agree with that?

A. I -- I might revise that. I think it's still better to have used the weights that I ended up using in the suggesting.

Q. And you said in your report -- and again, if you want to revise that and back off that statement, we

don't have to get into it, but --

A. Yeah. And I just said yes, I think she's not as incorrect as I thought she was initially when I read it.

MR. WALLACE: Let's get what paragraph we're talking about so we know what you're revising.

Q. Let's talk about paragraph 37 in your rebuttal report. You say --

A. Yes.

Q. -- "Because Dr. Burch uses the validation variable in her logistic model, she should have used the common post weight weighting because she's reaching across to the postelection wave with a validation of I voted takes place." Right?

A. Correct.

Q. But as we discussed, the validation is done independently of the postelection wave questioning?

A. That's correct.

Q. There are numerous validated voters, as we went through, who did not answer the postelection wave and who are omitted from common post weight; right?

A. Correct.

Q. So Dr. Burch was not reaching across to the postelection wave, she was analyzing a variable validated voting that applies to the entire sample?

A. That's correct.

Q. And because she was looking at the entire set of 462 or 460 minus the non-citizens respondents, common weight which is used for all adults where none of the variables from the postelection wave of questions being studied was the correct weight to use?

A. That is correct.

Q. And that is what I was referring to which should be corrected.

And turning back to Dr. Burch's rebuttal report on page 6, she then discusses another analysis where she looks into overreporting. And we can --

A. That's Exhibit 18 again?

Q. Correct. So Dr. Burch first looks at -- she concludes that 60 percent of white respondents and 46 percent of black respondents voted in the city based on the CES data, and then she also said: "It's worth noting the CES allows us to examine overreporting of voting." Right? So she looks at what is turnout by race, and she also looks at overreporting; right?

A. I believe that's correct. So we're on page 6; right?

Q. Page 6, the paragraph at the bottom under the chart.

A. Yes, yes.

Q. Right? So she's -- having looked at sort of what are the CES numbers show from (inaudible) she then says we can use this data to examine overreporting of voting by black voters and white voters; right?

A. She states that, yes.

Q. And she says the CES -- excuse me. The CES allows us to examine overreporting of voting by comparing self reported voter turnout to validated voter turnout; right?

A. Correct.

Q. Conceptually that makes sense; right?

A. Yes.

Q. So what she's doing, she's looking at respondents who reported voting in the second wave of questions, and she's seeing how many of those folks were actually independently validated as having voted; right?

A. That's, I believe, what she was doing, yes.

Q. And because this time she's looking at a variable from the postelection wave of questions, she uses the common post weight weighting as she notes in Footnote 22; right?

A. Yes.

Q. Okay. And Dr. Burch reports that 74 percent of white Mississippi respondents who said that they voted in the second wave actually did so according to the

independent validation; right?

A. I believe that's correct, yes.

Q. And you don't dispute that?

A. No.

Q. And she says that by contrast, 57 percent of the black Mississippi respondents who said they voted on the second wave were actually validated?

A. That's correct.

Q. You don't dispute her numbers on that?

A. No.

Q. And you replicated them, actually?

A. Yes.

Q. And you agree that using a common post weight weighting, they're accurate?

A. Yes.

Q. Now, at pages 8 and 9 of your report, your surrebuttal report, you say that: "Rather than using common post weight for this analysis comparing reported voting to validated voting, Dr. Burch should have used VV weighted post." Do you also want to revise that assertion?

A. Yeah, I think she still should have used it, but I think you're correct, that's a mistake I made.

MR. WALLACE: It's on page what?

THE WITNESS: 8 and 9.

MR. WALLACE: Of yours.

THE WITNESS: Correct.

BY MR. SAVITZKY:

Q. Right. And we discussed the VV weights only include people who were independently validated as being registered?

A. Correct.

Q. And that would mean excluding people who were reported -- who reported that they voted on the second wave of survey question but, in fact, weren't registered and didn't vote?

A. Correct.

Q. And if you're trying to detect overreporting, you're going to exclude potentially a lot of overreporting that way?

A. Correct.

Q. And by the way, do you know if there were respondents like that in the sample who reported voting but in fact were not registered and were excluded from the --

A. I believe there were. I would have to go back and look, but I believe there were instances like that.

Q. And we actually -- I mean, can look at them.

A. We can.

Q. Just briefly, we can pull back out what's

Exhibit 25. And just starting with row 29. Tell me when you're ready?

A. I'm ready.

Q. And this is a person who on CC2401, the question whether they voted, they said I definitely voted; right?

A. Yes.

Q. Voter status N/A, no validated vote and the VV weight given the zero weight --

A. Yes.

Q. -- and they are excluded?

A. Yes.

Q. 47 is another one on this page, right, I definitely voted.

A. Yes.

Q. No validated vote, no registration, no weight in the VV weights?

A. That's correct.

Q. And we could go through those. Would you dispute it if I told you there are 45 respondents in the Mississippi sample who said that they voted but whose registration was not independently validated?

A. No, I believe you. I believe that that --

MR. WALLACE: Registration or voting was not validated?

MR. SAVITZKY: Well, neither.

A. Neither, yeah.

Q. You wouldn't dispute that it's 45?

A. No.

Q. And there were 15 instances that you found of overreporting by respondents whose registration was validated?

A. I believe that's correct.

Q. And you discuss in your report how with only I think it was six white voters who over -- registered who overreport and only 9 black voters who overreported, that's a example of the small samples?

A. Exactly.

Q. But in fact, the total numbers of respondents who overreported is not 15, it's 60?

A. But even when you have the denominators in there, I think I -- didn't I perform a t-test there?

Q. Well, you performed a t-test on looking at that six versus 9.

A. Right. But there's not -- there's a denominator in there, that that's the key point. That's the 6 versus 9, so the sample is still small, and it's indistinguishable. It's not just the fact that it's 6 to 9 -- what's the paragraph number? And I can be more accurate on that.

Q. I believe it's paragraph 25.

A. Yes. So the test is not 6 versus 9, it's 6 out of 140 and 9 over 61. That's the test. That's what gives you the percent, that's the mean. And that -- when you ran that test with those numbers, 6 over 140 and 9 over 67 and run a t-test on it, are the means the same, yields the result, you know, with a alpha level of .05 that you cannot distinguish statistically between the two groups.

Q. But as we've established, the numerator and the denominator are all based on the VV weight -- or rather, the enumerator is based on the VV weight, and the denominator is too.

A. Yeah, I think it's consistent in this. I'd have to look at the details of it, but I ran it consistently, I believe. And so when you look at it that way, it just says they're =not statistically significant.

Q. Right. And my point is that you ran that t-test using the weighting that excluded most of the voters who overreported?

A. I'd have to go back and look at it to -- but you may be right.

Q. Well, we just discussed that you used the VV weight?

A. That's correct.

Q. And that we just discussed the VV weight would exclude 45 of the 60 respondents who overreported voting?

A. Yes.

Q. So you ran your t-test on data that excluded most of the people who overreported?

A. And to answer the question -- to answer the question you're asking, I -- we could run it again with the different denominator and see what happens. It may be a different result or the same.

Q. Well, let's answer the question I did ask. You ran your t-test on data that excluded most of the people who overreported voting; right?

A. That could be the case, yes.

Q. I think a yes or no would be proper --

A. Okay. Yes.

Q. -- to be objective. Yes; right?

A. I'll say yes.

Q. Thank you. And you didn't run a t-test on the data using the common weight which would have included most of the overreporting in the sample; right?

A. That's correct.

Q. So you don't know whether the level of overreporting that Dr. Burch reports using the correct

weighting is statistically significant?

A. I don't know.

Q. Almost done with the CES, couple other points.

First, you say in paragraph 28 of your surrebuttal report: "In her use of CES data because it has validated voters, Dr. Burch analysis is again tied to the CPS." Right?

A. Yes.

Q. Dr. Burch didn't use the VV weights in her analysis in the --

A. Then that's incorrect. So it's just tied to the ACS.

Q. So this statement that Dr. Burch's analysis is tied to the CPS is not correct?

A. That's correct.

Q. And turning to pages 7 and 9 of Dr. Burch's rebuttal report. Dr. Burch uses CES data to analyze eduction in voting; right?

A. Where are we?

Q. Starting at page 7 of Dr. Burch's rebuttal report, which I believe is Exhibit 18.

A. Okay.

Q. Are you there?

A. I am.

Q. Okay. And you don't discuss this analysis of

educational -- education voting in your surrebuttal report, do you?

A. But you -- one of her models in the logistic modeling that she did is with this dataset, correct, her model 2?

Q. That's correct.

A. So that I did analyze.

Q. You don't dispute her analysis on page 7, Figure 2 of page 8 that there's a small, not statistically significant gap between black and white validated voter turnout at each educational level?

A. You're talking about what she's got in Figure 2 and Figure 3. No, I'm not disputing that. The only qualification I make to it, again, is even with doing some descriptive statistics, she may run into issues with the weighting if you looked at it. But no, I don't dispute it.

Q. But you don't dispute that her analysis indicates that education is the significant explanatory variable in explaining the difference in turnout between black and white voters?

A. I think she's making a leap of faith in that. Causal analysis is really hard to determine through correlations. They're correlated, but to say it's specifically the causal effect is difficult. And that's

one of the things you run into with regression analysis of any type or even descriptive analysis.

Q. I'm looking at page 16 of her report. I mean, she reports that the P value on education is significant at the .001 level for voting?

A. But even that -- all that does it say the model fits well, doesn't say that that's a consolation.

Q. Understanding, I mean, all we can do in statistics is what we can do here which is to show that there is an extremely good fit between education and voting in Mississippi. You would agree with that?

A. That I agree, that it's a -- it's a parameter that helps fit the data -- the model to the data. So in the statistical sense, when you look at it, if you look at the partial R-squareds and look at the standardized coefficients, which she did not report, then you can see what the effects were. But she failed to report the standardized coefficients.

Q. But you don't dispute that result that she arrives at?

A. Not in that sense, no, I don't dispute it.

Q. And you don't dispute the ACS data which is reflected in the chart here on page 9, educational attainment by race in Mississippi showing a large gap in attainment of bachelor's degree or higher?

A. That's correct. I don't dispute that.

Q. And you don't dispute Dr, Burch's conclusion that: "While black and white people with similar educational backgrounds vote similarly, people with lower educational attainment vote at lower rates overall than people with higher educational attainment"?

A. I don't dispute that.

Q. And you don't dispute her conclusion that: "Black Mississippians are more likely to have lower educational attainment and thus lower voter turnout than white Mississippians"?

A. I don't dispute that.

Q. And --

MR. WALLACE: Objection to the form of "thus," but otherwise he may answer.

Q. And we can go now to the ecological inference analysis in Dr. Burch's report. I think it starts on page 9, so we can just stay where we are for the moment.

Looking at page 9 of Dr. Burch's rebuttal report, she explains that she conducted this ecological inference analysis using of the voter file -- the Mississippi voter file as a dataset to estimate voter turnout by race; right?

A. That's what she says, yes.

Q. You don't disagree with that?

A. No.

Q. So this is not the CES, this is the actual voter history of voters in Mississippi?

A. Yes.

Q. And she aggregated turnout data from the voter file up to the block group level and then married the block group level turnout data with block group level racial demographic data on non Hispanic white population, nonwhite population, and then ran the EI analysis; right?

A. I think her definition of nonwhite included Hispanics who were white among others and Indians. So as she puts in her report, it's nonwhite, so it's not a comparison between white and black. Is that correct?

Q. We can get into it, but yes, she runs the EI between non Hispanic white and other groups --

A. Correct.

Q. -- as a binary; right? And she does that by aggregating up the turnout data and the race data, marrying them together into a dataset that can be used for EI; right?

A. That's correct. And I -- again, I think under the other or nonwhite category, however she described it, she has, for example, people who might -- who say my ethnicity is Hispanic but I'm white racially, and then

she includes every other race, whether they're Choctaw or Chinese or Vietnamese, etcetera, in that group, yes.

Q. And by the way, just looking at page 11, Footnote 31 -- do you see Footnote 31 there?

A. I do.

Q. -- Dr. Burch says: "Performing the analysis with non Hispanic, black alone or a combination and nonblack as reference categories also produces estimates of lower black turnout relevant to nonblack residents both statewide and in the central district." Do you see that?

A. Yes, but it wasn't in her original report, was it?

Q. I mean, it's in the surrebuttal report along with the rest of her EI analysis; right?

A. But that's in the surrebuttal report, that's not the report that I was commenting on. Did she have it in her original report that I comment on, that's what question I'm asking.

Q. She had it in the rebuttal report that you commented on in your surrebuttal report --

A. Yeah.

Q. -- right?

A. Yeah.

Q. Okay. All right. And by the -- well, we'll

get back to it in one second. But going back to the EI analysis. Looking at pages 10 to 11 of Dr. Burch's rebuttal report, she finds a significant racial turnout gap both statewide and in supreme court district 1. Do you agree with that?

A. And that's where?

Q. Page 10, last paragraph: "The estimates obtained using the ecological inference show that there's a statistically significant racial gap in turnout in Mississippi." Right?

A. And where's the results of the statistical test?

Q. I don't -- I'm asking you if that's what she found.

A. Well that's what she says, but where's the result of the statistical test, is my question.

Q. Did you run a statistical test to confirm whether those results are significant?

A. I didn't.

Q. Okay. You had no basis to dispute --

A. Well I can't answer whether or not -- what test she did and how she ran it, so I don't -- I'm not in a position to give an opinion on it right now.

Q. You don't give an opinion on it?

A. That's correct. I don't know whether or not

it's -- I can't agree with it, but I don't have an opinion on it because I didn't run an independent statistical test, and she doesn't show one here, she just says she did.

Q. She reports that her statewide EI analysis shows that the white turnout was 58 percent, nonwhite turnout was 42 percent, 16 point gap?

A. She says that.

Q. And in the central district turnout -- black turnout is 44 percent white turnout 62 percent?

A. She said that.

Q. And by the way, when she runs well -- strike that.

And Dr. Burch says in the next sentence at the top of the page 11: "The statewide and central district estimates for each racial group produced using EI and the CES are realistic given what we know about the actual voter participation statewide in the central district, in other words, they match up with the benchmark reported by the secretary of state." Do you dispute that?

A. Well, I didn't run an EI analysis myself to look at what she did, so I'm not in a position to dispute or not dispute it.

Q. You don't claim that Dr. Burch didn't

accurately report the results of her analysis?

A. No, I'm not claiming that.

Q. With respect to the EI analysis for district 1, you say -- turning to paragraph 43 of your surrebuttal report. You say: "Dr. Burch included Adams County rather than Bolivar County in district 1"?

A. That's correct.

Q. Now assuming that's the case, do you have any reason to think that the inclusion of Adams versus Bolivar would have a material effect on the estimation of turnout by race on a districtwide basis?

A. I don't know the answer to that until I've looked at what the results would be.

Q. You didn't look at the results?

A. I didn't.

Q. Do you know the populations of those two counties are nearly identical 28,000 versus 30,000?

A. No, I didn't.

Q. Did you know they're both black majority counties?

A. No, I didn't.

Q. Would it stand to reason that in a district of 750,000 by voting age population including one similarly-sized majority black county versus another is not going to make a difference in terms of measuring the

districtwide turnout gap using EI?

A. No, I'm not going to agree to that because I don't know what she did in the EI, and I don't know what other factors may have come into play.

Q. But you didn't run an analysis yourself to check?

A. Yes, I didn't.

Q. Have you received any further information about whether or not Dr. Burch conducted -- looked at it with Bolivar instead of Adams?

A. I think she did and sent it on to the attorneys, but Mike and I haven't looked at it.

Q. Do you know what the overall result that she obtained was?

A. No, I don't.

Q. If I told you the result was so similar that we didn't have to change anything in the report, would you dispute that?

A. No, I wouldn't dispute it other than the fact that someone had the wrong county in there.

Q. Right. But you wouldn't dispute that the results don't actually change if I represented that to you?

A. No, I wouldn't.

Q. You also say that because Dr. Burch coded

racial demographic information as white and nonwhite, more specifically not Hispanic white versus non -- non Hispanic white, she is expressing an opinion about white voters relative to nonwhite voters, not an opinion about white voters relative to black voters?

A. Correct.

Q. All right. But you would agree that in Mississippi, the vast majority of nonwhite voters are black?

A. I would.

Q. You would agree that black and white Mississippians together form 96.5 percent of the population of Mississippi?

A. I'd have to look at it, but that sounds about right to me.

Q. Do you contend that the existence of a small number of nonwhite, nonblack Mississippians means that it's not possible to draw inferences about black Mississippians' voting behavior based on the actions of nonwhite Mississippians?

A. The issue I have with it is more why not stay with the black population? Why change the racial definitions for this part of the analysis? That's the problem I have with it.

Q. But given that 4 percent of the state's CVAP is

nonblack or nonwhite or thereabouts, doesn't matter if the turnout in that group is 0 percent or 100 percent?

A. It's a question I can't answer without looking at that data. It might be just as with the cases of some of these observations that are in the CES file where they have large weights, there could be effects that are like that. So offhand, I'm not able to answer that question without looking at the data.

Q. I mean, even if the turnout among that small number of nonblack potential voters who are included in the nonwhite category for purposes of the EI analysis was 0 percent, the implied black turnout rate would go up by 4 percent?

A. Again, it's a question that -- you can ask it as many different ways as you can. My point goes back to: Why didn't she look at black voters in the first place? And to answer the question that you're trying to ask me, it could be that among those 4 percent are cases that are -- that are going to be significant as found in the CES file. So I don't know, so I can't answer the question.

Q. And again, this isn't a survey, this is based on the voter file itself, that's the dataset here.

A. Yeah, and I'm not saying it's from a survey, I'm saying again there's, you know, why switch the

definition? And I can't answer the question without knowing more of it or if I started looking deeper in the analysis, which I haven't done.

Q. And as we discussed, looking again at Footnote 31 of Dr. Burch's report, she actually did look at black versus nonblack turnout, and she found looking again at that footnote that black turnout was estimated to be 42 percent while nonblack turnout was estimated to be 57 percent. Any reason to dispute that?

A. Yeah, and then there's -- again, why is it black versus nonblack, is the question. Why isn't it black versus white?

Q. Right. So the question is: Do you dispute that that's the result that she obtained?

A. I believe that -- I believe whatever the results she's pointing at, I think she's doing as accurately as she can. The issue is white versus black and suddenly we're in white and nonwhite, and then we're in black and nonblack.

Q. Well, having estimated black turnout at 42 percent and having estimated white turnout at 58 percent, can you not look at both the EI analysis and then say she did look at white turnout and black turnout?

A. My question is: Why didn't she do it? You don't have to ask me that question, ask her why she didn't stick with the same categories. I don't know the answer to that.

Q. Right. And --

A. All I can say is that I'm looking at something that says you're looking at these two categories and now suddenly the categories are switched. So it's difficult for me to answer those questions.

Q. Right. My question --

A. Regardless of what the numbers are or anything else, it's why -- why change?

Q. Well, I mean, I understand. But my question is: It seems like she did do that, that looking at the data, she ran the analysis both white versus nonwhite and black Versus nonblack, and so she does provide that information that you're looking for in her report.

A. But it's not direct, it's not white versus black. And that's a problem because that's what most of her analysis and that's what it seems everything in this is based on.

Q. Well, it's the same --

A. No matter how many times you ask me this, that's going to be my same answer. I can tell you right now.

Q. Well, why can you not look --

A. Because it's -- the problem is, why did someone change the categories they're doing an analysis from white to black to now it's nonblack and -- or nonwhite? To me, I don't understand the reasons for the change. And you have to wonder why it was done. And could the categories in the definitions by race in the voter file be different than they are elsewhere? Is that the reason? I don't know. And it could be that -- you know, it could be that there's lots of other issues there, and I'm going on the voter file about race and ethnic definitions that are not brought to the surface here. I don't know the answer to that.

Q. Well again, the dataset for the EI analysis we also discussed, the racial data comes from the census, right, block group level census data on race; right?

A. Yes.

Q. That's the source of the data?

A. Yes.

Q. Okay. So let's --

A. But the source of the data is -- it's the PL94171 data file.

Q. Yes.

A. Yes. Okay.

Q. So understanding that we're using census data,

that it's the same dataset --

A. I understand. But in looking at that, another issue that comes into play that she doesn't mention is, what's the effected differential privacy when you get down to that smaller end, the differential privacy protections that the census bureau has placed on small area data, which I believe are even in the public 94 -- the PL94171 data.

Q. Do you have any reason to think that differential privacy has an effect on the statewide or central districtwide EI analysis of voter turnout by race?

A. When you're aggregating up to smaller levels, up to some point they might. The census bureau will claim that's when you get to the state level or even lower levels that the differences wash out, but I'm not inclined to believe that that's necessarily the case, and they certainly appear at smaller levels of geography.

Q. This isn't something you mention in your report?

A. No.

Q. Is it something you're just thinking about right now?

A. It's -- it is something that I think can have

an effect on it when you start using different datasets like that and go down to small areas, yes.

Q. And setting aside the punitive effect of differential privacy, you would agree that using a single dataset based on Mississippi voter data from the secretary of state and race data from the U.S. census, Dr. Burch measured using EI white turnout and black turnout, and we can compare them?

A. I don't agree with that statement at all, because I don't know what the definitions are in the Mississippi voter dataset, how they might vary, what kind of matches you get between the two. So the -- again, I can go back and answer you why switch from white versus black to white, nonwhite and then black, nonblack. I just don't understand the basis for that.

Q. What do you mean by definition in the Mississippi voter data?

A. Whatever -- how are people defined? Is it self reporting? When -- what are the definitions of race that are in the Mississippi voter data file?

Q. The voter --

A. It's not in there, is it?

Q. I will tell you the voter data --

A. Yeah.

Q. -- In Mississippi does not --

A. Not in there.

Q. Which is why --

THE REPORTER: Gentleman, one at a time, please.

A. That's the point I'm bringing up. So that's not there. So what you're relying on -- totally on the census bureau data for race.

Q. Right.

A. And again, if you've got the sentence data for race, you've got black, you've got white, you've got all the other race categories, why not use them?

Q. We talked about how you used an EI type analysis in the early nineties; right?

A. That's current.

Q. You haven't run an EI analysis since then?

A. No.

Q. Do you have much familiarity with the type of EI analysis that Dr. Burch ran in this case?

A. I can see Beijing type analysis. I looked through what's on the websites and some of the documentation for the -- both the hard version, the easy version of Brinnon (phonetic), and that's what I know. And for example, one of the points I made in my report about it, she didn't report any priors on what the distributions are and assumptions. And that's usually

common in a Beijing analysis.

Q. And --

A. But that still doesn't get to my question. Why, if you've got the data for white and black and why switch the racial categories? I don't understand why she would do that.

Q. Are there reasons why if you're doing an analysis like this, you would not want to include a third group as a very small population?

A. I don't know the answer to that. I just -- my question still is: Why not look at black versus white if you've got the data for it?

Q. How would you go about looking at black versus white?

A. Well, she had it. She's using the ACS; correct? They use those same racial categories, correct, in her EI analysis. That's in there; correct? Where did she get the data for race if it's not from the ACS?

Q. From the U.S. census, from the PL --

A. The PL9R, yeah. My mistake. So from that dataset, they're in there too, white, black, any part black, all those issues. So why switch?

Q. So you're suggesting that the EI analysis could also have been run with many different racial categories

estimating the voter turnout not only of black voters and white voters but also of American Indian voters and, you know, Hispanic voters, understanding --

A. That's not what I'm suggesting. What I'm suggesting is -- and I'm asking the question -- why didn't she run that analysis? Why did she switch the categories from what she did elsewhere in her report where it's white and black? That's what's I don't understand.

Q. Right. And I guess I'm asking: How would you run an EI analysis on more than two variables --

A. It's not running more than two.

Q. -- reference categories?

A. How did she run it -- it's the same thing. Here's white, nonwhite. She ran that; correct?

Q. Correct.

A. Why didn't she run white, black?

Q. Right. And I'm asking the questions, I'm not going to answer them. But you don't -- you don't know -- I think the answer is clearly you don't, but you don't know of reasons why you would want to consolidate voters into two reference groups in order to, for example, not have part of your analysis be on very small numbers of members of a particular racial group that's not white and not black because the effects would be

less accurate?

A. I didn't say she needed to run it on, say, the Cherokee population. I'm saying why didn't she just run white versus black? She didn't do that. She ran white versus, you know, non Hispanic white versus everybody else.

Q. Do you know whether it's possible to do the thing you're suggesting using EI analysis?

A. Why didn't she do it? That's a question I'm asking. I can't answer that question. I don't know what's possible in the EI analysis. My question is: Why didn't she run white versus black? Because everything in the reports up to this point are -- uses those two categories. It's not nonwhite, did you report to me something about, well, here's the nonwhite VAP in a certain county, and they outnumber the white VAP. No. It was all white versus black. So why is it suddenly changing in the EI analysis to a new category of race? That's my question.

Q. And Dr. Burch found that white turnout was 58 percent statewide and 62 percent in district 1?

A. Using the definition of white that she used in the EI analysis?

Q. Non Hispanic white as defined by the census?

A. Yes.

Q. And she found that non Hispanic black alone or in combination turnout was 42 percent statewide and 43 percent in district 1?

A. That's on -- where is that found again?

Q. Footnote 31.

A. That's what she says. But again, why didn't she just put that in her report? And again, down here, it says again it's -- it's black turnout is estimated this while nonblack turnout was this. Why didn't she have black versus white even in this footnote? That's what I don't understand. She has white, nonwhite, and then down here she has black, nonblack. And why the switch? To me, that's mystifying.

Q. But you don't run an EI analysis, so you wouldn't be able to say whether there's an understandable reason to construct your analysis that way?

A. Well, no matter what analysis, I would be running ones I was familiar with or not. The question I would ask is: Why did someone switch these categories in this way? To me, that's -- it's not a good sign. And whether or not it's -- it's okay that the numbers are really small and everything turned out to be the same; if that's the case, why not run it that way instead of do this?

Q. It's not a good sign because you don't understand why she did it?

A. Yes. She doesn't give any explanation. So reading the reports that she does, white, black, white, black, white, black. So when we get to this point, it's white, nonwhite, and even down here in the footnote it's black, nonblack.

Q. Because this is a different analysis, the EI analysis?

A. I understand. But the whole function of the report wasn't to suggest that it's black voters that are turning out at a lower rate than white voters. Isn't that the intent of the entire exercise here? I'm asking you. So all of a sudden, we have black and nonblack and then white and nonwhite.

Q. So it could be that she did it this way to ensure the accuracy of her results?

A. But if that's the case, why would that be more accurate than saying white and black and black and white? I don't know the answer. I can't answer what she did in the analysis. All I can do is read what she said. And what she says is not consistent with things she said elsewhere up to this point in the report she's done.

Q. She constructed a different analysis

differently?

A. That's what it appears to be. That's my question, is, you know, why? Doesn't seem to be the topic.

Q. So just zooming out and talking about your surrebuttal report, how much time did you spend putting that surrebuttal report together?

A. It's quite a bit of time, especially starting to look into the EI analysis which I was not familiar with. So I spent a fair amount of time doing that thinking I don't want to have to learn R to do this, you know, it looks painful. I mean, I started down the path to do it, but then when I started reading the report again and said well, I see Dr. Burch now switched categories, and I -- that to me is a problem right there, I think I'll stop at that point.

Q. And how much time do you think it was total?

A. I'd have to look. It's a lot of hours.

Q. More than 40?

A. I don't know. Maybe. Again I'd have to look. Once I send the hours in, I don't keep track of it.

Q. You sent them in?

A. I have them -- I've got them posted. If you want to look at them, I've got an Excel spreadsheet.

Q. You kept records --

A. Yes.
Q. -- contemporaneous of your hours?
A. Oh, yes. Sure.
Q. Did you do any analyses that you left out of your surrebuttal report? You mentioned a t-test.
A. No. Other than that I did subsequently, as I said, I don't think so.
Q. You did the t-test subsequent to --
A. Well, when I was doing the original analysis, I just didn't put it in the report.
Q. Okay. And you can provide that to us?
A. I can.
Q. And --
MR. WALLACE: We will take that under consideration, and we'll let you know. You've also asked for a piece paper from the other expert and we're in the process, we'll get back to you soon.
MR. SAVITZKY: Thank you.
BY MR. SAVITZKY:
Q. And any -- other than that t-test, any other analysis that you sort of ran but didn't include in the report?
A. No.
Q. How about for your initial report?
MR. WALLACE: Same objection as to being out

of time. He may answer if he remembers.

A. I can't recall running different analysis that are not in the report.

MR. SAVITZKY: Just one second. Can we take three minutes, just go off. Thank you.

MR. WALLACE: Thank you.

(Short recess from 4:55 to 5:08 p.m.)

MR. SAVITZKY: Back on the record.

That concludes my questioning for Dr. Swanson at this point, so --

MR. WALLACE: I have one statement I need to make in response to your question about correcting things at the front end, and if you want me to ask him to swear to it, I will. He has not testified in court in the voting rights case. That was his testimony. It was true, but in an abundance of caution, he has given a deposition in the voting rights case in Louisiana. And I wanted to make sure you knew that -- I suspect you already do, but I wanted to clarify it on the record.

MR. SAVITZKY: And just -- that's in the Ardoin case?

MR. WALLACE: It is Ardoin, isn't it?

THE WITNESS: It is.

MR. SAVITZKY: Congressional redistricting case?

MR. WALLACE: Correct. That all I've got. We will read and sign. And we'll respond to you once we get it.

THE REPORTER: So you're ordering the transcript?

MR. SAVITZKY: Yes, please.

THE REPORTER: And you want a copy, Mr. Wallace?

MR. WALLACE: Oh, yes.

(Deposition concluded at 5:09 p.m.)

(Reading and signing was requested pursuant to FRCP Rule 30(e).)

C E R T I F I C A T E

STATE OF WASHINGTON

COUNTY OF WHATCOM

I, Evelyn M. Adrean, RPR, a Certified Shorthand Reporter in and for the State of Washington, do hereby certify that the foregoing transcript of the deposition of DAVID ARTHUR SWANSON, Ph.D., having been duly sworn on OCTOBER 5, 2023, is true and accurate to the best of my knowledge, skill, and ability. Reading and signing was requested pursuant to FRCP Rule 30(e).

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 20th day of October 2023.

Evelyn M Adrean

EVELYN M. ADREAN, RPR, CCR-WA

Expert Report of David A Swanson, Ph.D.

Expert in Demography for the Defendants.

White et al. v. Mississippi State Board of Election Commissioners et al.

5 January 2023

TABLE OF CONTENTS

I, David A. Swanson, affirm the conclusions I express in this report are provided to a reasonable degree of professional certainty.

EXPERT QUALIFICATIONS

1. I am an expert in demography with more than 50 years of experience. I have been retained on behalf of the State Board of Election Commissioners, Tate Reeves, in his official capacity as Governor of Mississippi, Lynn Fitch, in her official capacity as Attorney General of Mississippi, and Michael Watson, in his official capacity as Secretary of State of Mississippi, (hereinafter collectively "the Defendants") as an expert to provide analysis related to State Supreme Court redistricting litigation in the matter of *DYAMONE WHITE; DERRICK SIMMONS; TY PINKINS; CONSTANCE OLIVIA SLAUGHTER HARVEY-BURWELL*, *v. STATE BOARD OF ELECTION COMMISSIONERS; TATE REEVES in his official capacity as Governor of Mississippi; LYNN FITCH in her official capacity as Attorney General of Mississippi; MICHAEL WATSON in his official capacity as Secretary of State of Mississippi.*

2. I graduated with a Bachelor of Science in Sociology (with a minor in mathematics) from Western Washington University in 1972. I earned a graduate diploma in social sciences from the University of Stockholm in 1974, an M.A. in Sociology/Population Studies from the University of Hawai'i Mãnoa in 1976 and a Ph.D. in Sociology/Population Studies from the University of Hawai'i Mãnoa in 1985.

3. I have served in a number of professional association roles, including: general editor for Springer's Applied Demography series; member of the mortality expert panel of the Society of Actuaries Research Institute; Secretary-Treasurer (1995-7 and 2003-7) of the Southern Demographic association; and editor of *Population Research and Policy Review* (2004-7). More recently, I have been on the program committee for the 2022 annual meeting of the Population Association of America and also the program committees for the 2019 Conference on Population and Public Policy and both the 2020 and 2017 annual meetings of the Population Association of America. I have produced 115 refereed sole- and co-authored journal articles, and nine books. I also have edited or co-edited four additional books, with another on the COVID-19 pandemic forthcoming. Google Scholar shows more than 6,000 citations to my work (https://scholar.google.com/citations?user=t7P6qoYAAAAJ&hl=en&oi=ao).

4. My first demographic consulting job was in the spring and summer of 1972 with KVOS TV in Bellingham, Washington. While a graduate student at the Mãnoa campus of the University of Hawai'i, I was employed as a staff researcher with the East-West Population Institute, a unit of the Congressionally funded East-West Center, which adjoins the Mãnoa campus. In late 1976, I accepted a position with the Population,

Economic, and Enrollment Studies Division of the Washington State Office of Financial Management in Olympia, Washington (The Governor's Budget Office), and in 1981, I became the first State Demographer of Alaska. This was followed by private sector, government, and academic positions, to include serving as the State Demographer of Arkansas, Senior Scientist at Science Applications International Corporation, Dean at the Helsinki School of Economics and Business Administration (now part of Aalto University), and Professor & Chair of the Sociology/Anthropology Department at the University of Mississippi. I retired as Emeritus Professor of Sociology at the University of California Riverside in 2018 and was recognized as a "Dickson Professor Emeritus" in 2020-21. I have received a number of awards for my work, including two Fulbrights, and the 2022 "Terrie Award" for presenting the best paper (co-authored with two colleagues) on state and local demography at the annual meeting of the Southern Demographic Association (an award I also won in 1999 and 2016). I also have testified before Congress and State Legislatures and served on the U.S. Census Bureau's Scientific Advisory Committee, 2004-10, chairing it for two years. In November of 2022, I was nominated as one of the candidates to stand for election as the President of the Southern Demographic Association. I am currently a Research Associate (.25 FTE) with the Population Research Center, Portland State University.

5. Not only have I lived and worked in Mississippi, but my 115 refereed journal articles include studies dealing with demography, race, socio-economic status, and mortality in Mississippi (see, e.g., Swanson, 2008; Swanson and Cossman, 2020; Swanson and McGehee, 2009; Swanson and Sanford, 2012; Swanson and Verdugo, 2019). I also gave a recent paper describing the effect on the 2020 census of Mississippi of the Census Bureau's new Disclosure Avoidance System, "Differential Privacy" (Swanson and Cossman, 2021) and was a co-principal investigator on a 2005-6 grant funded by the National Science Foundation to study "Perceptions of Disaster Relief and Recovery: Analyzing the Importance of Social and Kinship Networks Among Hurricane Katrina Refugees on the Mississippi Gulf Coast," which led to a number of refereed journal articles (see, e.g., Chapel et al., 2007; Forgette et al., 2009; Henderson, et al., 2009; Swanson, 2008; Swanson, et al., 2007). I am a lifetime member of the Mississippi Academy of Sciences.

6. I have worked on redistricting cases (see paragraph 9 in this report for a list of these cases) as well as on revising school (K-12) attendance zones, an activity, which while lacking the legal underpinnings of legislative redistricting, shares similarities with the latter in terms of public consequences, analytical methods, GIS mapping, and variables such as age, race and socio-economic status as criteria of interest (Swanson et al., 1997; Swanson et al., 1998). Furthermore, as indicated in the dedication and

acknowledgments, respectively (Morrison and Bryan, 2019: viii, xi), I also played an active role in the development of *Redistricting: A Manual for Practitioners, Analysts, and Citizens*.

7. I been involved in the following court cases as a testifying and/or deposed expert witness:

   - Deposed Expert Witness (testimony expected to be given in April, 2023). 2022. Case No. CV 6417-300, Superior Court of Arizona in and for the County of Apache, General Adjudication of All Rights in the Little Colorado River System and Source, Phoenix, AZ (On behalf of the Hopi Tribe, Review of Population Forecasts done by a Demographer hired by the Navajo Nation). Osborne Maledon, P.A., Phoenix, AZ;
   - Deposed and Testifying Expert Witness. 2022. Case A-17-762364-C. Estate of Joseph P. Schrage Jr & Kristina. D. Schrage v. Allan Stahl. Eighth Judicial Court, Clark County, Las Vegas, Nevada (life expectancy, working life expectancy and present value of lost earnings and benefits). O'Reilly Law Group, Las Vegas, NV;
   - Deposed and Testifying Expert Witness. 2021. Case No. CV 6417-203, Superior Court of Arizona in and for the County of Apache, General Adjudication of All Rights in the Little Colorado River System and Source, Phoenix, AZ (Forecast of Hopi Tribal Population). Osborne Maledon, P.A., Phoenix, AZ;
   - Deposed and Testifying Expert Witness. 2012. Board of Education, Shelby County, Tennessee et al. v. Memphis City Board of Education et al. / Board of County Commissioners, Shelby County, Tennessee (third party plaintiff) v. Robert E. Cooper et al (third party defendant)." (Constitutionality of a Tennessee state law). (School District Enrollment Forecasts). Baker, Donelson, Bearman, Caldwell and Berkowitz, PC. Memphis, TN;
   - Deposed Expert Witness. 2009. "Quest Medical Services v. FMIC." (Demographic Effects of Hurricane Katrina on New Orleans in a case involving a Medical Service Provider). Podvey, Meanor, Catenacci, Hildner, Cocoziello, and Chattman, P.C., Newark, NJ;
   - Deposed and Testifying Expert Witness. 2007. "Spring Hill Hospital, Inc. v. Williamson Medical Center and Maury Regional Hospital." (Evaluation of population forecasts in a case involving a proposed hospital). Miller and Martin, PLLC, Nashville;
   - Deposed and Testifying Expert Witness. 1994. Arkansas Supreme Court. (Statistical evaluation of the accuracy of the number of qualified signatures on a public referendum as determined by a sample); and
   - Deposed Expert Witness. 1983. "Anchorage, et al., vs. J. Hammond et al." (Lawsuit brought by local governments against the state of Alaska on how populations are determined for purposes of state revenue sharing to local governments).

8. I produced the following expert reports as a consultant/potential expert witness in other court cases:

   - Expert Report, Estimated Life Expectancy and Present Value of Household Costs, Z. Kirkson. O'Reilly Law Group, Las Vegas, Nevada. (2019);

     Expert Report, The Potential Number of Claimants in regard to the 2010 Gulf of Mexico Oils Spill and its Sequellae. Watts Guerra, LLC. San Antonio, TX. (2016);

   - Expert Report in the matter of Conseil scolaire francophone de la Colombie-Britannique, Fédération des parents francophones de Colombie-Britannique, et al. v. Her Majesty the Queen in Right of the Province of British Columbia, and the Minister of Education of the Province of British Columbia, Vancouver Registry S103975 in the Supreme Court of British Columbia. Prepared for the Office of the Attorney General, Ministry of Justice, Province of British Columbia, Canada (2014);

   - Expert Report re Title Insurance Loss Model, First American Title Insurance Company, Miller and Martin PLLC, Nashville, TN (2008);

   - Expert Report re Patient Population in the matter of Ochsner Clinical Foundation versus Continental Casualty Company. Fisher and Kanaris PC, Chicago, IL (2008); and

   - Expert Report re Hurricane Katrina: Its Impacts on the Population and Candidates for Endovascular Surgery in the Primary and Secondary Service Areas of Garden Park Hospital as Defined by Hospital Corporation of America. Salloum and Brawley LLP, Nashville, TN (2007).

9. I have served as a consultant to BryanGeoDemographics (BGD) in regard to the following redistricting cases:

   - Singleton v. Morrill, Case 2:21-CV-01291-SGC;
   - Robinson v. Ardoin, Civil Action Nos. 22-211-SDD-SDJ, 22-214-SDD-SDJ;
   - McConchie v. State Board of Elections, No. 1:21-CV-03091; and
   - Caster v. Merrill, Case No. 2:21-CV-1535-AMM.

10. Because of its expertise and experience, I have used the services of Bryan Geodemographics, which under my direction has assembled data, maps and other work products.

11. My full Curriculum Vitae, including my 50 years of demography experience, is attached as Appendix 6.

12. I am being compensated at a rate of $400/hour.

I. EXECUTIVE SUMMARY

13. The *White et al.* case has been brought with the support of numerous expert reports. One of these reports was authored by Mr. William Cooper, whose report included a demographic analysis of the existing SCOMS districts, plus four new proposed alternative districts (including analysis of their characteristics). I will be referring to Mr. Cooper's report throughout my paper. Mr. Cooper's report relies on the use of 2020 voting age population (VAP) – a measure which he uses to argue that MS SCOMS District 1 is a *minority* Black district at 49.3% (see Cooper report at p.19). The appropriate measure would actually be the *citizen* voting age population (or CVAP). That is, the population actually eligible to vote. In regard to the existing Supreme Court of Mississippi (SCOMS) Districts, as shown in *Table III.E.2 2020 Census Voting Age Population for Existing SCOMS Districts* District 1 already has a Black (Citizens of Voting age Population) CVAP majority at 51.0% APB, a fact Mr. Cooper fails to note in his report. Cooper's Illustrative Plan 1 would increase the Black (Any Part Black, "APB") CVAP majority in District 1 to 57.0%, while Illustrative Plan 2 would raise the CVAP %APB to 55.4%, Least Change Plan 1 would raise the CVAP %APB to 54.4%, and Least Change Plan 2 would raise the CVAP %APB to 53.8%. Each of Cooper's plans yield a similar result: an already Black CVAP APB majority in District 1 is increased to a higher level.

14. When compared to the existing Supreme Court Districts, all four of Cooper's alternative plans serve to lessen the diversity of both the White non-Hispanic (WNH) and the APB CVAP populations across the three districts relative to the distribution of the Citizens of Voting Age Population (CVAP) as a whole. As such, the existing Supreme Court districts provide more diversity than do any of Cooper's plans.

15. Cooper does not analyze the existing SCOMS districts or his own alternative districts by traditional redistricting criteria. However, I use two of them to analyze the existing districts and those proposed by Cooper: core retention and compactness. Briefly, core retention is the principle that the core (population) of prior districts be maintained in a redistricting plan and Compactness is the principle that the distance between all parts of a district is minimized (Gallagher, Kreye and Duros, 2020: 14). Core retention is a critical measure in assessing alternate redistricting plans, because it reveals the *gross* changes in each population that was made to achieve the *net* change of the plan. In the cased of Cooper's illustrative plans, I find that significant gross amounts of population are moved around the state in order to achieve the minimal increase in % Black he proposes in his two new illustrative District 1 scenarios. Core retention of the APB CVAP population in Cooper's two illustrative plans is low, only 72.0% overall and 76.9% of APB VAP in District 1 are retained in his Illustrative Plan I and 65.7% overall and 68.6% of APB VAP are retained in his Illustrative Plan II. These core retention

statistics differ from those of the WNH population and the population as a whole. This finding is consistent with my finding that Cooper's plans serve to decrease diversity across the Supreme Court districts. Cooper's two "least change" plans provide higher levels of retention: 89.2% overall and 91.7% in District 1 of APB VAP in his Least Change Plan 1; and 93.6% overall and 97.0% of District 1 in his Least Change Plan II.

16. Concurrent with the requirement to use counties to build districts for legislative districts, Mississippi law also requires legislative districts to be compact (See Paragraph 60 in this report). Cooper implicitly acknowledges the importance of compactness by asserting that his proposed plans meet compactness criteria. His plans are compact because he asserts they are. However, he fails to calculate and show any compactness measures supporting this assertion. Using the Reock, Polsby-Popper, Schwartzberg and Convex Hull measures, I calculated the compactness of each district under the existing plan and each of Cooper's four plans. At an aggregate level, the existing SCOMS plan is the most compact among the five plans analyzed. SCOMS existing District 1 is the most compact District 1 configuration. Cooper's Least Change Plan 1 District 2 yields the most compact District 2 configuration, and Cooper's Least Change Plan 2 District 3 is the most compact District 3 configuration. While there are individual districts that are more compact in Cooper's plans by different compactness measures, each of the alternate plans suggested by Cooper range from somewhat less compact to substantially less compact overall than is offered by the existing SCOMS plan.

17. The boundaries of the existing SCOMS districts not only serve as the geographic basis for elections to the state's Supreme Court, they serve as the geographic basis for elections to the State Transportation Commission and the Public Service Commission. They also serve as the geographic basis for appointments to both the Mississippi Board of Bar Admissions and the Board of Trustees for the State Institutions of Higher Learning (IHL), as well as a number of other boards, to include, per a list provided by the State Attorney General's Office: ABLE Board of Directors (MISS. CODE ANN. § 43-28-7); State Board of Banking Review (MISS. CODE ANN. § 81-3-12); Charter School Authorizer Board (MISS. CODE ANN. § 37-28-7); Board of Cosmetology (MISS. CODE ANN. § 73-7-1); Board of Education (MISS. CODE ANN. § 37-1-1); Electronic Protection Licensing Advisory Board (MISS. CODE ANN. § 73-69-21); Board of Licensure for Professional Engineers and Surveyors (MISS. CODE ANN. § 73-13-5); State Board of Funeral Service (MISS. CODE ANN. § 73-11-43); Mississippi Home Corporation (MISS. CODE ANN. § 43-33-704); Hospital Equipment and Facilities Authority (MISS. CODE ANN. § 41-73-7); Land, Water and Timber Resources Board (MISS. CODE ANN. § 69-46-3); State Board of Medical Licensure (MISS. CODE ANN. § 73-43-3); Board of Nursing Home Administrators

(MISS. CODE ANN. § 73-17-7); Oil and Gas Board (MISS. CODE ANN. § 53-1-5); MS State Personnel Board (MISS. CODE ANN. § 25-9-109); State Board of Veterinary Medicine (MISS. CODE ANN. § 73-39-55. The IHL has a policy that acknowledges the value of diversity for Mississippi, as does an opinion written by Judge William Barbour in the "Magnolia Bar" case and, in addition, a statement by the ACLU in regard to this case. Using indices from the Mississippi Health and Hunger Atlas, I find that the existing Supreme Court Districts provide more population diversity than do any of Cooper's four alternative plans and that Cooper's plans serve to decrease population diversity across the Supreme Court districts.

18. In the Plaintiffs' expert report by Dr. Traci Burch, it is asserted that Mississippi's Black voters are currently disenfranchised. A general assertion in Dr. Burch's report (Figure 4 and accompanying text in her report and *Exhibit IV.A.4 Racial Differences in Voter Turnout and by Education Level* herein) is that White Mississippians turned out to vote in the 2020 election at a higher rate than Black Mississippians, 56.1% to 53.0%, respectively. Dr. Burch's finding is the result of a flawed analysis in which she employed the incorrect "universe" as the denominator in her calculations (the entire population, which includes those under age 18) rather than the correct "universe," the population eligible to vote ("Citizens of Voting Age Population" - CVAP). In referencing the officially published US Census Bureau tables published from the same source she cites (the 2020 Current Population Survey, November Voting supplement found in *Table IV.A.2 2020 Mississippi Voting by Race and Ethnicity*), I find that that when the correct universe, CVAP, is used as the denominator, APB Mississippians turned out at a *higher* rate in the 2020 election than WNH Mississippians: 72.9% to 69.8%. Additionally, I find her estimate of 53.0% "Black Alone or in Combination, non-Hispanic" to be incorrectly calculated.

19. As shown by data from past November Voting Supplements in the Current Population Survey (taken in the even numbered years when federal elections are held, starting in 1964), my finding is consistent with the trend of voting seen in Mississippi since 2004. Except in 2010, both the percent of Black CVAP registered and the percent of Black CVAP voting have been higher in *every survey year* than the percent of WNH CVAP registration and voting, respectively (see *Figures IV.A.1* and *IV.A.2* in this report). In conjunction with this 21st century trend, my finding in regard to the 2020 election also reveals that Dr. James T. Campbell's implication (p. 51 of his report) that Black Mississippians currently register and vote at lower rates than White Mississippians also is mistaken:

> "Under the circumstances prevailing in Mississippi today, and in light of the history from which those circumstances originate, it is my opinion that Black

> Mississippians are not afforded an equal opportunity to elect candidates of their choice in Supreme Court elections."

20. The Voting Supplements of the Current Population Survey (CPS) from 2004 to 2020 do not support Dr. Campbell's opinion. Moreover, the voter registration data in the Voting Supplements of the CPS are consistent with voting registration data collected for Mississippi in sample surveys conducted annually from 2015 to 2021 by the Survey Research Laboratory, Social Science Research Center, Mississippi State University (SSRC). These sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians age 18 and over who are registered to vote is higher than the percent of White Mississippians age 18 and over who are registered to vote. In addition, the SSRC sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians aged 18 and over who report "Always Vote" is higher than the percent of White Mississippians age 18 and over who report "Always Vote." Both the CPS and the SSRC data are consistent with a finding reported for the first time in this report: Statewide, a higher share of the Black population of potential and actual voters is within a quarter mile of a polling place than is the case for the White population of potential and actual voters, an indicator of opportunity for actual and potential Black voters. Moreover, the CPS shows that Black Voter turnout is higher than that of White Voters, a finding consistent with SSRC data.

II. ASSIGNMENT

21. On behalf of the Defendants, I have been asked to independently review and assess the features and characteristics of Mississippi's Supreme Court voting district plan along with plans and reports submitted by White et al. (Plaintiffs), as appropriate to my training, experience and background.

22. In **Section III**, I analyze Supreme Court Districts as well as the state as a whole in terms of population and voting data. I provide an assessment of: First, compliance of the Mississippi Supreme Court plan with redistricting requirements; then, second, core retention, and compactness as outcomes. I also assess the population diversity of the districts using health and hunger indices developed by the University of Mississippi for the state's counties. These indices are themselves correlated with socio-economic status and race.

23. In **Section IV**, I provide an in-depth analysis of Mississippi voter registration and voter turnout statistics and trends using:

- November Voting Supplement of the U.S. Census Bureau's Current Population Survey;
- Mississippi county-specific voter registration and voting frequency data by race from annual statewide surveys conducted from 2015 to 2021 by the Survey Research Laboratory of the Social Science Research Center (SSRC) at Mississippi State University.

24. In **Section V**, I provide Appendices.

25. In forming my opinions, I have considered all materials cited in this report and the appendices. I have also considered some pleadings and other filings in this matter; materials, to include, P. Morrison & T. Bryan, *Redistricting: A Manual for Analysts, Practitioners, & Citizens* (Springer 2019); and U.S. DOJ, Guidance under Section 2 of the Voting Rights Act, 52 U.S.C. 1301, for redistricting and methods of electing government bodies (Sept. 1, 2021). The population, voter registration, and voter turnout, data I use in this report are from standard sources used by demographers, to include census and survey data from the U.S. Census Bureau, as well as survey data from the Social Science Research Center, Mississippi State University. In using these data, I engaged the services of Bryan Geodemographics, an organization experienced in the assembly, summarization, and visualization of demographic and related data, which performed these activities under my direction.

26. I reserve the right to further supplement my report and opinions.

III. CHARACTERISTICS OF MISSISSIPPI SUPREME COURT DISTRICTS

A. Decennial Census

27. The Decennial Census counts people in the United States on a De Jure basis (Wilmoth, 2004: 65) and the U.S. Census Bureau attempts to count everybody once, only once, and in the right place (Cork and Voss, 2006). It is mandated by the Constitution to occur every 10 years, in years ending in zero, to provide the numbers needed to reapportion the House of Representatives, which also results in a reapportionment of the Electoral College. The decennial census numbers also are used by state governments to redraw legislative districts, and the federal government uses the numbers in various funding formulas to distribute some $1.504 trillion in funding for highways, hospitals, schools, and many other purposes (Sullivan, 2020: 1).

28. In order for states to redraw legislative and other districts, the U.S. Census Bureau issues the "PL 94-171 "redistricting data" file in conjunction with the decennial census.[1] Because the decennial census itself does not ask a "citizenship" question and also does not include questions about voting activities, other sources of data produced by the U.S. Census Bureau for itself or for other federal agencies are often used in redistricting activities, to include the PL 94-171 redistricting file, the American Community Survey and the Current Population Survey (Morrison and Bryan, 2019). It is not always the case that the counts or percentages of the same conceptual variables across these different sources will match exactly (Swanson and Van Patten, 1987; U.S. Census Bureau, 2020b: 17-19).

B. Mississippi Population Characteristics

29. Compared to the U.S. as a whole, Mississippi is not as diverse in terms of race and ethnicity. According to the U.S. Census Bureau[2], Mississippi has a 2020 population of 2,961,279 of which: 1,084,481 are Black Alone (36%); 1,658,893 are White Alone (56%); 32,701 are Asian (1%); 16,450 are American Indian or Alaskan Native (0.5%); and 56,860 are "Other" (1.9%). In the 2020 Census, 110,732 Mississippians reported being "two or more races" (3.7%) and 105,220 reported being Hispanic or Latino (3.6%). For the U.S. as a whole: approximately 12.4% of its 2020 population of 331,449,281 is "Black Alone;" 62% is "White Alone;" 5.9% is Asian; 1.1% is American Indian or Alaskan Native; and 8.4% is "other." In the 2020 Census, 33,898,993 Americans reported being "two or more races" 10.2%) and 62,080,044 reported being Hispanic or Latino (18.7%). In Mississippi, 92% of its 2020 population

[1] https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html

[2] https://data.census.gov/cedsci/profile/Mississippi?g=0400000US28

is either "Black Alone" or "White Alone," while in the U.S, 74% of its 2020 population is either "Black Alone" or "White Alone," making Mississippi less racially diverse than the U.S. as a whole. With only 3.6% of its population identifying themselves as Hispanic or Latino, Mississippi is less ethnically diverse than the U.S. as a whole, where 18.7% identify themselves as Hispanic or Latino.

C. Mississippi Supreme Court Geography

30. Mississippi's three Supreme Court election districts are designated along county boundaries, with 22 counties in Supreme Court District 1, 27 counties in District 2, and 33 counties in Supreme Court District 3 – as shown in Appendix 4 Map A. There are 82 counties in Mississippi. Each county is of varying population, ranging from a high of 222,679 in Hinds County, to a low of 1,280 in Issaquena County.[3] All counties in Mississippi are functioning governmental entities, each governed by a board of supervisors and 10 of them have two county seats.[4] Counties appear to have been foundational in the development and maintenance of MS Supreme Court Districts since their inception.[5] Three justices are elected for eight year terms in staggered fashion from each of the three Supreme Court Judicial Districts.[6] An inventory of county assignments to districts from different plans and the cluster analysis herein may be found in Appendix 1A.

31. Appendix 4 Map A shows the current SCOMS District boundaries. These districts serve more than one purpose. They not only form the geographic basis for elections to the Mississippi State Supreme Court, but also for elections regarding the Transportation Commission and the Public Service Commission (Campbell, 2022): In addition they serve as the geographic basis for (1) appointments to the Board of Bar Admissions[7]; (2) the Board of Trustees for the State Institutions of Higher Learning (IHL); and (3) boards identified in paragraph 17. In regard to IHL, four of the 12 Member Board of Trustees for the State Institutions of Higher Learning are appointed by the Governor from each of the three Supreme Court districts.[8] The IHL Board Office is responsible for policy and financial oversight of the eight public institutions of higher learning in

[3] https://www.mississippi-demographics.com/counties_by_population

[4] https://www.mssupervisors.org/mississippi-counties

[5] Provided by MS Attorney General's Office: a copy of "The Code of Mississippi, 1848, Article 11, An Act to Regulate the Districts for the Election of Judges of the High Court of Errors and Appeals and to Change the Terms of Said Court."

[6] https://courts.ms.gov/appellatecourts/sc/sc.php

[7] https://courts.ms.gov/news/2020/10.12.20Board%20of%20Bar%20Admissions.php

[8] http://www.mississippi.edu/board/

Mississippi.[9] The Board's policy statement 102.06 acknowledges the value of diversity for Mississippi.[10] Given that Mississippi is less racially and ethnically diverse than the U.S. as a whole, this is an important policy statement for the state, one not only in line with a statement by the ACLU (2022) in regard to this case but also the 1992 "Magnolia Bar" case concerning the SCOMS districts, in which Judge William Barbour's decision acknowledged the defendants claim that the existing SCOMS districts foster political and socio-economic diversity (Barbour, 1992: line 1417). Any changes that impact the SCOMS districts would have implications not only for the elections regarding the Supreme Court, but also elections for the Transportation Commission and Public Service Commission. In addition, they will impact appointments to the Board of Bar Admissions and the Board of Trustees for the State Institutions of Higher Learning.

D. Mississippi Supreme Court Census Population

32. Using the 2020 Census, there are three important population definitions I use to characterize each of the districts. I start with the voting age population (VAP), within which is the White, non-Hispanic population (WNH) and then the any part Black population (APB). Other minority populations such as Asian, Native Hawaiian and Pacific Islander, American Indian Alaskan Native and "Other" are relatively small in Mississippi and, therefore, not central to this report.[11] The Hispanic population is relevant only insofar as they own a disproportionately large share of non-citizen population, and therefore largely explain the differences between VAP and CVAP estimates. As part of its demographic reporting, the US Census Bureau provides numerous statistics for each race alone and in combination, and also by ethnicity (whether an individual is of Hispanic origin or not). Therefore, an individual could be Black Alone, Black and White or any number of other combinations with other races and ethnicity. For the purpose of this examination, I am using the "Any Part Black" (the "APB" definition). The APB population is used in the plaintiffs' analysis and is outlined by the Department of Justice in their guidance for defining populations in VRA cases.[12] The DOJ Guidance on Federal Statutes Regarding Redistricting and Methods for Electing Public Officials states:

> "The Department of Justice will follow both aggregation methods defined in Part II of the Bulletin. The Department's initial review will be based upon allocating any response that includes White and one of the five other race categories identified in the response. Thus, the total numbers for "Black/African American,"

[9] http://www.mississippi.edu/board/

[10] http://www.mississippi.edu/board/downloads/policiesandbylaws.pdf

[11] https://data.census.gov/table?q=p1&g=0400000US28

[12] https://www.justice.gov/opa/press-release/file/1429486/download

> "Asian," "American Indian/Alaska Native," "Native Hawaiian or Other Pacific Islander," and "Some other race" reflect the total of the single-race responses and the multiple responses in which an individual selected a minority race and White race."
>
> The Department will then move to the second step in its application of the census data by reviewing the other multiple-race category, which is comprised of all multiple-race responses consisting of more than one minority race. Where there are significant numbers of such responses, the Department will, as required by both the OMB guidance and judicial opinions, allocate these responses on an iterative basis to each of the component single-race categories for analysis. Georgia v. Ashcroft, 539 U.S. 461, 473, n.1 (2003)"[13]

33. In *Table III.D.1* (below) one can see that Mississippi's 2020 Voting Age Population (VAP) was 2,277,599 per the 2020 Pl 94-171 redistricting file and when divided into the three SCOMS districts shows 716,402 in District 1 (31% of the total VAP), 796,767 in District 2 (35% of the total VAP), and 764,430 in District 3 (34% of the total VAP), a fairly equitable distribution. As can be seen in this table, approximately 45% of the VAP in District 1 is made up of WNH total and 49.3% of APB total. It is this number, 49.3%, that the Plaintiffs are relying on to characterize D1 as being minority Black. In District 2, approximately 65% of VAP is made up of WNH total while 28% is made up of APB total. In District 3, 62% of the VAP is made up of WNH total with 33% made up of APB total. Clearly, District 1 has the highest percent of APB total of the three while Districts 2 and 3 are clearly majority WNH total.

Table III.D.1 2020 Census Voting Age Population for Existing SCOMS Districts[14]

Existing Districts	VAP	WNH Total	APB Total		% WNH	% APB
1	716,402	324,908	353,091		45.4%	49.3%
2	796,767	517,385	220,412		64.9%	27.7%
3	764,430	473,158	249,577		61.9%	32.6%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

[13] https://www.justice.gov/opa/pr/justice-department-issues-guidance-federal-statutes-regarding-redistricting-and-methods

[14] These statistics correspond in part to those presented in Mr. Cooper's expert declaration: Figure 2: Mississippi – 1990 to 2020 Census Percent Voting Age Population by Race and Ethnicity on P.9.

34. A useful way to look at the distribution of WNH total and APB total across the three districts is to use the coefficient of variation (*CV*). Because the *CV* is a dimensionless number, it can be used to make comparisons across populations with different means (Swanson, 2012: 86). To get to this measure, one starts by computing the mean VAP and its standard deviation across the three districts, which yields 759,199.67 (where 759,199.67 = 2,277,599/3) and a standard deviation of 33,016.67. If each of the three districts had the same number of VAP (approximately 759,200), the standard deviation would be essentially zero. The actual population standard deviation is 33,016.67. When the standard deviation is divided by the mean, one obtains the coefficient of variation (*CV*), which shows the extent of variation relative to the mean. In this case, the *CV* is approximately 0.04 (where 0.04 = 33,016.6/759,199.67). In this regard, I compare the *CV*s for VAP (0.04), WNH total (0.19), and APB total (0.21). The WNH total is about four times higher than that seen for VAP and the APB total is approximately five times higher than that that seen for VAP, which serves to confirm that WNH total and APB total population are less equally distributed across the three districts than the total VAP, irrespective of their means.

35. The plaintiffs put forth four potential alternative plans,[15] each with different features. Using the same procedure I applied to the existing plan (*Table III.D.1* above), I summarize the demographic characteristics of each of these four alternative plans. As shown in *Table III.D.2* (below) for Cooper's Illustrative Plan 1, one can see that Mississippi's 2020 Voting Age Population (VAP) is 2,277,599 per the 2020 Pl 94-171 redistricting file (consistent with the VAP reported in *Table III.D.1* above) . The new District 1 has 40.9% WNH and 55.3 % of APB. This represents an increase of +6.0 percentage points (55.3% - 49.3%) APB in this district over the existing plan. In District 2, 68.3% of VAP is made up of WNH while 23.5% is made up of APB. In District 3, 63.4% of the VAP is made up of WNH with 30.3% made up of APB. Clearly, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

[15] Mr. Cooper's expert declaration:

- Figures 10 and 11: Illustrative Plan 1 on P.27
- Figures 13 and 14: Illustrative Plan 2 on P.30
- Figures 15 and 16: Least Change Plan 1 on P.33 and P.34
- Figures 17 and 18: Least Change Plan 2 on P.35

Table III.D.2 2020 Census Voting Age Population for Cooper Illustrative Plan 1 Districts

Illustrative 1	VAP	WNH Total	APB Total		% WNH	% APB
1	737,689	301,664	407,999		40.9%	55.3%
2	757,569	517,762	178,124		68.3%	23.5%
3	782,341	496,025	236,957		63.4%	30.3%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

36. As shown in *Table III.D.3* (below) for Cooper's Illustrative Plan 2, one can see that the new District 1 has 41.4% WNH and 54.2 % of APB. This represents an increase of +4.9 percentage points (54.2% - 49.3%) APB in this district over the existing plan. In District 2, 65.9% of VAP is made up of WNH while 26.4% is made up of APB. In District 3, 65.5% of the VAP is made up of WNH, with 28.3% made up of APB. Again, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

Table III.D.3 2020 Census Voting Age Population for Cooper Illustrative Plan 2 Districts

Illustrative 2	VAP	WNH Total	APB Total		% WNH	% APB
1	746,385	309,225	404,440		41.4%	54.2%
2	760,360	500,934	200,715		65.9%	26.4%
3	770,854	505,292	217,925		65.5%	28.3%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

37. As shown in *Table III.D.4* (below) for Cooper's Least Change Plan 1, one can see the new District 1 has 42.1% WNH and 53.0 % of APB. This represents an increase of +3.7 percentage points (53.0% - 49.3%) APB in this district over the existing plan. In District 2, 66.0% of VAP is made up of WNH while 26.5% is made up of APB. In District 3, 64.1% of the VAP is made up of WNH with 30.1% made up of APB. Again, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

Table III.D.4 2020 Census Voting Age Population for Cooper Least Change Plan 1 Districts

Least Change 1	VAP	WNH Total	APB Total		% WNH	% APB
1	722,892	304,436	383,099		42.1%	53.0%
2	766,360	505,954	202,788		66.0%	26.5%
3	788,347	505,061	237,193		64.1%	30.1%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

38. As shown in *Table III.D.5* (below) for Cooper's Least Change Plan 2, one can see the new District 1 has 43.3% WNH and 52.0 % of APB. This represents an increase of +2.7 percentage points (52.0% - 49.3%) APB in this district over the existing plan. In District 2, 64.9% of VAP is made up of WNH while 27.7% is made up of APB. In District 3, 64.5% of the VAP is made up of WNH with 29.5% made up of APB. Again, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

Table III.D.5 2020 Census Voting Age Population for Cooper Least Change Plan 2 Districts

Least Change 2	VAP	WNH Total	APB Total		% WNH	% APB
1	738,384	319,492	383,997		43.3%	52.0%
2	796,767	517,385	220,412		64.9%	27.7%
3	742,448	478,574	218,671		64.5%	29.5%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

E. ACS Citizen Voting Age Population Characteristics of Mississippi

39. Each of the plans put forth by the plaintiffs are as remarkable for their features and what they say about them, as what they do not. Conventionally, when a Gingles 1 analysis is done, it includes an analysis not just of the VAP, but of the Citizen VAP (or, "CVAP") as well. Conceptually, the CVAP is a refined measure, withdrawing those who may be of voting age – but by virtue of not being citizens are ineligible to vote. In recent cases, Mr. Cooper includes this important measure.[16] In this case, however, Mr. Cooper does not. Why, one must ask is this the case? As noted in the executive summary, the APB Black CVAP is already a majority at 51.0%. This fact that District 1 is an existing "majority-minority district is contrary to plaintiffs' claim that the SCOMS District 1 is a minority district in need of remediation.

40. The American Community Survey (ACS) is the source of record for CVAP data. The survey is a set of "rolling" sample surveys conducted by the U.S. Census Bureau (Morrison and Bryan, 2019; US Census Bureau, 2020a). It is distinct and different from the Decennial Census and the Current Population Survey, which also are conducted by the U.S. Census Bureau. The ACS provides data that the US Department of Justice commissions and relies on for adjudicating VRA cases.[17] For the purposes of cases just like these, the US Census Bureau began tabulating CVAP data starting back in 2002, and currently produces a new specially tabulated CVAP dataset each year at the request of the US DOJ.[18] The output of this file is composed of estimates of the CVAP by race and ethnicity for different levels of Census geography, as follows:[19]

> "This is a special tabulation of the citizen voting age population and other data from the 2016-2020 5-year American Community Survey (ACS). This is the twelfth release of this special tabulation of ACS data. The first release used the 2005-2009 5-year ACS data, and the data are re-released every year using each subsequent year's 5-year ACS data. These special tabulations provide citizenship voting age data to assist the redistricting process. Data from this and all previous releases are available through the Voting Rights link on the Census Bureau's Redistricting Data Office web site, www.census.gov/rdo."

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[16] See Second Declaration of William S. Cooper in Alabama *Caster v. Merrill* and Exhibit 1 - Decl. of William S. Cooper in *Robinson v. Ardoin* and *Galmon v. Ardoin* and related Louisiana redistricting litigation in 2022 both current SCOTUS cases where he reports and discusses CVAP alongside VAP and its importance in measuring minority populations.

[17] Morrison, P. and T. Bryan (2019). Redistricting: A Manual for Analysts, Practitioners, and Citizens. Springer. Cham, Switzerland

[18] https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/CVap.html

[19] https://www2.census.gov/programs-surveys/decennial/rdo/technical-documentation/special-tabulation/CVAP_2016-2020_ACS_documentation_v3.pdf

41. The US Census Bureau reports a variety of CVAP statistics as part of this special tabulation, including data in total as well as by select racial and ethnic groupings – as seen in *Exhibit III.E.1* (below).

Exhibit III.E.1 American Community Survey DOJ VRA Race and Ethnicity Reporting Classifications

1	Total CVAP
2	Not Hispanic or Latino (NH)
3	American Indian or Alaska Native Alone (NH)
4	Asian Alone (NH)
5	Black or African American Alone (NH)
6	Native Hawaiian or Other Pacific Islander Alone (NH)
7	White Alone (NH)
8	American Indian or Alaska Native and White (NH)
9	Asian and White (NH)
10	Black or African American and White (NH)
11	American Indian or Alaska Native and Black or African American (NH)
12	Remainder of Two or More Race Responses (NH)
13	Hispanic or Latino

Source:https://www2.census.gov/programs-surveys/decennial/rdo/technical-documentation/special-tabulation/CVAP_2016-2020_ACS_documentation_v3.pdf.

42. As discussed in the Mississippi Supreme Court Census Population section above, the DOJ directs that two levels of minority population be produced. In order to create the first-level required DOJ estimate of the Black or African American population, group 5 Black or African American Alone (NH) and group 10 Black or African American and White (NH) are aggregated. In recent cases, this level has proven just to be a demographic exercise. Plaintiffs in cases such as these are commonly going straight to the second-level definition, as follows.

43. In order to create the second-level required DOJ estimate of the any-part Black or African American population, the following are aggregated, group 5 Black or African American Alone (NH) and group 10 Black or African American and White (NH) and group 11 American Indian or Alaska Native and Black or African American (NH). The American Indian or Alaska native combination is the only other Black or African American combination reported.

44. The DOJ does not outline which one of numerous demographic methods they recommend to "allocate these (multi-race) responses on an iterative basis" nor do they

provide the multi-race granularity of reporting afforded by the Decennial Census. While there are more Black or African American population in the ACS in the "Remainder of Two or More Race Responses" category – there is no way to estimate this from the data that the DOJ requests from the Census Bureau to fulfill their own definitions. In this regard, one can think of the estimates provided by Black or African American Alone (NH) and Black or African American and White (NH) and American Indian or Alaska Native and Black or African American as a lower bound of the actual any-part Black CVAP being reported.

45. Again, we have two sources of population data: (1) the Decennial Census from 2020 (Total and Voting Age Population, or "VAP"); and (2) the most recent ACS from 2016-2020 (Citizen Voting Age Population, or "CVAP"). Plaintiffs claim the existing District 1 is a minority district based on 2020 Census VAP data – at 49.3%. Plaintiffs do not present the measure used by their own expert in other cases to measure actual voting strength: CVAP. Cooper's analysis only reports results from the 2020 Decennial Census, which shows a 49.3% VAP bare minority share in existing Supreme Court District 1. When you remove the non-Citizens then examine APB as a share of CVAP the conclusion is different - Supreme Court District 1 is an APB CVAP majority at 51.0% as shown in *Table III.E.2* (below).

46. As long as I am focusing on the population eligible to vote, I need to acknowledge and address the prison populations in Mississippi, where many of the residents are ineligible to vote. It is important to note that the ACS Citizen Voting Age Population, or "CVAP" includes group quarters (e.g. prisons) populations, some of whom are ineligible to vote. The state of Mississippi has three large correctional facilities, which house overwhelmingly Black populations. The Mississippi State Penitentiary, "Parchman" (MSP in Sunflower County), Central Mississippi Correctional Facility (CMCF in Rankin County); and the Southern Mississippi Correctional Institution (SMCI in Greene County) – as shown in Appendix 4 Map B. It is my opinion that because of the size of these facilities, and the share of them that are Black, any analysis is at risk of the misrepresenting CVAP members who are actually eligible to vote. In order to give the Plaintiffs every benefit of the doubt using the CVAP measure – my analysis excludes the estimated Black prisoner population of each of these three facilities – and the districts in which they respectively reside. This exclusion serves to *reduce* the APB CVAP statistic to an estimate of the size of this population that is actually eligible to vote. Retaining and including these three large populations would run the risk of artificially inflating the Black CVAP who are eligible to vote in Mississippi in particular. While it is widely recognized that Mississippi has numerous felons ineligible to vote who are not currently incarcerated, there is no practical way to measure or locate these demographically by district in a meaningful way.

47. For the purpose of demographic measurement of prisoners, it is important to note two things. First, the decennial census often reports estimates of "GQ_Corr" or Group Quarters – Correctional populations that are different from the current actual prisoner populations. For the Mississippi State Penitentiary (MSP), for example, the Decennial Census reported 304 prisoners in Census Block 281339501005056 (with 88 WNH and 212 APB), and 2,790 prisoners in adjacent Census Block 281339501005057 (1,179 WNH and 1,416 APB). This totals 3,094, with 1,267 (41%) WNH and 1,628 (52.6%) APB. For the Census Block Group (BG) 281339501005 containing MSP reported by the ACS CVAP file for the DOJ, there are a reported 4,585 CVAP – 3,165 of which are reported as Black CVAP. Neither the 2020 Decennial Census nor the ACS statistics for the Black population here are consistent with official MS DOC reports. At the time of the writing of this paper, Mississippi Department of Corrections (MS DOC) had published prisoner statistics through March of 2022 – and is on these numbers our analysis relies. As shown in *Table III.E.1* (below) MS DOC reported 1,283 Black prisoners, 665 White prisoners and 20 "other" prisoners at MSP. I use the MS DOC numbers in the analysis – removing them from our CVAP in order to estimate an accurate voter-eligible population. MS DOC reported 1,435 Black prisoners and 1,301 White and 43 other prisoners at the Central Mississippi Correctional Facility (CMCF). MS DOC reported 1,476 Black prisoners, 751 White and 29 other prisoners at the South Mississippi Correctional Institution (SMCI). My analysis includes these three facilities but does not include smaller facilities such as county or youthful offender facilities, private prisons or regional correctional facilities both because of their size and the fact the MS DOC does not break out the prisoners in each of those facilities individually.

Table III.E.1 Mississippi Prisoner Analysis by Race and Ethnicity, March 2022 by Facility

	Black		White		Hispanic		Native American		Asian		Data Unavailabl		TOTAL
LOCATION	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
MSP	1,283	0	665	0	11	0	1	0	7	0	1	0	1,968
CMCF	1,098	337	763	538	17	7	8	5	4	2	0	0	2,779
SMCI	1,476	0	751	0	24	0	4	0	1	0	0	0	2,256
County Jails (approved)	402	2	448	26	10	1	1	0	2	0	4	0	896
County Jails (unapproved)	444	14	416	26	10	1	0	0	4	0	4	1	920
Youthful Offender Facility	11	0	3	0	1	0	0	0	1	0	0	0	16
Private Prisons	2,102	0	861	0	20	0	8	0	4	0	1	0	2,996
Regional Correctional Facilities	2,518	40	1,350	55	69	2	6	1	9	0	0	0	4,050
Community Work Centers	167	16	106	81	2	1	1	1	0	1	0	0	376
Community Trusties	0	0	0	0	0	0	0	0	0	0	0	0	0
TVC	46	0	30	0	0	0	0	0	0	0	0	0	76
Transitional Housing	8	1	4	4	0	0	0	0	0	0	0	0	17
Pending File Review	100	5	52	12	1	0	0	0	1	0	0	0	171
RRP	7	0	15	5	0	0	0	0	0	0	0	0	27
Contempt	0	0	0	1	0	0	0	0	0	0	0	0	1
Court Order	86	0	57	8	0	0	0	0	1	0	0	0	152
TOTAL	10,788	527	6,182	929	207	13	33	7	44	3	13	1	18,747
% OF TOTAL OFFENDERS	57.55%	2.81%	32.98%	4.96%	1.10%	.07%	.18%	.04%	.23%	.02%	.07%	.01%	100.00%

Source: Mississippi Department of Corrections https://www.mdoc.ms.gov/Admin-Finance/MonthlyFacts/03-01-2022.1.pdf

48. The statistics in *Table III.E.1* show there are both large *absolute* numbers of Black prisoners in these facilities, and that there is also a higher *proportionate* number of Black prisoners in the three major prisons in Mississippi than White prisoners overall and by gender. While not all of these prisoners are ineligible to vote, for purposes of this analysis, I assume that they are. I use the MS DOC numbers in my estimates of those eligible to vote by race and ethnicity – removing Black prisoners from APB CVAP in the counties where they are located in order to place a lower boundary on the voter-eligible Black population.

49. *Table III.E.2* (below) shows the CVAP analysis with these prisoners excluded for the existing Supreme Court Districts. In the first row, for District 1, one can see that the CVAP is 705,555. The WNH population is 324,204 and the APB population is 360,356. The percent Black CVAP is shown in the last two columns. The "%APB" column reports the % APB CVAP w*ithout adjustment* for Black prisoners. The "%APB – "Prison Adjusted" column reports the % APB CVAP *with adjustment* for Black prisoners. The numbers shaded in green are higher % Black, and the numbers shaded in red are lower %Black.

50. The % APB CVAP for District 1 (shown in the % APB column) is 51.1%. District 1 in the existing plan contains both MSP and CMCF (combined for 2,718 Black prisoners and 2,029 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 51.0%. That is – under the assumption that all of the prisoners are ineligible to vote, the adjustment for Black prisoners reduces the % Black CVAP eligible to vote by approximately 0.1%. It is clear from this analysis that

regardless of whether you include Black prisoners or not – the APB CVAP in District 1 in the existing plan is currently a "majority minority" population. Further investigation revealed that even if I used the most conservative, restrictive definition of Black (Black Alone, non-Hispanic) of which there are 358,072 in District 1 – one would still find a majority of 50.8%.

Table III.E.2 2020 Census Voting Age Population for Existing SCOMS Districts

Existing Districts	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	705,555	324,204	360,256	2,718	2,029	51.1%	51.0%
2	781,300	527,524	218,180	1,476	780	27.9%	27.8%
3	751,245	479,855	250,322			33.3%	33.3%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations for author by Bryan GeoDemographics using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

51. *Table III.E.3* (below) shows the % APB CVAP under Cooper's Illustrative Plan 1. The % APB CVAP for District 1 (shown in the % APB column) is an *overwhelming* majority of 57.1%. District 1 in this plan contains MSP (with 1,283 Black prisoners and 685 other prisoners). District 2 contains SMCI and CMCF (with 2,911 Black prisoners and 2,124 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the "% APB – Prison Adj." column) is 57.0%. That is, the adjustment for prisoners reduces the % Black CVAP eligible to vote by approximately 0.1%. In this table, it is also interesting to note that the D1 APB population of 414,130 is exactly half of the total APB population of 828,758.

Table III.E.3 2020 Census Voting Age Population for Cooper Illustrative Plan 1 Districts

Illustrative 1	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	725,645	295,443	414,130	1,283	685	57.1%	57.0%
2	740,350	529,260	175,711	2,911	2,124	23.7%	23.5%
3	772,105	506,880	238,917			30.9%	30.9%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations for author by Bryan Geodemographics using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

52. *Table III.E.4* (below) shows the % APB CVAP under Cooper's Illustrative Plan 2. The % APB CVAP for District 1 (shown in the % APB column) is again an *overwhelming* majority of 55.4%. District 1 in this plan contains MSP (with 1,283 Black prisoners and 685 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). District 3 contains CMCF (with 1,435 Black prisoners and 1,344

other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 55.4%. That is – the adjustment for prisoners reduces the % Black CVAP eligible to vote is negligible.

Table III.E.4 2020 Census Voting Age Population for Cooper Illustrative Plan 2 Districts

Illustrative 2	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	734,095	308,563	406,542	1,283	685	55.4%	55.4%
2	747,610	513,335	199,460	1,476	780	26.7%	26.6%
3	756,395	509,685	222,756	1,435	1,344	29.4%	29.4%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations by Bryan GeoDemographics for author using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

53. *Table III.E.5* (below) shows the % APB CVAP under Cooper's Least Change Plan 1. The % APB CVAP for District 1 (shown in the % APB column) is still an *overwhelming* majority of 54.4%. District 1 in this plan contains both MSP and CMCF (combined for 2,718 Black prisoners and 2,029 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 54.4%. That is – the adjustment for prisoners reduces the % Black CVAP eligible to vote is negligible.

Table III.E.5 2020 Census Voting Age Population for Cooper Least Change Plan 1 Districts

Least Change 1	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	718,485	305,683	390,711	2,718	2,029	54.4%	54.4%
2	751,875	516,885	201,241	1,476	780	26.8%	26.6%
3	767,740	509,015	236,806			30.8%	30.8%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations by Bryan GeoDemographics for author using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

54. *Table III.E.6* (below) shows the % APB CVAP under Cooper's Least Change Plan 2. The % APB CVAP for District 1 (shown in the % APB column) is still a majority of 53.8%. District 1 in this plan contains both MSP and CMCF (combined for 2,718 Black prisoners and 2,029 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 53.8%. That is – the adjustment for prisoners reduces the % Black CVAP eligible to vote is negligible.

Table III.E.6 2020 Census Voting Age Population for Cooper Least Change Plan 2 Districts

Least Change 2	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	728,555	318,494	392,118	2,718	2,029	53.8%	53.8%
2	781,300	527,524	218,180	1,476	780	27.9%	27.8%
3	728,245	485,565	218,460			30.0%	30.0%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations by Bryan GeoDemographics for author using 2016-2020 AVS DOJ CVAP and MS DOC Reported Prisoner Populations.

55. *Table III.E.7* (below) shows the percent APB CVAP over time as estimated from the American Community Survey over three segments of time. First from the 2014-2018 5-year ACS DOJ dataset, then from the 2015-2019 5-year ACS DOJ dataset, then from the most recent 2016-2020 5-year ACS DOJ dataset. One can see in the first row of this table that the %APB CVAP population in the current plan was already a majority in the 2014-2018 dataset – and has since grown to 51% in the most recent 2016-2020 ACS DOJ dataset. As expected, in each of Cooper's alternative plans - the %APB CVAP population in the current plan were all already significant majorities in the 2014-2018 ACS DOJ dataset – and has since grown even more significant majorities in the most recent 2016-2020 ACS DOJ dataset. Under each of Cooper's alternative plans, the %APB CVAP grows from an existing majority to a larger majority.

Table III.E.7 CVAP analysis over time: District 1 % APB CVAP under Current Plan compared to Cooper's Plans for 2014-2018, 2015-2019 and 2016-2020

	2014-2018	2015-2019	2016-2020
Current Plan	50.8%	51.0%	51.0%
Illustrative 1	56.8%	57.1%	57.0%
Illustrative 2	54.9%	55.3%	55.4%
Least Change 1	54.1%	54.4%	54.4%
Least Change 2	53.4%	53.7%	53.8%

Source: ACS, as described and discussed in the text; calculations by BryanGeoDemographics for author.

F. Performance of Mississippi Districts Using Traditional Redistricting Principles

56. The state of Mississippi does not have legally required periodic updates to their Supreme Court Districts. As such, Mississippi does not have laws or rules to direct how its Supreme Court districts should be drawn other than what is found in Sec 9-3-1 of the State Code. If plans are put forward to re-draw the SCOMS districts, however, it would be appropriate to follow traditional redistricting principles in general as well as redistricting laws found in Mississippi in evaluating them, as was the situation in the "Magnolia Bar" case (Barbour, 1992).

57. Different states consider and implement different criteria. For example, in some states, including Texas, state constitutions *require* the use of counties to draw certain legislative boundaries, while others just require them to be considered. The Congressional Research Service explains:

> "Many of the 'rules' or criteria for drawing congressional boundaries are meant to enhance fairness and minimize the impact of gerrymandering. These rules, standards, or criteria include assuring population equality among districts within the same state; protecting racial and language minorities from vote dilution while at the same time not promoting racial segregation; promoting geographic compactness and contiguity when drawing districts; minimizing the number of split political subdivisions and 'communities of interest' within congressional districts; and preserving historical stability in the cores of previous congressional districts."[20]

Following the general path found in Cooper's report, I continue under the assumption that these same principles apply to redistricting of the state's Supreme Court districts.

58. The National Conference of State Legislatures (NCSL) is widely recognized as the nation's independent, objective, and bipartisan authority on redistricting matters.[21] The NCSL has published a series of principles that reflect traditional districting principles (or criteria) have been both informed by and adopted by many states. This guidance

[20] https://crsreports.congress.gov/product/pdf/R/R42831/3

[21] https://www.ncsl.org/aboutus/ncslservice/facts-about-ncsl.aspx:

- NCSL is the only organization that advocates solely for states' interests in Washington, D.C.
- NCSL is the only organization that provides support services to legislators and legislative staff.
- NCSL is the only bipartisan organization of its kind with leadership and participation from both sides of the aisle.
- NCSL presents all sides of the issues and provides information based on facts, not politics.
- NCSL promotes the legislative institution as a whole and works to make it stronger and more efficient.
- NCSL's legislator members vote on policy issues that direct the organization's activities on Capitol Hill.
- NCSL's annual Legislative Summit is the largest and most important gathering of the year for legislators and legislative staff.

from the NCSL is the basis of any assessment I make as an expert of individual states or organization's criteria and redistricting plans.

59. These traditional districting principles (or criteria) have been adopted by many states:

- **Compactness:** Having the minimum distance between all the parts of a constituency (a circle, square or a hexagon is the most compact district).
- **Contiguity:** All parts of a district being connected at some point with the rest of the district.
- **Preservation of counties and other political subdivisions:** This refers to not crossing county, city, or town, boundaries when drawing districts.
- **Preservation of communities of interest:** Geographical areas, such as neighborhoods of a city or regions of a state, where the residents have common political interests that do not necessarily coincide with the boundaries of a political subdivision, such as a city or county.
- **Preservation of cores of prior districts:** This refers to maintaining districts as previously drawn, to the extent possible. This leads to continuity of representation.
- **Avoiding pairing incumbents**: This refers to avoiding districts that would create contests between incumbents.

60. Mississippi specifically has codified many of these principles into law for redistricting their legislature and congressional districts. For legislative districts, Mississippi requires districts to be compact, contiguous and to preserve political subdivisions.[22] Mississippi Code § 5-3-101 states:

> In accomplishing the apportionment, the committee shall follow such constitutional standards as may apply at the time of the apportionment and shall observe the following guidelines unless such guidelines are inconsistent with constitutional standards at the time of the apportionment, in which event the constitutional standards shall control:
>
> (a) Every district shall be compact and composed of contiguous territory and the boundary shall cross governmental or political boundaries the least number of times possible; and
>
> (b) Districts shall be structured, as far as possible and within constitutional standards, along county lines; if county lines are fractured, then election district lines shall be followed as nearly as possible.[23]

[22] https://www.ncsl.org/research/redistricting/redistricting-criteria.aspx

[23] https://law.justia.com/codes/mississippi/2016/title-5/chapter-3/standing-joint-legislative-committee-on-reapportionment/section-5-3-101

For congressional districts, Mississippi requires districts to be to be compact, contiguous, to preserve political subdivisions and to preserve communities of interest.[24]

61. For the purpose of drawing alternate SCOMS districts, plaintiffs' expert Mr. William Cooper has applied the law and principles selectively. He has followed the precedent of SCOMS districting and legislative law using entire counties as the building blocks for SCOMS districts (see Mississippi Code § 5-3-101 part (b), "Districts shall be structured, as far as possible and within constitutional standards, along county lines."). He also has used Mississippi's established Planning and Development Districts ("PDDs" as shown in Appendix 4 Map C) as communities of interest to organize and report demographic features of the state (but does not use these in a meaningful way to actually inform the design of his districts).[25] In fact, Mr. Cooper does *not* even attempt to analyze the SCOMS districts using the traditional redistricting principles of core retention and compactness. I, however, analyze the existing districts and each of his proposed four plans using these principles.

Core Retention

62. Courts have recognized the need to preserve the core of a prior established district as a legitimate redistricting criterion,[26] as well as the avoidance of contests between incumbents.[27] Core retention fosters the continuity of political representation. A *Core Retention Analysis* (CRA) also known as a constituency report is simply a demographic accounting of the addition and subtraction of persons that would be brought about by a proposed realignment of a district's existing boundaries, a process consistent with determining core retention (see paragraph 15). A CRA is a way of quantifying precisely how a proposed realignment would affect the continuity of representation among a district's current residents and eligible voters.

63. Core Retention Analysis has usually considered only the total populations of districts in comparisons across plans. Here, I have also broadened this standard demographic model, using standard methodology to present comparisons to alternative redistricting plans, and by also analyzing the core retention of protected group. I refer to this as "differential" CRA. The "differential" being the findings it generates by district between the total population and the Black population. In the matters of voting rights and redistricting – another population besides total can and does frequently yield

[24] https://www.ncsl.org/research/redistricting/redistricting-criteria.aspx

[25] See Cooper expert report at P.10.

[26] *Abrams v. Johnson*, 521 U.S. 74, 84 (1997).

[27] *Bush v. Vera*, 517 U.S. 952 (1996).

significant differences in CRA findings: race and ethnicity. While race cannot be the prevailing factor in drawing a district - in the state of Mississippi and beyond the impact of redistricting on race and ethnic groups is still of significant legal concern. Are there differential impacts to the total population and by race and ethnicity?

64. In each of the following tables, I show the population from each of the original SCOMS districts distributed into each of Cooper's alternative plan districts. In each column, I show the total population impact, the White, non-Hispanic (WNH) impact, and the any part Black (APB) impact. Below the table, I show core retention diagnostics for District 1 (D1) and then the plan as a whole.

DISTRICT 1 (D1) Core Retention Metrics

- The first row (Existing D1 VAP) shows the VAP in D1 of the existing SCOMS plan.
- The second row (Pop Retained in D1) shows the size of the population that was unperturbed by the new plan. As I move forward, this is the population that I will refer to as "retained".
- The third row (Pop Sent Out of D1) is the size of the population that was originally in D1 but was moved to either D2 or D3.
- The fourth row (Pop Added to D1) is the size of the population that was originally in D2 or D3 but was moved in to D1.
- The fifth row (Net Change to D1) is the net of the population sent out of and added to D1. This is the change in population that drives the change in population behind Mr. Cooper's new alternate district estimates.
- The sixth row (D1 core retention) is the percent of the population from the original D1 plan who are retained in the new plan's D1.

Total Plan Core Retention Metrics

- The seventh row (Pop Retained in Original Districts) is the sum of the population left unperturbed in all 3 districts by the new plan.
- The eighth row (Pop Changing Districts) is the sum of the population moved in all 3 districts by the new plan.
- The ninth row (Plan Core Retention) is the percent of the population from the original plan who are retained in the same district under the new plan.
- In *Table III.F.1* (below) one can see the core retention results for Cooper's Illustrative Plan 1. In District 1 (D1), 63.1% of the total population is retained in District 1, but

the drivers of this differ significantly by race and ethnicity. Only *half* (49.7%) of the WNH population from D1 is retained, while 76.9% of the APB population is retained. Across the entire plan, 74.3% of Mississippi's total population is retained in their original district. 75.2% of WNH and 72.0% of APB are retained in their original districts. 585,817 Mississippians, 325,945 WNH and 230,591 APB are moved. While there is no established threshold for core retention, I argue a move of 25.7% of the population (585,817) to a different judiciary in order to change the APB population in D1 by 54,908 is substantial.

Table III.F.1 Core Retention of Illustrative Plan 1

Row	Original SCOMS	Ill Plan 1	2020 VAP	2020 WNH VAP	2020 APB VAP
A	1	1	452,017	161,498	271,547
B		2	120,310	87,901	24,869
C		3	144,075	75,509	56,675
D	**1 Total**		**716,402**	**324,908**	**353,091**
E	2	1	123,748	65,155	54,562
F		2	637,259	429,861	153,255
G		3	35,760	22,369	12,595
H	**2 Total**		**796,767**	**517,385**	**220,412**
I	3	1	161,924	75,011	81,890
J		3	602,506	398,147	167,687
K	**3 Total**		**764,430**	**473,158**	**249,577**
L	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (D)	716,402	324,908	353,091
		Pop Retained in D1 (A):	452,017	161,498	271,547
		Pop Sent Out of D1 (B + C):	264,385	163,410	81,544
		Pop Added to D1 (E + I):	285,672	140,166	136,452
		Net Change to D1 (sent out + added):	21,287	-23,244	54,908
		New D1 VAP:	737,689	301,664	407,999
		D1 Core Retention:	63.1%	49.7%	76.9%
		Pop Retained in Original Districts (A + F + J)	1,691,782	989,506	592,489
		Pop Changing Districts (B + C + E + G + I):	585,817	325,945	230,591
		Plan Core Retention (Pop Retained / Total Pop):	74.3%	75.2%	72.0%

Source: data discussed in text; calculations by Bryan GeoDemographics for author.

65. In *Table III.F.2* (below) one can see the core retention results for Cooper's Illustrative Plan 2. The results are even more significant than in Illustrative Plan 1. In D1, 51.5% of the total population is retained in D1, but the drivers of this again differ significantly by race and ethnicity. *One-thirds* (35.1%) of the WNH population from D1 is retained, while only 68.6% of the APB population is retained. Across the entire plan, 66.8% of Mississippi's total population is retained in their original district. 67.5% of WNH and 65.7% of APB are retained in their original districts. In this plan, 755,429

Mississippians, 426,938 WNH and 281,962 APB are moved. Again while there is no established threshold for core retention, I argue a move of 33.2% of the population (755,429) to a different judiciary in order to change the APB population in D1 by only 51,349 is substantial.

Table III.F.2 Core Retention of Illustrative Plan 2

Row	Original SCOMS	Ill Plan 2	2020 VAP	2020 WNH VAP	2020 APB VAP
A	**1**	1	369,056	114,033	242,268
B		2	71,738	39,631	28,703
C		3	275,608	171,244	82,120
D	**1 Total**		**716,402**	**324,908**	**353,091**
E	**2**	1	77,391	35,211	39,433
F		2	688,622	461,303	172,012
G		3	30,754	20,871	8,967
H	**2 Total**		**796,767**	**517,385**	**220,412**
I	**3**	1	299,938	159,981	122,739
J		3	464,492	313,177	126,838
K	**3 Total**		**764,430**	**473,158**	**249,577**
L	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (D)	716,402	324,908	353,091
		Pop Retained in D1 (A):	369,056	114,033	242,268
		Pop Sent Out of D1 (B + C):	347,346	210,875	110,823
		Pop Added to D1 (E + I):	377,329	195,192	162,172
		Net Change to D1 (sent out + added):	29,983	-15,683	51,349
		New D1 VAP:	746,385	309,225	404,440
		D1 Core Retention:	51.5%	35.1%	68.6%
		Pop Retained in Original Districts (A + F + J)	1,522,170	888,513	541,118
		Pop Changing Districts (B + C + E + G + I):	755,429	426,938	281,962
		Plan Core Retention (Pop Retained / Total Pop):	66.8%	67.5%	65.7%

Source: data discussed in text; calculations by Bryan GeoDemographics for author

66. In *Table III.F.3* (below) one can see the core retention results for Cooper's Least Change Plan 1. The core retention results here are much better than in Illustrative Plans 1 and 2. In D1, 88.4% of the total population is retained. 85.4% of WNH and 91.7% of APB are retained. Across the entire plan, 92.4% of Mississippi's total population is retained in their original district. 94.3% of WNH and 89.2% of APB are retained in their original districts. In this plan, 172,412 Mississippians, 74,458 WNH and 88,566 APB are moved. I would characterize these changes as minimal and not substantially differentiated by race and ethnicity.

Table III.F.3 Core Retention of Least Change Plan 1

Row	Original SCOMS	LC Plan 1	2020 VAP	2020 WNH VAP	2020 APB VAP
A	**1**	1	633,441	277,443	323,812
B		3	82,961	47,465	29,279
C	**1 Total**		**716,402**	**324,908**	**353,091**
D	**2**	1	30,407	11,431	17,624
E		2	766,360	505,954	202,788
F	**2 Total**		**796,767**	**517,385**	**220,412**
G	**3**	1	59,044	15,562	41,663
H		3	705,386	457,596	207,914
I	**3 Total**		**764,430**	**473,158**	**249,577**
J	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (C)	716,402	324,908	353,091
		Pop Retained in D1 (A):	633,441	277,443	323,812
		Pop Sent Out of D1 (B):	82,961	47,465	29,279
		Pop Added to D1 (D + G):	89,451	26,993	59,287
		Net Change to D1 (sent out + added):	6,490	-20,472	30,008
		New D1 VAP:	722,892	304,436	383,099
		D1 Core Retention:	88.4%	85.4%	91.7%
		Pop Retained in Original Districts (A + E + H)	2,105,187	1,240,993	734,514
		Pop Changing Districts (B + D + G):	172,412	74,458	88,566
		Plan Core Retention (Pop Retained / Total Pop):	92.4%	94.3%	89.2%

Source: data discussed in text; calculations by Bryan GeoDemographics for author.

67. *Table III.F.4* (below) one can see the core retention results for Cooper's Least Change Plan 2. The core retention results here are again much better than in Illustrative Plans 1 and 2. In D1, 94.8% of the total population is retained. 93.5% of WNH and 97.0% of APB are retained. Across the entire plan, 95.8% of Mississippi's total population is retained in their original district. 97.2% of WNH and 93.6% of APB are retained in their original districts. In this plan, 96,106 Mississippians, 36,540 WNH and 52,420 APB are moved. I would characterize these changes as minimal and not substantially differentiated by race and ethnicity.

Table III.F.4 Core Retention of Least Change Plan 2

Row	Original SCOMS	LC Plan 2	2020 VAP	2020 WNH VAP	2020 APB VAP
A	**1**	1	679,340	303,930	342,334
B		3	37,062	20,978	10,757
C	**1 Total**		**716,402**	**324,908**	**353,091**
D	**2**	2	796,767	517,385	220,412
E	**2 Total**		**796,767**	**517,385**	**220,412**
F	**3**	1	59,044	15,562	41,663
G		3	705,386	457,596	207,914
H	**3 Total**		**764,430**	**473,158**	**249,577**
I	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (C)	716,402	324,908	353,091
		Pop Retained in D1 (A):	679,340	303,930	342,334
		Pop Sent Out of D1 (B):	37,062	20,978	10,757
		Pop Added to D1 (D + G):	59,044	15,562	41,663
		Net Change to D1 (sent out + added):	21,982	-5,416	30,906
		New D1 VAP:	738,384	319,492	383,997
		D1 Core Retention:	94.8%	93.5%	97.0%
		Pop Retained in Original Districts (A + E + H)	2,181,493	1,278,911	770,660
		Pop Changing Districts (B + D + G):	96,106	36,540	52,420
		Plan Core Retention (Pop Retained / Total Pop):	95.8%	97.2%	93.6%

Source: Data discussed in text; calculations by Bryan GeoDemographics for author.

68. In *Table III.F.5* (below) one sees a comparison of the core retention in total and by race, WNH and APB. There are many communities of interest in Mississippi and differential core retention analysis enables one to demographically quantify the impact of potential changes on one of interest, which in this case would be the existing judicial districts. The CRA shows that Illustrative Plans 1 and 2 are significantly disruptive to large numbers of Mississippians across the state in order to achieve small increases in the percent APB in District 1. The differential CRA shows that the Least Change Plans 1 and 2 are minimally disruptive and do *not* displace large numbers of Mississippians. Least Change Plan 1 has a minimal amount of differential core retention by race (that is, 94.3% CRA for WNH and 89.2% CRA for APB is minimally different from 92.4% overall), while Least Change Plan 2 has virtually no differential core retention by race (that is, 97.2% CRA for WNH and 93.6% CRA for APB is minimally different from 95.8% overall).

Table III.F.5 Core Retention Analysis of SCOMS by Plaintiff Plan

Population		Ill Plan 1	Ill Plan 2	LC Plan 1	LC Plan 2
Total	District 1	63.1%	51.5%	88.4%	94.8%
	Total	74.3%	66.8%	92.4%	95.8%
WNH	District 1	49.7%	35.1%	85.4%	93.5%
	Total	75.2%	67.5%	94.3%	97.2%
APB	District 1	76.9%	68.6%	91.7%	97.0%
	Total	72.0%	65.7%	89.2%	93.6%

Source: 2020 Census Population analyzed with CRA by SCOMS and alternate plaintiff plans. Calculations by Bryan GeoDemographics for author.

Compactness

69. The second traditional redistricting principle I address is the compactness of districts (See paragraph 15). In addition to noting that compactness was a criteria used in the "Magnolia Bar" case (Barbour, 1992), I once again turn to Mississippi Code § 5-3-101 which states for the purpose of legislative redistricting:

> "In accomplishing the apportionment, the committee shall follow such constitutional standards as may apply at the time of the apportionment and shall observe the following guidelines unless such guidelines are inconsistent with constitutional standards at the time of the apportionment, in which event the constitutional standards shall control."
>
> **(a) Every district shall be compact**

70. Within Mr. Cooper's report on Page 4 (P. 4), Mr. Cooper states that he was "asked by the attorneys for the Plaintiffs in this case [have asked me] to determine whether the Black population in Mississippi is "sufficiently large and **geographically compact**" to allow for one of the three at-large districts for the Mississippi Supreme Court to be drawn with a majority Black voting age population, consistent with traditional districting principles." Mr. Cooper goes on to mention the word "compact" six more times in his report as follows:

1. On P.5, Mr. Cooper states at C. Summary of Expert Conclusions 11. "I have reached the following conclusions: • Based on the 2020 Census, Black Mississippians are sufficiently numerous and **geographically compact** to allow for one majority-Black VAP district".
2. On P.6, Mr. Cooper also states at C. Summary of Expert Conclusions 11 "• In addition, Black Mississippians have been sufficiently numerous and **geographically compact** to allow for one majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court based on the prior decennial Census numbers from 1990, 2000, and 2010."
3. On P.24, Mr. Cooper states at A. Illustrative Plans and Traditional Redistricting Principles 46. "The two illustrative plans that I have developed contain three districts— each with one

majority-Black district. Both illustrative plans comply with traditional redistricting principles, including **compactness**".

4. On P.24, Mr. Cooper states at A. Illustrative Plans and Traditional Redistricting Principles 47. "The illustrative plans meet the first Gingles precondition, i.e., they demonstrate that the Black population in Mississippi is sufficiently numerous and **geographically compact** to allow for the creation of at least one 3-member majority Black district."

5. On P.24, Mr. Cooper states at A. Illustrative Plans and Traditional Redistricting Principles 48. "There is no question that Mississippi's Black population is "**geographically compact**." For example, and by way of reference, the nine-single member district plan shown in Exhibit G contains three contiguous majority-Black VAP districts (Districts 4, 5, and 6)—demonstrating beyond a shadow of doubt that **the Black population is compactly distributed** north-to-south in and around the Delta."

71. Mr. Cooper makes statements in his report that he is *certain* that the alternate districts as he has configured them are defensibly compact. In fact, on P.24, Mr. Cooper uses language such as "*there is no question*" and "*beyond a shadow of a doubt.*" Yet the only evidence he offers are his own personal observations and strongly stated beliefs. Mr. Cooper does not appear to have gone through the exercise of actually calculating and measuring the compactness of each district in each plan – an exercise that he *has* done in other cases.[28] At this point, I turn my attention to performing and discussing just such an analysis.

72. Compactness is a tool that can be used in redistricting to compare the relative compactness of existing districts against new districts to determine whether the new districts entail minimal or large-scale changes from the existing districts. There are numerous measures of "compactness" – each using different math and concepts. But what compactness measure does an expert use? The law offers few precise definitions of compactness other than "you know it when you see it," which effectively implies a common understanding of the concept. In contrast, academics have shown that compactness has multiple dimensions and have generated many conflicting measures.[29]

73. There is no professional consensus on a "right" measure, and every widely used measure works differently. A district that is "most compact" by one measure can easily

[28] See Second Declaration of William S. Cooper in Alabama *Caster v. Merrill* and Exhibit 1 - Decl. of William S. Cooper in *Robinson v. Ardoin* and *Galmon v. Ardoin* and related Louisiana redistricting litigation in 2022 both current SCOTUS cases where he reports and discusses CVAP alongside VAP and its importance in measuring minority populations.

[29] "How to Measure Legislative District Compactness If You Only Know it When You See it," https://gking.harvard.edu/presentations/how-measure-legislative-district-compactness-if-you-only-know-it-when-you-see-it-7.

and frequently be less compact by another. Four of the most common measures (Polsby-Popper, Schwartzberg, Reock and Convex Hull) each have unique features[30] so I use each to facilitate a comprehensive analysis of each plan. The analysis includes two tables per plan. The first is the actual scores, by district and by measure including a plan average by measure. The second is a *ranking* by district and by plan. That is – for each district and each measure, how did each score rank (1 being the best score and 5 being the worst)? Last, the tables are thematically shaded based on their performance. Cells in green are the best performing districts, cells in red are poorer performing districts.

Table III.F.6a (below) shows the compactness scores for the existing SCOMS districts, by compactness measure, and *Table III.F.6b* (below) shows the ranks of those scores relative to the other plans. One can compare the average scores and sum these ranks as a means of evaluating the compactness of each plan. For example, using *Table III.F.6b*. For District 1, using the Polsby-Popper Score, the SCOMS plan ranks first, that is, that district, by that measure, out of the five plans (original SCOMS and each of Cooper's alternative plans) is the most compact.

[30] These measures are provided by the widely used professional redistricting software "Maptitude for Redistricting," for example, the software Mr. Cooper has used in the past in other cases such as in Alabama *Caster v. Merrill*. The Reock compactness score is computed by dividing the area of the voting district by the area of the smallest circle that would completely enclose it. Since the circle encloses the district, its area cannot be less than that of the district, and so the Reock compactness score will always be a number between 0 and 1 (which may be expressed as a percentage). The Area/Convex Hull test computes the ratio the district area to the area of the convex hull of the district (minimum convex polygon which completely contains the district). This measure is always between 0 and 1, with 1 being the most compact. The Polsby-Popper (PP) measure is the ratio of the area of the district to the area of a circle whose circumference is equal to the perimeter of the district. This measure also is always between 0 and 1, with 1 being the most compact. The Schwartzberg test (Schwartzberg, 1966) https://core.ac.uk/download/pdf/217207073.pdf is a perimeter-based measure that compares a simplified version of each district to a circle, which is considered to be the most compact shape possible. Unlike other measures, the scale of Schwartzberg values is *above* 1, with *lower* values approaching 1 being most compact. The Polsby-Popper and Schwartzberg ratios place high importance on district perimeter. Thus, they are highly susceptible to bias due to "shoreline complexity." Therefore, districts that are trimmed around shorelines may end up with a low compactness score through no fault of the district's authors and may not necessarily be a true indicator of gerrymandering. This is precisely why it is important to use multiple compactness scores (in this case the Polsby-Popper, Schwartzberg, Reock and Convex Hull measures) and let the reader judge which one is a better fit based on the geography of the district and method of calculation each score uses. A higher score means more compact, but the scores using different measures cannot be directly compared to each other. *See* Azavea White Paper, "Redrawing the Map on Redistricting," (2012), https://cdn.azavea.com/com.redistrictingthenation/pdfs/Redistricting_The_Nation_Addendum.pdf .

Table III.F.6a Compactness Scores of Existing SCOMS Districts

	More is Better			Less is Better
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.15	0.42	0.65	2.55
2	0.31	0.44	0.77	1.79
3	0.40	0.66	0.88	1.58
Average	0.29	0.51	0.77	1.97

Source: See text. Calculations by Bryan GeoDemographics for author.

Table III.F.6b Compactness Rankings of Existing SCOMS Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	1	1	3	1
2	**3**	**3**	**4**	**3**
3	2	1	1	2
Average	2.0	1.7	2.7	2.0

Source: See text. Calculations by Bryan GeoDemographics for author

74. In *Table III.F.6b* one can see that the existing SCOMS districts perform the best or nearly the best for each district, by each measure compared to the other proposed plans. The exception is the Convex Hull measure, which ranks District 1 3rd and District 2 4th out of the five plans. The sum of the ranks for the existing SCOMS plan is 25.

75. *Table III.F.7a* (below) shows the compactness scores for the Cooper Illustrative 1 Plan districts, by compactness measure, and *Table III.F.7b* shows the ranks of those scores relative to the other plans.

Table III.F.7a Compactness Scores of Cooper Illustrative 1 Districts

	More is Better			Less is Better
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.15	0.32	0.74	2.61
2	0.31	0.39	0.80	1.80
3	0.37	0.38	0.79	1.65
Average	0.27	0.36	0.78	2.02

Source: See text. Calculations by Bryan GeoDemographics for author

Table III.F.7b Compactness Ranking of Cooper Illustrative 1 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	2	3	1	2
2	5	4	2	4
3	3	4	2	3
Average	3.3	3.7	1.7	3.0

Source: See text. Calculations by Bryan GeoDemographics for author

76. In *Table III.F.7b* one can see that the Cooper Illustrative 1 Plan districts perform more poorly than the existing SCOMS plan. That is, the plan is less compact. The Convex Hull measure ranks District 1 as 1st with District 2 and District 3 tied for 2nd. The sum of the ranks for the Cooper Illustrative 1 Plan is 35.

Table III.F.8a Compactness Scores of Cooper Illustrative 2 Districts

	More is Better			Less is Better
District	**Polsby-Popper**	**Reock**	**Convex_Hull**	**Schwartzberg**
1	0.12	0.27	0.71	2.85
2	0.38	0.48	0.78	1.62
3	0.29	0.33	0.72	1.85
Average	0.27	0.36	0.74	2.11

Source: See text. Calculations by Bryan GeoDemographics for author

Table III.F.8b Compactness Ranking of Cooper Illustrative Plan 2 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	3	5	2	3
2	2	2	3	2
3	5	5	4	5
Average	3.3	4.0	3.0	3.3

Source: See text. Calculations by Bryan GeoDemographics for author

77. In *Table III.F.8b* one can see that the Cooper Illustrative Plan 2 districts performs even more poorly than the existing SCOMS plan. That is, the plan is less compact. The District 2 configuration generally performs well across the different measures. The sum of the ranks for the Cooper Illustrative Plan 2 is 41.

Table III.F.9a Compactness Scores of Cooper Least Change 1 Districts

	More is Better			Less is Better
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.09	0.29	0.55	3.39
2	0.39	0.50	0.83	1.60
3	0.33	0.41	0.79	1.74
Average	0.27	0.40	0.72	2.24

Source: See text. Calculations by Bryan GeoDemographics for author

Table III.F.9b Compactness Ranking of Cooper Least Change 1 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	5	4	5	5
2	1	1	1	1
3	4	3	3	4

Source: See text. Calculations by Bryan GeoDemographics for author

78. In *Table III.F.9b* one can see that the Cooper Least Change 1 Plan Districts 1 and 3 perform more poorly and the plan overall performs more poorly than the existing SCOMS plan. That is, the plan is less compact overall. The movement of Madison County from District 1 to District 3 significantly distorts the boundaries of District 1 and impairs the compactness of District 3. The sum of the ranks for the Cooper Least Change Plan 1 is 37.

Table III.F.10a Compactness Scores of Cooper Least Change 2 Districts

	More is Better		Less is Better	
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.12	0.35	0.59	2.95
2	0.31	0.44	0.77	1.79
3	0.46	0.54	0.88	1.48
Average	0.30	0.44	0.75	2.07

Source: See text. Calculations by Bryan GeoDemographics for author.

Table III.F.10b Compactness Ranking of Cooper Least Change 2 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	4	2	4	4
2	3	3	4	3
3	1	2	1	1
Average	2.7	2.3	3.0	2.7

Source: See text. Calculations by Bryan GeoDemographics for author

79. In *Table III.F.10b* one can see that the Cooper Least Change Plan 2 Districts 1 performs more poorly and the plan overall performs more poorly than the existing SCOMS plan. That is, the plan is less compact. Note that District 2 in this plan is unchanged from the original SCOMS plan. The sum of the ranks for the Cooper Least Change Plan 2 is 32.

80. In summary, the alternate plans suggested by Cooper range from somewhat less compact to substantially less compact when compared to the existing SCOMS plan.

G. Voting Age Population Polling Place Spatial Analysis

81. There is a long history of Black voter suppression in Mississippi. In recent years, much has been written about the impact of Black voter disenfranchisement, driven both by social and legal forms of suppression.[31] In this report, I attempt to measure two elements of Black voter suppression. The first is *causal* and is what I discuss here. "What are the differences in proximity, the differences in the distance (proximity) of Black voting age population to current polling stations compared to all voting age population – and, in particular, the WNH voting age population. My hypothesis for this question was that if the Black voting age population were being systematically disenfranchised by the state of Mississippi, a symptomatic indicator of that would be seeing fewer of them close to polling places, and more of them a great distance from polling places. The second measure I discuss is *evidentiary* (discussed later in Section IV): Does one sees actual evidence of Black voter suppression at the polls today? That is: does one see a difference in Black voter registration and Black voter turnout, which one would expect as an outcome of Black voter disenfranchisement?

[31] https://www.clarionledger.com/in-depth/news/politics/elections/2022/08/23/mississippi-voter-access-roadblocks-vote-despite-voting-rights-act-1965/10201239002/

https://publicintegrity.org/politics/elections/who-counts/more-than-15-of-black-mississippi-residents-permanently-barred-from-voting/

https://dce.olemiss.edu/um-votes-exploring-the-history-of-voting-suppression-in-ms/

https://www.fastcompany.com/90570476/how-voters-are-casting-their-ballot-in-the-state-thats-made-it-hardest-to-vote-in-2020

82. The Statewide Election Management System (or "SEMS") is the election information management system - for which data is provided by local officials. This system supports a wide variety of responsibilities related to elections and based on information from SEMS and by working with assorted county election officials, reporters at the Mississippi Free Press (*MFP*) produced an inventory of polling places for the November 8, 2020 election.[32] Using that inventory, BryanGeoDemographics performed for me an in-depth spatial analysis of the location of those polling places and their proximity to the voting age population in total and by race and ethnicity. This analysis was conducted for the population as a whole and by race and ethnicity for the entire state of Mississippi. This analysis was then conducted for each individual county. This sub-state analysis allows one to aggregate and assign the proximity of total VAP, WNH VAP and Any Part Black VAP to polling places within each existing district in the current SCOMS configuration, as well in each illustrative and least change configuration proposed by Mr. Cooper in his expert report. While each of Mr. Cooper's illustrative and least change plans increases the percent of the Black population in District 1, I wanted to know if the increases he achieved came at the expense of Black voter proximity to the polls. That is, while he increased the number and proportion of Blacks – did he increase (or decrease) the number of Blacks who happen to have close proximal access to the polls. If Mr. Cooper's plans increased the number and proportion of Blacks, but he moved close-poll proximity Blacks *out of* District 1 and moved distant-poll proximity Blacks *into* District 1, one could argue that the actual impact of such plans would be to increase Black voter disenfranchisement and risk *fewer* Blacks actually turning out to vote.

83. I was not selective and did not discriminately select a vintage of polling locations that I expected would have been any more or less favorable to the outcome I was researching.

[32] https://www.sos.ms.gov/press/op-ed-secretary-watson-election-reform-whats-best-mississippi; https://www.mississippifreepress.org/voting-2022

Table III.G.1 Distance of Population to Polling Places by Race Definition

		VAP (A)	WNH VAP (B)	APB VAP (C)
1/4 Mile		546,405	282,127	235,277
1	Share of Distance		51.6%	43.1%
	Share of Pop		21.4%	28.6%
1/2 Mile		972,324	488,114	427,910
2	Share of Distance		50.2%	44.0%
	Share of Pop		37.1%	52.0%
< Mile		1,488,775	785,200	612,982
3	Share of Distance		52.7%	41.2%
	Share of Pop		59.7%	74.5%
> Mile		788,824	530,251	210,098
4	Share of Distance		67.2%	26.6%
	Share of Pop		40.3%	25.5%
Total		2,277,599	1,315,451	823,080
5	Share		57.8%	36.1%

Source: data discussed in text; calculations by Bryan GeoDemographics for author.

84. *Table III.G.1* shows the VAP (at A), the WNH VAP (at B), and the APB VAP (at C) with the sum of the population who are different distances from a polling place. In the first row (at 1) I show the population who are within a quarter mile of a polling place. This number is shown as both a percent of the population that is within that distance (WNH / VAP and APB / VAP), as well as the share of that population of their share within the state (WNH VAP within ¼ mile / WNH VAP and APB VAP within ¼ mile / APB VAP for example). In the second row (at 2) I show the population within ½ a mile. In the third row (at 3) I show the population within 1 a mile. And in the fourth row (at 4) I show the population more than a mile distant from a polling place. At 5 I show that the 1,315,451 WNH VAP are 57.8% of the total Mississippi VAP (MS VAP), and 823,080 APB VAP are 36.1% of MS VAP.

85. Starting with my analysis at ¼ mile. While WNH VAP make up 57.8% of MS VAP, they only make up 51.6% of VAP within ¼ mile of a polling place. Conversely, while APB VAP make up 36.1% of MS VAP, they make up 43.1% of VAP within ¼ mile of a polling place. While 21.4% of WNH VAP live within ¼ mile of a polling place, 28.6% of APB VAP live within ¼ mile of a polling place. By both measures, WNH VAP are *under*-represented and APB VAP are *over*-represented at our measure of closest distance (1/4 mile) to MS polling places.

86. Starting with my analysis at ½ mile. While WNH VAP make up 57.8% of MS VAP, they only make up 50.2% of VAP within ½ mile of a polling place. Conversely, while APB VAP make up 36.1% of MS VAP, they make up 44.0% of VAP within 1/2 mile of a polling place. While 37.1% of WNH VAP live within ½ mile of a polling place,

52.0% of APB VAP live within ½ mile of a polling place. By both measures, again, WNH VAP are *under*-represented and APB VAP are *over*-represented at our next proximal measure (1/2 mile) to MS polling places.

87. Starting with my analysis at < 1 mile. While WNH VAP make up 57.8% of MS VAP, they only make up 52.7% of VAP within 1 mile of a polling place. Conversely, while APB VAP make up 36.1% of MS VAP, they make up 41.2% of VAP within 1 mile of a polling place. While 59.7% of WNH VAP live within 1 mile of a polling place, 74.5% of APB VAP live within 1 mile of a polling place. By both measures, again, WNH VAP are *under*-represented and APB VAP are *over*-represented at our next proximal measure (1 mile) to MS polling places.

88. Now, looking at VAP more than one mile from a polling place. While the WNH VAP makes up 57.8% of MS VAP, it makes up 67.2% of VAP more than a mile from a polling place. Conversely, while the APB VAP makes up 36.1% of MS VAP, it makes up 26.6% of VAP more than a mile from a polling place. While 40.3% of the WNH VAP live more than a mile from a polling place, only 25.5% of the APB VAP live more than a mile from a polling place. By both measures, the WNH VAP is *over*-represented and the APB VAP is *under*-represented at our measure of greatest distance (> 1 mile) to MS polling places.

89. These results suggest that in terms of proximity distance to a polling place, Black voters have more of an opportunity to vote than White voters in Mississippi.

H. Diversity Evaluation of the Supreme Court Districts

90. In conjunction with the lawsuit that led to this report, the ACLU (2022) states "It's far past time that the Supreme Court districts that Mississippi uses to elect its Supreme Court reflect the diversity of the state's population, rather than diminishing the voice of Black voters." Given this statement and the recognition of the importance of political and socio-economic diversity by Judge William Barbour in the "Magnolia Bar" case, which involved SCOMS districting (Barbour, 1992), it is worthwhile here to evaluate the issue of population diversity in conjunction with this case involving SCOMS districts.

91. The ACLU and Judge Barbour are not the only entities to recognize the importance of diversity in Mississippi. Another entity is the Board of Trustees of the State Institutions of Higher Learning, whose members are appointed by The Governor on the basis of the State's Supreme Court Districts. Among the Board's policies and bylaws, as

amended through September 29th, 2022,[33] one finds Policy 102.06 (p. 14), a statement on diversity:

> "One of the strengths of Mississippi is the diversity of its people. This diversity enriches higher education and contributes to the capacity that our students develop for living in a multicultural and interdependent world. Our system of government, rooted in respect for all people and respect for each individual, is based on understanding. Embracing diversity of thought, cultural background, experience, and identity helps to foster inclusive and intellectually enriched campus communities that maximize opportunities for success among all students and employees."

92. Given this statement, the one by the ACLU, and the opinion by Judge Barbour, I conducted an examination of the diversity of the Supreme Court Districts themselves using a demographic "cluster analysis" which is set of tools and algorithms used to classify different objects into groups in such a way that the similarity between two objects is maximal if they belong to the same group and minimal otherwise (Gallesty, 2020). It is the process of grouping individuals or entities with similar characteristics or similar variables (NCSS, 2022). In the case of the entities of interest here - Mississippi counties - one can then examine how these groups are represented in the existing and proposed district plans. The *Mississippi Health and Hunger Atlas* (Haggard, Cafer, and Green, 2017) provides the data for this process, which allows one to construct groups of counties through its indices of health and well-being (See paragraph 96 for a description of these indices). In turn, these groups can be used to assess diversity based on the indices. For example, if the cluster analysis reveals that all of the state's 82 counties can be formed into "k" groups, and each of these "k" groups had the same percent of its counties within a given district, the district in question would be maximally diverse; if all of the counties within a given Supreme Court District were members of the same group, there would be no population diversity within the district.

93. The authors of the *Mississippi Health and Hunger Atlas* note that health and hunger are correlated with socio-economic status (Haggard, Cafer, and Green, 2017:1), which in turn is correlated with race (Massey, 2007). This correlation comes back full circle to health and well-being, via the correlation of race and socio-economic status with one another and to mortality (McGehee, 1994; Stockwell, Swanson, and Wicks, 1988; Swanson and McGehee, 1996; Swanson and Sanford, 2012; Swanson and Tedrow, 2018; Waldron, 2002). These correlations support the argument that the health and hunger indices also serve as indices of race and socio-economic status.

[33] http://www.mississippi.edu/board/downloads/policiesandbylaws.pdf

94. As can be seen in *Exhibit III.H.1*, there are nine variables used to indicate health need and seven to indicate hunger need. As described in the Atlas, these variables are combined and summarized to create a single "needs" index for each county in Mississippi, as described in paragraph 96. Five health variables are combined and summarized with five hunger variables to create a single "performance" index for each county. These two indices formed the input for the cluster analysis. I performed what is known as a NCSS K-Means procedure (NCSS, 2022), the results of which are shown in Appendix 2.

95. The performance levels are based on quintiles (Haggard, Cafer, and Green, 2017:4), which are arranged from very low to very high: "Counties with a very low ranking are in the lowest 20 percent for need or performance. Being in the lowest 20 percent or first quintile means counties either have low need or low performance, depending on the indicator. Counties with a very high ranking are in the highest 20 percent counties for need or performance. For example, a very high ranking for percent of food insecure individuals means that county is in the highest 20 percent, or fifth quintile. This denotes the highest need group for percentages of food insecure people in that county." The health indices were scored similarly.

Exhibit III.H.1 Health and Hunger Needs Atlas Needs and Performance Variables

Need Indicators	Performance Indicators
Health	**Health**
Teen Pregnancy Rate per 1,000 Live Births	Primary Care Physicians per 100,000
Low Birth Weight per 100 Live Births	Other Primary Care Providers per 100,000
Pre-Term Birth Rate per 100 Live Births	Medicaid Enrollees per Primary Care Provider
Adult Obesity Rate	Population Enrolled in Medicaid
Adult Diabetes Rate	Under 18 Enrolled in Medicaid
Adult Hypertension per 100,000 Deaths	
Uninsured Adults	
Uninsured Under 18	
Avg. Miles to Closest Primary Care Provider	
Hunger	**Hunger**
Food Insecure Individuals	SNAP Enrollment (% Total Population)
Children Food Insecure	SNAP Enrollment (% Eligible)
Food Insecure with Hunger	SNAP Enrollment: Children (% Eligible)
Population Income Eligible for SNAP	Local Sustainability Resilience Index
Children Income Eligible for SNAP	Overall Performance Rank
Food Affordability	
Low Food Access Index	

Source: *Mississippi Health and Hunger Atlas*, 2017 (indicators are shown and discussed in pp 2 to 22).

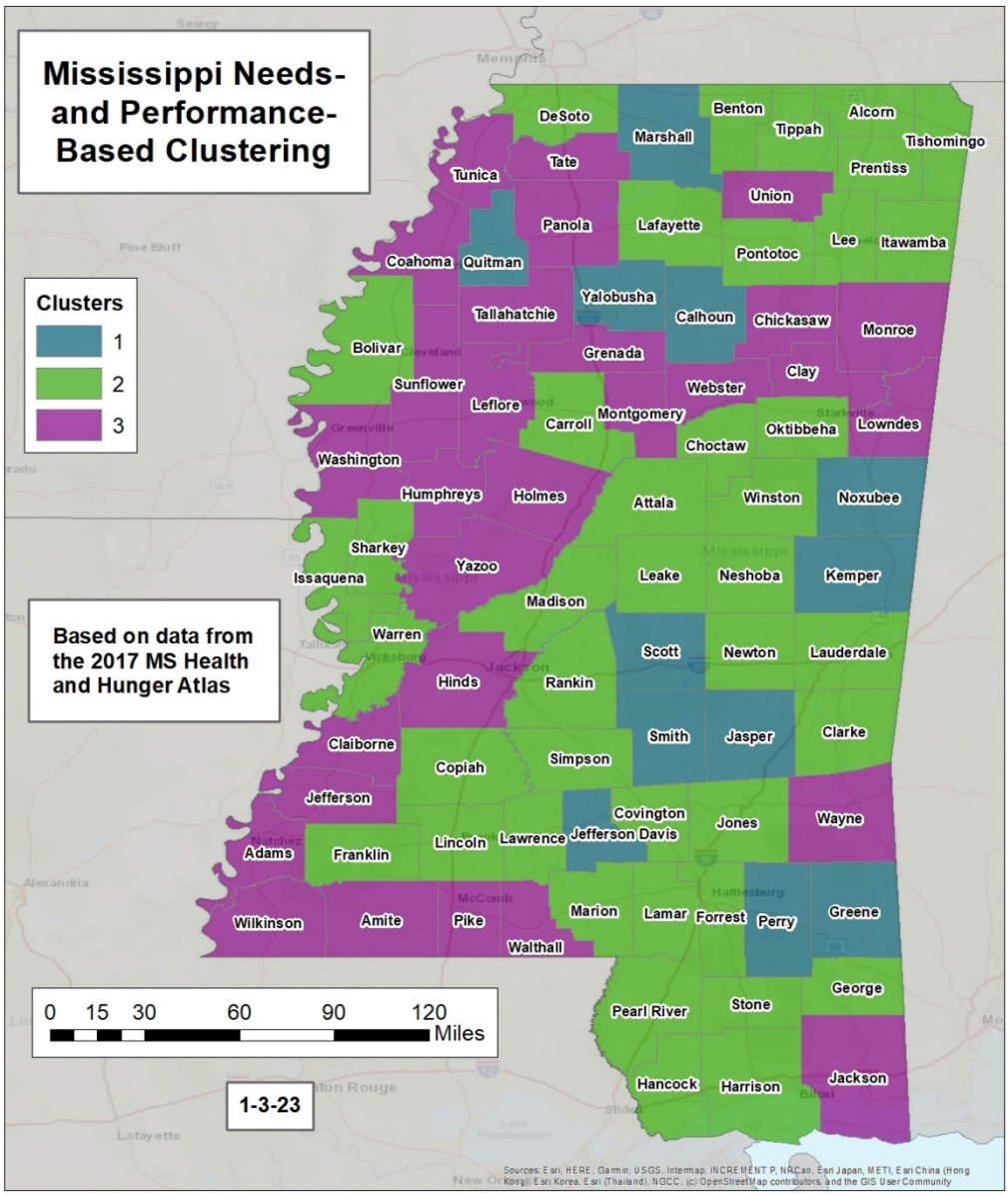
96. The cluster analysis enables us to understand the geographic distribution of population diversity beyond the raw% APB for each county. Using the existing SCOMS districts as a reference (see Appendix 4 Map D), it can be seen that large numbers of high %APB VAP population are generally distributed north and south along the Mississippi river, but there are other concentrations around the state at the county level. District 1 was originally drawn such that it captures much of its APB population along the Mississippi river, but it also extends eastward to capture, among other concentrations, two high APB counties on the eastern edge of Mississippi, Kemper and Noxubee. As will be shown, the current districts each have a given level of population diversity. The cluster analysis enables us to determine if the alternative plans proposed by plaintiffs maintain the level of population diversity found in each of the current districts, increase it, or reduce it.

97. My analysis yielded three clusters as follows: 12 counties in cluster 1 (high need/high performance); 41 counties in cluster 2 (medium need/medium performance); and 29 counties in cluster 3 (high need/low performance). In the remainder of this section, I compare the numbers and types of clusters for the existing SCOMS plans and for each of the plans proposed the Plaintiffs' expert, Mr. Cooper.

98. The overall results can be seen in the map shown as *Exhibit III.H.2*, where 12 counties are clustered into Group 1 (shown in teal), "low need/high performance;" 41 counties are clustered into Group 2 (shown in lime green), "medium "need/medium performance" group; and 29 counties are clustered into Group 3 (shown in purple), "high need/low performance."

99. The counties in each of the three cluster groups would be spread proportionately across the three Supreme Court Districts if diversity was at a maximum. However, unlike group 1, which can be divided by three with no remainder, groups 2 and 3 have fractional remainders. Given this; districts 1, 2 and 3 would have each 4 of the 12 counties in Group 1; districts 1, 2, and 3 would each have 13 of the 41 counties in Group 2, with the remaining two counties placed, respectively, into two of the three districts; and districts 1, 2, and 3 would each have 9 of the 29 counties in Group 3, with the remaining two counties placed, respectively, into two of the three districts. These distributions match the arithmetic means that correspond to the arithmetic means (expressed as percentages) shown in the "b" series of exhibits in this section (see below for a description of the exhibits).

Exhibit III.H.2 Cluster Map Based on Mississippi Needs and Performance Indicators

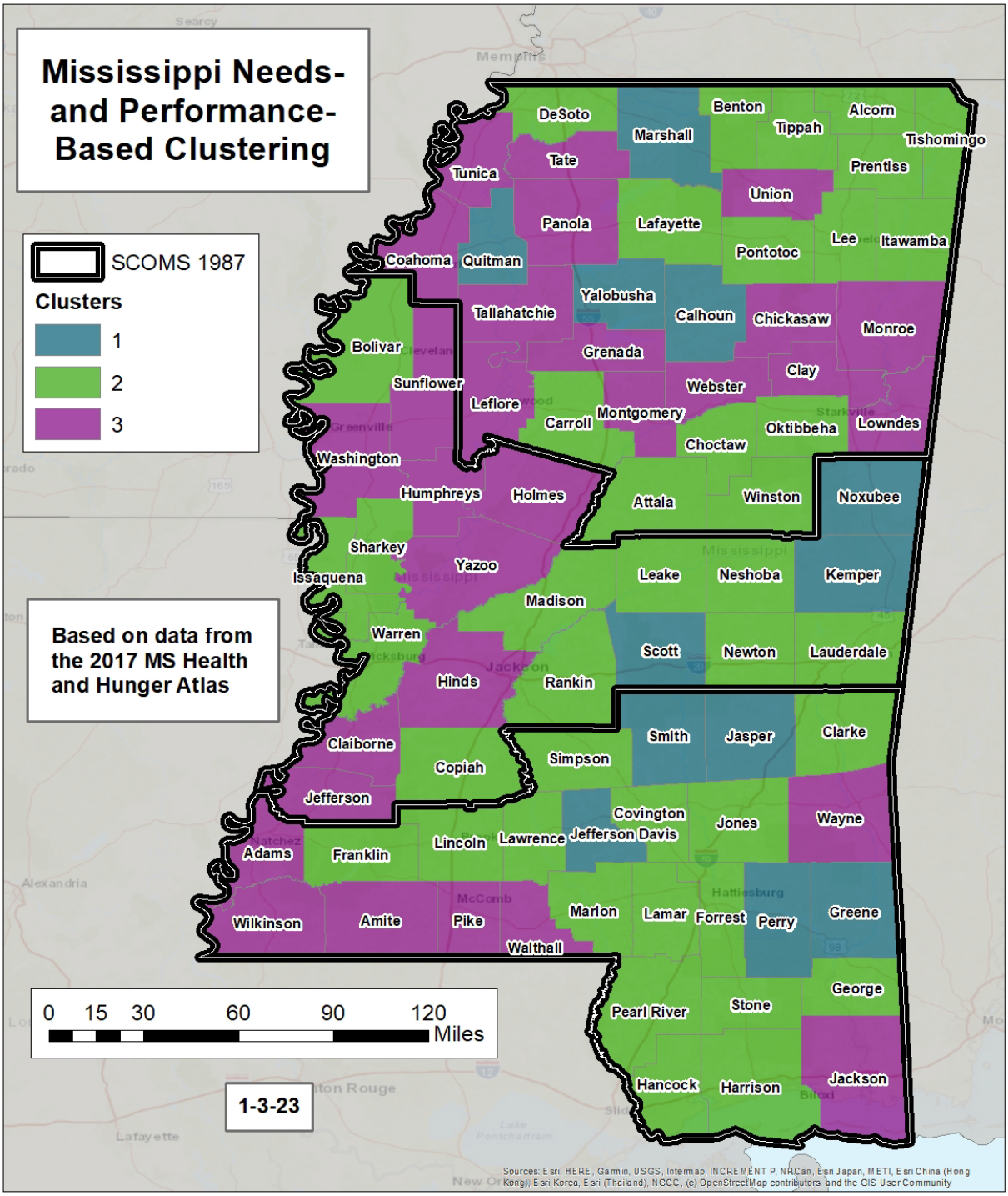


Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

100. Next, I present the cluster analysis results for the existing SCOMS districts, and for each of the four alternate plans presented by Mr. Cooper. The remaining series of fifteen exhibits are presented by each of the five plans, with a map, a table and a chart for each, which is in accordance with the following general layout:

- *Exhibit III.H.#.a* is the map showing the arrangement of counties for the plan
- *Exhibit III.H.#.b* is a chart with the statistics of the cluster analysis for the plan
- *Exhibit III.H.#.c* is a chart of the cluster analysis for the plan

Exhibit III.H.3.a Cluster Map for Existing SCOMS Plan



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

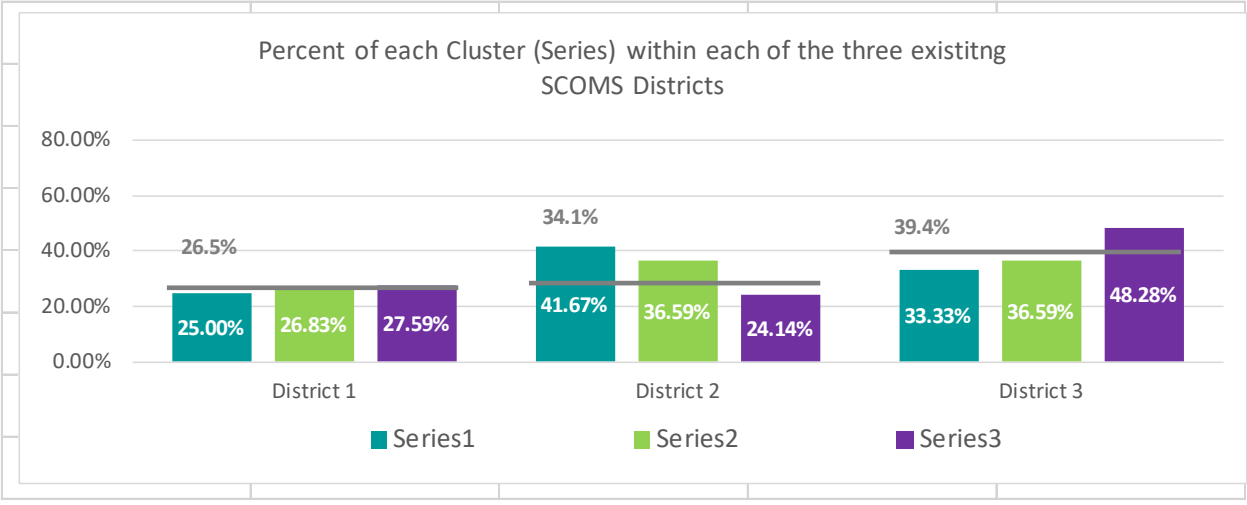
101. *Exhibit III.H.3.a* (above) shows the distribution of counties by cluster group across the three existing Supreme Court Districts. Under the existing plan: District 1 has three of the 12 Group 1 counties (shown in teal), 11 of the 41 Group 2 counties (shown in lime green), and eight of the 29 Group 3 counties (shown in purple); District 2 has five of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green) , and seven of the 29 Group 3 counties (purple); District 3 has four of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and 14 of the 29 Group 3 counties (purple). *Exhibit III.H.3.b* and *Exhibit III.H.3.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three existing districts.

Exhibit III.H.3.b Cluster Analysis Table: Existing SCOMS Plan

Cluster (Series)	District 1	District 2	District 3	Total
1	25.0%	41.7%	33.3%	100.0%
2	26.8%	36.6%	36.6%	100.0%
3	27.6%	24.1%	48.3%	100.0%
mean	26.5%	34.1%	39.4%	
sd	0.01	0.07	0.06	
cv	0.04	0.22	0.16	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculation, table and graph by author.

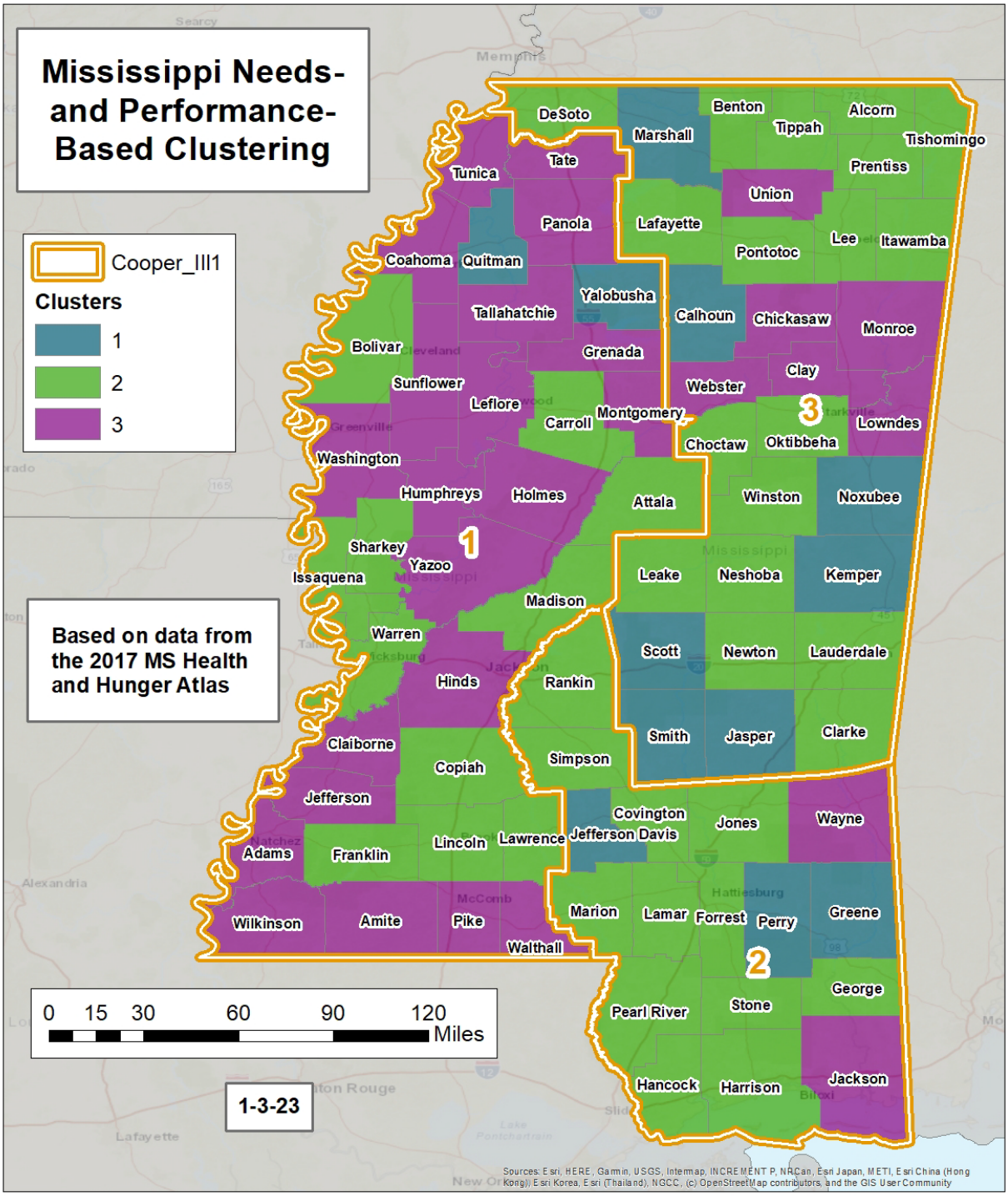
Exhibit III.H.3.c Cluster Analysis Chart: Existing SCOMS Plan



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculation, table and graph by author.

102. In *Exhibit III.H.3.b* and *Exhibit III.H.3.c*, (above) one can see the relative distribution of the cluster groups (labeled as "Series" in the Graph) within each of the three existing Supreme Court Districts numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and Purple = cluster group 3). If all three groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within a given district (which is the arithmetic average of the three groups, as shown approximately by the horizontal bar within each of the three districts). In the case of the Existing Districts, the three groups are nearly distributed equally within existing district 1, Cluster Group 1 (teal bar at 25%), cluster group 2 (lime green at 26.83%) and Cluster group 3 (purple at 27.59%). In existing district 2, the horizontal line shows that cluster groups 1 (teal bar at 41.67%) and 2 (lime green bar at 36.59%) are both higher and closer to one another than either is to group 3 (purple bar at 24.14%), while in existing district 3, groups 1 (teal bar at 33.33%) and 2 (lime green bar at 36.49%) are both lower and closer to one another than either is to group 3 (purple bar at 48.28%). As a way to summarize these results, recall the discussion of the arithmetic mean, standard deviation and coefficient of variation (*CV*) in line item #33, where it is noted that the latter which shows the extent of variation relative to the mean. In District 1, the *CV* is 0.04, in District 2, it is 0.22, and in District 3, it is 0.16. These *CV*s can be interpreted as a measure of the diversity in that the lower they are, the more diversity is equitably distributed. I will compare these *CV* values under the existing set of Supreme Court Districts to those proposed by Cooper, with a focus on District 1.

Exhibit III.H.4.a Cluster Map for Cooper Illustrative Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

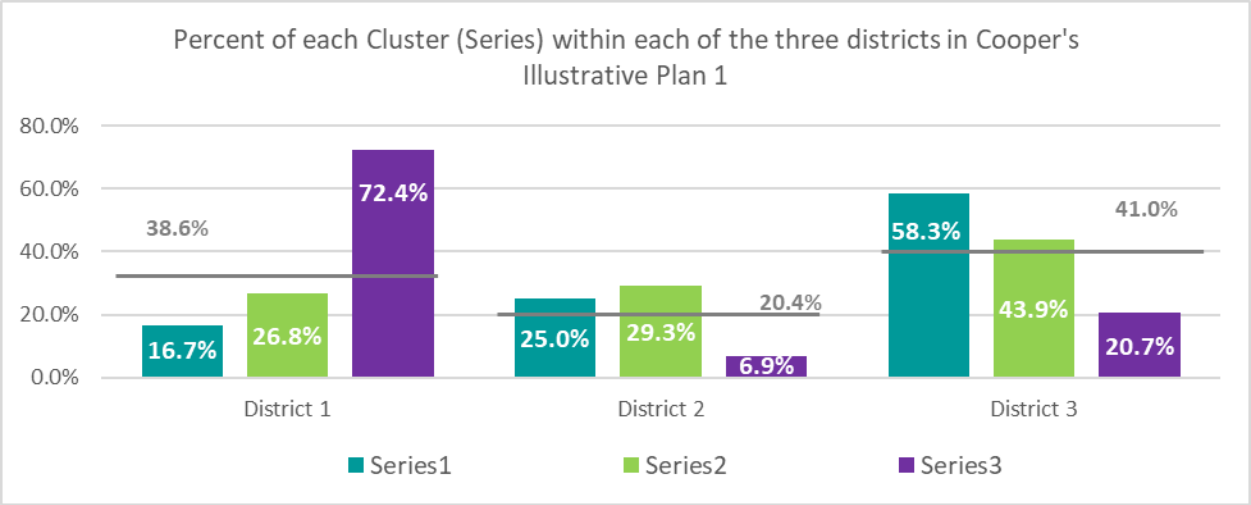
103. *Exhibit III.H.4.a* (above) shows the distribution of counties by cluster group across the three Supreme Court Districts proposed under Cooper's Illustrative Plan I: District 1 has two of the 12 Group 1 counties (shown in teal), 11 of the 41 Group 2 counties (shown in lime green) , and 21 of the 29 Group 3 counties (shown in purple); District 2 has three of the 12 Group 1 counties (teal), 12 of the 41 Group 2 counties (lime green), and two of the 29 Group 3 counties (purple); District 3 has seven of the 12 Group 1 counties (teal), 18 of the 41 Group 2 counties (lime green), and six of the 29 Group 3 counties (purples). *Exhibit III.H.4.b* and *Exhibit III.H.4.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Illustrative Plan 1.

Exhibit III.H.4.b Cluster Analysis Table: Cooper Illustrative Plan 1

Cluster (Series)	District 1	District 2	District 3	Total
1	16.7%	25.0%	58.3%	100.0%
2	26.8%	29.3%	43.9%	100.0%
3	72.4%	6.9%	20.7%	100.0%
mean	38.6%	20.4%	41.0%	
sd	0.24	0.10	0.16	
cv	0.63	0.48	0.38	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

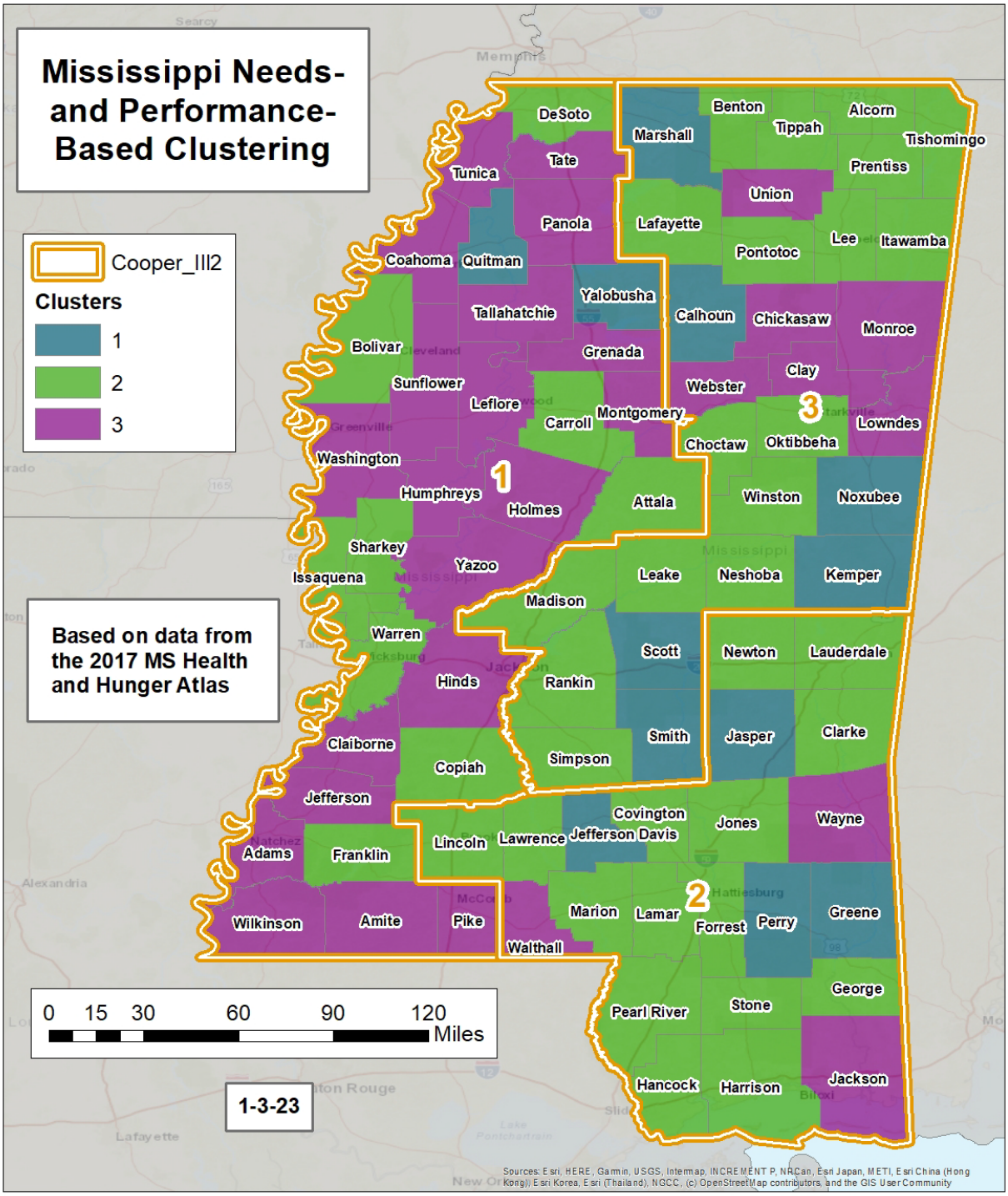
Exhibit III.H.4.c Cluster Analysis Chart: Cooper Illustrative Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

104. In *Exhibit III.H.4.b* and *Exhibit III.H.4.c*, (above) one can see the relative distribution of the cluster groups (labeled as "Series" in the Graph) under Cooper's Illustrative Plan 1, across the three Supreme Court Districts numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within a given district (which is the arithmetic average of the three groups, as shown by the horizontal bar within each of the three districts). In the case of the districts proposed in Cooper's Illustrative Plan 1, the three groups are highly unequally distributed within District 1, with cluster group 3 (purple bar at 72.4%) counties substantially higher than cluster group 1 (teal bar at 16.7%) and group 2 counties (lime green bar at 26.8%) combined. In proposed District 2, the bars show that cluster groups 1 (teal bar at 25.0%) and 2 (lime green bar at 29.3%) are both substantially higher and closer to one another than either is to group 3 (purple bar at 6.9%), while in Cooper's proposed district 3, groups 1 (teal bar at 58.3%) and 2 (lime green bar at 43.9%) are both substantially higher and closer to one another than either is to group 3 (purple bar at 20.7%). Recall that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Illustrative Plan 1, the *CV*s are 0.63 in District 1, 0.48 in District 2, and 0.38 in District 3, all of which are higher than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is 15.75 times higher than the *CV* for District 1 under the existing plan: It decreases diversity by a factor of 15.75.

Exhibit III.H.5.a Cluster Map for Cooper Illustrative Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

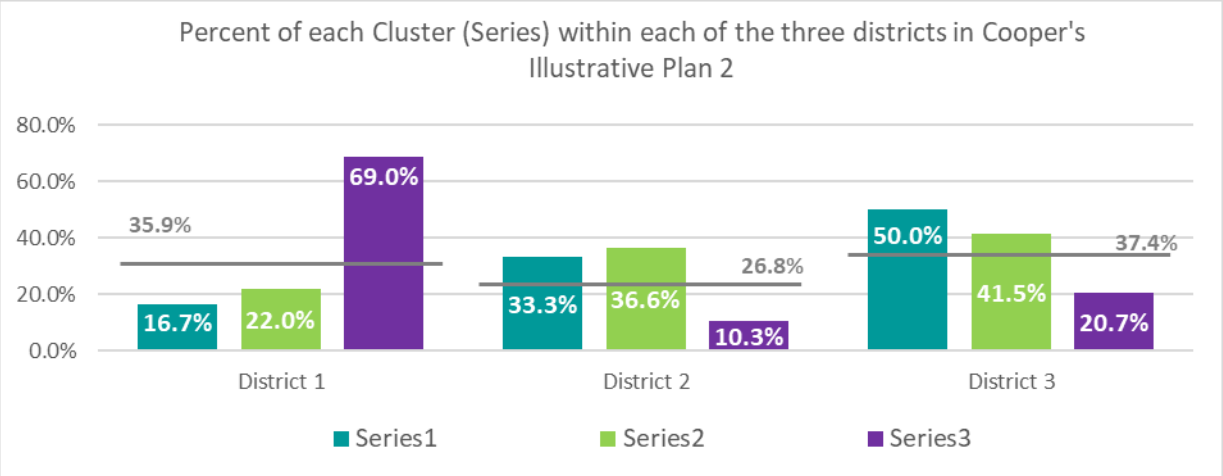
105. *Exhibit III.H.5.a* (above) shows the distribution of counties by cluster group across the three districts proposed under Cooper's Illustrative Plan II. Under this plan: District 1 has two of the 12 Group 1 counties (shown in teal) , nine of the 41 Group 2 counties (shown in lime green), and 20 of the 29 Group 3 counties (shown in lime green); District 2 has four of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and six of the 29 Group 3 counties (purple); District 3 has six of the 12 Group 1 counties (teal) , 17 of the 41 Group 2 counties (lime green) , and two of the 29 Group 3 counties (purple). *Exhibit III.H.5.b* and *Exhibit III.H.5.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Illustrative Plan 2.

Exhibit III.H.5.b Cluster Analysis Table: Cooper Illustrative Plan 2

Cluster (Series)	District 1	District 2	District 3	Total
1	16.7%	33.3%	50.0%	100.0%
2	22.0%	36.6%	41.5%	100.0%
3	69.0%	10.3%	20.7%	100.0%
mean	35.9%	26.8%	37.4%	
sd	0.24	0.12	0.12	
cv	0.66	0.44	0.33	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

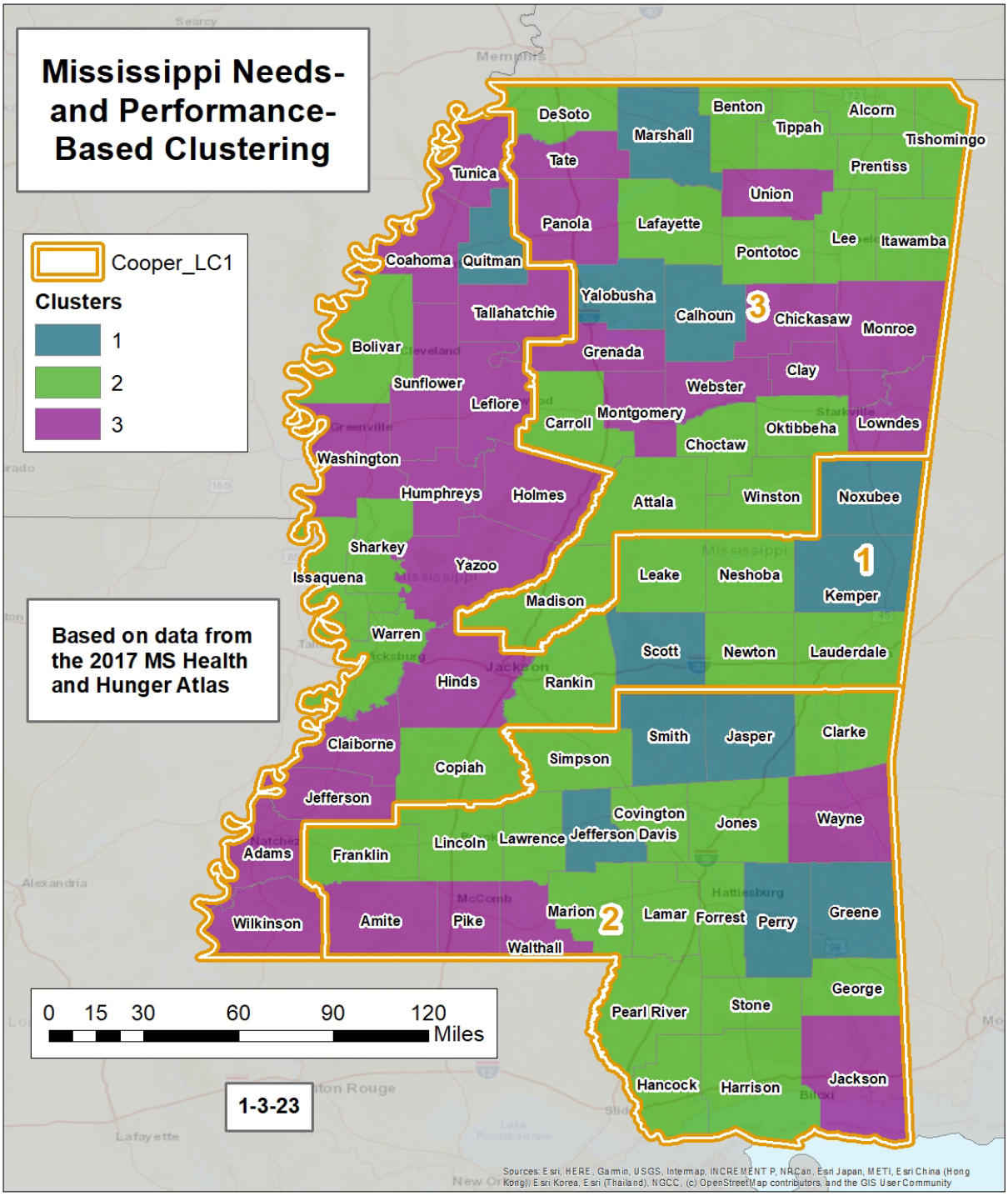
Exhibit III.H.5.c Cluster Analysis Chart: Cooper Illustrative Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

106. In *Exhibit III.H.5.b* and *Exhibit III.H.5.c*, (above), one can see the relative distribution of the cluster groups (Labeled "Series" in the Graph) under Cooper's Illustrative Plan 2, within each of the three Supreme Court Districts numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within a given district (which is the arithmetic average of the three groups, as approximately shown by the horizontal bar within each of the three districts). In the case of these proposed districts, the three groups are unequally distributed within proposed district 1, with cluster group 3 (purple bar at 69.0%) counties substantially higher than both cluster group 1 (teal bar at 16.7%) and cluster group 2 (lime green bar at 22.0%) counties. In proposed district 2, cluster groups 1 (teal bar at 33.3%) and 2 (lime green bar at 36.6%) are both higher and closer to one another than either is to group 3 (purple bar at 10.3%), while in Cooper's proposed district 3, Cluster group 1 (teal bar at 50%) is higher than group 2 (lime green bar at 41.5%), which, in turn, is substantially higher than cluster group 3 (purple bar at 20.7%). Again, recall that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Illustrative Plan 2, the *CV*s are 0.66 in District 1, 0.44 in District 2, and 0.33 in District 3, all of which are higher than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is 16.5 times higher than the *CV* for District 1 under the existing plan: It decreases diversity by a factor of 16.5.

Exhibit III.H.6.a Cluster Map for Cooper Least Change Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

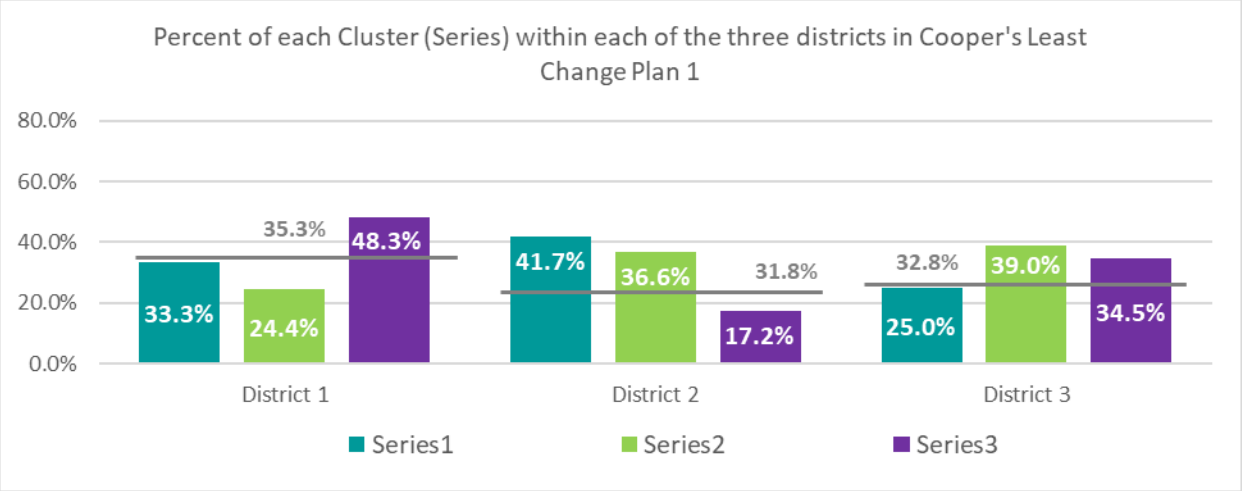
107. *Exhibit III.H.6.a* (above) shows the distribution of counties by cluster group across the three districts proposed under Cooper's Least Change Plan 1. Under this plan: District 1 has four of the 12 Group 1 counties (shown in teal), 10 of the 41 Group 2 counties (shown in lime green), and 14 of the 29 Group 3 counties (shown in purple); District 2 has five of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and five of the 29 Group 3 counties (purple); District 3 has three of the 12 Group 1 counties (teal), 16 of the 41 Group 2 counties (Lime green), and ten of the 29 Group 3 counties (purple). *Exhibit III.H.6.b* and *Exhibit III.H.6.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Least Change Plan 1.

Exhibit III.H.6.b Cluster Analysis Table: Cooper Least Change Plan 1

Cluster (Series)	District 1	District 2	District 3	Total
1	33.3%	41.7%	25.0%	100.0%
2	24.4%	36.6%	39.0%	100.0%
3	48.3%	17.2%	34.5%	100.0%
mean	35.3%	31.8%	32.8%	
sd	0.10	0.11	0.06	
cv	0.28	0.33	0.18	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

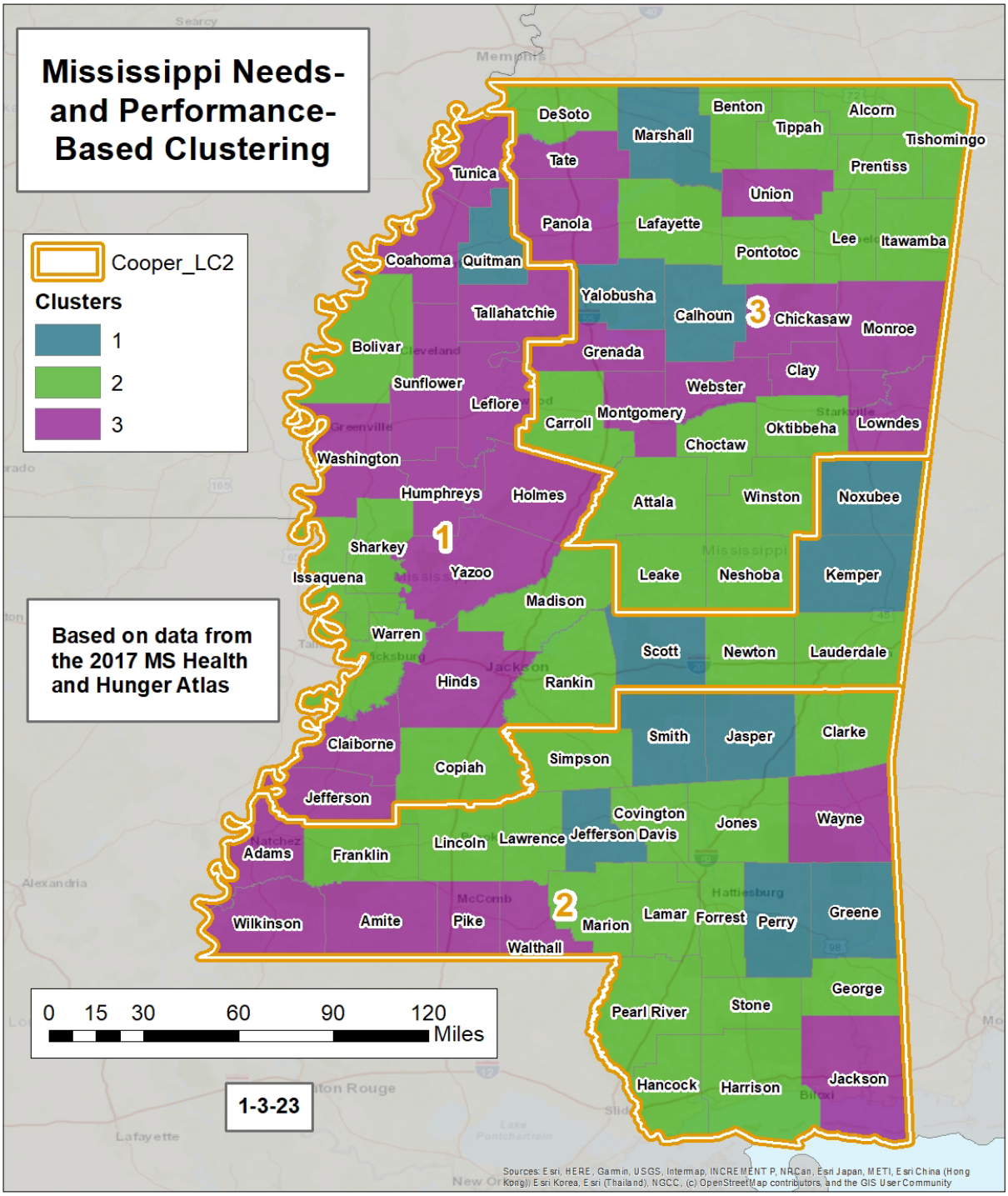
Exhibit III.H.6.c Cluster Analysis Chart: Cooper Least Change Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

108. In *Exhibit III.H.6.b* and *Exhibit III.H.6.c*, (above), one can see the relative distribution of the cluster groups (Labeled "Series" in the Graph) within each of the three Supreme Court Districts proposed in Cooper's Least Change Plan 1 numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three cluster groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within each of the three districts proposed under Cooper's Least Change Plan I (which is the arithmetic average of the three groups, as shown by the horizontal bar within each of the three districts). The three groups are not distributed equally within Cooper's proposed District 1, where the graph shows that Cluster groups 1 (teal bar at 33.3%) and 2 (lime green bar at 24.4%) are both lower and closer to one another than either is to Cluster group 3 (purple bar at 48.3%). In proposed District 2, Cluster groups 1 (teal bar at 41.6% and 2 (lime green bar at 36.6%) are substantially higher and closer to one another than either is to Group 3 (purple bar at 17.2%). In Cooper's proposed District 3, Cluster group 1 (teal bar at 25%) is lower than that found for Cluster groups 2 (lime green bar at 39.0%) and 3 (purple bar at 34.5%) which are both closer to one another than either is to Cluster Group 1. Once again, recall that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Least Change Plan 1, the *CV*s are 0.28 in District 1, 0.33 in District 2, and 0.18 in District 3, all of which are higher than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is seven times higher than the *CV* for District 1 under the existing plan: It *decreases* diversity by a factor of seven.

Figure III.H.7.a Cluster Map for Cooper Least Change Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

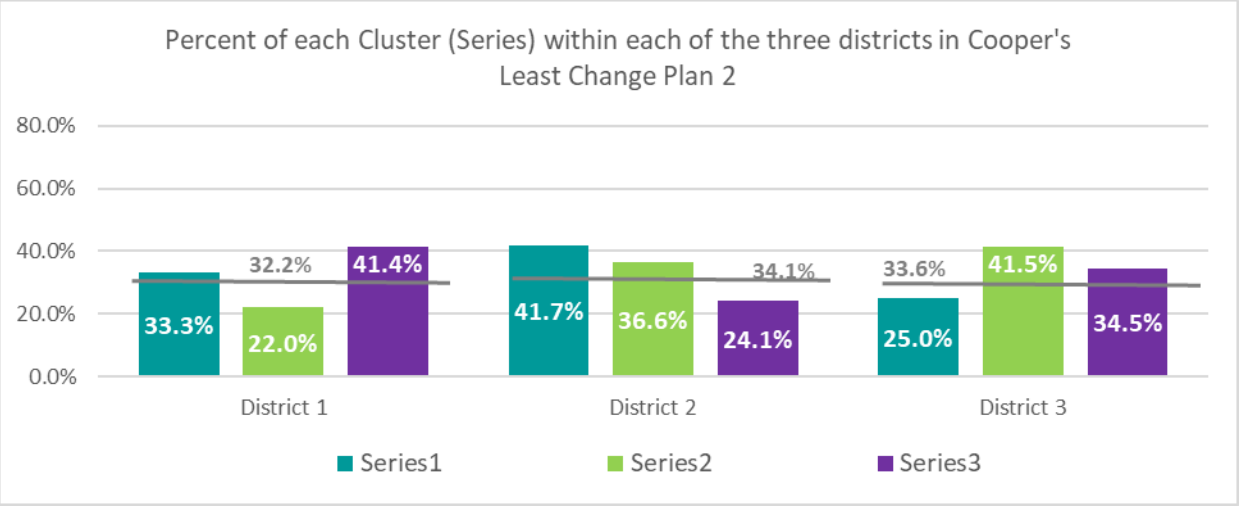
109. *Exhibit III.H.7.a* (above) shows the distribution of counties by cluster group across the three districts proposed under Cooper's Least Change Plan II. Under this plan: District 1 has four of the 12 Group 1 counties (shown in teal), nine of the 41 Group 2 counties (shown in lime green), and 12 of the 29 Group 3 counties (shown in purple); District 2 has five of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and 10 of the 29 Group 3 counties (purple); District 3 has three of the 12 Group 1 counties (teal), 17 of the 41 Group 2 counties (lime green), and six of the 29 Group 3 counties (purple). *Exhibit III.H.7.b* and *Exhibit III.H.7.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Least Change Plan 2.

Exhibit III.H.7.b Cluster Analysis Table: Cooper Least Change Plan 2

Cluster (Series)	District 1	District 2	District 3	Total
1	33.3%	41.7%	25.0%	100.0%
2	22.0%	36.6%	41.5%	100.0%
3	41.4%	24.1%	34.5%	100.0%
mean	32.2%	34.1%	33.6%	
sd	0.08	0.07	0.07	
cv	0.25	0.22	0.20	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

Exhibit III.H.7.c Cluster Analysis Chart: Cooper Least Change Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

110. In *Exhibit III.H.7.b* and *Exhibit III.H.7.c*, (above), one can see the relative distribution of the cluster groups (Labeled "Series" in the Graph) within each of the three Supreme Court Districts proposed in Cooper's Least Change Plan 2 numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three cluster groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within each of the three districts proposed under Cooper's Least Change Plan 2 (which is the arithmetic average of the three groups, as shown by the horizontal bar within each of the three districts). The three groups are not distributed equally within Cooper's proposed District 1, where the graph shows that Cluster groups 1 (teal bar at 33.3%) and 2 (lime green bar at 22.0%) are both substantially lower and closer to one another

than either is to Cluster group 3 (purple bar at 41.4%). In proposed District 2, Cluster groups 1 (teal bar at 41.7% and 2 (lime green bar at 36.6%) are both substantially higher and closer to one another than either is to Group 3 (purple bar at 24.1%). In Cooper's proposed District 3, Cluster group 1 (teal bar at 25.0%) is lower than that found for Cluster groups 2 (lime green bar at 41.5%) and 3 (purple bar at 34.5%) which are both closer to one another than either is to Cluster Group 1. Recall, again that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Least Change Plan 2, the *CV*s are 0.25 in District 1, 0.22 in District 2, and 0.20 in District 3, none of which is lower than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is 6.25 times higher than the *CV* for District 1 under the existing plan: It decreases diversity by a factor of 6.25.

111. In summary, each of the four plans proposed by Cooper reduce the level of diversity found in all of the existing three districts and notably do so in regard to District 1.

IV. MISSISSIPPI VOTER REGISTRATION AND TURNOUT

A. Voter Registration and Turnout by Race and Ethnicity in Mississippi

112. A core tenet of the plaintiffs in this case is that Black voters are currently disenfranchised and do not have the same access to voting and do not exercise their right to vote in the same way the Whites in Mississippi do. Here, I examine expert reports written on behalf of the plaintiffs and offer my opinion on current Black voter registration and voting behavior.

113. Measuring voter registration and actual voting in Mississippi by race is a challenge. The state of Mississippi does not record registered voters by race. Given this, the US Census Bureau's Current Population Survey (or "CPS") is used to understand recent voter registration and turnout in Mississippi. Because these data are only available at the whole-state level, I subsequently turn to sample survey data collected by the Survey Research Laboratory, Social Science Research Center, Mississippi State University, to examine sub-state patterns.

114. As part of its regular, on-going Current Population Survey (CPS), the Census Bureau adds periodic supplements asking questions on topics ranging from school enrollment to tobacco use.[34] One such supplement is the "voting and registration" supplement, which is added in November of national voting years.[35] In 2020, the CPS collected information from 134,122 respondents with dozens of detailed questions on voting behavior.[36] The sample is collected for the US as a whole and by state.

115. The US Census Bureau produces two work products from the "voting and registration" supplement. It tabulates and reports the results of the most important questions such as "Did (you/name) vote in the election held on Tuesday, November 3, 2020?" by state and by the most common demographic variables such as age, race, sex and educational attainment. The sample results are then adjusted to estimated population numbers and the results given in 1,000s of persons with 90% margins of error. These tabulations are formal and the resulting reports are viewed as official work products of the Federal Government. [37] When possible, an expert would always start their analysis of registration and voting behavior with a reference to these reports. In addition to these official statistics, the Census Bureau also publishes a "raw data" or "Public Use Microdata Sample" (or "PUMS" file) with data from individual

[34] https://www.census.gov/data/datasets/time-series/demo/cps/cps-supp_cps-repwgt.html

[35] https://www.census.gov/programs-surveys/cps/about/supplemental-surveys.html

[36] https://www2.census.gov/programs-surveys/cps/techdocs/cpsnov20.pdf

[37] https://www.census.gov/data/tables/time-series/demo/voting-and-registration/p20-585.html

respondents, with each weighted to represent the population in the United States they represent. I will discuss the PUMS data in more detail shortly.

116. In the course of examining voter turnout and registration, the first stop was to look at the official tables published by the Census Bureau to see if the statistics desired by race and ethnicity were available for Mississippi. They are in Table 4B, available as an excel file, provides the official statistics on the number and percent registered and voted by race and ethnicity in Mississippi in 2020.[38]

117. *Table IV.A.1* (registration by race and ethnicity) and *Table IV.A.2* (actual voting by race and ethnicity) both present a "Total Population" as well as a "Total Citizen Population" – and show statistics under these categories for several race and ethnicity combinations, such as "White Alone," "Black Alone," "White non-Hispanic," and "Black Alone or in combination". In the online source for these two tables, which is the Census Bureau's Table 4B,[39] it is not clearly stated that the "Total Population" in Table 4B is actually the voting age population ("VAP") and that "Total Citizen Population" is actually the total Citizen Voting Age Population (CVAP). Keep this in mind in reading these two tables and also that the numbers are given in 1,000s.

Table IV.A.1 2020 Mississippi Voter Registration by Race and Ethnicity

Sex, Race, and Hispanic-Origin	Total "VAP" Population	Total citizen population	Total registered	Percent registered (Citizen)	Margin of error [1]
Total	2,212	2,177	1,749	80.4	2.7
Male	1,029	1,015	792	78.0	4.2
Female	1,182	1,162	957	82.4	3.6
White alone	1,350	1,337	1,054	78.8	3.6
White non-Hispanic alone	1,300	1,295	1,026	79.2	3.6
Black alone	792	787	654	83.1	4.1
Asian alone	37	20	9	B	B
Hispanic (of any race)	67	53	34	B	B
White alone or in combination	1,375	1,363	1,079	79.2	3.5
Black alone or in combination	805	799	666	83.4	4.1
Asian alone or in combination	41	24	13	B	B

Source: Table 4B, US Census Bureau (https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx). Numbers do not always add to totals due to sampling and rounding error.

[38] https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx

[39] https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx

118. First, I examined voting registration. *Table IV.A.1* row 1 (highlighted in yellow) reading left to right shows the VAP population (2,212), then the total CVAP population (2,177) then the total CVAP registered to vote (1,749), then the percent CVAP who are registered, (80.4%, where 80.4 ≈ (1,749/2,177)*100).[40]

119. *Table IV.A.1* row 5 (highlighted in yellow) shows voter registration results for White non-Hispanic alone population (in 1,000s). Again, reading left to right and starting in the first column, one can see that the White non-Hispanic alone VAP number is 1,300 and that the White non-Hispanic alone CVAP number is 1,295, of which 1,026 were registered to vote, yielding the results that 79.2% of the White non-Hispanic alone CVAP were registered to vote, where 79.2% ≈ (1,026/1,295)*100.

120. *Table IV.A.1* row 10 (highlighted in yellow) shows voter registration results for Black Alone and in combination (in 1,000s). In this row, one sees 799 Black Alone or in combination CVAP, of whom 666 who were registered to vote, yielding the result that 83.4% of the Black Alone or in combination CVAP were registered to vote, where 83.4% ≈ (666/799)*100.

121. Next, I examined actual voting. *Table IV.A.2* shows in the first row, reading from right to left, the VAP population (2,212), then the total CVAP population (2,177) then the CVAP who voted (1,521), then the percent CVAP who voted (70.3%, where 70.3 ≈ (1,521/2,177)*100).

[40] Note the numbers are in the table are the official reported. Percentages may vary slightly due to rounding.

Table IV.A.2 2020 Mississippi Voting by Race and Ethnicity

	Total "VAP" Population	Total citizen population	Total voted	Percent voted (Citizen)	Margin of error [1]
Total	2,212	2,177	1,531	70.3	3.2
Male	1,029	1,015	680	67.0	4.8
Female	1,182	1,162	850	73.2	4.2
White alone	1,350	1,337	921	68.9	4.1
White non-Hispanic alone	1,300	1,295	904	69.8	4.1
Black alone	792	787	573	72.8	4.9
Asian alone	37	20	8	B	B
Hispanic (of any race)	67	53	23	B	B
White alone or in combination	1,375	1,363	942	69.1	4.0
Black alone or in combination	805	799	582	72.9	4.8
Asian alone or in combination	41	24	11	B	B

Source: Table 4B, US Census Bureau (https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx). Numbers do not always add to totals due to sampling and rounding error.

Table IV.A.2 row 5 (highlighted in yellow) shows voting results for White non-Hispanic alone population (in 1,000s). Reading right to left and starting in the first column, one can again see that the White non-Hispanic alone VAP number is 1,300 and that the White non-Hispanic alone CVAP number is 1,295, of which 904 voted, yielding the result that 69.8% of the White non-Hispanic CVAP voted, where 69.8% ≈ (904/1,295)*100.

122. *Table IV.A.2* row 10 (highlighted in yellow) shows voting results for Black Alone and in combination (in 1,000s). In this row, one sees 799 Black Alone or in Combination CVAP, of whom 582 voted, yielding the result that 72.9% of the Black Alone or in Combination CVAP voted, where 72.9% ≈ (582/799)*100.

123. In examining the CPS results for the White non-Hispanic and the Black Alone or in combination population in Mississippi for the 2020 election, I am left with a decisive conclusion. In 2020 the Black Alone or in Combination population out-registered and out-voted the White non-Hispanic population. It is clear can see that Black Alone or in Combination were registered at a higher level (83.4%) than the White non-Hispanic (79.2%). And in looking at who voted in the 2020 election, Black Alone or in Combination voted at a higher level (72.9%) than the White non-Hispanic (69.8%).

124. Because the registration and voting data are from a sample survey, there are "Margins of Error" (MOEs) provided with them, which provide an estimate of the statistical uncertainty in the sample-based estimates. In the case of the 2020 CPS data, the MOEs are given at a 95% level of confidence. In regard to the 79.2% of the White

Non-Hispanic CVAP registered to vote, the estimated MOE is 3.6, which is interpreted to mean that one can be 95% certain that the actual percent who registered is between 75.6% and 82.8% (79.2 ± 3.6); similarly, in regard to the 83.4% of the Black Alone or in Combination CVAP registered to vote, the estimated MOE is 4.1, which is interpreted to mean that one can be 95% certain that the actual percent who registered is between 79.3% and 87.5% (83.4 ± 4.1). Because the upper end (82.8%) of the 95% MOE of White Non-Hispanic CVAP percent registered does not overlap the 83.4% estimated in the sample survey of the Black Alone or in combination CVAP registered to vote, one can be 95% certain that the actual percent of Black Alone or in Combination CVAP registered to vote in the 2020 Mississippi election is higher than the actual percent of White non-Hispanic CVAP (Swanson, 2012: 13-157). This finding is supported by the fact that the lower end (79.3%) of the 95% MOE of Black Alone or in Combination CVAP does not overlap the 79.2% of the White non-Hispanic CVAP registered to vote (Swanson, 2012: 153-157).

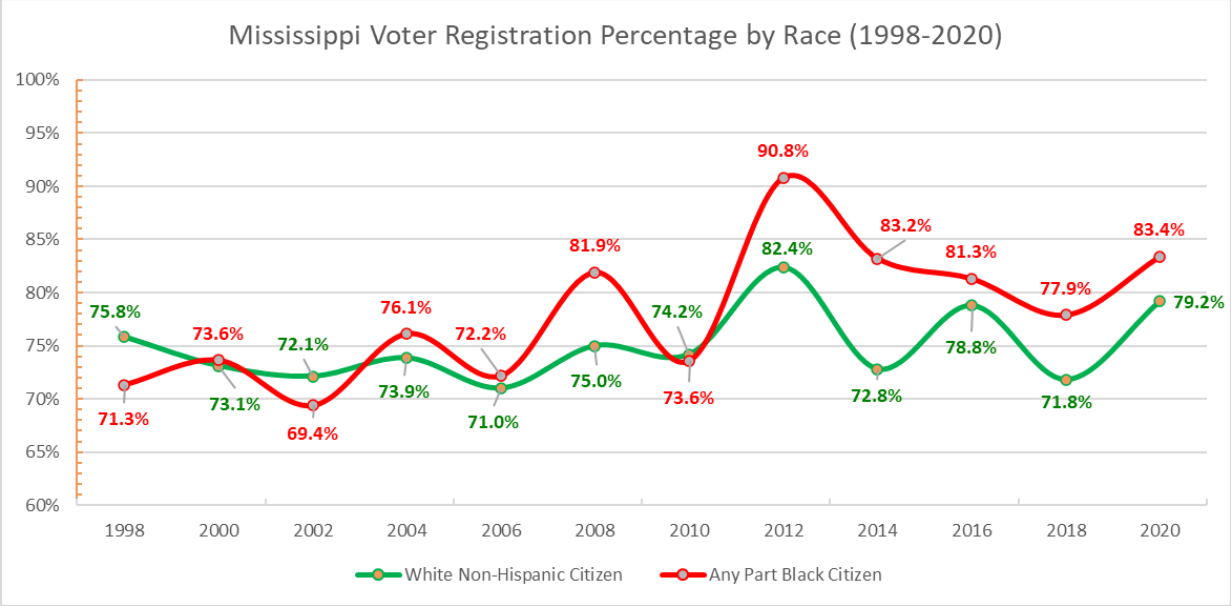
125. In regard to the 69.8% of the White Non-Hispanic CVAP who voted, the estimated MOE is 4.1, which is interpreted to mean that one can be 95% certain that the actual percent who voted is between 65.7% and 73.9% (69.8 ± 4.1); similarly, in regard to the 72.9% of the Black Alone or in Combination CVAP who voted, the estimated MOE is 4.8, which is interpreted to mean that one can be 95% certain that the actual percent who voted is between 68.1% and 77.7% (72.9 ± 4.1). Because the upper end (73.9%) of the 95% MOE of White Non-Hispanic CVAP percent voted overlaps the 72.9% estimated in the sample survey of the Black Alone or in Combination CVAP who voted, one cannot be 95% certain that the actual percent of Black Alone or in combination CVAP who voted in the 2020 Mississippi election is higher than the actual percent of White non-Hispanic CVAP who voted in the 2020 election (Swanson, 2012: 153-157). Using the numbers underlying the 95% level MOEs along with a knowledge of basis inferential statistics, however, one can be 66% certain that the actual percent of Black Alone or in Combination who voted in the 2020 Mississippi election is higher than the actual percent of White non-Hispanic CVAP who did (at a 66% level of confidence, z ≈ 1.00 and with an estimated standard error of .0209, the MOE for this group is 1.21, resulting in the upper 66% MOE bound of 71.0%, where 71.0 = 69.8 +1.21) (Swanson, 2012: 147-150).

126. It is natural to ask if the voter registration and turnout for the 2020 election is an anomaly. In order to investigate this, I examined the historic US Census Bureau's CPS November Supplement the official reports for biannual federal election years. While the Census Bureau has collected voting and registration data since 1964, the CPS has gathered and reported *citizenship* data consistently only since 1998. Since the 2020 data are based on CVAP, I begin my historic analysis in 1998 to ensure data consistency

and comparability with my 2020 analysis to the degree possible (removing noncitizens decreases the voting-age population base, resulting in higher rates for any given election (https://www.census.gov/topics/public-sector/voting/about/faqs.html).

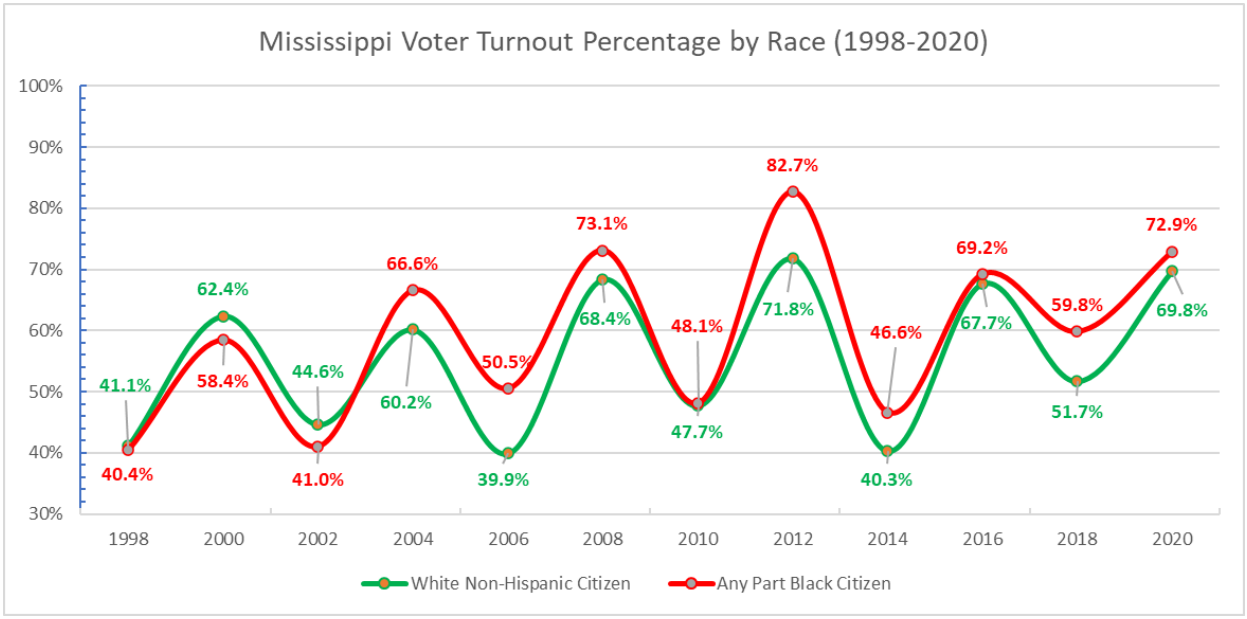
127. In *Exhibit IV.A.1* below, one can see that from each election year from 1998 to 2006, the difference in the percent of registration between White non-Hispanic (WNH) citizens of voting age and any part Black (APB) citizens of voting age was small, being slightly higher or lower based on the election. However, starting in 2008 with Obama's presidential campaign, the percent Black voter registration noticeably exceeded the percent White voter registration. In 2010 (not a presidential election year), the percent Black voter registration declined, and was virtually equal to percent White voter registration. Then in 2012, percent Black voter registration surged again with Obama's second campaign. For every election year since 2012, percent Black voter registration has remained *higher* than percent White voter registration.

Exhibit IV.A.1 Mississippi Voter Registration by Race and Ethnicity History



Source: U.S. Census Bureau, Current Population Survey, November Voting Supplement (biannual by federal election year).

Exhibit IV.A.2 Mississippi Voter Turnout by Race and Ethnicity History



Source: U.S. Census Bureau, Current Population Survey, November Voting Supplement (biannual by federal election year).

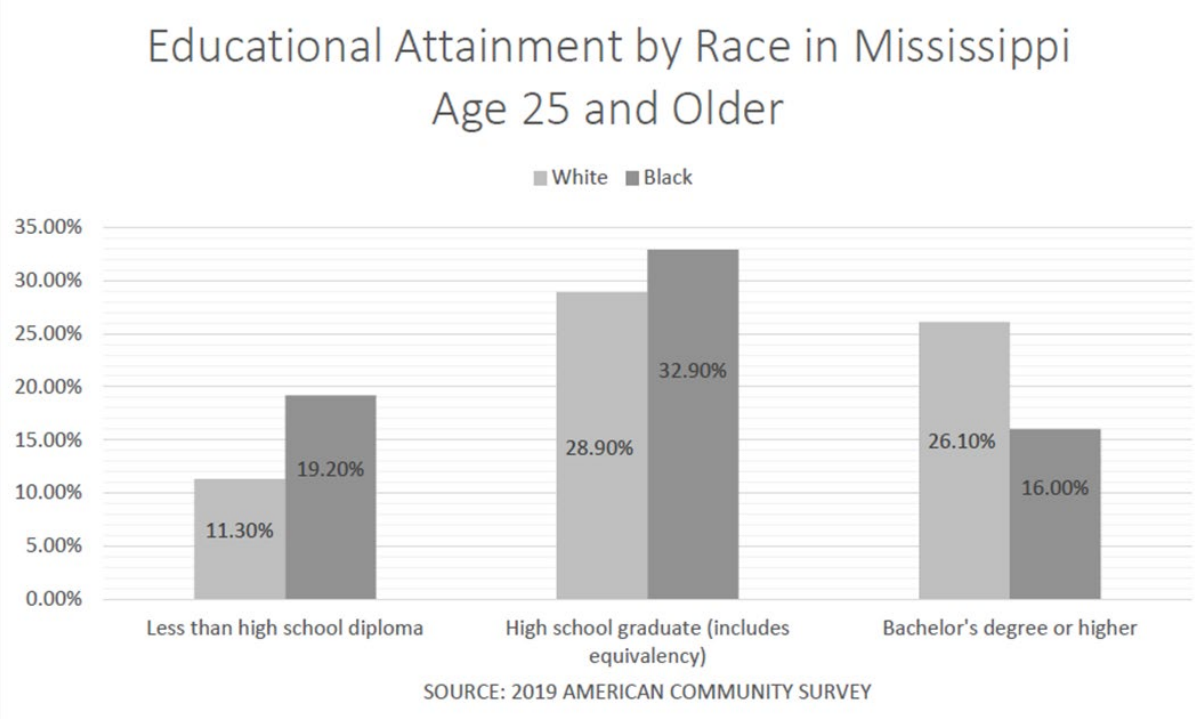
128. In *Exhibit IV.A.2* (above), one sees that from 1998 to 2002, the percent voter *turnout* between White non-Hispanic (WNH) and any part Black (APB) were quite close to each other, each being slightly higher or lower based on the election. But then, starting in 2004, White voter turnout lagged Black voter turnout until 2010. In 2010 (not a presidential election year) the turnout declined to be equal to Whites. Then in 2012 they APB turnout surged even higher for President Obama's second campaign. For every year since, Black voter turnout has been somewhat to much higher than Whites.

129. Now having reported the official US Census Bureau statistics on voter registration and voting turnout by race by year, I turn my attention to the analysis of this subject by the plaintiffs' expert, Dr. Traci Burch[41]. Here I focus on the analysis and interpretations on pages 9-10 of her report. This analysis examines educational attainment by race and ethnicity in Mississippi, then relates these two population characteristics to voter registration and turnout. In Exhibit 3, "Educational Attainment by Race in Mississippi Age 25 and Older" (shown below in *Exhibit IV.A.3*), Dr. Burch accurately reports the percent of Whites and Blacks by educational attainment level from the 2019 American Community Survey (ACS). My analysis of more recent ACS data corroborates her finding that the White population in Mississippi generally enjoys higher educational attainment levels than Blacks do. Her exhibit does not state the definition of "White"

[41] Dr. Traci Burch is an Associate Professor of Political Science at Northwestern University and Research Professor at the American Bar Foundation. She states in her qualifications that "I am widely regarded as an expert on political behavior, barriers to voting, and political participation. Dr. Burch has presented an expert report as part of this case.

and "Black" however. My research shows that this exhibit reports White Alone, non-Hispanic and Black Alone, which is discussed subsequently at length. As in all research, consistency in demographic terms is critical across different analyses. The population put forth in the complaint and then analyzed in the demographer's report (Cooper) is the any part Black, or "APB" population. The Black educational attainment data presented by Dr. Burch are straight from the standard ACS reporting template – which only includes this inconsistent Black definition. Additional work is generally necessary to get the exact race definitions to agree across analyses and would have been necessary here to know educational attainment for APB. I agree with Dr. Burch that any analysis of educational attainment should be based to the population by age who has largely completed whatever the highest level of educational attainment they hope to achieve. Conventionally, that base population is age 25+, and is the definition Dr. Burch reports here from the US Census Bureau's own standard.

Exhibit IV.A.3 Racial Differences in Voter Turnout and by Education Level



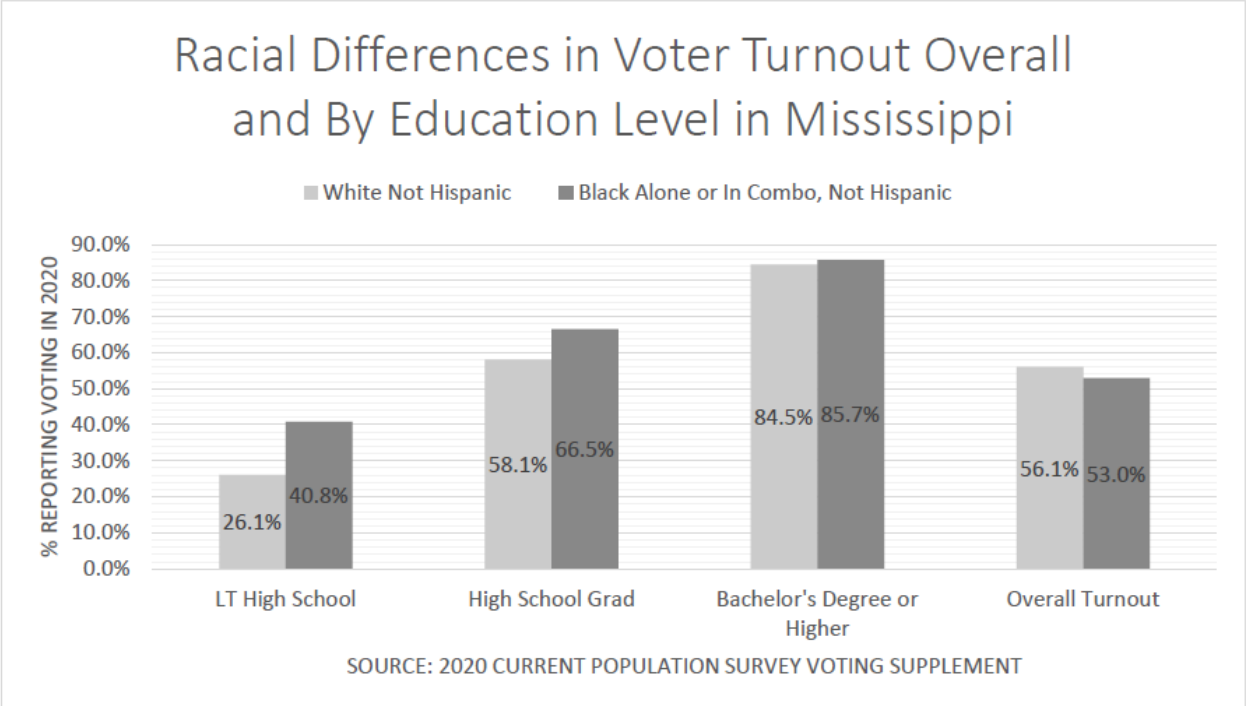
Source: Exhibit 3 (p. 9) in Report by Dr. Tracie. Burch

130. Next, on page 10 of her report, Dr. Burch provides Figure 4 "Racial Differences in Voter Turnout and by Education level" (shown below in *Exhibit IV.A.4*). The statistics in this table are key in supporting Dr. Burch's statement that:

> "Examining voter turnout in Mississippi by race and educational attainment in Figure 4 shows the clear impact of Mississippi's history of educational attainment on voting."

Exhibit IV.A.4 Racial Differences in Voter Turnout and by Education Level

Figure 4: Racial Differences in Voter Turnout Overall and by Education Level in Mississippi. Source: 2020 Current Population Survey Voting and Registration Supplement



Source: Figure 4 (p. 10) in Report by Dr. Traci Burch

131. Here, Dr. Burch is vague about the source of the information she presents in the preceding exhibit and does not describe the steps she undertook to produce it. Since these statistics of voting by education level by state are not readily available in official published tables, I conclude that these estimates were produced with the use of the CPS PUMS (or "raw data") files. In addition to the official statistics reported by the Census Bureau (above in *Tables IV.A.1* and *IV.A.2*), the Census Bureau also publishes a "raw data" or "Public Use Microdata Sample" (or "PUMS" file) with data from individual respondents, with each weighted to represent the population in the United States they represent. These files enable more detailed analysis than provided by the topline reports described above. These files are technically difficult and require both statistical software and expertise in sampling and survey research, demography and statistics. When experts seek more information and details on statistics beyond the high-level tables provided by the Census Bureau, they turn to these files.

132. Because Dr. Burch provides neither a clear definition of the source of her data (was it the tabulated results from the CPS or the PUMS file generated from the CPS?) nor the steps that resulted in the numbers she provides (as replicated here in *Exhibit IV.A.4*), an investigation of the CPS PUMS data is warranted, as is an attempt to replicate her findings. Whatever her method and whatever her definitions: our assumption is that her findings were based on an analysis and interpretation of the CPS "raw data" (or CPS "PUMS") data alluded to earlier. It is there that the investigation turns next.

133. Bryan GeoDemographics has expertise in this area and both downloaded the national 2020 CPS dataset and data dictionary at my request [42] and processed the data in both Excel and SAS to ensure accuracy and reliability. According to the CPS PUMS data dictionary, the variables necessary to generate state-level registration and voting statistics by race are as follows:

- GESTFIPS: Federal Information Processing Standards (FIPS) State Code
- PES 1: Did (you/name) vote in the election held on Tuesday, November 3, 2020?
- PES 2: Were you/Was name) registered to vote in the November 3, 2020 election? (If NOT voted)
- PEEDUCA: Educational Attainment
- PRPERTYP: Type of respondent (child, adult civilian or adult armed forces)
- PTDTRACE: Race
- PEHSPNON: Hispanic Origin
- PRCITSHP: Citizenship Status
- PRTAGE: Respondent Age
- PWSSWGT: Population weight (note: there are numerous weights included in this file. The data dictionary instructs: "There is no supplement weight associated with the November 2020 Voting and Registration supplement. Use the basic CPS weight, PWSSWGT (located in positions 613-622), for tallying the supplement items.)

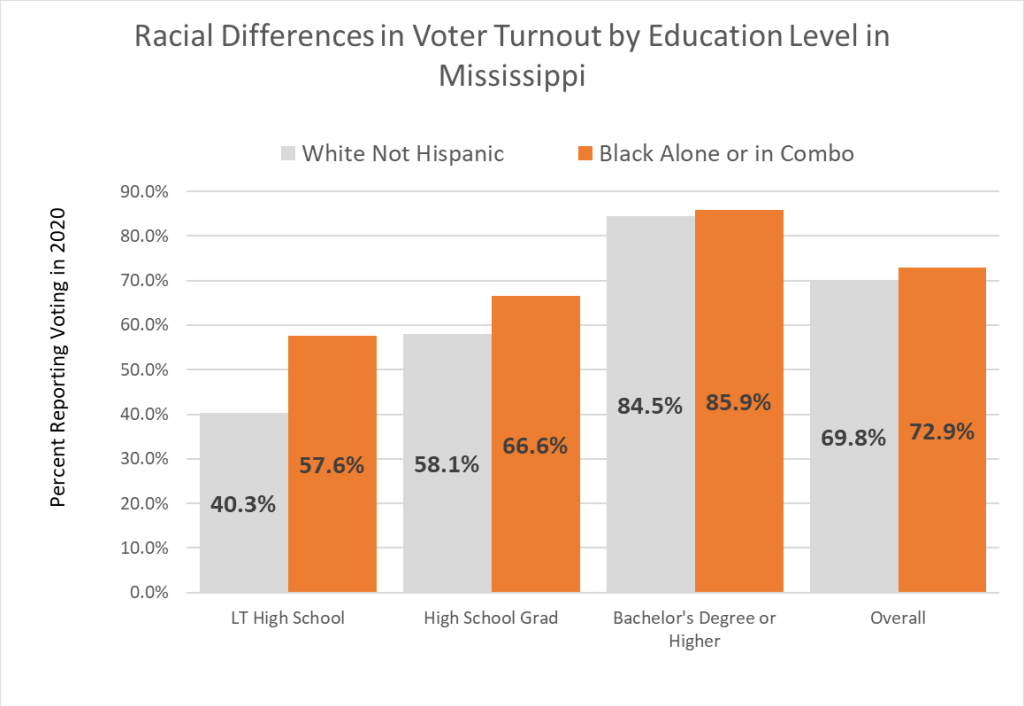
134. In the CPS PUMS data dictionary, it instructs users specifically that the universe for calculating education statistics is PRPERTYP = 2 or 3. That is, the base for educational statistics and their analysis is adults (either civilian or armed forces). In my analysis of the CPS PUMS data, I found the population definitions that appear to be used by Dr. Burch for her education analysis and began my analysis of her voting turnout estimates. I find that Dr. Burch's CPS-based education estimates are based on

[42] https://www2.census.gov/programs-surveys/cps/techdocs/cpsnov20.pdf

the citizen, non-Hispanic population of all ages (*not* adults as she reported earlier with her American Community Survey analysis). "White" is White Alone, and "Black" is APB. Using this definition, I can replicate her % voted statistics by education level precisely. While this is irrelevant for the Bachelor's Degree or Higher population (since anyone with those accomplishments would be an adult anyways), this definition impacts the High School Grad statistics slightly and the "LT high school" statistics *significantly*. By including all ages here, Dr. Burch is effectively measuring what percent of children voted. Not only would that definition be illogical – but it is specifically instructed by the CPS documentation not to do so.

135. The correct population base for the Figure 4 that Dr. Burch presents would be the citizen, age 18+ population. That is, the percent of those who are actually eligible to vote. *Exhibit IV.A.5* shows what the percent voter turnout by race and educational level *would have been* using that correct definition. There are several important observations here. First, when you remove children ineligible to vote from the base, the % voted goes up, as expected. For White, non-Hispanic, less than high school, rises +14.2 percentage points, from 26.1% in Dr. Burch's report to 40.3% here. For APB, less than high school, rises even more +16.8pp from 40.8% in Dr. Burch's report to 57.6% here. Not only is there a significant difference in how each much each group increases, but the *interpretation* of the outcome changes as well. The percent difference between less than high school and high school graduate is significant only for White, non-Hispanic. In examining these results, if one were to argue that one group's voter turnout appears to be suffering more so from a disparity in educational attainment – it would be the White non-Hispanics. Not Blacks. In examining the "Bachelor Degree or Higher" category, one sees that the "Black Alone or in Combination" population out-votes their White non-Hispanic peers there as well.

Exhibit IV.A.5 Racial Differences in Voter Turnout and by Education Level, Based to Citizens of Voting Age in 2020



Source" CPS 2020, November Voting Supplement (U.S. Census Bureau). Graph assembled by Bryan GeoDemographics for author.

136. Next, in examining Dr. Burch's estimate of total voter turnout by race (the last columns in her Figure 4). Dr. Burch's [43] report states (page 10) that:

> "overall, White Mississippians have higher voter turnout than Black Mississippians: 56.1% of White Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens."

137. These numbers provided by Dr. Burch contradict the statistics published by the Census Bureau, reported in *Table IV.A.2 2020 Mississippi Voting by Race and Ethnicity* above – and here I seek to understand why. As with the analysis of voting by educational level – the official CPS PUMS data dictionary is employed, where it instructs users specifically that the universe for calculating voting registration and voting statistics is PRTAGE >=18 and PRCITSHP = 1, 2, 3, or 4. That is, respondent must be voting age (18+) and citizens (code 1, 2, 3 and 4) to be included – otherwise they will be assigned "Not in Universe" and not included in the analysis.

Table IV.A.3 2020 MS Voter Estimates Citizens, Age 18+ by Race and Ethnicity Census Bureau Definition

	No Response	Refused	DK	Not in Unverse	Voted	Not Voted	Total	% Voted
Total	**172,860**	**7,148**	**26,039**	**0**	**1,530,528**	**440,304**	**2,176,877**	**70.3%**
WNH	107,149	4,527	16,586	0	904,127	262,726	1,295,115	**69.8%**
Black Including Hispanic Combinations								
BA (inc. Hisp)	61,542	2,621	7,554	0	573,046	141,975	786,738	72.8%
BA and B-W (inc. Hisp)	61,542	2,621	7,554	0	581,038	145,022	797,777	72.8%
BA and W-B-AI (inc. Hisp)	61,542	2,621	7,554	0	574,373	141,975	788,065	72.9%
APB (inc. Hisp)	61,542	2,621	7,554	0	582,365	145,022	799,104	**72.9%**
Black Non-Hispanic Combinations								
BA NH	61,542	2,621	7,554	0	571,130	140,112	782,959	72.9%
BA and B-W NH	61,542	2,621	7,554	0	575,115	143,158	789,991	72.8%
BA and W-B-AI NH	61,542	2,621	7,554	0	572,457	140,112	784,285	73.0%
APB NH	61,542	2,621	7,554	0	576,442	143,158	791,318	72.8%

Source: 2020 CPS November Voter Supplement PUMS file. Table assembled by Bryan GeoDemographics for author.

138. To begin, my initial analysis of the CPS PUMS data was aimed at replicating the officially published statistics published by the Census Bureau, using these definitions. Using the variables and definitions above, I was able to replicate the published results precisely using the CPS raw (PUMS) data file in *Table IV.A.2* (above). The official statistics published by the Census Bureau match their own internal dataset. Exactly. In *Table IV.A.3* (above) I show the PWSSWGT weights by racial and ethnic category, by response to PES 1: Did (you/name) vote in the election held on Tuesday, November 3, 2020? A complete inventory of variables and weights is shown in Appendix 3.

139. Next, my analysis was aimed at replicating the CPS results published by Dr. Burch. Since she does not present the exact populations or definitions used to calculate her percentages, one must carefully focus on her words:

> "56.1% of White Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens."

140. I explored the CPS raw (PUMS) data file using a variety of variables, definitions and filters. Because Dr. Burch's statistics are a level-shift different than ours, our conjecture is that (as with the education statistics reported above) she included the total *all-age* citizen population as the base of her analysis, rather than using the *citizen*

voting-age population.[44] In analyzing the CPS PUMS data, this would be easy to do. The population weight "PWSSWGT" in the CPS PUMS file is the person weight for the total population. An expert would need to filter any results of the PES1 (Did you vote?) variable to those *eligible to vote* (18+ VAP citizens) separately using the PRTAGE (age) and PRCITSHP (citizenship) variables to get the correct results. Knowing this, I seek to uncover how Dr. Burch arrived at her estimates and conclusions.

141. In *Table IV.A.4* (below), I report different percent voted statistics under a variety of race definitions, assuming Dr. Burch used citizens of all-ages as her universe. All of the following statistics will be misleading because they include children who are ineligible to vote. That population is highlighted in *Table IV.A.4* as "Not in Universe".

142. In the second row, "WNH" (White, non-Hispanic) I calculate an all-age % voted as 56.1%. I believe this "White Not Hispanic" citizen all-age population is the one used in her report since the number matches exactly.

143. Next, I turn to replicating the 53.0% "Black Alone or in Combination, not Hispanic" voting statistic Dr. Burch reports.[45] Referencing *Table IV.A.4*: In the third row, I show APB NH (Any Part Black, non-Hispanic). This is our best guess at Dr. Burch's Black definition, since she uses the words "Black Alone or in Combination, not Hispanic. That definition results in a theoretical % voted statistic of 52.6%. Very close, but not exactly the 53.0% Dr. Burch reports. This exploration continues by looking at various other Black Alone or in combination population definitions. For example:

- The % voted for the BA NH (Black Alone, non-Hispanic) population. That results in a % voted statistic of 53.1%.
- The % voted for the BA and B-W NH (Black Alone and Black-White, non-Hispanic) population. That results in a % voted statistic of 52.6%.
- The % voted for the BA and W-B-AI NH (Black Alone and Black-White, American Indian non-Hispanic) population. That results in a % voted statistic of 53.1%.

144. Having exhausted all permutations of "Black Alone or in Combination," one has a variety of possible estimates from 52.6% to 53.1%. I conclude that Dr. Burch used the citizen, all-ages definition and one of the "Black Alone or in Combination" definitions

[44] I am uncertain why Dr. Burch excludes Black Hispanics, since the complaint states clearly that plaintiffs are considering "any part Black" – which includes Hispanics. Dr. Burch is not clear whether her White Non-Hispanic" is White Alone or in combination.

[45] All statistics are supported by an analytic table produced from the CPS PUMS file shown in Appendix 1

I have tested, and the small difference is attributable to either a small mathematical error or rounding.

Table IV.A.4 2020 MS Voter Estimates Citizens, All Ages by Race and Ethnicity: Dr. Burch Definition Replication Attempt

	No Response	Refused	DK	Not in Unvierse	Voted	Not Voted	Total	% Voted
Total	**172,860**	**7,148**	**26,039**	**687,921**	**1,530,528**	**440,304**	**2,864,799**	53.4%
WNH	107,149	4,527	16,586	315,946	904,127	262,726	1,611,060	**56.1%**
Black Including Hispanic Combinations								
BA (inc. Hisp)	61,542	2,621	7,554	297,536	573,046	141,975	1,084,274	52.9%
BA and B-W (inc. Hisp)	61,542	2,621	7,554	310,215	581,038	145,022	1,107,992	52.4%
BA and W-B-AI (inc. Hisp)	61,542	2,621	7,554	297,536	574,373	141,975	1,085,601	52.9%
APB (inc. Hisp)	61,542	2,621	7,554	310,215	582,365	145,022	1,109,319	52.5%
Black Non-Hispanic Combinations								
BA NH	61,542	2,621	7,554	292,827	571,130	140,112	1,075,785	53.1%
BA and B-W NH	61,542	2,621	7,554	303,549	575,115	143,158	1,093,540	52.6%
BA and W-B-AI NH	61,542	2,621	7,554	292,827	572,457	140,112	1,077,112	53.1%
APB NH	61,542	2,621	7,554	303,549	576,442	143,158	1,094,867	**52.6%**

Source" CPS 2020, November Voting Supplement (U.S. Census Bureau). Table assembled by Bryan GeoDemographics for author.

145. It appears that Dr. Burch fails to acknowledge she used a population base with a minimum age inappropriate for analyzing educational attainment, let alone, eligible to vote. That is, the universe Dr. Burch uses is the entire population. In the case of educational attainment, which includes post-secondary attainment, the minimum age used by the US Census Bureau is 25. For voter registration and voting turnout, not only is the minimum age 18, but, in addition, the appropriate denominator is the population eligible to vote, namely CVAP with the exclusion of felons. Dr. Burch's findings also present a troubling inconsistency. Not only are her reported overall turnout statistics substantively different than those officially reported by the US Census Bureau (hers are replicated here in *Exhibit IV.A.4*, which I compare to my calculations as found in at *Table IV.A.2* above) – but her interpretation presents the *opposite* conclusion of what I arrived at. That is: Blacks register at a lower rate and vote at a lower rate than Whites. The evidence I have found leads me to conclude differently: Blacks neither register nor vote at lower rates than Whites; instead the data show that Blacks register and vote at higher rates than Whites.

146. In sum, I believe Dr. Burch used the CPS PUMS data for her voting analysis. Dr. Burch appears to have applied the citizenship filter properly, the race definitions *somewhat* properly, but neglected to add an age filter to include only adults. The significant consequences of this decision alone are voter registration and turnout statistics and conclusions that are the *opposite* of actual reported, therefore with an *opposite* conclusion reached. The official CPS results showing Black voters out-performing White voters contradict the findings, the conclusions and general arguments of Dr. Burch.

147. There is a fundamental, demographic observation that supports this conclusion. In many states (Mississippi included) minority populations such as Black and Hispanic tend to be younger (Schaeffer, 2019). That is, they make up a larger share of the underage population ineligible to vote. This is the case in Mississippi, where the 2020 total population is 2,961,279, the White Alone population is 1,658,893 (56%) while the Any Part Black population found by summing all combinations of black and other races is 1,123,108 (38%) (https://data.census.gov/table?q=any+part+black,+mississippi&tid=DECENNIALPL2020.P1). As shown in *Table III.D.1* of this report, the 2020 VAP total in Mississippi is 2,277,599 while the White Alone VAP is 1,315,451 (58% of the VAP total)) and the Any Part Black (APB) population is 823,080 (36% of the VAP total). Whites are *over*-represented and Blacks are *under*-represented among VAP relative to their respective total populations. The "*under 18, not eligible to vote* "population total in Mississippi is 683,680 (where 683,680 = 2,961,279 – 2,277,599). The White Alone population *under 18, not eligible to vote* is 343,442 (where 343,442 = 1,658,893 – 1,315,451), which is 21% of the total White Alone population. The APB population *under 18, not eligible to vote* is 300,028 (where 300,028 = 1,123,108 – 823,080, which is 27% of the APB population. Thus, according to the 2020 census of Mississippi, the APB population has a higher percent (27%) that is *under 18, not eligible to vote* than the White Alone population (21%). If an analyst were to include this under voting-age population in a calculation of voting turnout for Whites – it would artificially and incorrectly *inflate* a voter turnout estimate for them. If an analyst were to include this under voting-age population in a calculation of voting turnout for Blacks – it would artificially and incorrectly *decrease* a voter turnout estimate for them. In the end, Dr. Burch's exact estimates and *how* she arrived at them are irrelevant. The conclusion that Whites have higher voter turnout than Blacks is incorrect for the 2020 election and would be incorrect based on *Exhibit IV.A.2* and have been since at least 2004.

B. Voter Registration by Race

148. The Survey Research laboratory of the Social Science Research Center (SSRC) at Mississippi State University (https://srl.ssrc.msstate.edu/) provided me with voter registration and voting frequency data by race as found in annual statewide surveys it has conducted from 2015 to 2021. The data were provided in a SAS file, which I exported into the NCSS statistical analysis package I use. An overview of the data was provided by Dr. John Edwards, the Director of the SSRC Survey Research Laboratory, which also documents the coding in this file. This is found in Appendix 5. As can be seen in Appendix 5, the sample size in each of these seven years is at least 1,500 and across all seven years, approximately 61% of respondents are White and 36%, Black. While the survey asks respondents if they are registered to vote in its annual surveys, it does not ask if they voted in a given election year. Instead it asks respondents a series of questions about the frequency of voting (always vote, nearly always vote, vote part of the time, seldom vote, never vote, with responses "Don't Know" and "refused" classified as missing). Because of the nature of the voting question, it is not directly comparable to the turnout data found in the CPS. However, the results by race within the SSRC data are directly comparable. At this point it should be noted in regard to the voter registration data that I do discuss here that it is the case that while both Blacks and Whites tend to *over-report* voter registration (Cuevas-Molinas, 2017), Blacks may do so at a higher rate than Whites (Fullerton et al., 2007) as is also the case with voting (Jenkins et al., 2012). This caveat would not only apply to the SSRC survey data but also to the CPS, the ACS, and any other survey in the United States that includes questions on voter registration, voting and race.

149. Given this caveat, I used the NCSS "Contingency Tables" procedure[46] to examine race by voter registration by year (See Appendix 5b for the NCSS output of each of these seven runs). I find that in each year, 2015 to 2021, SSRC reports that the percent of Black voter registration exceeds that of White voter registration in Mississippi: In 2015, it is 90.4% for Whites and 93.3% for Blacks; in 2016, it is 91.9% for Whites and 92.8% for Blacks; in 2017, it is 92% for Whites; and 94.2% for Blacks; in 2018, it is 91.2% for Whites and 93.7% for Blacks; in 2019, it is 91.9% for Whites and 94.3% for Blacks; in 2020, it is 91.4% for Whites and 94.5% for Blacks; and in 2021, it is 90.9% for Whites and 94,2% for Blacks. While it may be the case that Blacks over-report voting and voter registration at a higher rate than Whites, the closer proximity to polling places that Blacks have (as discussed in the preceding section) may offset to some degree the likelihood of over-reporting.

[46] https://www.ncss.com/software/ncss/analysis-of-two-way-tables-in-ncss/

150. Again using the NCSS "Contingency Tables" procedure,[47] I now turn to an examination of race by voting frequency by year using the SSRC voting frequency data (See Appendix 5c for the NCSS output of each of these seven runs). I find that in each year, 2015 to 2021, SSRC reports that the percent of Black Mississippians 18 years of age and over who report "Always Vote" exceeds that of White Mississippians age 18 and over who report "Always Vote:" In 2015, it is 61.0% for Whites and 67.3% for Blacks; in 2016, it is 60.1% for Whites and 66.4% for Blacks; in 2017, it is 59.3% for Whites and 64.5 % for Blacks; in 2018, it is 54.5% for Whites and 62.5% for Blacks; in 2019, it is 60.3% for Whites and 65.5% for Blacks; in 2020, it is 68.22% for Whites and 72.1% for Blacks; and in 2021, it is 56.8% for Whites and 66.7% for Blacks. Again, while it may be the case that Blacks over-report voting and voter registration at a higher rate than Whites, the closer proximity to polling places that Blacks have (as discussed in the preceding section) may offset to some degree the likelihood of over-reporting.

151. Given my findings based on the SSRC data and my findings in regard to the CPS, which are based on estimates controlled to the universe of those who are eligible to vote (the definition directed by the Census Bureau and the definition my expertise would lead me to recommend), I disagree with Dr. Burch's claim:

> "…that the overall gap in turnout between Black and White Mississippians exists because the gap in educational opportunities between Black and White Mississippians. Black Mississippians have less access to quality education and therefore have lower educational attainment for the reasons discussed in this section; this lower educational attainment leads to lower voter turnout."

CONCLUSIONS

152. For the reasons stated in this report and illustrated in the appendices, I conclude that Supreme Court District 1 already has a Black (Any Part Black) CVAP majority of 51.1% without a prison adjustment, and 51.0% with a prison adjustment. Mr. Cooper's Illustrative Plan 1 would increase the Black (Any Part Black) CVAP majority in District 1 to approximately 57% Black. Cooper's other illustrative plan and his two "least Change" plans yield a similar result: An already Black CVAP majority in District 1 is increased to a higher level.

153. Core retention of the Black (Any Part Black) VAP population in Cooper's two illustrative plans is low, only 76.9% of the original Black VAP retained in his Illustrative Plan I and 68.7% in his Illustrative Plan II. Cooper's two "least change"

[47] https://www.ncss.com/software/ncss/analysis-of-two-way-tables-in-ncss/

plans provide the highest level of retention of the original Black VAP at 91.7% and 97.0%, respectively.

154. In regard to Compactness, each of the alternate plans suggested by Cooper range from somewhat less compact to substantially less compact than is offered by the existing SCOMS plan.

155. The Supreme Court Districts serve as the geographic basis for elections to the state Transportation Commission and the Public Service Commission. In addition, they serve as the geographic basis for appointments to the Mississippi Board of Bar Admissions and the Board of Trustees for the State Institutions of Higher Learning (IHL) and a number of other boards (see Paragraph 17 for the list of the other boards). The IHL has a policy that acknowledges the value of diversity for Mississippi, as does a statement by the ACLU and a court decision by Judge William Barbour in the 1992 "Magnolia Bar" case involving the SCOMS districts. Using indices from the Mississippi Health and Hunger Atlas, I find that the existing Supreme Court Districts provide more population diversity than do any of Cooper's four alternative plans and that Cooper's plans serve to decrease diversity across the Supreme Court districts. These findings are consistent with my finding that core retention found in Cooper's plans is low.

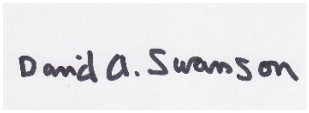
156. One of the findings in Dr. Traci Burch's expert report (Figure 4 and accompanying text in her report) is that White Mississippians turned out to vote in the 2020 election at a higher rate than Black Mississippians, 56.1% to 53.0%, respectively. Dr. Burch's finding is the result of a flawed analysis that employed the incorrect "universe" as the denominator in her calculations (the entire population, including non-citizens, those under age 18) rather than the population eligible to vote ("Citizens of Voting Age Population" - CVAP). Evidence from the same source she cites (the 2020 Current Population Survey, November Voting supplement) shows that when the correct universe, CVAP, is used as the denominator, Black Mississippians turned out at a higher rate in the 2020 election than White Mississippians: 72.9% to 69.8%. As shown by data from past Voting Supplements in the Current Population Survey (taken in the even numbered years when federal elections are held, starting in 1964), my finding is consistent with the trend of voting seen in Mississippi since 2004: Both the percent of Black CVAP registration and the percent of Black CVAP voting have generally been higher than the percent of White non-Hispanic CVAP registration and voting, respectively (see Figures IV.A.1 and IV.A.2 in this report). In conjunction with this 21st century trend, my finding in regard to the 2020 election also reveals that Dr. James T. Campbell's implication (p. 51 of his report) that Black Mississippians currently register and vote at lower rates than White Mississippians also is mistaken:

> "Under the circumstances prevailing in Mississippi today, and in light of the history from which those circumstances originate, it is my opinion that Black Mississippians are not afforded an equal opportunity to elect candidates of their choice in Supreme Court elections."

157. The Voting Supplements of the Current Population Survey from 2004 to 2020 do not support Dr. Campbell's opinion. Moreover, the voter registration data in the Voting Supplements of the Current Population Survey are consistent with annual voting registration data collected for Mississippi in sample surveys from 2015 to 2021 conducted by the Survey Research Laboratory at the Social Science Research Center, Mississippi State University. These sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians age 18 and over who are registered to vote is higher than the percent of White Mississippians age 18 and over who are registered to vote. In addition, the SSRC sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians aged 18 and over who report "Always Vote" is higher than the percent of White Mississippians age 18 and over who report "Always Vote." Both the CPS and the SSRC data are consistent with a finding reported for the first time in this report: Statewide, a higher share of the Black population of potential and actual voters is within a quarter mile of a polling place than found for the White population of potential and actual voters.

* * *

Submitted: 5 January 2023



David A. Swanson

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APPENDICES

Appendix 1. County Assignments

Generated by author and by Bryan Geodemographics for author

A. Mississippi County Assignments by

- my Needs and Performance Cluster,
- the existing 1987 SCOMS Plan, and
- the Cooper Illustrative Plans 1 and 2 and Least Change Plans 1 and 2

A. Mississippi County Assignments by Needs and Performance Cluster, the existing 1987 SCOMS Plan, and Cooper Illustrative Plans 1 and 2 and Least Change Plans 1 and 2

STCTY	Name	Cluster	SCP_1987	ILL_Plan1	ILL_Plan2	LCP_1	LCP_2
28001	Adams	3	2	1	1	1	2
28003	Alcorn	2	3	3	3	3	3
28005	Amite	3	2	1	1	2	2
28007	Attala	2	3	1	1	3	3
28009	Benton	2	3	3	3	3	3
28011	Bolivar	2	1	1	1	1	1
28013	Calhoun	1	3	3	3	3	3
28015	Carroll	2	3	1	1	3	3
28017	Chickasaw	3	3	3	3	3	3
28019	Choctaw	2	3	3	3	3	3
28021	Claiborne	3	1	1	1	1	1
28023	Clarke	2	2	3	2	2	2
28025	Clay	3	3	3	3	3	3
28027	Coahoma	3	3	1	1	1	1
28029	Copiah	2	1	1	1	1	1
28031	Covington	2	2	2	2	2	2
28033	DeSoto	2	3	3	1	3	3
28035	Forrest	2	2	2	2	2	2
28037	Franklin	2	2	1	1	2	2
28039	George	2	2	2	2	2	2
28041	Greene	1	2	2	2	2	2
28043	Grenada	3	3	1	1	3	3
28045	Hancock	2	2	2	2	2	2
28047	Harrison	2	2	2	2	2	2
28049	Hinds	3	1	1	1	1	1
28051	Holmes	3	1	1	1	1	1
28053	Humphreys	3	1	1	1	1	1
28055	Issaquena	2	1	1	1	1	1
28057	Itawamba	2	3	3	3	3	3
28059	Jackson	3	2	2	2	2	2
28061	Jasper	1	2	3	2	2	2
28063	Jefferson	3	1	1	1	1	1
28065	Jefferson Davis	1	2	2	2	2	2
28067	Jones	2	2	2	2	2	2
28069	Kemper	1	1	3	3	1	1
28071	Lafayette	2	3	3	3	3	3
28073	Lamar	2	2	2	2	2	2
28075	Lauderdale	2	1	3	2	1	1
28077	Lawrence	2	2	1	2	2	2
28079	Leake	2	1	3	3	1	3
28081	Lee	2	3	3	3	3	3
28083	Leflore	3	3	1	1	1	1
28085	Lincoln	2	2	1	2	2	2
28087	Lowndes	3	3	3	3	3	3
28089	Madison	2	1	1	3	3	1
28091	Marion	2	2	2	2	2	2
28093	Marshall	1	3	3	3	3	3
28095	Monroe	3	3	3	3	3	3
28097	Montgomery	3	3	1	1	3	3
28099	Neshoba	2	1	3	3	1	3
28101	Newton	2	1	3	2	1	1
28103	Noxubee	1	1	3	3	1	1
28105	Oktibbeha	2	3	3	3	3	3
28107	Panola	3	3	1	1	3	3
28109	Pearl River	2	2	2	2	2	2
28111	Perry	1	2	2	2	2	2
28113	Pike	3	2	1	1	2	2
28115	Pontotoc	2	3	3	3	3	3
28117	Prentiss	2	3	3	3	3	3
28119	Quitman	1	3	1	1	1	1
28121	Rankin	2	1	2	3	1	1
28123	Scott	1	1	3	3	1	1
28125	Sharkey	2	1	1	1	1	1
28127	Simpson	2	2	2	3	2	2
28129	Smith	1	2	3	3	2	2
28131	Stone	2	2	2	2	2	2
28133	Sunflower	3	1	1	1	1	1
28135	Tallahatchie	3	3	1	1	1	1
28137	Tate	3	3	1	1	3	3
28139	Tippah	2	3	3	3	3	3
28141	Tishomingo	2	3	3	3	3	3
28143	Tunica	3	3	1	1	1	1
28145	Union	3	3	3	3	3	3
28147	Walthall	3	2	1	2	2	2
28149	Warren	2	1	1	1	1	1
28151	Washington	3	1	1	1	1	1
28153	Wayne	3	2	2	2	2	2
28155	Webster	3	3	3	3	3	3
28157	Wilkinson	3	2	1	1	1	2
28159	Winston	2	3	3	3	3	3
28161	Yalobusha	1	3	1	1	3	3
28163	Yazoo	3	1	1	1	1	1

Appendix 2. Cluster Analysis Methodology and Findings

I (David A. Swanson, author) used the NCSS K-Means Procedures to generate the clusters (https://www.ncss.com/software/ncss/clustering-in-ncss/#KMeans) because, I was looking for a small number of clusters (Ideally three) and as stated at this site:

The k-means algorithm was developed by J.A. Hartigan and M.A. Wong of Yale University as a partitioning technique. It is most useful for forming a small number of clusters from a large number of observations. It requires variables that are continuous with no outliers.

The objective of this technique is to divide N observations with P dimensions (variables) into K clusters so that the within-cluster sum of squares is minimized. Since the number of possible arrangements is enormous, it is not practical to expect the single best solution. Rather, this algorithm finds a "local" optimum. This is a solution in which no movement of an observation from one cluster to another will reduce the within-cluster sum of squares. The algorithm may be repeated several times with different starting configurations. The optimum of these cluster solutions is then selected.

I first used Discriminant Analysis (an analytic method related to cluster analysis whereby the clusters are a priori known and a model is constructed such that it can be used to determine into which clusters new cases would be placed) in 1980 (Swanson, 1980). I have used cluster analysis: (1) in work I did with Bryan GeoDemographics in regard to Texas redistricting (2021); (2) to identify value-chain clusters for the Southern Nevada Economic Study (Schlottman, et al., 2006); and (3) as a means of developing cost-effective ways to use the housing unit method to generate municipal population estimates in Washington (Swanson, Randall, and Weisser, 1977).

As the hyperlinked citation above indicates, I used the NCSS statistical package in this analysis (https://www.ncss.com/software/ncss/). I have used this statistical package since the early 1980s.

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

Minimum Iteration Section

Iteration No.	No. of Clusters	Percent of Variation	Bar Chart of Percent
2	2	65.50	||||||||||||||||||
4	3	37.46	||||||||||
8	4	27.17	||||||||
11	5	22.09	|||||||

Iteration Section

Iteration No.	No. of Clusters	Percent of Variation	Bar Chart of Percent
1	2	71.16	||||||||||||||||||||
2	2	65.50	||||||||||||||||||
3	2	71.16	||||||||||||||||||||
4	3	37.46	||||||||||
5	3	37.46	||||||||||
6	3	37.46	||||||||||
7	4	31.16	|||||||||
8	4	27.17	||||||||
9	4	28.23	||||||||
10	5	23.94	|||||||
11	5	22.09	|||||||
12	5	23.05	|||||||

Cluster Means

Variables	Cluster1	Cluster2	Cluster3
NEED	3336.219	2843.865	4209.005
PERFORMANCE	35336.63	12430.18	14721.96
Count	12	41	29

Cluster Standard Deviations

Variables	Cluster1	Cluster2	Cluster3
NEED	313.4394	441.6815	596.8018
PERFORMANCE	10136.39	4359.49	5035.884
Count	12	41	29

F-Ratio Section

Variables	DF1	DF2	Between Mean Square	Within Mean Square	F-Ratio	Prob Level
NEED	2	79	1.585478E+07	238693.8	66.42	0.000000
PERFORMANCE	2	74	2.138707E+09	3.150861E+07	67.88	0.000000

K-Means Cluster Analysis Report (Continued)

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

Distance Section

Row	Cluster	Dist1	Dist2	Dist3
1	3	2.8206	1.1286	0.8646
2	2	3.0464	1.0160	2.7609
3	3	2.0752	1.5413	0.4177
4	2	2.7059	0.4426	2.1869
5	2	0.8837	0.0024	2.4459
6	2	2.2237	0.8380	0.9249
7	1	0.3147	2.2720	2.1611
8	2	1.5612	1.1072	1.2575
9	3	2.7743	1.1912	0.7629
10	2	2.3504	0.4048	2.0125
11	3	2.1922	0.9788	0.7930
12	2	2.4071	0.5780	1.1685
13	3	2.7123	0.9931	0.9013
14	3	2.6813	2.3417	0.5978
15	2	2.3223	0.6454	1.1021
16	2	2.6049	0.4574	1.3497
17	2	3.2453	0.7843	2.4045
18	2	2.5744	0.6066	1.1897
19	2	2.4434	0.4513	2.1151
20	2	2.8640	0.3475	1.9939
21	1	0.4092	1.2905	1.1530
22	3	2.5539	1.2770	0.5196
23	2	3.0582	0.7489	2.4730
24	2	2.8530	0.3209	1.8558
25	3	2.7058	1.0091	0.8807
26	3	2.3578	1.7794	0.1338
27	3	2.4098	2.7226	1.0991
28	2	0.5489	0.3324	2.1111
29	2	2.2431	1.0477	2.5456
30	3	3.2902	2.0881	0.8219
31	1	1.2517	1.4719	1.3304
32	3	2.8899	2.2071	0.5217
33	1	1.0461	1.4971	1.7226
34	2	2.5802	0.1541	1.6266
35	1	0.7766	3.2534	3.2262
36	2	3.2234	0.7173	1.9343
37	2	3.8070	1.5434	3.2150
38	2	3.3681	1.2108	2.9404
39	2	2.0833	0.4834	1.7840
40	2	1.5814	1.0566	1.2988
41	2	2.8715	0.4552	1.6208

K-Means Cluster Analysis Report (Continued)

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

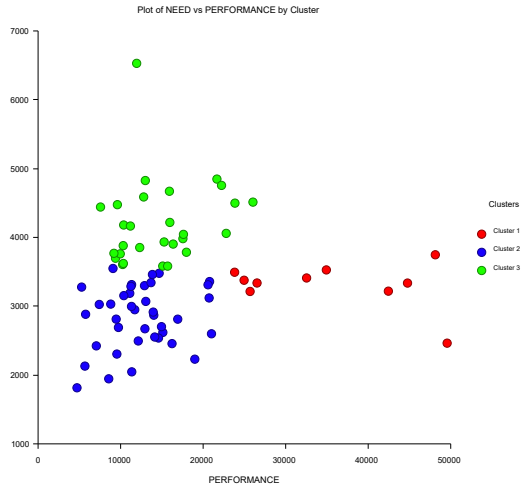
Distance Section (Continued)

Row	Cluster	Dist1	Dist2	Dist3
42	3	4.7564	4.6645	2.9515
43	2	2.6852	0.4494	1.4139
44	3	3.1130	2.0872	0.6438
45	2	3.2244	0.9437	1.5539
46	2	2.3320	0.6374	2.2239
47	1	0.2459	2.5631	2.3324
48	3	2.8570	1.2211	0.8141
49	3	2.8826	1.7057	0.4681
50	2	2.5834	0.5767	1.2230
51	2	2.3610	0.1736	1.6971
52	1	0.0118	0.8931	1.5504
53	2	3.0202	0.5853	1.6904
54	3	2.2810	2.6380	1.0615
55	2	2.6110	0.2274	1.5768
56	1	0.9444	1.6360	1.6793
57	3	3.0493	2.5098	0.8030
58	2	1.5906	0.9557	1.5213
59	2	2.3548	0.1859	1.6403
60	1	1.4677	3.9958	3.6302
61	2	3.5285	1.1583	2.8047
62	1	1.1138	1.5040	1.5209
63	2	2.3090	0.7957	0.9515
64	2	2.5441	0.2239	1.9542
65	1	1.8838	4.0112	4.3408
66	2	2.3282	0.3242	1.9065
67	3	1.6263	1.8967	0.8862
68	3	1.7922	2.5670	1.2726
69	3	2.1011	1.6175	0.3739
70	2	1.7971	0.9708	2.1459
71	2	2.4805	0.4117	2.0976
72	3	1.7167	2.5979	0.1545
73	3	2.7703	1.3313	0.6297
74	3	2.7941	1.6776	0.3830
75	2	2.8289	0.9618	1.0320
76	3	2.1291	0.9984	0.7997
77	3	2.1572	1.4056	0.4253
78	3	2.2807	1.4125	0.3535
79	3	1.9465	1.3303	0.6407
80	2	2.4135	0.2938	1.4527
81	1	1.0111	3.5231	3.4057
82	3	1.9179	2.4254	1.0452

K-Means Cluster Analysis Report (Continued)

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

Plots



Procedure Input Settings

Autosave Inactive

Variables Tab

-- Variables ----------

Cluster Variables:	NEED, PERFORMANCE
Label Variable:	<Empty>

-- Cluster Options ----------

Minimum Clusters:	2
Maximum Clusters:	5
Reported Clusters:	3

-- Other Options ----------

Random Starts:	3
Max Iterations:	25
Percent Missing:	50

Reports Tab

-- Select Reports ----------

Minimum Iteration Report	Checked
Iteration Report	Checked

K-Means Cluster Analysis Report (Continued)

Cluster Means Report	Checked
Cluster Standard Deviations Report	Checked
F-Ratio Report	Checked
Distance Report	Checked
Distance by Cluster Report	Unchecked

-- Report Options ----------

Precision:	Single

Column Names:	Names

Procedure Input Settings (Continued)

Plots Tab

-- Bivariate Plot Format ----------	
Bivariate Plots	Checked
Show Row Numbers	Checked
Show Row Labels	Checked

Storage Tab

-- Storage Variable ----------	
Store Cluster ID in Variable:	C21

Appendix 3. Current Population Survey Calculations

These tables were constructed by Bryan GeoDemographics for the author.

A. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Any-Age Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, Any Age and Citizenship Weighted by PWSSWGT. 40.8% LT HS, 66.5% HS Grad, 85.7% Bachelor's Degree or Higher, 52.6% Overall Calculations – attempting to match 53.0% overall reported.

B. CPS 2020 Voter Supplement PUMS Data Pivot Table, Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black (including Hispanics) Age 18+ and Citizenship Weighted by PWSSWGT. 26.1% LT HS, 58.1% HS Grad, 84.5% Bachelor's Degree or Higher, 56.1% Overall Calculations – attempting to match 56.1% overall reported.

C. CPS 2020 Voter Supplement PUMS Data Pivot Table, CVAP Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black (inc. Hispanic), Age 18+ and Citizenship Weighted by PWSSWGT

D. D. CPS 2020 Voter Supplement PUMS Data Pivot Table, CVAP Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race White Alone, non-Hispanic, Age 18+ and Citizenship Weighted by PWSSWGT

E. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Including Any Age and Filtered to Citizenship (1, 2, 3 or 4)

F. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Reported Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Filtered to Age (18+) and Citizenship (1, 2, 3 or 4)

A. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Figure 4 Black Alone or in Combo non-Hispanic Any-Age Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, Any Age and Citizenship Weighted by PWSSWGT. Note that 52.6% total does not exactly match her 53.0% reported.

Any Part Black, Non-Hispanic Educational Attainment by Vote Status	gestfips	28	* State FIPS Filter to MS								
	PTDTRACE	(Multiple Items)	* Race: Any Part Black								
	PEHSPNON	2	* Ethnicity: Non-Hispanic								
	PRTAGE	(All)	* Age: All								
	PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 and 4	"Citizens"							
PES 1 Response:		No Response	Refused	DK	Not in Universe	Voted	Not Voted	Total	Educational Attainment	% Voted
Not in Universe	-1				2,454,827,960		15,296,850	2,454,827,960		
	< 1st	31					15,296,850	15,296,850		
	7,8	34	10,782,157		39,606,345	52,529,661	25,300,522	128,218,685		
	9	35			177,050,218	83,953,971	37,500,389	298,504,578	LTHS	40.8%
	10	36		12,757,284	226,625,836	168,866,749	98,706,301	506,956,170		
	11	37	56,518,701		71,676,118	251,103,093	192,016,036	571,313,948		
	12	38	44,419,439		43,084,990	222,816,797	79,293,300	389,614,526		
High School Grad	39	257,780,196		59,388,128	22,617,400	2,066,482,470	702,775,694	3,109,043,888	HS GRAD	66.5%
SC	40	103,147,028			0	1,219,123,263	113,048,327	1,435,318,618		
Associates	41	14,249,330				231,224,652	33,159,822	278,633,804	Some College	82.9%
Associates Academic	42	25,966,225		16,153,604		328,004,087	60,076,536	430,200,452		
Bachelor	43	46,728,268				751,449,754	60,052,797	858,230,819		
Masters	44	55,829,070				313,238,748	14,357,337	383,425,155	Bachelors+	85.7%
Professional	45					11,185,702		11,185,702		
PhD	46		13,451,673			64,442,420		77,894,093		
Grand Total		615,420,414	26,208,957	75,541,732	3,035,488,867	5,764,421,367	1,431,583,911	10,948,665,248	Overall	52.6%

B. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Figure 4 White non-Hispanic Any-Age Citizen Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, Any Age and Citizenship Weighted by PWSSWGT.

White Alone, Non-Hispanic Educational Attainment by Vote Status										
	gestfips	28	* State Filter							
	PTDTRACE	1	* Race: White Alone							
	PEHSPNON	2	* Ethnicity: Non-Hispanic							
	PRTAGE	(All)	* Age: All							
	PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 and 4	"Citizens"						
		No Response	Refused	DK	Not in Unvierse	Voted	Not Voted	Total	Educational Attainment	% Voted
	Sum of PWSSWGT	Column Labels								
	Row Labels	-9	-3	-2	-1	1	2	Grand Total		
Not in Universe	-1				2,604,525,531			2,604,525,531		
< 1st	31						12,963,304	12,963,304		
1,2,3,4	32					13,589,215		13,589,215		
5,6	33					19,288,678	38,670,925	57,959,603		
7,8	34	21,201,656			51,028,132	21,933,015	98,751,460	192,914,263		
9	35	10,568,938			206,983,755	87,127,841	76,548,901	381,229,435	LTHS	26.1%
10	36	23,303,861			151,302,340	111,628,660	127,651,766	413,886,627		
11	37	12,246,593			93,106,761	92,010,349	144,511,134	341,874,837		
12	38				39,546,824	55,290,229	27,438,980	122,276,033		
Grad	39	444,634,058	12,858,931	35,037,882		2,304,594,122	1,172,578,147	3,969,703,140	HS GRAD	58.1%
SC	40	241,407,765	22,524,873	72,240,109	0	2,275,941,962	482,076,228	3,094,190,937		
Associates	41	10,605,943	9,883,577	13,417,843		467,161,742	56,551,957	557,621,062	Some College	75.7%
Associates Academic	42	76,452,354		32,935,974	12,964,196	870,556,186	131,631,272	1,124,539,982		
Bachelor	43	207,635,697		12,229,524	0	1,780,437,888	200,900,643	2,201,203,752	Bachelors+	84.5%
Masters	44	9,670,844				749,742,442	26,153,444	785,566,730		
Professional	45					115,698,943	16,586,638	132,285,581		
PhD	46	13,762,970				76,269,288	14,240,914	104,273,172		
	Grand Total	1,071,490,679	45,267,381	165,861,332	3,159,457,539	9,041,270,560	2,627,255,713	16,110,603,204	Overall	56.1%

C. CPS 2020 Voter Supplement PUMS Data Pivot Table, matching Dr. Burch's Figure 4 Black Alone or in Combo non-Hispanic Any-Age Voter Turnout by Education Analysis – except filtered to voting age 18+. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, 18+ and Citizenship Weighted by PWSSWGT.

Any Part Black, Educational Attainment by Vote Status	No Response	Refused	DK	Not in Unvierse	Voted	Not Voted	Total	Educational Attainment	% Voted
28	* State FIPS Filter to MS								
(Multiple Items)	* Race: Any Part Black								
(All)	* Ethnicity: All								
(Multiple Items)	* Age: 18+								
(Multiple Items)	* Citizenship 1, 2, 3 and	"Citizens"							
< 1st						15,296,850	15,296,850		
7,8	10,782,157				52,529,661	25,300,522	88,612,340		
9					83,953,971	37,500,389	121,454,360	LTHS	57.6%
10		12,757,284			168,866,749	98,706,301	280,330,334		
11	56,518,701				251,103,093	192,016,036	499,637,830		
12	44,419,439				222,816,797	79,293,300	346,529,536		
Grad	257,780,196		59,388,128	0	2,066,482,470	721,410,147	3,105,060,941	HS GRAD	66.6%
SC	103,147,028			0	1,259,191,478	113,048,327	1,475,386,833		
Associates	14,249,330				231,224,652	33,159,822	278,633,804	Some College	83.3%
Associates Academic	25,966,225		16,153,604		328,004,087	60,076,536	430,200,452		
Bachelor	46,728,268				751,449,754	60,052,797	858,230,819		
Masters	55,829,070				332,399,660	14,357,337	402,586,067	Bachelors+	85.9%
Professional					11,185,702		11,185,702		
PhD		13,451,673			64,442,420		77,894,093		
	615,420,414	26,208,957	75,541,732	0	5,823,650,494	1,450,218,364	7,991,039,961	Overall	72.9%

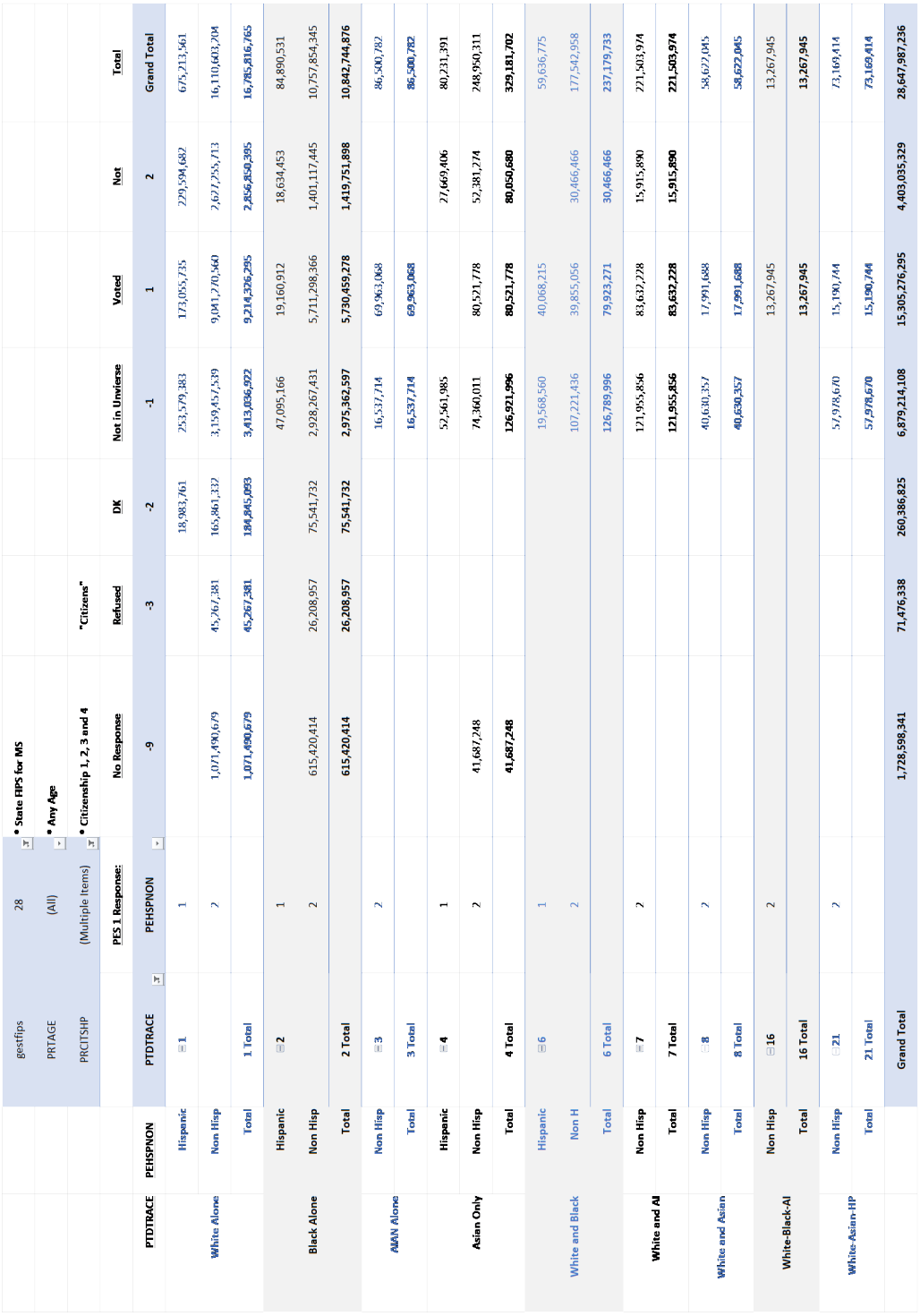
D. CPS 2020 Voter Supplement PUMS Data Pivot Table, matching Dr. Burch's Figure 4 White non-Hispanic Any-Age Voter Turnout by Education Analysis – except filtered to age 18+. PES 1 Vote Responses for MS Filtered to Race White non-Hispanic, 18+ and Citizenship Weighted by PWSSWGT.

White Alone, Non-Hispanic Educational Attainment by Vote Status

gestfips	28	* State FIPS Filter to MS
PTDTRACE	1	* Race: White Alone
PEHSPNON	2	* Ethnicity: All
PRTAGE	(Multiple Items)	* Age: 18+
PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 "Citizens"

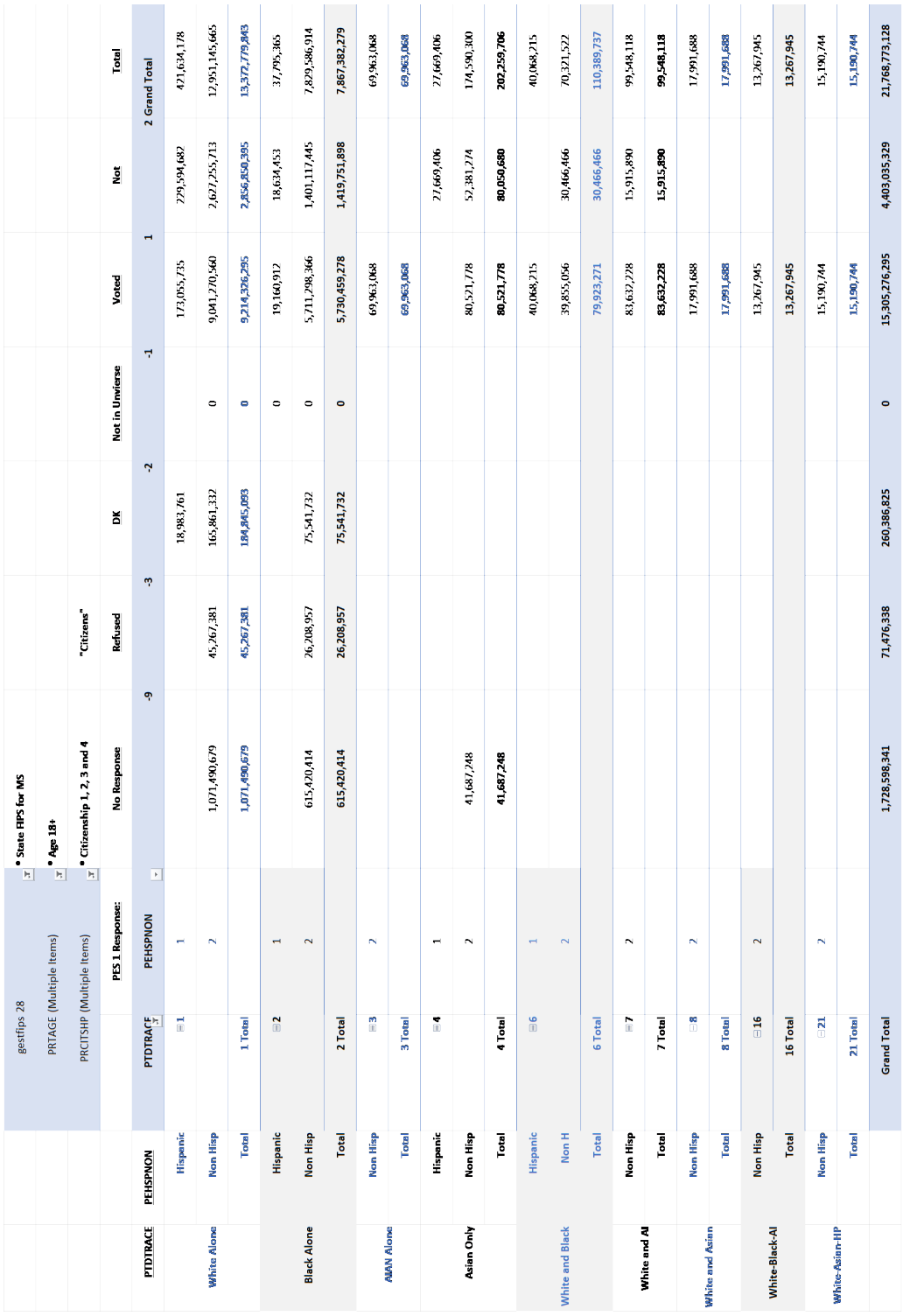
Sum of PWSSWGT	Column Labels	No Response	Refused	DK	Not in Unviverse		Voted	Not Voted	Total	Educational Attainment	% Voted
Row Labels		-9	-3	-2	-1	1	2	Grand Total			
< 1st	31					12,963,304	12,963,304				
1,2,3,4	32				13,589,215		13,589,215				
5,6	33				19,288,678	38,670,925	57,959,603				
7,8	34	21,201,656			21,933,015	98,751,460	141,886,131	LTHS			40.3%
9	35	10,568,938			87,127,841	76,548,901	174,245,680				
10	36	23,303,861			111,628,660	127,651,766	262,584,287				
11	37	12,246,593			92,010,349	144,511,134	248,768,076				
12	38				55,290,229	27,438,980	82,729,209				
Grad	39	444,634,058	12,858,931	35,037,882		2,304,594,122	1,172,578,147	3,969,703,140	HS GRAD		58.1%
SC	40	241,407,765	22,524,873	72,240,109	0	2,275,941,962	482,076,228	3,094,190,937	Some College		75.9%
Associates	41	10,605,943	9,883,577	13,417,843		467,161,742	56,551,957	557,621,062			
Associates Academic	42	76,452,354		32,935,974	0	870,556,186	131,631,272	1,111,575,786			
Bachelor	43	207,635,697		12,229,524	0	1,780,437,888	200,900,643	2,201,203,752			
Masters	44	9,670,844				749,742,442	26,153,444	785,566,730	Bachelors+		84.5%
Professional	45					115,698,943	16,586,638	132,285,581			
PhD	46	13,762,970				76,269,288	14,240,914	104,273,172			
Grand Total		1,071,490,679	45,267,381	165,861,332	0	9,041,270,560	2,627,255,713	12,951,145,665	Overall		69.8%

E. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Including Any Age and Filtered to Citizenship (1, 2, 3 or 4)



gestfips	28	* State FIPS for MS										
PRTAGE	(All)	* Any Age										
PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 and 4	"Citizens"									
		PES 1 Response:	No Response	Refused	DK	Not in Universe	Voted	Not	Total			
PTDTRACE	PEHSPNON	PTDTRACE	PEHSPNON	-9	-3	-2	-1	1	2	Grand Total		
White Alone	Hispanic	1	1			18,983,761	253,579,383	173,055,735	229,594,682	675,213,561		
	Non Hisp		2	1,071,490,679	45,267,381	165,861,332	3,159,457,539	9,041,270,560	2,627,255,713	16,110,603,204		
	Total	1 Total		1,071,490,679	45,267,381	184,845,093	3,413,036,922	9,214,326,295	2,856,850,395	16,785,816,765		
Black Alone	Hispanic	2	1				47,095,166	19,160,912	18,634,453	84,890,531		
	Non Hisp		2	615,420,414	26,208,957	75,541,732	2,928,267,431	5,711,298,366	1,401,117,445	10,757,854,345		
	Total	2 Total		615,420,414	26,208,957	75,541,732	2,975,362,597	5,730,459,278	1,419,751,898	10,842,744,876		
AIAN Alone	Non Hisp	3	2				16,537,714	69,963,068		86,500,782		
	Total	3 Total					16,537,714	69,963,068		86,500,782		
Asian Only	Hispanic	4	1				52,561,985		27,669,406	80,231,391		
	Non Hisp		2	41,687,248			74,360,011	80,521,778	52,381,274	248,950,311		
	Total	4 Total		41,687,248			126,921,996	80,521,778	80,050,680	329,181,702		
White and Black	Hispanic	6	1				19,568,560	40,068,215		59,636,775		
	Non H		2				107,221,436	39,855,056	30,466,466	177,542,958		
	Total	6 Total					126,789,996	79,923,271	30,466,466	237,179,733		
White and AI	Non Hisp	7	2				121,955,856	83,632,228	15,915,890	221,503,974		
	Total	7 Total					121,955,856	83,632,228	15,915,890	221,503,974		
White and Asian	Non Hisp	8	2				40,630,357	17,991,688		58,622,045		
	Total	8 Total					40,630,357	17,991,688		58,622,045		
White-Black-AI	Non Hisp	16	2					13,267,945		13,267,945		
	Total	16 Total						13,267,945		13,267,945		
White-Asian-HP	Non Hisp	21	2				57,978,670	15,190,744		73,169,414		
	Total	21 Total					57,978,670	15,190,744		73,169,414		
		Grand Total		1,728,598,341	71,476,338	260,386,825	6,879,214,108	15,305,276,295	4,403,035,329	28,647,987,236		

F. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Reported Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Filtered to Age (18+) and Citizenship (1, 2, 3 or 4)



gestfips 28	• State FIPS for MS										
PRTAGE (Multiple Items)	• Age 18+										
PRCITSHP (Multiple Items)	• Citizenship 1, 2, 3 and 4		"Citizens"								
PES 1 Response:		No Response	Refused	DK	Not in Universe		Voted	Not	2 Grand Total	Total
PTDTRACE	PEHSPNON	-9	-3	-2	-1		1	2		
White Alone	Hispanic			18,983,761			173,055,735	229,594,682	421,634,178	
	Non Hisp	1,071,490,679	45,267,381	165,861,332	0		9,041,270,560	2,627,255,713	12,951,145,665	
	Total	1,071,490,679	45,267,381	184,845,093	0		9,214,326,295	2,856,850,395	13,372,779,843	
Black Alone	Hispanic				0		19,160,912	18,634,453	37,795,365	
	Non Hisp	615,420,414	26,208,957	75,541,732	0		5,711,298,366	1,401,117,445	7,829,586,914	
	Total	615,420,414	26,208,957	75,541,732	0		5,730,459,278	1,419,751,898	7,867,382,279	
AIAN Alone	Non Hisp						69,963,068		69,963,068	
	Total						69,963,068		69,963,068	
Asian Only	Hispanic							27,669,406	27,669,406	
	Non Hisp	41,687,248					80,521,778	52,381,274	174,590,300	
	Total	41,687,248					80,521,778	80,050,680	202,259,706	
White and Black	Hispanic						40,068,715		40,068,715	
	Non H						39,855,056	30,466,466	70,321,522	
	Total						79,923,271	30,466,466	110,389,737	
White and AI	Non Hisp						83,632,228	15,915,890	99,548,118	
	Total						83,632,228	15,915,890	99,548,118	
White and Asian	Non Hisp						17,991,688		17,991,688	
	Total						17,991,688		17,991,688	
White-Black-AI	Non Hisp						13,267,945		13,267,945	
	Total						13,267,945		13,267,945	
White-Asian-HP	Non Hisp						15,190,744		15,190,744	
	Total						15,190,744		15,190,744	
Grand Total		1,728,598,341	71,476,338	260,386,825	0		15,305,276,295	4,403,035,329	21,768,773,128	

Appendix 4. Mississippi Maps

These maps were produced by Bryan Geodemographics for the author.

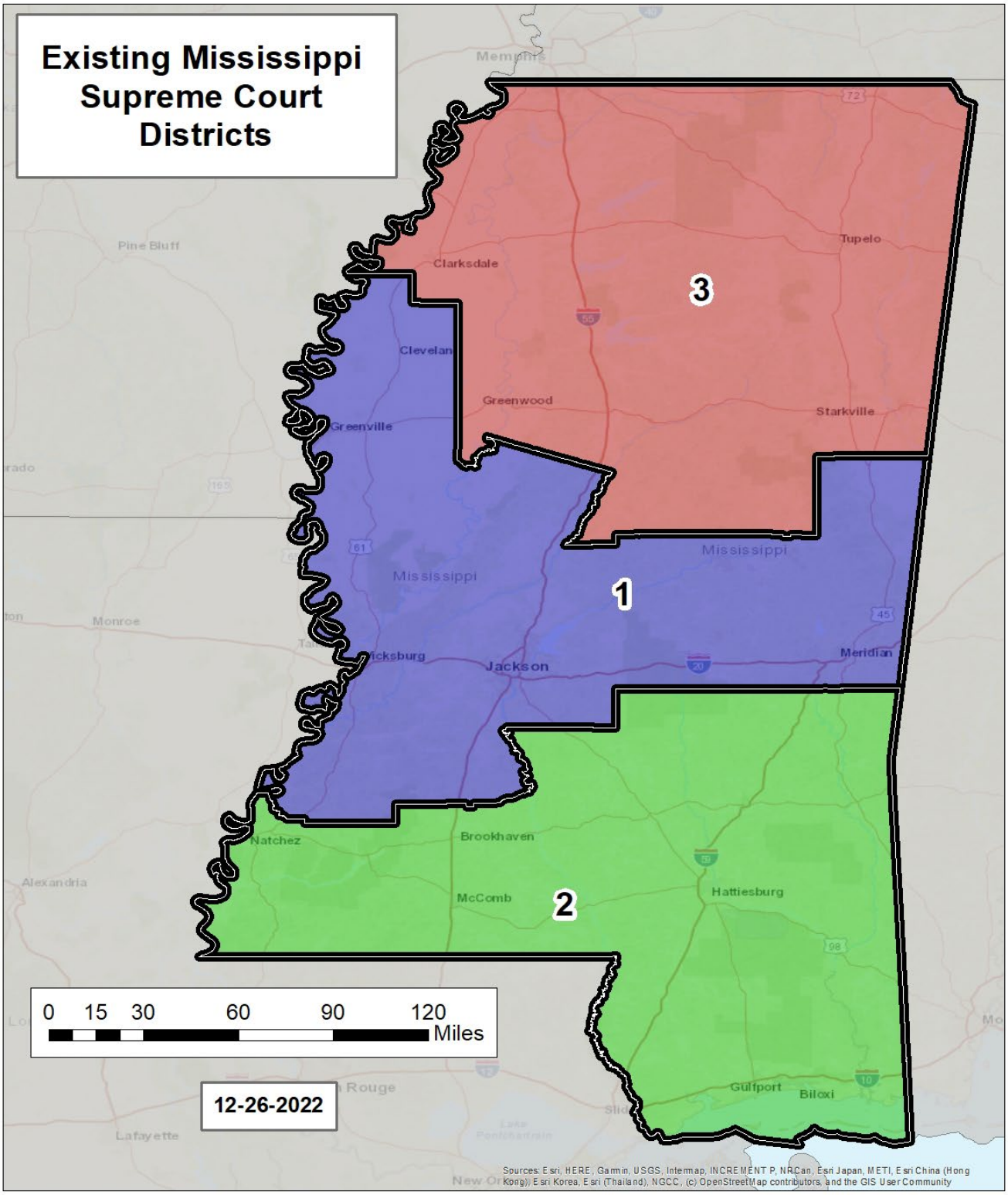
A. Existing MS Supreme Court Districts

B. Existing MS Supreme Court Districts with Major Prisons

C. Existing MS Supreme Court Districts with Planning and Development Districts

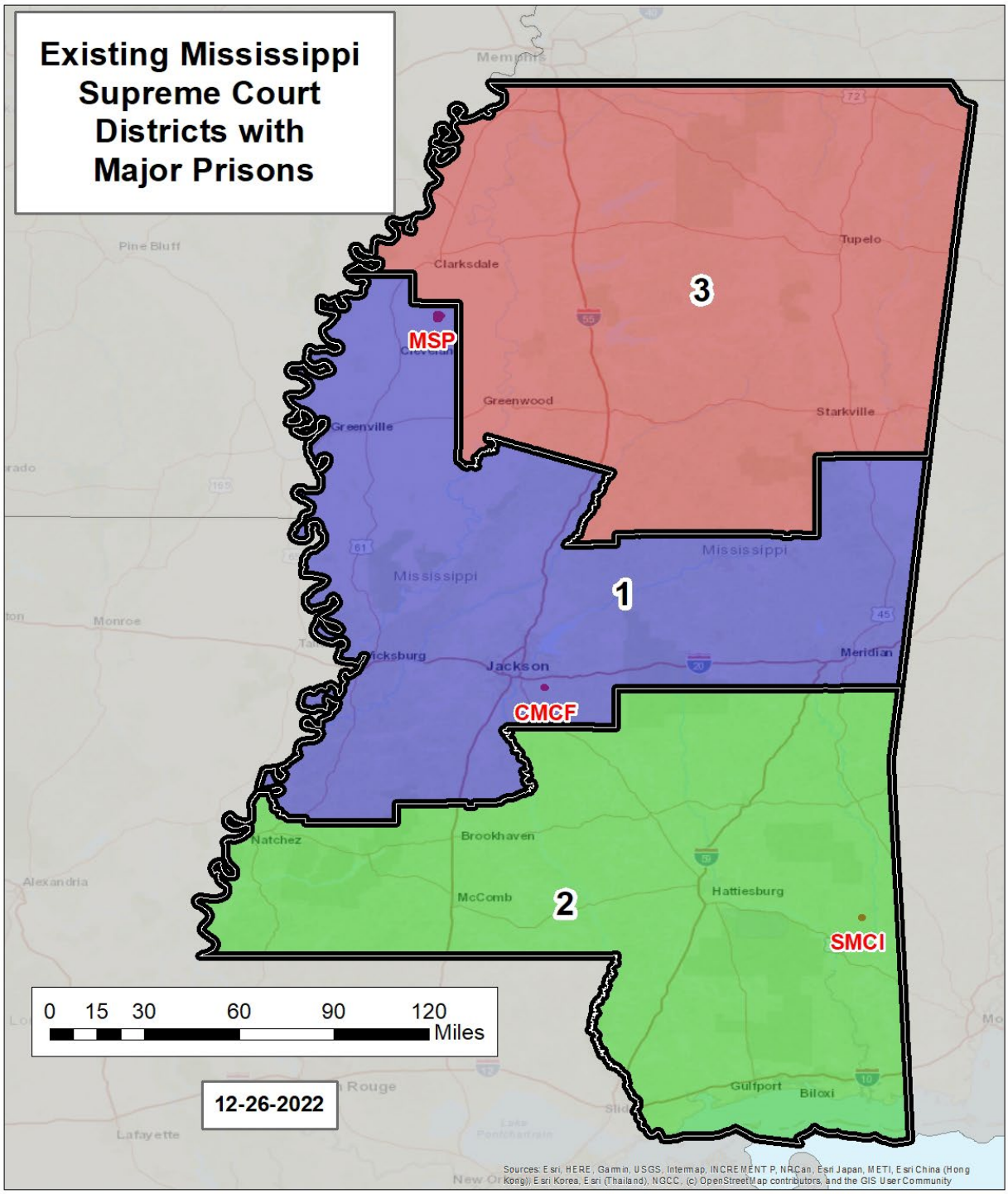
D. Existing MS Supreme Court Districts and Percent VAP APB by County

A. Existing Mississippi Supreme Court Districts



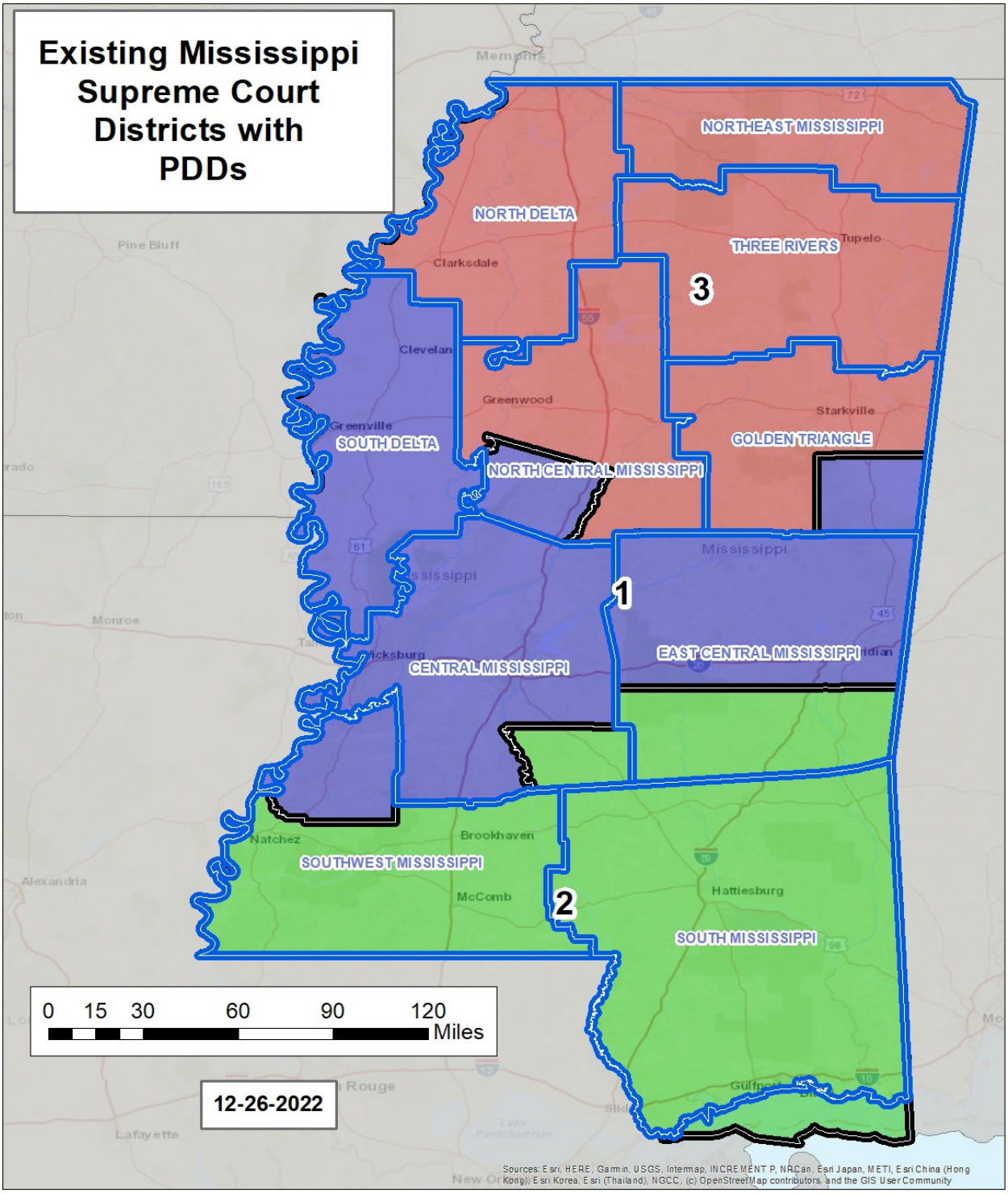
Map compiled for author by Bryan GeoDemographics using data described in text.

B. Existing MS Supreme Court Districts with Major Prisons



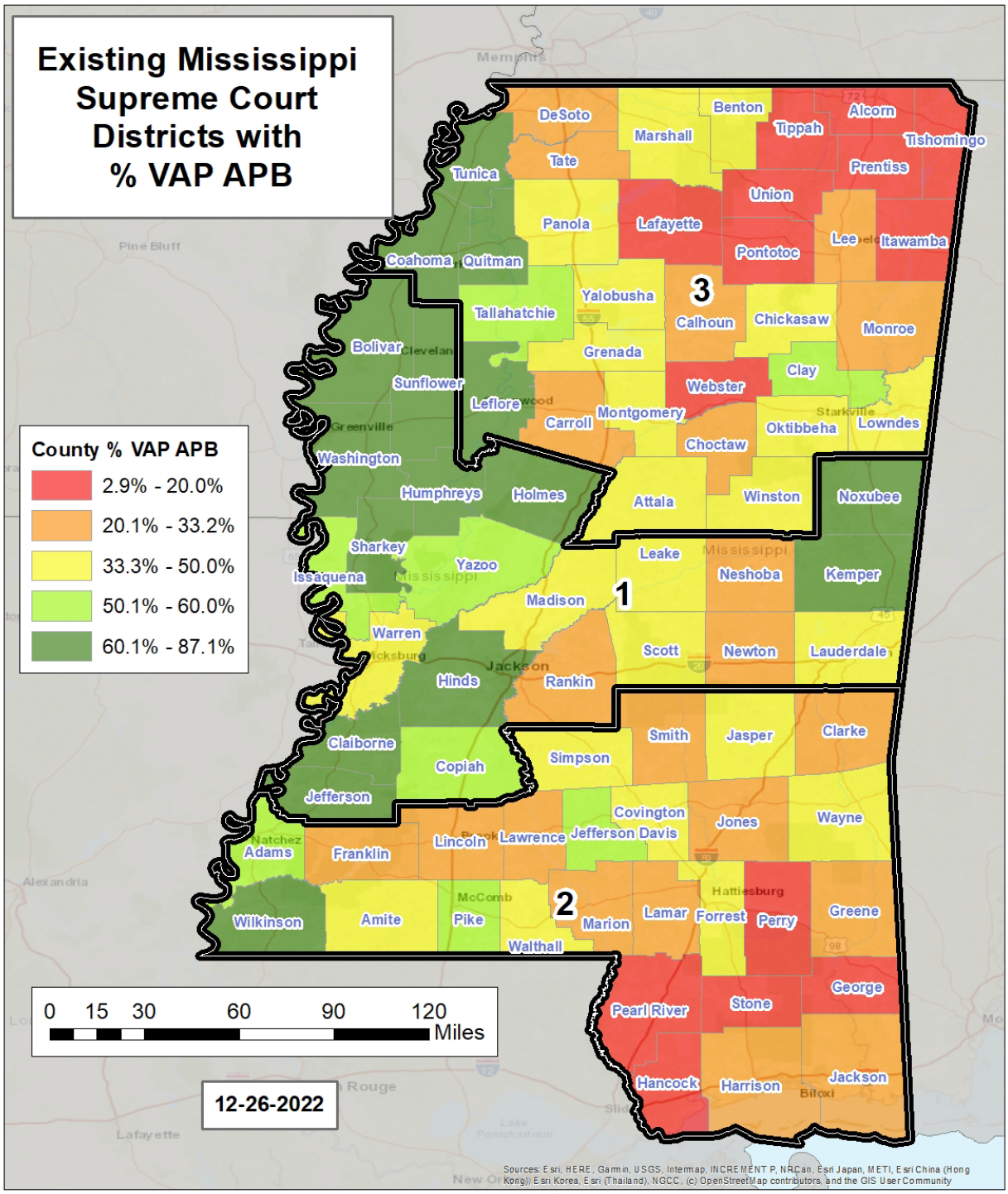
Map compiled for author by Bryan GeoDemographics using data described in text.

C. Existing MS Supreme Court Districts with Planning and Development Districts



Map compiled for author by Bryan GeoDemographics using data described in text.

D. Existing MS Supreme Court Districts and Percent VAP APB by County



Map compiled for author by Bryan GeoDemographics using data described in text.

Appendix 5a. SSRC Survey Overview with Codes

Provided to author by Dr. John Edwards, Director, Survey Research Lab, SSRC, Mississippi State University

Mississippi Voter Registration Status 2015-2021

DataYear

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2015	1578	14.8	14.8	14.8
	2016	1524	14.3	14.3	29.1
	2017	1515	14.2	14.2	43.3
	2018	1500	14.1	14.1	57.3
	2019	1527	14.3	14.3	71.7
	2020	1505	14.1	14.1	85.8
	2021	1518	14.2	14.2	100.0
	Total	10667	100.0	100.0	

RegVote

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Registered to vote	9787	91.8	92.5	92.5
	2 Not Registered to vote	793	7.4	7.5	100.0
	Total	10580	99.2	100.0	
Missing	3 Don't Know	42	.4		
	4 Refused	45	.4		
	Total	87	.8		
Total		10667	100.0		

FreqVote

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Always votes	6216	58.3	62.5	62.5
	2 Nearly always votes	2046	19.2	20.6	83.0
	3 Votes part of the time	831	7.8	8.4	91.4
	4 Seldom votes	414	3.9	4.2	95.5
	5 Never votes	445	4.2	4.5	100.0
	Total	9952	93.3	100.0	
Missing	6 Don't know	38	.4		
	7 Refused	38	.4		
	System	639	6.0		
	Total	715	6.7		
Total		10667	100.0		

County

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Adams County	117	1.1	1.1	1.1
	2 Alcorn County	122	1.1	1.1	2.2
	3 Amite County	52	.5	.5	2.7
	4 Attala County	102	1.0	1.0	3.7
	5 Benton County	39	.4	.4	4.1
	6 Bolivar County	119	1.1	1.1	5.2
	7 Calhoun County	64	.6	.6	5.8
	8 Carroll County	45	.4	.4	6.2
	9 Chickasaw County	77	.7	.7	6.9
	10 Choctaw County	40	.4	.4	7.3
	11 Claiborne County	39	.4	.4	7.7
	12 Clarke County	56	.5	.5	8.2
	13 Clay County	104	1.0	1.0	9.2
	14 Coahoma County	68	.6	.6	9.8
	15 Copiah County	102	1.0	1.0	10.8
	16 Covington County	65	.6	.6	11.4
	17 DeSoto County	261	2.4	2.5	13.9
	18 Forrest County	252	2.4	2.4	16.2
	19 Franklin County	28	.3	.3	16.5
	20 George County	75	.7	.7	17.2
	21 Greene County	41	.4	.4	17.6
	22 Grenada County	79	.7	.7	18.3
	23 Hancock County	155	1.5	1.5	19.8
	24 Harrison County	684	6.4	6.4	26.2
	25 Hinds County	965	9.0	9.1	35.3
	26 Holmes County	83	.8	.8	36.1
	27 Humphreys County	14	.1	.1	36.2
	28 Issaquena County	2	.0	.0	36.2
	29 Itawamba County	80	.7	.8	37.0
	30 Jackson County	468	4.4	4.4	41.4
	31 Jasper County	62	.6	.6	42.0
	32 Jefferson County	36	.3	.3	42.3
	33 Jefferson Davis County	40	.4	.4	42.7
	34 Jones County	213	2.0	2.0	44.7
	35 Kemper County	40	.4	.4	45.1
	36 Lafayette County	176	1.6	1.7	46.7
	37 Lamar County	207	1.9	1.9	48.7
	38 Lauderdale County	274	2.6	2.6	51.2
	39 Lawrence County	46	.4	.4	51.7

County

	Frequency	Percent	Valid Percent	Cumulative Percent
40 Leake County	83	.8	.8	52.5
41 Lee County	351	3.3	3.3	55.8
42 Leflore County	105	1.0	1.0	56.7
43 Lincoln County	138	1.3	1.3	58.0
44 Lowndes County	292	2.7	2.7	60.8
45 Madison County	456	4.3	4.3	65.1
46 Marion County	80	.7	.8	65.8
47 Marshall County	78	.7	.7	66.6
48 Monroe County	169	1.6	1.6	68.2
49 Montgomery County	55	.5	.5	68.7
50 Neshoba County	102	1.0	1.0	69.6
51 Newton County	82	.8	.8	70.4
52 Noxubee County	46	.4	.4	70.8
53 Oktibbeha County	346	3.2	3.3	74.1
54 Panola County	86	.8	.8	74.9
55 Pearl River County	171	1.6	1.6	76.5
56 Perry County	35	.3	.3	76.8
57 Pike County	140	1.3	1.3	78.2
58 Pontotoc County	124	1.2	1.2	79.3
59 Prentiss County	85	.8	.8	80.1
60 Quitman County	23	.2	.2	80.3
61 Rankin County	606	5.7	5.7	86.0
62 Scott County	102	1.0	1.0	87.0
63 Sharkey County	16	.1	.2	87.2
64 Simpson County	87	.8	.8	88.0
65 Smith County	50	.5	.5	88.4
66 Stone County	46	.4	.4	88.9
67 Sunflower County	86	.8	.8	89.7
68 Tallahatchie County	40	.4	.4	90.1
69 Tate County	75	.7	.7	90.8
70 Tippah County	68	.6	.6	91.4
71 Tishomingo County	71	.7	.7	92.1
72 Tunica County	27	.3	.3	92.3
73 Union County	101	.9	1.0	93.3
74 Walthall County	41	.4	.4	93.7
75 Warren County	188	1.8	1.8	95.4
76 Washington County	166	1.6	1.6	97.0
77 Wayne County	65	.6	.6	97.6
78 Webster County	62	.6	.6	98.2

County

		Frequency	Percent	Valid Percent	Cumulative Percent
	79 Wilkinson County	20	.2	.2	98.4
	80 Winston County	65	.6	.6	99.0
	81 Yalobusha County	42	.4	.4	99.4
	82 Yazoo County	65	.6	.6	100.0
	Total	10628	99.6	100.0	
Missing	84 Refused	39	.4		
Total		10667	100.0		

Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Hispanic	222	2.1	2.1	2.1
	2 Non-Hispanic	10368	97.2	97.9	100.0
	Total	10590	99.3	100.0	
Missing	3 Don't Know	22	.2		
	4 Refused	55	.5		
	Total	77	.7		
Total		10667	100.0		

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 White	6350	59.5	60.5	60.5
	2 Black	3766	35.3	35.9	96.4
	3 American Indian/Alaska Native	80	.7	.8	97.2
	4 Asian or Pacific Islander	62	.6	.6	97.8
	5 Multi-racial	178	1.7	1.7	99.5
	6 Other	56	.5	.5	100.0
	Total	10492	98.4	100.0	
Missing	7 Not Sure	4	.0		
	8 Refused	171	1.6		
	Total	175	1.6		
Total		10667	100.0		

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Man	4651	43.6	43.8	43.8
	2 Woman	5963	55.9	56.2	100.0
	Total	10614	99.5	100.0	
Missing	4 Refused	53	.5		
Total		10667	100.0		

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Never attended school or only Kindergarten	4	.0	.0	.0
	2 Grades 1 - 8 (Elementary)	164	1.5	1.5	1.6
	3 Grades 9 - 11 (Some High School)	693	6.5	6.5	8.1
	4 Completed High School or GED equivalent	2695	25.3	25.4	33.5
	5 Some college or vocational program	2338	21.9	22.0	55.6
	6 Completed Associate degree (2-year program)	1400	13.1	13.2	68.8
	7 Completed Bachelors degree (4-year program)	1996	18.7	18.8	87.6
	8 Completed Masters degree	973	9.1	9.2	96.8
	9 Beyond Masters degree	343	3.2	3.2	100.0
	Total	10606	99.4	100.0	
Missing	10 Not Sure	24	.2		
	11 Refused	37	.3		
	Total	61	.6		
Total		10667	100.0		

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	115	1.1	1.1	1.1
	19	180	1.7	1.7	2.9
	20	173	1.6	1.7	4.5
	21	171	1.6	1.7	6.2
	22	154	1.4	1.5	7.7
	23	167	1.6	1.6	9.3
	24	148	1.4	1.4	10.7
	25	135	1.3	1.3	12.0
	26	153	1.4	1.5	13.5
	27	129	1.2	1.3	14.8
	28	143	1.3	1.4	16.2
	29	120	1.1	1.2	17.3
	30	156	1.5	1.5	18.8
	31	131	1.2	1.3	20.1
	32	146	1.4	1.4	21.5
	33	128	1.2	1.2	22.8
	34	152	1.4	1.5	24.2
	35	132	1.2	1.3	25.5
	36	162	1.5	1.6	27.1
	37	156	1.5	1.5	28.6
	38	168	1.6	1.6	30.2
	39	138	1.3	1.3	31.6
	40	144	1.3	1.4	33.0
	41	168	1.6	1.6	34.6
	42	139	1.3	1.3	35.9
	43	139	1.3	1.3	37.3
	44	146	1.4	1.4	38.7
	45	154	1.4	1.5	40.2
	46	177	1.7	1.7	41.9
	47	160	1.5	1.6	43.5
	48	173	1.6	1.7	45.1
	49	167	1.6	1.6	46.8
	50	196	1.8	1.9	48.7
	51	181	1.7	1.8	50.4
	52	192	1.8	1.9	52.3
	53	194	1.8	1.9	54.2
	54	185	1.7	1.8	55.9
	55	205	1.9	2.0	57.9
	56	210	2.0	2.0	60.0

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
57	198	1.9	1.9	61.9
58	209	2.0	2.0	63.9
59	194	1.8	1.9	65.8
60	201	1.9	1.9	67.7
61	208	1.9	2.0	69.8
62	199	1.9	1.9	71.7
63	183	1.7	1.8	73.5
64	201	1.9	1.9	75.4
65	200	1.9	1.9	77.3
66	200	1.9	1.9	79.3
67	153	1.4	1.5	80.8
68	180	1.7	1.7	82.5
69	183	1.7	1.8	84.3
70	180	1.7	1.7	86.0
71	146	1.4	1.4	87.4
72	132	1.2	1.3	88.7
73	128	1.2	1.2	90.0
74	126	1.2	1.2	91.2
75	109	1.0	1.1	92.2
76	98	.9	.9	93.2
77	108	1.0	1.0	94.2
78	88	.8	.9	95.1
79	67	.6	.6	95.7
80	77	.7	.7	96.5
81	55	.5	.5	97.0
82	54	.5	.5	97.5
83	45	.4	.4	98.0
84	40	.4	.4	98.4
85	45	.4	.4	98.8
86	27	.3	.3	99.1
87	14	.1	.1	99.2
88	22	.2	.2	99.4
89	17	.2	.2	99.6
90	12	.1	.1	99.7
91	9	.1	.1	99.8
92	6	.1	.1	99.8
93	7	.1	.1	99.9
94	2	.0	.0	99.9
95	3	.0	.0	100.0

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
	96	2	.0	.0	100.0
	97	2	.0	.0	100.0
	Total	10317	96.7	100.0	
Missing	-99 Refused	350	3.3		
Total		10667	100.0		

Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Household income less than $10,000	670	6.3	8.1	8.1
	2 Household income $10,000 to under $15,000	533	5.0	6.5	14.6
	3 Household income $15,000 to under $20,000	607	5.7	7.4	22.0
	4 Household income $20,000 to under $25,000	539	5.1	6.5	28.5
	5 Household income $25,000 to under $35,000	881	8.3	10.7	39.2
	6 Household income $35,000 to under $50,000	1130	10.6	13.7	52.9
	7 Household income $50,000 to under $75,000	1317	12.3	16.0	68.9
	8 Household income $75,000 to under $100,000	1022	9.6	12.4	81.3
	9 Household income $100,000 to under $150,000	845	7.9	10.3	91.5
	10 Household income $150,000 to under $200,000	366	3.4	4.4	96.0
	11 Household income $200,000 or more	332	3.1	4.0	100.0
	Total	8242	77.3	100.0	
Missing	12 Not Sure	770	7.2		
	13 Refused	1655	15.5		
	Total	2425	22.7		
Total		10667	100.0		

Party

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Republican	3615	33.9	39.6	39.6
	2 Democrat	2999	28.1	32.9	72.5
	3 Independent	2512	23.5	27.5	100.0
	Total	9126	85.6	100.0	
Missing	4 Not sure	811	7.6		
	5 Refused	730	6.8		
	Total	1541	14.4		
Total		10667	100.0		

Party
Lean

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Independent leaning democratic	671	6.3	45.0	45.0
	2 Independent leaning republican	819	7.7	55.0	100.0
	Total	1490	14.0	100.0	
Missing	3 Not sure	799	7.5		
	4 Refused	223	2.1		
	System	8155	76.5		
	Total	9177	86.0		
Total		10667	100.0		

Appendix 5b. NCSS Contingency Table output by year, 2105-2021, SSRC Survey Data on Voter Registration

Analysis based on SSRC data with calculations by author using the NCSS statistical package.

Race Code: 1 = White; 2 = Black
Registered to Vote Code: 1 = Yes; 2 = No; 3 = Don't Know; 4 = Refused.

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2015)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	847	547	1394
2	82	35	117
3	5	1	6
4	3	3	6
Total	937	586	1523

Column Percentages Table

RegVote \ Race	1	2	Total
1	90.39%	93.34%	91.53%
2	8.75%	5.97%	7.68%
3	0.53%	0.17%	0.39%
4	0.32%	0.51%	0.39%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	857.6	536.4	1394.0
2	72.0	45.0	117.0
3	3.7	2.3	6.0
4	3.7	2.3	6.0
Total	937.0	586.0	1523.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(DataYear=2016) AND (Race <> 3,4,5,6,7,8) AND (DataYear = 2016)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	856	488	1344
2	70	36	106
3	2	1	3
4	4	1	5
Total	932	526	1458

Column Percentages Table

RegVote \ Race	1	2	Total
1	91.85%	92.78%	92.18%
2	7.51%	6.84%	7.27%
3	0.21%	0.19%	0.21%
4	0.43%	0.19%	0.34%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	859.1	484.9	1344.0
2	67.8	38.2	106.0
3	1.9	1.1	3.0
4	3.2	1.8	5.0
Total	932.0	526.0	1458.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2017)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	828	507	1335
2	64	29	93
3	3	2	5
4	5	0	5
Total	900	538	1438

Column Percentages Table

RegVote \ Race	1	2	Total
1	92.00%	94.24%	92.84%
2	7.11%	5.39%	6.47%
3	0.33%	0.37%	0.35%
4	0.56%	0.00%	0.35%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	835.5	499.5	1335.0
2	58.2	34.8	93.0
3	3.1	1.9	5.0
4	3.1	1.9	5.0
Total	900.0	538.0	1438.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2018)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote	Race 1	2	Total
1	809	509	1318
2	72	32	104
3	5	1	6
4	1	1	2
Total	887	543	1430

Column Percentages Table

RegVote	Race 1	2	Total
1	91.21%	93.74%	92.17%
2	8.12%	5.89%	7.27%
3	0.56%	0.18%	0.42%
4	0.11%	0.18%	0.14%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote	Race 1	2	Total
1	817.5	500.5	1318.0
2	64.5	39.5	104.0
3	3.7	2.3	6.0
4	1.2	0.8	2.0
Total	887.0	543.0	1430.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2019)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	808	528	1336
2	69	27	96
3	1	2	3
4	1	3	4
Total	879	560	1439

Column Percentages Table

RegVote \ Race	1	2	Total
1	91.92%	94.29%	92.84%
2	7.85%	4.82%	6.67%
3	0.11%	0.36%	0.21%
4	0.11%	0.54%	0.28%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	816.1	519.9	1336.0
2	58.6	37.4	96.0
3	1.8	1.2	3.0
4	2.4	1.6	4.0
Total	879.0	560.0	1439.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2020)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote	Race 1	2	Total
1	837	466	1303
2	72	25	97
3	3	2	5
4	4	0	4
Total	916	493	1409

Column Percentages Table

RegVote	Race 1	2	Total
1	91.38%	94.52%	92.48%
2	7.86%	5.07%	6.88%
3	0.33%	0.41%	0.35%
4	0.44%	0.00%	0.28%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote	Race 1	2	Total
1	847.1	455.9	1303.0
2	63.1	33.9	97.0
3	3.3	1.7	5.0
4	2.6	1.4	4.0
Total	916.0	493.0	1409.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2021)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote	Race 1	2	Total
1	817	490	1307
2	66	28	94
3	12	1	13
4	4	1	5
Total	899	520	1419

Column Percentages Table

RegVote	Race 1	2	Total
1	90.88%	94.23%	92.11%
2	7.34%	5.38%	6.62%
3	1.33%	0.19%	0.92%
4	0.44%	0.19%	0.35%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote	Race 1	2	Total
1	828.0	479.0	1307.0
2	59.6	34.4	94.0
3	8.2	4.8	13.0
4	3.2	1.8	5.0
Total	899.0	520.0	1419.0

Appendix 5c. NCSS Contingency Table output by year, 2105-2021, SSRC Survey Data on Voting Frequency

Analysis based on SSRC data with calculations by author using the NCSS statistical package

Race Code:
1 = White
2 = Black
3 = AIAN (American Indian, Alaskan Native)
4 = API (Asian, Pacific Islander)
5 = Multiracial
6 = other
7 = not sure
8 = refused

Voting Frequency:
1 = Always Votes
2 = Nearly Always Votes
3 = Votes Part of the Time
4 = Seldom Votes
5 = Never Vote
6 = Don't Know
7 = Refused

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2015
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	517	203	71	31	18	4	3	847
2	368	90	47	25	17	0	0	547
3	5	0	0	0	0	0	0	5
4	1	1	2	1	0	0	0	5
5	10	3	0	0	2	0	0	15
6	1	0	0	0	1	0	0	2
8	12	3	2	1	2	0	0	20
Total	914	300	122	58	40	4	3	1441

The number of rows with at least one missing value is 137

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	61.04%	23.97%	8.38%	3.66%	2.13%	0.47%	0.35%	100.00%
2	67.28%	16.45%	8.59%	4.57%	3.11%	0.00%	0.00%	100.00%
3	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
4	20.00%	20.00%	40.00%	20.00%	0.00%	0.00%	0.00%	100.00%
5	66.67%	20.00%	0.00%	0.00%	13.33%	0.00%	0.00%	100.00%
6	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	100.00%
8	60.00%	15.00%	10.00%	5.00%	10.00%	0.00%	0.00%	100.00%
Total	63.43%	20.82%	8.47%	4.02%	2.78%	0.28%	0.21%	100.00%

The number of rows with at least one missing value is 137

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2016
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	560	198	59	34	73	3	5	932
2	349	78	33	17	45	2	2	526
3	4	2	4	1	2	0	0	13
4	1	1	0	1	4	0	0	7
5	13	0	2	2	3	1	0	21
8	17	1	1	2	1	0	3	25
Total	944	280	99	57	128	6	10	1524

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	60.09%	21.24%	6.33%	3.65%	7.83%	0.32%	0.54%	100.00%
2	66.35%	14.83%	6.27%	3.23%	8.56%	0.38%	0.38%	100.00%
3	30.77%	15.38%	30.77%	7.69%	15.38%	0.00%	0.00%	100.00%
4	14.29%	14.29%	0.00%	14.29%	57.14%	0.00%	0.00%	100.00%
5	61.90%	0.00%	9.52%	9.52%	14.29%	4.76%	0.00%	100.00%
8	68.00%	4.00%	4.00%	8.00%	4.00%	0.00%	12.00%	100.00%
Total	61.94%	18.37%	6.50%	3.74%	8.40%	0.39%	0.66%	100.00%

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2017
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	534	185	65	34	73	3	6	900
2	347	73	52	21	37	6	2	538
3	6	2	1	1	1	1	0	12
4	1	2	0	0	2	0	0	5
5	12	4	3	1	4	0	1	25
6	3	2	2	2	4	0	0	13
8	17	2	0	3	0	0	0	22
Total	920	270	123	62	121	10	9	1515

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	59.33%	20.56%	7.22%	3.78%	8.11%	0.33%	0.67%	100.00%
2	64.50%	13.57%	9.67%	3.90%	6.88%	1.12%	0.37%	100.00%
3	50.00%	16.67%	8.33%	8.33%	8.33%	8.33%	0.00%	100.00%
4	20.00%	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	100.00%
5	48.00%	16.00%	12.00%	4.00%	16.00%	0.00%	4.00%	100.00%
6	23.08%	15.38%	15.38%	15.38%	30.77%	0.00%	0.00%	100.00%
8	77.27%	9.09%	0.00%	13.64%	0.00%	0.00%	0.00%	100.00%
Total	60.73%	17.82%	8.12%	4.09%	7.99%	0.66%	0.59%	100.00%

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2018
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	441	238	69	35	22	2	2	809
2	318	105	52	13	18	3	0	509
3	1	2	1	0	2	0	0	6
4	1	0	1	0	0	0	0	2
5	11	7	2	2	2	1	0	25
6	4	1	0	4	1	0	0	10
7	1	0	0	1	0	0	0	2
8	9	3	0	0	0	0	0	12
Total	786	356	125	55	45	6	2	1375

The number of rows with at least one missing value is 125

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	54.51%	29.42%	8.53%	4.33%	2.72%	0.25%	0.25%	100.00%
2	62.48%	20.63%	10.22%	2.55%	3.54%	0.59%	0.00%	100.00%
3	16.67%	33.33%	16.67%	0.00%	33.33%	0.00%	0.00%	100.00%
4	50.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	100.00%
5	44.00%	28.00%	8.00%	8.00%	8.00%	4.00%	0.00%	100.00%
6	40.00%	10.00%	0.00%	40.00%	10.00%	0.00%	0.00%	100.00%
7	50.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	100.00%
8	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Total	57.16%	25.89%	9.09%	4.00%	3.27%	0.44%	0.15%	100.00%

The number of rows with at least one missing value is 125

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2019
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	487	203	67	36	10	3	2	808
2	346	83	60	16	20	1	2	528
3	7	2	1	0	2	0	0	12
4	2	0	1	1	1	0	0	5
5	14	6	3	1	1	0	0	25
6	5	2	1	1	0	0	0	9
8	11	1	3	1	1	0	1	18
Total	872	297	136	56	35	4	5	1405

The number of rows with at least one missing value is 122

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	60.27%	25.12%	8.29%	4.46%	1.24%	0.37%	0.25%	100.00%
2	65.53%	15.72%	11.36%	3.03%	3.79%	0.19%	0.38%	100.00%
3	58.33%	16.67%	8.33%	0.00%	16.67%	0.00%	0.00%	100.00%
4	40.00%	0.00%	20.00%	20.00%	20.00%	0.00%	0.00%	100.00%
5	56.00%	24.00%	12.00%	4.00%	4.00%	0.00%	0.00%	100.00%
6	55.56%	22.22%	11.11%	11.11%	0.00%	0.00%	0.00%	100.00%
8	61.11%	5.56%	16.67%	5.56%	5.56%	0.00%	5.56%	100.00%
Total	62.06%	21.14%	9.68%	3.99%	2.49%	0.28%	0.36%	100.00%

The number of rows with at least one missing value is 122

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2020
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	571	159	45	41	18	0	3	837
2	336	62	41	12	7	4	4	466
3	4	1	2	2	0	0	0	9
4	5	1	0	2	1	0	0	9
5	5	11	3	5	3	0	0	27
6	0	0	2	0	0	0	0	2
7	2	0	0	0	0	0	0	2
8	20	4	3	2	0	0	1	30
Total	943	238	96	64	29	4	8	1382

The number of rows with at least one missing value is 123

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	68.22%	19.00%	5.38%	4.90%	2.15%	0.00%	0.36%	100.00%
2	72.10%	13.30%	8.80%	2.58%	1.50%	0.86%	0.86%	100.00%
3	44.44%	11.11%	22.22%	22.22%	0.00%	0.00%	0.00%	100.00%
4	55.56%	11.11%	0.00%	22.22%	11.11%	0.00%	0.00%	100.00%
5	18.52%	40.74%	11.11%	18.52%	11.11%	0.00%	0.00%	100.00%
6	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%
7	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
8	66.67%	13.33%	10.00%	6.67%	0.00%	0.00%	3.33%	100.00%
Total	68.23%	17.22%	6.95%	4.63%	2.10%	0.29%	0.58%	100.00%

The number of rows with at least one missing value is 123

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2021
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	464	213	79	34	24	2	1	817
2	327	82	40	23	16	2	0	490
3	8	1	1	1	1	0	0	12
4	5	2	3	2	0	0	0	12
5	8	4	2	2	3	0	0	19
6	2	1	1	0	1	0	0	5
8	23	2	4	0	2	0	0	31
Total	837	305	130	62	47	4	1	1386

The number of rows with at least one missing value is 132

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	56.79%	26.07%	9.67%	4.16%	2.94%	0.24%	0.12%	100.00%
2	66.73%	16.73%	8.16%	4.69%	3.27%	0.41%	0.00%	100.00%
3	66.67%	8.33%	8.33%	8.33%	8.33%	0.00%	0.00%	100.00%
4	41.67%	16.67%	25.00%	16.67%	0.00%	0.00%	0.00%	100.00%
5	42.11%	21.05%	10.53%	10.53%	15.79%	0.00%	0.00%	100.00%
6	40.00%	20.00%	20.00%	0.00%	20.00%	0.00%	0.00%	100.00%
8	74.19%	6.45%	12.90%	0.00%	6.45%	0.00%	0.00%	100.00%
Total	60.39%	22.01%	9.38%	4.47%	3.39%	0.29%	0.07%	100.00%

The number of rows with at least one missing value is 132

Appendix 6. David A. Swanson CV (2022 V17)

Curriculum Vitae

David A. Swanson

1 Lake Louise Drive #19
Bellingham, Washington 98229
&
8924 Evening Star Drive
Las Vegas, NV 89134

email: david.swanson@ucr.edu

Webpage : https://profiles.ucr.edu/app/home/profile/dswanson

I. Education

Ph.D.	1985	Sociology/Population Studies	University of Hawai`i
M.A.	1976	Sociology/Population Studies	University of Hawai`i
Graduate Studies Diploma	1974	Social Science/Swedish	University of Stockholm
B.Sc.	1972	Sociology/Mathematics	Western Washington State College

(Credit courses also completed at the University of Puget Sound (9 semester hours) and Columbia Basin College (30 quarter hours)

G.

H. **II. Academic and Related Positions**

A. **Primary Appointments**

Center for Population Research Portland State University	2022-2023	Research Associate
Aoyama Gakuin University, Tokyo, Japan	October 27 to November 11 2018	Visiting Professor
University of California Riverside Department of Sociology	2007 - 2018	Professor of Sociology (emeritus, 2018)
University of Mississippi Department of Sociology & Anthropology	2003-2007	Professor of Sociology and Chair
Helsinki School of Economics Mikkeli Business Campus BScBA Program, BBA & MBA Program	2000 to 2003 1999-2000 1997 to 1999	Dean Acting Dean Visiting Faculty
Portland State University, Department of Urban Studies	1995 to 1997	Professor of Urban Studies
University of Arkansas at Little Rock, College of Business, Institute for Economic Advancement	1992 to 1995	Senior Demographic Specialist

Pacific Lutheran University, Department of Sociology	1987 to 1992	Associate Professor (Tenure Awarded)
Bowling Green State University, Department of Sociology	1985 to 1987 1984 to 1985	Assistant Professor Visiting Instructor
Alaska Department of Labor	1981-1983	State Demographer
Population, Enrollment, and Economic Studies Division, Washington State Office of Financial Management	1977-1981	Research Investigator
East-West Population Institute	1975 to 1977	Staff Researcher

B. Conjoint and Miscellaneous Appointments

M.P.S in Applied Demography Dept. of Sociology & Criminology Penn State University	2019	Lecturer (On-line) Appdem 804 Business Demography Appdem 805 Demog & Public Policy
Center for Studies in Demography & Ecology, University of Washington	2017-	Faculty Affiliate
Demographic and Social Analysis Program, Department of Sociology University of California Irvine	2007- 2019	Affiliated Faculty
Blakely Center for Sustainable Suburban Development University of California Riverside	2008 - 2009	Interim Director
Blakely Center for Sustainable Suburban Development University of California Riverside	2007-2018	Research Associate
Social Science Research Center Mississippi State University	2004-	Research Fellow
Center for Population Studies University of Mississippi	2003-2007	Director
Theodore Roosevelt Institute	2002-2011	Senior Fellow
HELP University, Malaysia	April, 2003	Guest Lecturer

Mikkeli Polytechnic College, International Business Program	Spring, 2001 Spring, 2000	Guest Lecturer in Statistics Guest Lecturer in Statistics
Portland State University Center for Population and Census	1995 -1997	Director
University of Arkansas at Little Rock, Institute for Economic Advancement	1992 -1995	Director, Demographic Research Unit
University of Arkansas for Medical Sciences, National Center for Rural Mental Healthcare Research	1992-1995	Research Scientist
Pacific Lutheran University, Center for Social Research And Public Policy	1987 -1992	Director
Pacific Lutheran University, Department of Sociology	1990-1991	Acting Chair
Bowling Green State University, Population and Society Research Center	1984-1987	Assistant Director for Population Research
University of Alaska, Juneau School of Business Administration	1983	Lecturer
National Science Foundation “Research For Undergraduates" Demographic Research Laboratory Western Washington University	Summer, 1994 Summer, 1991 Summer, 1989 Summer, 1988	Workshop Instructor Workshop Instructor Workshop Instructor Workshop Instructor
ICPSR Summer Program in Quantitative Methods, University of Michigan	July, 1989 July, 1988 July, 1987 July, 1986	Guest Lecturer Workshop Instructor Workshop Instructor Workshop Instructor
Argonne National Laboratory,	Summer, 1987	Faculty Research Participant

III. Teaching Experience

A. Credit Courses

1. Undergraduate Courses

Sociology Courses

Introductory Sociology
Population, Poverty, and Hunger
Introductory Statistics
Research Methods
Urban Sociology

Population Studies/Demography Courses

Introduction to Population Studies
Introduction to Applied Demography
Demographic Analysis and International Business
Market Demographics
Population Analysis
Population Forecasting
The Baby Boom
World Population Issues

i. Business Administration Courses

Introductory Statistics for Business Administration
Business Mathematics
Demographic Methods and International Business
Quantitative Methods in Business
Business Forecasting
Market Demographics
Introduction to SPSS

2. Graduate Courses

Sociology Courses

Research Methods
Multivariate Analysis

Population Studies/Demography Courses

Business Demographics
Demographic Methods
Advanced Market Demographics
Applied Demography
Population Forecasting
Population Estimation Methods

Business Administration Courses

Business Forecasting
Refresher Mathematics for MBA Students
Quantitative Methods

I. **B. Non-Credit and Continuing Education Courses and Topics**

Census and Survey Administration	Population Estimation
Census and Survey Methods	Population Forecasting
Interviewer Training	Enrollment Forecasting

IV. Thesis Supervision

A. Committees chaired

2014. *Overcrowding as a Determinant of Violence in California State Prisons.* B. A. Honors Thesis by John Maldonado. Department of Sociology. University of California Riverside.

2011 *Demographic Analysis and the U.S. Hispanic Population.* Ph.D. Dissertation by Matt Kaneshiro, Department of Sociology, University of California Riverside.

2007. *A Comparison of Housing Unit Estimates to the American Community Survey Master Address File*. Sociology M.A. Thesis completed by A. J. Reese. Department of Sociology and Anthropology, University of Mississippi.

2004 *Towards International Standardisation of Accounting: IAS and the Accounting Practises in Finland and Russia*. Senior (BScBA) Thesis completed by O. Nieminen, Mikkeli Business Campus, Helsinki School of Economics and Business Administration

2003 *The Impact of International Mergers and Acquisitions on Brand Strategies*. Senior (BScBA) Thesis completed by N. Yli-Pirilä, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

2003 *International Franchising and Investment.* Senior (BScBA) Thesis completed by M. Wainwright, Mikkeli Business Campus, Helsinki School of Economics and Business Administration

2002 *Mobile Commerce: Hype or Reality?* Senior (BScBA.) Thesis completed by P. Louko, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

2002 *Transport Perspectives within the European Union.* Senior (BScBA.) Thesis completed by O. Martychtchenko, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

2001 *Investing in African Economies: Inhibitions and Prospects – A General Overview*. Senior (BBA.) Thesis completed by P. Kalubi, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

1996 *Population Estimation Techniques Using the Housing Unit Method*. Master of Urban Science (M.U.S.) Research Paper completed by Tom Bryan, Department of Urban Studies, Portland State University (Co-chaired with George Hough).

1987 *Measuring Propensity: The Association between Socioeconomic Variables and Differential Migration for Ohio, 1975-1980*. M.A. Thesis completed by K. A. Wright, Department of Sociology, Bowling Green State University.

1986 *Estimation of Net Migration among Major regions in Iraq, 1957- 1977,* M.A. Thesis completed by A. Al-Jiboury, Department of Sociology, Bowling Green State University.

1986 *An Interpretation of the Ratio-Correlation Method of Population Estimation.* M.A. Thesis completed by R. Prevost, Department of Sociology, Bowling Green State University.

B. Committees of which a member

2017 A Descriptive Profile of the Multiracial Asian Population in the United States. Ph.D. Dissertation completed by Sooji Han, Department of Sociology, University of California Riverside

2014 A Spatial Examination of Residency Restriction Legislation: The Impact of Social Disorganization and Social Services. Ph.D. Dissertation completed by Erin Wolbeck, Department of Sociology, University of California Riverside

2012. Exploring the Decision-Making Process in Relation to Legitimacy Assignment. Ph.D. Dissertation completed by Adam Sanford, Department of Sociology, University of California Riverside.

2005 *Unique Competencies of International Non-Governmental Organizations (INGOs): Empirical Explorations from India*. Ph.D. Dissertation completed by Pranaya Kumar Swain, Department of Sociology, Indian Institute of Technology-Kanpur, Kanpur, Utter Pradesh, India (External Examiner).

1991 *The Influence of Parents on the Drinking Patterns of Their Teenage Children*. M.A. Thesis completed by R. D. Jacobsen, Division of Social Sciences, Pacific Lutheran University.

1990 *Austrian National Identity and the Dokumentationsarchis des Osterreichischen Widerstandes*. M.A. Thesis completed by F. Hornquist, Division of Social Science, Pacific Lutheran University.

1989 *A Model for Fertility Change*. Ph.D. Dissertation completed by N. Sugathan, Department of Demography, University of Kerala, (External Examiner).

1989 *The Spruce Program: A Profile of the Participants*. M.A. Thesis completed by K. Roe, Division of Social Science, Pacific Lutheran University.

1986 *A Content Analysis of Music Videos*. M.A. Thesis completed by L. Olsen, Department of Radio, Television, and Film, Bowling Green State University.

1986 *Projection of Flexible Age-specific Migration Rates: An Examination of Pittenger's Simplified Techniques*. M.A. completed by B. Bennett, Department of Sociology, Bowling Green State University.

1986. *Alienation Correlates of Marital Dissolution: A Longitudinal Study*. Ph.D. Dissertation completed by Yvonne Woods, Department of Sociology, Bowling Green State University.

V. <u>Professional Development</u>

Participant in (and Successful completion of) Records Management Training, ALCS, June, 2016

Participant in (and Successful completion of) Information Security Training, ALCS, June, 2016.

Participant, Population Projections Workshop, Association for Latin American Population Studies, 16 November 2010.

Participant, U.S. Census Bureau Workshop, “The American Community Survey,” 22 September 2010.

Participant, U.S. Census Bureau Webinar, “The American Community Survey: Tracking How We Change with Multi-Year Estimates,” 18 November 2009.

Participant, Nielsen Claritas Webinar, “Small Area Population Estimates,” 10 November 2009.

Special Sworn Status. US Census Bureau. 2007 (renewed, 2008).

Participant, “Title 13 Training, Confidentiality and Privacy.” US Census Bureau, Completed, March, 2007 and renewed November 2008.

Participant, “The Basic Course in the Protection of Human Research Subjects,” University of Mississippi, Completed, October, 2005.

Participant, RAND Summer Institute on Aging. RAND, Santa Monica, California. July, 2004.

Participant, Fulbright German Studies Seminar. Berlin, Rostock, and Bonn, Germany. June, 2003.

Participant in (and successful completion of), “Finnish for Foreigners II,” Kuopio University, Kuopio, Finland, July-August, 2001

Participant in (and successful completion of), “Finnish for Foreigners I,” Mikkeli Polytechnic College, Mikkeli, Finland, July, 2000

Participant in (and successful completion of), “Ethics in Business,” Science Applications International Corporation, 1998, 1999

Participant in (and successful completion of), Regulatory and Licensing Training Program, U.S. Department of Energy, Yucca Mountain Project, Las Vegas, Nevada, November, 1998

Participant, “The American Community Survey,” American Statistical Association, Los Angeles, California, August, 1997

Participant, “Marketing and Census 2000,” Seattle, Washington, August, 1996

Participant in and successful completion of), “Refresher Swedish,” Portland State University, Portland, Oregon, Fall, 1995.

Participant in (and successful completion of), “Introductory Finnish,” Portland State University, Portland, Oregon, Fall, 1995

Participant, “Census 2000 Content and Access,” Cincinnati, Ohio, April, 1993.

Participant, “Arkansas State Census Data Center Annual Meeting,” Little Rock, Arkansas, October, 1992.

Participant, “The Strategic Planning Process,” Pacific Lutheran University, January, 1992.

Participant, “1990 Census Content,” U.S. Bureau of the Census (Seattle Regional Office), Pacific Lutheran University, November, 1990.

Participant, “Programs and Products of the U.S. Bureau of the Census,” U.S. Bureau of the Census (Detroit Regional Office) Bowling Green State University, April, 1987.

Participant, “Proposal Writing and Research Administration,” College of Education, Bowling Green State University, Spring Semester, 1987.

Participant, ”An Introduction to the Bootstrap,” Continuing Education Session, American Statistical Association, Chicago, Illinois, August, 1986.

Participant, First Annual Research Conference, U.S. Bureau of the Census, April, 1985.

Participant in (and successful completion of),, “Performance Evaluation for Supervisory Personnel,” Alaska Department of Labor, September, 1983.

Participant, “Planning for the 1990 Census,” Continuing Education Session, American Statistical Association, Toronto, Ontario, Canada, August, 1983.

Participant, (and successful completion of), “Successful Project Management,” Alaska Department of Personnel, Juneau, Alaska, October, 1981.

Participant in (and successful completion of), “MARK-IV Programming,” Informatics, Inc., Olympia, Washington, 1980.

Participant in (and successful completion of), “IBM OS JCL” and “WYLBUR,” Washington State University, Olympia, Washington, 1979.

Participant (and successful completion of), “Zero-Based Budgeting,” Washington Office of Financial Management, Olympia, Washington, 1978.

Participant, “Funding Public Higher Education,” Washington Office of Financial Management-Washington Higher education Coordinating Board, Olympia, Washington, 1977.

Participant, “Didactic Seminar on Causal Modeling,” American Sociological Association, San Francisco, California, August, 1976.

Participant in (and successful completion of), “Swedish I,” “Swedish II,” and “Swedish III,” Stockholm University, Stockholm, Sweden, 1973-74.

Participant, “1970 Census Products and Their Use,” Hawaii Department of Administration, Honolulu, Hawaii, May, 1973.

Participant in (and successful completion of), “Introduction to Basic Assembly Language (BAL) Programming,” University of Hawaii, Honolulu, Hawaii, Spring, 1973.

VI. Research Projects and Grants

J. **A. Research Grants and Contracts Let and Administered**

"Survey of Food Consumption and Lifestyles," Nye and Lincoln counties, Nevada, ($100,000). 1996-97, University of Nevada Las Vegas

“1984 Residential Energy Survey” ($250,000). 1983-84, Walker Information, Inc.

“Cooperative Publication on Alaskan Native Demography” ($4,000). 1984, Alaska Department of Labor.

“Chloropleth Computer Mapping” ($3,500). 1983, Alaska Department of Labor.

“Public Opinion Survey”, Washington State Board for Community College Education, ($25,000). 1981Gilmore Research Group.

"Revision to the Higher Education Enrollment Projection System (HEEPS)," ($5,000), 1980, Washington State Office of Financial Management.

"Population Forecasting System" ($30,000), 1980, Washington State Office of Financial Management.

K. **B. Research Contracts Awarded**

Population Health Impact of Reduced Risk Tobacco Products ($320,000). ALCS, Inc. (Principal Investigator) 2013-2018.

Hopi Tribal Population Dynamics and Forecast ($70,000). Hopi Tribe. 2017-2019.

Population Forecasting System Evaluation ($20,000) Washington State Office of Financial Management (Co-Principal Investigator with J. Tayman), 2015-2016

Accuracy Study ($228,000). ESRI (Co-Principal Investigator, Cropper GIS), 2011-2012.

Population Projections for Native Hawaiians. ($16,078). Policy Analysis and System Evaluation, Kamehameha Schools, Honolulu, Hawaii. March, 2008 (Principal Investigator, McKibben Demographic Research).

Evaluation of methods used to estimate vacancy rates and average persons for households ($25,000), U. S. Bureau of the Census, Summer 2007- Fall 2008.
Multi-Year Estimates, American Community Survey, ($5,500). U. S. Bureau of the Census, Summer, 2007.

Evaluation of Methods used to Estimate the Size and Composition of the Foreign-Born Population ($27,000). U.S. Bureau of the Census, September, 2006 (through Sabre Systems, Inc.), Spring 2007 - Fall 2007.

Enrollment Forecasting and Attendance Boundary Study. ($12,000). Harrison County School District, Biloxi, MS., Fall, 2006. (Principal Investigator, J. McKibben).

Small Area Labor Force and Population Projections. ($7,500). Southern Nevada Regional Planning Commission (Subcontract with Theodore Roosevelt Institute, Las Vegas, NV), Summer, 2006

Population Projections of the Chinese Population by Age and Sex for 22 Selected Counties. ($1,500). Third Wave Research, Inc. Madison, Wisconsin. November 2004.

Population Projections for Native Hawaiians. ($9,871.24). Policy Analysis and System Evaluation, Kamehameha Schools, Honolulu, Hawaii. May 2004.

Forecasting Headcount Enrollment at the Southaven Satellite Campus, ($2,000). Office of Outreach and Continuing Education, University of Mississippi. December 2003.

Estimation and Forecasting of U.S. Lifestyle Segments, 2002 to 2012 ($6,500), Third Wave Research, Inc., Madison, Wisconsin. October, 2002.

Review and Revision of Demographic Forecasts for Jubail, Saudi Arabia ($20,000), Parsons Brinckerhoff, Inc., Jubail, Saudi Arabia, July, 1999.

Demographic Mentoring and Instruction ($3,000), Western Washington University, Bellingham, Washington, 1999.

Washoe County Population Estimation System Development ($24,900), Washoe County Nevada. 1999.

Redesign of the Nevada State Population Forecasting Model ($12,000), Nevada Consulting Alliance/Nevada State Demographer's Office. 1998-99.

Census Enumerator, Crew Leader, and Supervisor Training, Neighborhood Census Project ($2,500), Portland Multnomah Progress Board (funded by a grant from the Anne E. Casey Foundation), Portland, Oregon. 1997.

Evaluating Response Rates for the American Community Survey, Portland Test Site, ($2,000) U.S. Bureau of the Census. 1997.

Estimating Household Income from Incomplete Data ($25,000), Metromail, Inc. 1997.

Liberal Education Profile, Portland State University ($70,000), Portland State University. 1997 (with D. Atkinson).

Forecasting Enrollment and Attendance Zone Changes for the Hillsboro 1J District ($77,000), Hillsboro1J School District, Oregon, 1995-1996 (with D. Lycan, G. Hough, and I. Sharkova).

Forecasting Enrollment for the Newberg School District ($5,000), Newberg School District, Oregon, 1996.

Estimating and Forecasting U.S. Lifestyle Segments, 1990 to 2010 ($5,000), Third Wave Research, Inc. (with T. Bryan and G. Hough)

Omnibus Contract for Income Surveys, Community Development Block Grants ($18,000), Oregon Department of Economic Development, 1996.

Tribal Membership Forecast ($1,400). The Confederated Tribes of the Grand Ronde Community of Oregon, 1995.

"Demographic Services" for Study included in ADAMNA Grant No. P50 MH48197-03, entitled "Center For Rural Mental Health Care Research" ($7,198). University of Arkansas for Medical Sciences, 1992-93.

"Kitsap County Open Space Poll." Consultation and Training of a Volunteer Organization to conduct Polling in support of a proposed open-space Bond Issue, Kitsap County, Washington ($3,000). Kitsap Citizens for Open Space, 1992.

"Pierce County Private Industry Council, Evaluation of Programs." ($25,000). Pierce County Private Industry Council. 1991. (with J. Schiller and K. McDade).

Pierce County Solid Waste Management Survey: ($12,000). Jacobsen Ray McLaughlin and Fillips, Inc., 1991.

"1991 Tacoma-Pierce County Quality of Life Survey." Module on Mental Health Issues ($3,000). Greater Lakes Mental Health Foundation, 1991.

"Implementation of the REMI Socioeconomic Forecasting Model in support of the SAIC/YMPO socioeconomic monitoring program and SCA model development." ($29,000). Science Applications International Corporation, Yucca Mountain Project Office. U.S. Department of Energy, 1991.

"1990 Tacoma-Pierce County Quality of Life Survey." Module on health Issues ($6,000). Tacoma-Pierce County Health Department,.

1990.“Implementation of the REMI Socioeconomic Forecasting Model, in support of the SAIC/YMPO socioeconomic monitoring program and SCA model development.” ($38,000). Science Applications International Corporation, Yucca Mountain Project Office. U.S. Department of Energy, 1990.

“Review and Analysis of the Demographic Module of the EDFS-S REMI Module.” ($6,380). Science Applications International Corporation, Yucca, Mountain Project Office, U.S. Department of Energy, 1989-90.

“Small Area Model Development for the High Level Radioactive Waste Repository.” ($10,000). Battelle Human Affairs Research Centers, 1989.

“1989 Tacoma-Pierce County Solid Waste Management Survey.” module on hazardous and other household wastes ($6,000). Pierce County Waste Management Division, Pierce County, Washington, 1989.

“Pierce County Solid Waste Management Survey.” ($17,000). Pierce County, Washington (Co-Investigator with J. Schiller), 1988.

1988 “Tacoma Area Quality of Life Survey,” module on racial issues ($2,000). Tacoma Urban League (Co-Investigator with J. Schiller), 1988.

“Evaluation of the Demographic Component of the HARC/REMI Economic Demographic Model ($3,000). Battelle Human Affairs Research Centers, 1988.

‘Survey of Applied Demographers.” ($1,500). Population Association of America, 1986-87.

“Life Tables By Sex, 1980 and 1970 and Net Migration By Age and Sex, 1970-80 and 1960-70 For Ohio.” ($750). Final Report submitted to the Ohio Data User’s Center, Department of Development, December, 1984.

“Technical Data Services.” ($2,500). Alaska Reapportionment Board, 1981. 1980 Census Computer Tape Acquisition and Evaluation” ($3,000). Washington State Redistricting Board, 1979.

C. Research Grants Awarded

“Measuring Health Status for Populations with Incomplete Census & Vital Statistics Information: Estimating Life expectancy at Birth.” ($9,861). COR Fellowship. University of California Riverside. 2017.

“Socio-Economic Status, Race, and Life Expectancy in Los Angeles County, 1970-1990: A Proof of Concept Proposal for $20,100 in Funds under Strategic Goal 1. ($20,100) College of Humanities, Arts, and Social Sciences, University of California (Principal Investigator). 2011-2012.

“Virtual Co-laboratory for Policy Analysis in Greater Los Angeles” ($2,300,000). UC Multicampus Research Program and Initiatives, University of California. (Co-Investigator with Richard Arnott et al.). 2010-2014.

“Perceptions of Disaster Relief and Recovery: Analyzing the Importance of Social and Kinship Networks Among Hurricane Katrina Refugees on the Mississippi Gulf Coast.” ($96,212). National Science Foundation (Co-Principal Investigator with F. Forgette and M. Van Boening), 2005-6.

“Interdisciplinary Working Group to Develop a Strategy for the Development of an NICHD Population and Health Research center in Mississippi.” ($9,400). Office of Research and Sponsored Programs, University of Mississippi (Principal Investigator, with Co-Investigators, Fazlay Faruque and Peggy Hewlett). 2005-6.

“Applied Demographic Research in Migration” ($40,000). National Science Foundation (Co-Director with L.M. Tedrow), 1991.

"Applied Demographic Research in Migration" ($40,000). National Science Foundation (Co-Director with L.M. Tedrow), 1989.

"Applied Demographic Research in Migration" ($40,000). National Science Foundation (Co-Director with L.M. Tedrow), 1988.

"VCR Survey" ($1,500). Kaltenborn Foundation (with B. Klopfenstein), 1987.

VCR Survey" ($5,000). National Association of Broadcasters (with B. Klopfenstein), 1987.

"Pilot Survey of VCR Use" ($1,500). Kaltenborn Foundation, 1986.

"Pilot Survey of VCR Use" ($2,730). Bowling Green State University, 1986.

"Socioeconomic Correlates of Infant Mortality: Ohio, 1980" ($90,000). U.S. Department of Health and Human Services. (Co-principal Investigator with E.G. Stockwell and J. Wicks), 1985-86.

D. Program Grants Awarded

"Transition Funding for the BScBA Degree Conversion, Phase II (€100,000), European Union Objective 1 Program (with V-P. Heiskanan). 2002

"Transition funding for the BScBA Degree Conversion, Phase I (€200,000), European Union Objective 1 Program (with V-P. Heiskanen), 2001

"BBA Program Development" (€200,000) European Union Objective 1 Program (with J. Masalin), 2000.

"Academic Challenge: Developing an Applied Demography Program, Bowling Green State University" ($121,336). Ohio Board of Regents (with M. Pugh et al.), 1986.

VII. Publications

A. Books and Monographs

Socio-demographic Perspectives on the COVID-19 Pandemic. (Forthcoming) Co-editor with Richard Verdugo. Information Age Publishing, Charlotte, NC.

Global Populations in Transition (2018). Co-author with Jo Martins and Fei Guo. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Cohort Change Ratios and Their Applications. (2017). Co-author with Jack Baker, Jeff Tayman, and Lucky Tedrow. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

The Frontiers of Applied Demography. (2016) Editor. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

The Washington State Census Board and Its Demographic Legacy. (2016). Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Methods of Demographic Analysis. (2014). Co-author with Farhat Yusuf and Jo Martins. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

A Practitioner's Guide to State and Local Population Projections. (2013). Co-author with Stanley K. Smith and Jeff Tayman. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Subnational Population Estimates. (2012). Co-author with Jeff Tayman. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Opportunities and Challenges for Applied Demography in the 21st Century. (2012). Co-Editor with Nazrul Hoque. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York .
.
Learning Statistics: A Manual for Sociology Students.(2012). Cognella Academic Publishing/University Readers. San Diego, CA.

An Introduction to Consumer Demographics and Behaviour: Markets are People. (2011). Co-author with Farhat Yusuf and Jo Martins. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Estimating Characteristics of the Foreign-Born by Legal Status: An Evaluation of Data and Methods (2011). Co-author with Dean Judson. Springer Briefs in Population Studies, Volume 2, Springer, B.V. Press. Dordrecht, Heidelberg, London, and New York.

CEMAF as a Census Method: A Proposal for a Re-Designed Census and an Independent Census Bureau. (2011). Co-author with Paula Walashek. Springer Briefs in Population Studies, Volume 1, Springer, B.V. Press. Dordrecht, Heidelberg, London, and New York

Applied Demography in the 21st Century. (2008). Co-Editor with Steve Murdock. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Southern Nevada Regional Economic Study (2006). Co-author with Alan Schlottmann, Robert Schmidt, and Edward Feser. Theodore Roosevelt Institute. Irvine, CA and Las Vegas, NV.

The Methods and Materials of Demography, 2nd Edition.. (2004). Co-Editor with Jacob Siegel. Academic/Elsevier Press: Los Angeles.

Population Projections for States and Local Areas: Methodology and Analysis. (2001). Co-author with Stanley K. Smith and Jeff Tayman. Kluwer Academic /Plenum Press: New York.

Issues In Applied Demography: Proceedings of the 1986 National Conference (1987) Co-Editor with Jerry Wicks. PSRC Press: Bowling Green, Ohio.

Socioeconomic Correlates of Infant Mortality-Ohio, 1980. Final Report for the Maternal and Child Health and Crippled Service Program, Grant MCJ-390520-01 (1986) Co-author with Edward G. Stockwell and Jerry Wicks.

Alaska Population Overview: 1982. Alaska Department of Labor (1983). Editor.

Alaska Population Overview: 1981. Alaska Department of Labor (1982). Editor.

B. Book and Monograph Chapters

Swanson, D. R. Sewell and T. Bryan (2021). The Effect of the Differential Privacy Disclosure Avoidance System Proposed by the Census Bureau on 2020 Census Products: Four Case Studies of Census Blocks in Alaska. pp. 2058-2062 in JSM 2021: Statistics, Data, and the Stories They Tell. American Statistical Association, Alexandria, VA.

“Estimating the underlying infant mortality rates for small populations: A case study of counties in Estonia.” (2021), pp. 3-21 in R. Verdugo (Ed). The Demographic Crisis in Europe: Selected Essays. Information Age Publishing. Charlotte, NC.

"Constructing Life Tables from the Kaiser Permanente Smoking Study and Applying the Results to the Population of the United States." (2020) pp.115-152 in B. Jivetti and M. N. Hoque (eds.). Population Change and Public Policy. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with S. Chow and T. Bryan).

"The Number of Native Hawaiians and Part-Hawaiians in Hawai'i, 1778 to 1900: Demographic Estimates by Age." (2020) pp. 345-356 in B. Jivetti and M. N. Hoque (eds.). Population Change and Public Policy. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

"A Bio-demographic Perspective on Inequality and Life Expectancy: An Analysis of 159 Countries for the Periods 1970-90 and 1990-2010." (2018) pp. 577- 613 in C.R. Rao and A. Rao (eds.), Handbook of Statistics, Vol. 38. Elsevier Press (with L. Tedrow).

"Foreword." (2016). pp. v-vi in T. Wilson, E. Charles-Edwards, and T. Bell (eds.) Demography for Planning and Policy: Australian Case Studies. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

"Demographics and Market Segmentation: China and India." (2016). pp. 3-19 in D. Swanson (ed.) The Frontiers of Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with J. Martins, F. Yusuf, and G. Brooks).

"Census Costs: Rationale for Re-designing Traditional Census Data Collection Methodology with the Census-Enhanced Master Address File" (2016). pp. 287-301 in D. Swanson (ed.) The Frontiers of Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with A. Yacyshyn).

"A Long Term Test of the Accuracy of the Hamilton-Perry Method for Forecasting State Populations by Age."(2016). pp, 491-513 in D. Swanson (ed.) The Frontiers of Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with J. Tayman).

"Exploring Stable Population Concepts from the Perspective of Cohort Change Ratios: Estimating the Time to Stability and Intrinsic *r* from Initial Information and Components of Change." (2016) pp. 227-258 in R. Schoen (ed.). Dynamic Demographic Analysis. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with L. Tedrow and J. Baker).

"An Exploratory Examination of Population and Stability in Afghanistan." (2015). pp. 305-322 in R. Sáenz, N. Rodríguez, and D. Embrick (eds.). The International Handbook of the Demography of Race and Ethnicity. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with S. El-Badry).

"Applied Demography" (2015). pp. 839-844 in: James D. Wright (editor-in-chief). International Encyclopedia of the Social & Behavioral Sciences, 2nd edition, Vol 1. Oxford: Elsevier.

"On the Ratio-correlation Method of Population Estimation and Its Variants." (2014). pp. 93-118 in N. Hoque and L. Potter (eds.). Emerging Techniques in Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with J. Tayman).

"A Loss Function Approach to Examining ACS Estimates: A Case Study of 2010 "Person per Household" Estimates for California Counties" (2012). pp. 98-100 in (D. Cork, Ed.) Case Studies/Agenda Book, Workshop on the Benefits (and Burdens) of the American Community Survey. National Research Council, National Academy of Sciences, Washington, DC. (with George Hough).
http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_073124.pdf

"DOMICILE 1.0: An Agent-Based Simulation Model for Population Estimates at the Domicile Level." (2012). pp. 345-370 in N. Hoque and D. A. Swanson (eds.) Opportunities and Challenges for Applied

Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with C. Griffith, M. Knight, and B. Long).

"Introduction." (2012) pp. 1-3 in N. Hoque and D. A. Swanson (eds.) Opportunities and Challenges for Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York (with N. Hoque).

"Disappearing Hispanics? The Case of Los Angeles County, California: 1990-2000." (2011) pp. 95-122 in R. Verdugo (ed.). The Demography of the Hispanic Population: Selected Essays. Charlotte, NC: Information Age Publishing. Charlotte, NC. (with M. Kaneshiro and A. Martinez).

"Applied Demography: Its Business and Public Sector Components." (2008) in Yi Zeng (ed.) The Encyclopedia of Life Support Systems, Demography Volume. UNESCO-EOLSS Publishers. Oxford, England. (with L. Pol).(Online at http://www.eolss.net/).

"Applied Demography at the Beginning of the 21st Century." (2008) pp. 3-12 in S. Murdock and D. Swanson (eds.). Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with S. Murdock).

"Measuring Uncertainty in Population Data Generated by the Cohort-Component Method: A Report on Research in Progress." (2008) pp. 165-189 in S. Murdock and D. Swanson (eds.). Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

"Opportunities and Challenges for Applied Demography in the 21st Century" (2008). pp. 361-368 in S. Murdock and D. Swanson (eds.). Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.. (with S. Murdock).

"Introduction." pp. 1 - 8 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles. (with J. Siegel).

"Internal and Short Distance Migration." pp. 493-522 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles. (with T. Bryan and P. Morrison).

"Population Projections." pp. 561-601 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004).Academic/Elsevier Press: Los Angeles. (with M.V. George, S. Smith, and J. Tayman).

"Glossary and Demography Timeline" pp. 751-786 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles. (with G.E. Stephan).

"Regional Survey." pp. 3-151 to 3-155 in Viability Assessment for A Repository at Yucca Mountain, Nevada. 1998. U.S. Department of Energy: Washington, D.C.

"Evaluation Approach for the Arkansas Pilot Rural Enterprise Center." pp. 114-119 in P. Shapira and J. Youtie (eds.) Evaluating Industrial Modernization Programs: Practices, Methods, and Results. 1995. Georgia Institute of Technology: Atlanta, GA. (with J. Opitz, C. Franklin, S. Miller, and F. Fenix).

"Confidence Intervals for Net Migration that Incorporate Measurement Errors in Census Counts." pp. 121-140 In K. V. Rao and J. Wicks (eds.) Issues in Applied Demography: Proceedings of the International Conference on Applied Demography. 1994. PSRC Press: Bowling Green, Ohio (with H. Kintner).

"Estimating Vital Rates from Corporate Databases: How Long Will General Motors' Salaried Retirees Live?" pp. 265-297 in H. Kintner, T. Merrick, P. Morrison, and P. Voss (eds.) Demographics: A Casebook For Business and Government. 1994. Westview Press: Boulder, Colorado (with H. Kintner).

"Overview of Demography and Management Issues in Business." pp. 92-93 In J. Wicks and D. Swanson (eds.) Issues in Applied Demography: Proceedings of the 1986 National Conference, 1986. PSRC Press: Bowling Green, Ohio.
1987.

"Public Opinion," Chapter II in A Report to the Governor and the Legislature: The Community College System in Washington. Washington State Board for Community College Education: Olympia, WA 1980. (with R. Bell).

C. Refereed Journal Articles

2022 Global Under-reporting of COVID-19 cases from January 1, 2020 to May 6, 2022." Current Science (https://www.currentscience.ac.in/Volumes/123/06/0741.pdf) (with S. Krantz and A Rao).

2022 Using Taylor's Law to Estimate Variance in Annual Unemployment by State." Review of Economics and Finance (https://refpress.org/ref-vol20-a18/) (with J. Tayman).

2022 "Two New Mathematical Equalities in the Life Table." Canadian Studies in Population (https://doi.org/10.1007/s42650-022-00065-3) (with L.M. Tedrow).

2022 "Forecasting a Tribal Population using the Cohort-Component Method: A Case Study of the Hopi." Population Research and Policy Review (https://doi.org/10.1007/s11113-022-09715-5).

2022 "Taylor's Law and the Relationship between Life Expectancy at Birth and Variance in Age at Death in a Period Life Table. Population Review 61 (1): 31-42. (with L. Tedrow).

2021 "An Example of Converting Clinical Study Mortality Data into a Life Table: The U.S. Population with Sickle Cell Disease." Open Journal of Public Health. 3 (1): 1-5.

2021. "On Mathematical Equalities and Inequalities in the Life Table: Something Old and Something New." Canadian Studies in Population 48 (June): 225-237 https://link.springer.com/article/10.1007/s42650-021-00044-0 (with L. Tedrow).

2021 "Using Synthetic Adjustments and Controlling to Improve County Population Forecasts from the Hamilton-Perry Method." Population Research and Policy Review https://doi.org/10.1007/s11113-021-09646-7 (with J. Tayman and J. Baker).

2021 "The Accuracy of Hamilton-Perry Population Projections for Census Tracts in the United States." Population Research and Policy Review. https://doi.org/10.1007/s11113-020-09601-y (with J. Baker and J. Tayman).

2020 "How Relevant is the Basic Reproductive Number Computed during COVID-19, Especially during Lockdowns?" Infection Control and Hospital Epidemiology Dec 14;1-7. doi: 10.1017/ice.2020.1376. Online ahead of print. (with A. Rao, S. Krantz, M. Bonsall, T. Kurien S. N. Byrareddy, R. Bhat and S. Kurapati).

2020. "Estimating the underlying death rate of a small population: A case study of counties in Kansas, Nebraska, North Dakota, and South Dakota." Transactions of the Kansas Academy of Science 123 (3-4): 353-369 (with J. Baker and A. Kposowa).

2020 "Estimating the Underlying Infant Mortality Rates for Small Populations, Even Those Reporting Zero Infant Deaths: A Case Study of 42 Counties in Mississippi." Journal of the Mississippi Academy of Sciences 65 (2): 183-197 (with R. Cossman).

2019. "A New Estimate of the Hawaiian Population for 1778, the Year of First European Contact." Hŭlili 11 (2): 203-222.

2019. "Estimating the stochastic uncertainty in sample-based estimates of infant mortality in Ghana." Journal of Economic and Social Measurement 44: 161-175. (with J. Baker and A. Kposowa).

2019. "Estimating the underlying infant mortality rates for small populations, even those reporting zero infant deaths: A case study of 66 local health areas in British Columbia." Canadian Studies in Population 46 (2): 173-187

2019. The Civil War's Demographic Impact on White Males in the 11 Confederate States: An Analysis by State and Selected Age Groups." Journal of Political and Military Sociology 46 (1): 1-26 (with R. Verdugo).

2019. "Estimating the underlying infant mortality rates for small populations: An historical study of US counties in 1970." Journal of Population Research 36 (3): 233–244 (with Jack Baker).

2019 Estimating the underlying infant mortality rates for small populations, including those reporting zero infant deaths: A case study of counties in California." Population Review 58 (2): 1-22 (with J. Baker and A. Kposowa).

2018. "A Note on rescaling the arithmetic mean for right-skewed positive distributions. Review of Economics and Finance.14 (4):17-24 DOI Article ID: 1923-7529-2018-04-17-08 (with Jeff Tayman and Tom Bryan).

2017. "Using Modified Cohort Change and Child Woman Ratios in the Hamilton-Perry Forecasting Method." Journal of Population Research 34 (3): 209-231. (with J. Tayman).

2017. "The Civil War's Demographic Impact on White Males in Mississippi." Journal of the Mississippi Academy of Sciences 62 (3). (with R. Verdugo).

2016. "New Insights on the Impact of Coefficient Instability on Ratio-Correlation Population Estimates." Journal of Economic and Social Measurement 41: 121-143 (with J. Tayman).

2015. "On the Relationship among Values of the same Summary Measure of Error when it is used across Multiple Characteristics at the same point in time: An Examination of MALPE and MAPE." Review of Economics and Finance 5 (1): 1-14.

2013. "Consumer Demographics: Welcome to the Dark Side of Statistics." Radical Statistics 108: 38-46.

2012. "Socio-Economic Status and Life Expectancy in the United States, 1990-2010: Are We Reaching the Limits of Human Longevity?". Population Review 51 (2): 16-41 (with A. Sanford).

2012. "Population, the Status of Women, and Stability in Afghanistan." The Southern Africa Journal of Demography 13 (1): 5- 36 (with S. El-Baldry).

2012. "Using Cohort Change Ratios to Estimate Life Expectancy in Populations with Negligible Migration: A New Approach." Canadian Studies in Population 39: 83-90. (with L. Tedrow).

2012. "An Evaluation of Persons per Household (PPH) Data Generated by the American Community Survey: A Demographic Perspective." Population Research and Policy Review 31: 235-266. (with G. Hough).

2011. "On Estimating a De Facto Population and Its Components." Review of Economics and Finance 5:17-31 (with J. Tayman).

2011. "MAPE-R: A Rescaled Measure of Accuracy for Cross-Sectional, Sub-national Forecasts." Journal of Population Research 28: 225-243 (with T. Bryan and J. Tayman).

2011. "Immigration and its Effect on Demographic Change in Spain." The Open Demography Journal 4:22-33 (with R. Verdugo).

2010. "New Directions in the Development of Population Estimates in the United States?". Population Research and Policy Review 29 (6): 797-818 (with J. McKibben).

2010. "Socio-economic Status and Life Expectancy in Indiana, 1970-1990." The Open Demography Journal 3:1-7. (with N. Hoque).

2010 "Business Demography in the 21st Century." Population Research and Policy Review. 29 (1): 1-3 (with F. Yusuf).

2010 "Forecasting the Population of Census Tracts by Age and Sex: An Example of the Hamilton-Perry Method in Action." Population Research and Policy Review 29 (1): 47-63 (with A. Schlottmann and R. Schmidt).

2010. "Teaching Business Demography Using Case Studies". Population Research and Policy Review. 29 (1): 93-104 (With P. Morrison).

2010 "Towards a Comprehensive Quality Assurance System for Degree Programs in Higher Education." The Montana Professor 20(1): 13-20.

2009 "Socio-Economic Status and Life Expectancy in the United States, 1970-1990." Population Review 48 (1): 39-63 (with Mary McGehee and Nazrul Hoque)
(Reprinted in the Special 60th Anniversary Issue of Population Review, 2021)

2009 "The Socio-Demographic and Environmental Effects of Katrina: An Impact Analysis Perspective". The Open Demography Journal.2 (11): 36-46. (with R. Forgette, J. McKibben, M. Van Boening, and L. Wombold).

2009 "Socio-economic Status and Life Expectancy in Florida, 1970 to 1990." The Florida Scientist 72 (3): 242-248. (with M. McGehee).

2009 "Socio-economic Status and Life Expectancy in Mississippi, 1970-1990. Journal of the Mississippi Academy of Sciences 54 (3-4): 190-195 (with M. McGehee).

2009 "Hurricane Katrina: A Case Study of Its Impacts on Medical Service Providers and Their Client Populations." The Open Demography Journal 2: 8-17.

2009 "A Model Growth Curve for Juvenile Age Estimation using Diaphyseal Long Bone Lengths among Ancient Maya Populations." Latin American Antiquity 20 (1): 3-14 (with M. Danforth, G. Wrobel, and C. Armstrong).

2009 "After a Disaster: Lessons in Survey Methodology from Hurricane Katrina." Population Research and Policy Review 28: 67-92 (with T. Henderson, M. Sirois, A. Chia-Chen Chen, C. Airriess, and D. Banks).

2009 "Before, Now, and After: Assessing Hurricane Katrina Relief." Population Research and Policy Review 28: 31-42 (with R. Forgette, B. Dettrey, and M. Van Boening).

2008 "The Demographic Effects of Hurricane Katrina on the Mississippi Gulf Coast: An Analysis by Zipcode." Journal of the Mississippi Academy of Sciences. 53 (4): 213-231.

2008 "Psychologists and Hurricane Katrina: Natural Disaster Response through Training, Public Education, and Research." Training and Education in Professional Psychology 2: 83-88 (with S. Schulenberg, K. Dellinger, A. Koestler, A. Kinnell, R. Forgette, and M. Van Boening).

2008 "Applied Demography in Action: A Case Study of Population Identification." Canadian Studies in Population 35 (1): 133-158.

2007 "On MAPE-R as a Measure of Cross-sectional estimation and forecast accuracy." Journal of Economic and Social Measurement 32 (4): 219-233 (with C. Coleman).

2007 "Assessing Katrina's Demographic and Social Impacts on the Mississippi Gulf Coast." Journal of the Mississippi Academy of Sciences 54 (2): 228-242 (with R. Forgette, M. Van Boening, C. Holley, and A. Kinnell).

2007 "Determinants of Government Aid to Katrina Survivors: Evidence from Survey Data." Southern Economic Journal 74 (2): 344-362. (with W. Chappell, R. Forgette, and M. Van Boening).

2007 "Providing Census Tabulations to Government Security Agencies in the United States: The Case of Arab-Americans." Government Information Quarterly 24(2): 470-487. (with S. El-Badlry).

2006 "The United States Census at the Dawn of the 21st Century." Journal of Economic and Social Measurement. 31(3-4): 139-149. (with Charles G. Renfro).

2006 "The Roots of Conflict over U.S. Census Counts in the Late 20th Century and Prospects for the 21st Century." Journal of Economic and Social Measurement 31 (3-4): 185-205 (with P. Walashek).

2006 "An Evaluation of the American Community Survey: Results from the Oregon Test Site." Population Research and Policy Review 25(3): 257-273. (with G. Hough).

2006 "A Comparison of in-class and Online Student Evaluations" Delta Education Journal 3(2): 37-47.

2005 "Deep Structure Learning and Statistical Literacy." Delta Education Journal 3(1): 41-52.

2004 "Contemporary Developments in Applied Demography within the United States." Journal of Applied Social Science 21 (2): 26-56 (with L. Pol).

2004 "Advancing Methodological Knowledge within State and Local Demography: A Case Study." Population Research and Policy Review 23 (August): 379-398.

2000 "A Note on the Measurement of Accuracy for Subnational Demographic Estimates." Demography 37 (May): 193-201 (with J. Tayman and C. Barr).

1999 "In Search of the Ideal Measure of Accuracy for Subnational Demographic Forecasts." Population Research and Policy Review 18: 387-409 (with J. Tayman and C. Barr).

1998 "Merging Methods and Judgment for K-12 Enrollment Forecasting." Educational Research Service Spectrum 16 (Fall): 24-31 (with G. Hough, R. Lycan, C. Clemans, and J. Rodriguez).

1999 "On the Validity of MAPE as a Measure of Population Forecast Accuracy." Population Research and Policy Review 18: 299-322 (with J. Tayman).

1998 "Toward an Assessment of Continuous Measurement: A Comparison of Returns with 1990 Census Returns for the Portland Test Site." Journal of Economic and Social Measurement . 24: 295-308 (with G. Hough).

1998 "In Defense of the Net Migrant." Journal of Economic and Social Measurement. 24: 155-170 (with S. Smith).

1997 "On Teaching Statistics." Voprosy Statistiki 7: 77-80. (with J. McKibben, *in Russian*)

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VIII. Papers Read at Professional Conferences

A. Contributed Refereed Papers

"Boosted Regression Trees for Small-Area Population Forecasting." Presented at the 2022 Conference of the Southern Demographic Association, Knoxville, TN (with J. Baker and J. Tayman).

"Expert Judgment & Standard Small Area Projection Methods: Population Forecasting for Water District Needs." Presented at the 2022 Conference of the Southern Demographic Association, Knoxville, TN (with T, Bryan, M. Hattendorf, K. Comstock, L. Starosta, and R. Schmidt).

"Repurposing record matching algorithms to identify blocks and block groups affected by Differential Privacy: Progress Report on a Pilot Project." Presented at the 2022 Small Area Estimation Conference, Session on Challenging Problems from SAE and Modern Data Science, May 26 (with T. Bryan).

"Producing Summary Statistics of COVID-19 cases and deaths over time: The case for using geometric measures, not arithmetic ones. Presented at the 2022 Conference of the Canadian Population Association, Session on Covid-19 and Mortality, May 10 (with R. Verdugo, A. Rao, and S. Krantz).

"Boosted Regression Trees for Small-Area Population Forecasting." Presented at the Annual Meeting of the Population Association of America, Session on Challenges Facing Small Area Forecasting and Estimation. Atlanta, GA. February 1st, 2022. (with J. Baker and J. Tayman).

"Taylor's Law and the Relationship between Life Expectancy at Birth and Variance in Age at Death in a Period Life Table." Presented at the Annual Meeting of the Population Association of America, Session on Mathematical Demography. Atlanta, GA. April 9th, 2022. (with L. M. Tedrow).

"Forecasting a Tribal Population using the Cohort-Component Method: A Case Study of the Hopi." Presented at the Annual Meeting of the Population Association of America, Session on Old Wine in New Bottles: Tools for Applied Demographers, Atlanta, GA, April 8th, 2022.

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"Constructing Life Tables from the Kaiser Permanente Smoking Study and Applying the Results to Models Designed to assess the Population Health Impact of Reduced Risk Tobacco Products." Presented at the Population & Public Policy Conference,
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"Leveraging Extant Data to Meet Local Information Needs: A Case Study in Team Applied Demography." Presented at the Annual Meeting of the Population Association of America, March, 2000, Los Angeles, California (with P. Morrison, C. Popoff, I. Sharkova, and J. Tayman).

" We are What We Measure: Toward A New Approach for Assessing Population Forecast Accuracy." Presented at the Annual Meeting of the Southern Demographic Association, October 29th, 1999, San Antonio, Texas. (with J. Tayman and C. Barr).

"On Measuring Accuracy in Subnational Demographic Forecasts." Presented at the 52nd Congress of the International Statistical Institute, Helsinki, Finland, August 18, 1999 (with J. Tayman and C. Barr).

"Population Estimates from Remotely Sensed Data: A Discussion of Recent Technological Developments and Future Research Plans." Presented at the Annual Meeting of the Canadian Population Society, Lennoxville, Quebec, Canada, June, 1999 (with J. Wicks, R. Vincent, and J. Luiz Pereira De Almeida.

"Teaching Statistics to Non-Specialists in an Intercultural Setting: Addressing Issues of Understanding and Retention in a Modern Learning Environment." Presented at the Mid-Term Conference of the Sociology of Education Research Committee, International Sociological Association, Joensuu, Finland, June, 1997. (with J. McKibben).

"A Computer-Based Curriculum For Service Courses In Statistics." Presented at the International Conference On Problems of Statistical Education, St. Petersburg, Russia, July,1996 (with J. McKibben).

"In Defense of The Net Migrant." Presented at the 1996 Annual Meeting of the Population Association of America, New Orleans, Louisiana (with S. Smith).

"What Is Applied Demography?" Presented at the 1996 Annual Meeting of the Population Association of America, New Orleans, Louisiana (with T. Burch and L. Tedrow).

"Alternative Measures For Evaluating Population Forecasts: A Comparison of State, County, and Sub-county Geographic Areas." Presented at the 1995 Annual Meeting of the Population Association of America, San Francisco, California (with J. Tayman).

"Changes in Factories, Changes in Accuracies: On the Relationship Between Economic Structure and the Ratio-Correlation Method of Population Estimation." Presented at the 1994 Annual Meeting of the Southern Demographic Association, Atlanta, Georgia (with J. McKibben).

"Forecasting Health Benefits Populations." Presented at the XIVth International Symposium on Forecasting, Stockholm, Sweden (with H. Kintner).

"Between A Rock and A Hard Place: The Evaluation of Demographic Forecasts." Presented at the XIVth International Symposium on Forecasting, Stockholm, Sweden (with J. Tayman).

"Construction of Confidence Intervals for Population Forecasts Generated by the Cohort-Component Method." Presented at the 1994 Annual Meeting of The Population Association of America, Miami, Florida (with D. Arnold, J. Carlson, H. Kintner, and C. Williams).

"Ties that Bind: Families, Organizational Demography, and Health Benefits." Presented at the 1994 Annual Meeting of The Population of America, Miami, Florida (with H. Kintner).

"Measuring the Utility of Population Projections." Presented at the 1994 Annual Meeting of The Ohio Academy of Science. Toledo, Ohio (with J. Tayman).

"Mean Square Error Confidence Intervals for Intercensal Net Migration Estimates: A Case Study of Arkansas 1980-1990." Presented at the 1993 Annual Meeting of the Southern Demographic Association, New Orleans, Louisiana (with H. Kintner and M. McGehee).

"Estimating Demographic Rates From Employer Administrative Database." Presented at the 1993 Annual Meeting of the International Union for the Scientific Study of Population, Montreal, Quebec (with H. Kintner).

"Evaluation of Ratio-Correlation and Difference-Correlation Methods for Estimating County Populations: The Case of Post-Industrial Indiana." Presented at the 1993 Annual Meeting of the American Statistical Association, San Francisco, California (with J. McKibben).

"Ratio-Correlation: A Short-Term County Population Projection Method." Presented at the 1993 International Symposium on Forecasting. Pittsburgh, Pennsylvania (with D. Beck).

"The Relationship Between Life Expectancy and Socioeconomic Status In Arkansas, 1970 and 1990." Presented at the 1993 Annual Meeting of the Population Association of America, Cincinnati, Ohio.

"Measurement Errors in Census Counts and Estimates of Intercensal Net Migration." Presented at the 1993 Annual Meeting of the Population Association of the America, Cincinnati, Ohio (with H. Kintner).

"Ratio-Correlation as a Short-Term County Population Projection Method: A Case Study for Washington State." Presented at the 1992 Annual Meeting of the Southern Demographic Association , Charleston, South Carolina (with D. Beck).

"Adult Transfer Students: Predicting Who Will Finish and Who Will Drop Out." Presented at the 1992 Annual Meeting of the Pacific Northwest Association of Institutional Researchers and Planners, Bellingham, Washington (with S. Hedman and L. Nelson).

"Measurement Errors in Census Counts and Estimates of Intercensal Net Migration." Presented at the 1992 Annual Meeting of the American Statistical Association, Boston, Massachusetts (with H. Kintner).

"The Disposal of Household Hazardous Waste: Results From a Survey of Pierce County, Washington." Presented at the 1992 Annual Meeting of the Northwest Scientific Association, Bellingham, Washington.

"A Variation of the Housing Unit Method For Estimating the Population of Small, Rural Areas: A Case Study of the Local Expert Procedure." Presented at the 1992 Annual Meeting of the Population Association of America, Denver, Colorado (with J. Carlson and L. Roe).

"A System for Placing Confidence Intervals Around Estimated the Population of Small, Rural Areas: A Case Study of the Local Expert Procedure." Presented at the 1992 Annual Meeting of the Population Association of America, Denver, Colorado (with J. Carlson and L. Roe).

"Perspectives on Change in Employer Health Benefits Populations." Presented at the 1991 Annual Meeting of the Population Association of America, Washington, D.C. (with H. Kintner).

"Evaluating Socioeconomic Impact Models: An Adoption of Winter's Method to the Yucca Mountain Project." Presented at the 1990 Annual Meeting of the American Statistical Association, Anaheim, California (with J. Carlson, J. Hollingsworth, and C. Williams).

"The Development of Small Area Socioeconomic Data to be Utilized for Impact Analysis: Rural Southern Nevada." Presented at the 1990 International High Level Radioactive Waste Management Conference, Las Vegas, Nevada (with J. Carlson and C. Williams).

"Identifying Factors Associated with the Subjective Feelings of One's Quality of Health." Presented at the 1990 U.S. Uniformed Services Conference of Family Physicians, Richmond, Virginia (with W. F. Miser).

"Demographic Issues for Washington State." Session on Regional Demography, 1989 Annual Meeting of the Rural Sociological Society, Seattle, Washington.

"Intercensal Net Migration Among the Three Major Regions of Iraq, 1957-1977." Presented at the 1989 Annual Meeting of the Population Association of America, Baltimore, Maryland (with A. Al-Jiboury).

"VCR Households: A Comparison of Early and Recent Adopters." Presented at the 1988 Annual Meeting of the Broadcast Education Association, Las Vegas, Nevada (with B. Klopfenstein).

"Technical Skills and Training Needs of Applied Demography." Presented at the 1987 Annual Meeting for the American Statistical Association, San Francisco, California (with L. S. Rosen and H. J. Kintner).

"Causes of Death in Infancy and the Proposed Redefinition of the Neonatal Period." Presented at the 1987 Annual Meeting of the North Central Sociological Association, Cincinnati, Ohio (with E. G. Stockwell and J. Wicks).

"The Impact of Census Error Adjustments on Ohio Population Projections." Presented at the 1987 Annual Meeting of the North Central Sociological Association, Cincinnati, Ohio (with K. Vaidya, R. Yehya, B. Bennett and R. Prevost).

"Projecting Household VCR Penetration: A Demographic Approach." Presented at the 1987 Annual Meeting of the Population Association of America, Chicago, Illinois (with B. Klopfenstein).

"A State Based Regression Model For Estimating Substate Life Expectancy: Tests Using 1980 Data." Presented at the 1987 Annual Meeting of the American Statistical Association, San Francisco, California.

"An Analysis of VCR Adopter Characteristics and Behavior." Presented at the 1987 Annual Meeting of the International Communication Association, Montreal, Quebec, Canada (with B. Klopfenstein).

"Estimating Life Expectancy For Health Service Areas: A Test Using 1980 Data For Indiana." Presented at the 1986 Annual Meeting of the American Statistical Association, Chicago, Illinois.

"Converging Trends in the Relationship Between Infant Mortality and Socioeconomic Status." Presented at the 1986 Annual Meeting of the North Central Sociological Association, Toledo, Ohio (with E. Stockwell and J. Wicks).

"Geographic Variation of Longevity in Ohio, 1930 and 1980." Presented at the 1986 Annual Meeting of the North Central Sociological Association, Toledo, Ohio (with E. Stockwell).

"Identifying Extreme Errors in Ratio-Correlation Estimates of Population." Presented at the 1986 Annual Meeting of the Population Association of America, San Francisco, California (with R. Prevost).

"Missing Survey Data in End-Use Energy Models: An Overlooked Problem." Presented at the 1985 Annual Meeting of the American Statistical Association, Las Vegas, Nevada.

"Fecundability Among Ethnic Groups in Hawaii." Presented at the 1985 Annual Meeting of the North Central Sociological Association, Louisville, Kentucky.

"Issues in Energy End-Use Survey Research." Presented at the 1985 Conference of the American Council for an Energy Efficient Society, San Cruz, California (with S. M. Buller, R. J. Canter, L. Guliasi, and R. M. Wong).

"Improving the Measurement of Temporal Change in Regression Models Used for County Population Estimates." Presented at the 1983 Annual Meeting of the Population Association of America, Pittsburgh, Pennsylvania (with B. Baker and J. Van Patten).

"Municipal Population Estimation: Practical and Conceptual Features of the Housing Unit Method." Presented at the 1983 Annual Meeting of the Population Association of America, Pittsburgh, Pennsylvania (with B. Baker and J. Van Patten).

"Getting at the Factors Underlying Trends Using Statistical Decomposition Techniques." Presented at the 1980 Annual Meeting of The College and University Systems Exchange, Phoenix, Arizona.

"Allocation Accuracy in Population in Estimates: An Overlooked Criterion with Fiscal Implications." Presented at the 1980 Annual Meeting of The American Statistical Association, Houston, Texas.

"Graphic Display of Demographic Data." Presented at the 1979 Annual Meeting of The Population Association of America, Philadelphia, Pennsylvania (with L. M. Tedrow).

"A Method of Estimating Annual Age-Standardized Mortality Rates for Counties: Results of a Test Using Washington State Data." Presented at the 1978 Annual Meeting of The American Statistical Association, San Diego, California.

"Preliminary Results of an Evaluation of the Utility of Ridge Regression for Making County Population Estimates." Presented at the 1978 Annual Meeting of the Pacific Sociological Association.

B. Contributed Non-Refereed Papers

"Why Do Group Health Benefit Populations Change Size? A Case Study of General Motors Salaried Population, 1983-1990." Presented at the 1994 Applied Demography Conference, Bowling Green, Ohio (with H. Kintner).

"An Evaluation of the Demographic Components of a Proprietary Economic Forecasting and Simulation System: The REMI Model as used by SAIC, Inc. for the Yucca Mountain Project in Nevada." Presented at the 1994 Applied Demography Conference, Bowling Green, Ohio (with Y. Zhao and J. Carlson).

"On the Utility of Lagged Ratio-Correlation as a Short-Term County Population Projection Method: A Case Study of Washington State." Presented at the 1994 Applied Demography Conference, Bowling Green, Ohio (with J. Tayman and D. Beck).

"The Producers Perspective." Presented at the 1994 Annual Meeting of Federal-State Cooperative Program for Population Projections, Session on The Utility of Population Projections, Miami, Florida.

"Confidence Intervals for Net Migration Estimates that Incorporate Measurement Errors in Census Counts." Presented at the 1992 Applied Demography Conference, Bowling Green, Ohio (with H. Kintner).

"Baseline Projections of Household Solid Waste Generation: A Case Study of Pierce County, Washington." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio.

"Conference Intervals for Estimates of Intercensal Net Migration." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio (with H. Kintner).

"Estimating Migration in a Sparsely-Populated Specialized Economic Area: The Yucca Mountain High-Level Nuclear Waste Repository." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio (with J. Carlson).

"Development of Demographic Data Utilizing Key Informants in Rural Incorporated Places." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio (with L. K. Roe and J. Carlson).

"Poverty and Infant Mortality." Presented at the June, 1989 Meeting of the Washington State Child Health Research and Policy Group, Seattle, Washington.

"Some Results of the 1988 'Research Experience for Undergraduates' Program in Demography." Poster Session at the 1988 Applied Demography Conference, Bowling Green, Ohio (with L. Tedrow).

"Overview of the Survey of Applied Demographers." Presented at the 1987 Annual Meeting of the Population of Association of America, Chicago, Illinois (with H. Kintner).

"Applied Demography." Presented to the Department of Sociology, Western Washington University, October, 1986.

"Preliminary Results From the 1986 Survey Demographers." Presented at the 1986 Annual Meeting of the Population Association of America, San Francisco, CA (with H. Kintner et al.).

"Survey Findings." Presented at the Public Hearing on Public Affairs Programming and Commercial Television, June, 1984 San Francisco, California.

"Comparative Analysis of Change in Average Household Size With Reference to IRS Data on Average Exemptions Per Return: Census Results From Selected Municipalities in Washington, 1970, 1977, and 1978." Presented at the October, 1979 meeting of The Task Force on Sub-County Population Estimates Federal-State Cooperative Program for Population Estimates, Washington, D. C. (with T. J. Lowe).

"Recent Trends in Household Size for Rural, Predominantly White, Non-Hispanic Communities: Special Census Results From Three Towns in Washington, 1976 and 1979." Presented at the October, 1979 meeting of The Task Force on Sub-County Population Estimates, Federal-State Cooperative Program for Population Estimates, Washington, D. C. (with T. J. Lowe).

IX. Invited Presentations

"Modeling and the Covid-19 Pandemic: A Local Area Perspective." Presented at the Annual Meeting of the Federal-State Cooperative Program for Population Projections (Virtual), May 13-14, 2021.

"Using a Simple Population Forecasting Method to Assess Economic and Health Characteristics of a Population of Interest." Presented at the Department of Public and Regional Economics, Aoyama Gakuin University, Tokyo, Japan, 7 November 2018

"Using a Population Forecasting Method to Assess the Demographic Impact of Natural and Man-made Disasters." Presented at the Department of Sociology, Kyoto University, Kyoto, Japan, 5 November 2018

"Cohort Change Ratios and Their Applications." Presented as part of the Open Seminar, Foreign Scholar Lecture Series, National Institute for Population and Social Security Research, Tokyo, Japan, 31 October 2018 (http://www.ipss.go.jp/int-sem/e/lec2.html)

"On Equality and Inequality in Stationary Populations." Presented at the 4th International Symposium on the Human Mortality Database, Berlin, Germany, May 23, 2017 (with Lucky Tedrow).

"Use of Demography in the Public Sector." presented in an invited session on demography and policy at the 2017 Conference of the Population Association of American, Chicago, IL.

"The Washington State Census Board and Its Demographic Legacy." Presented at the Center for Studies in Demography and Ecology, University of Washington. Seattle, Washington, January 8, 2016.

"Aging in the Western Hemisphere, 2015-2035." Presented at the analytic exchange on Demographic Change and Mobility in Aging Regions to 2035. Co-sponsored by the U.S. National Intelligence Council and the Bureau of Intelligence and Research, U.S. State Department. Arlington, VA. July 17. 2015.

"The Current Status of Applied Demography: A Four-Field View with an Eye toward the Future." Plenary Presentation. 8th International Conference on Population Geographies, University of Queensland, Brisbane, Australia. July 1-3, 2015.

"A New Estimate of the Hawaiian Population for 1778, the Year of First European Contact." Presented as part of the Colloquium Series, Department of Sociology, University of Hawai'i. February 13th, 2015.

"Measuring Uncertainty in Population Forecasts: A New Approach Employing the Hamilton-Perry Method." Presented at the Population Institute Methods Workshop, Penn State University, June 24th, 2014. State College, PA (with Jeff Tayman).

"Measuring Uncertainty in Population Forecasts: A New Approach Employing the Hamilton-Perry Method." Presented at the Annual Conference of the Federal-State Cooperative Program for Population Projections, Boston, MA, April 30th, 2014. (with Jeff Tayman).

"Measuring Uncertainty in Population Forecasts: A New Approach." Presented at the Joint Eurostat/UNECE Work Session on Demographic Projections, October 29-31, 2013. Rome, Italy (with Jeff Tayman).

"People of the Inland Empire: Changes in Ethnicity, Age and Race, Presented at the "Practically Speaking" Development Series, Center for Sustainable Suburban Development, University of California Riverside, June 11th, 2013. Riverside, CA.

"A Loss Function Approach to Examining ACS Estimates: A Case Study of 2010 "Persons Per Household" Estimates for California Counties." Presented at the Workshop on "The Benefits (and Burdens) of the American Community Survey" sponsored by the Committee on National Statistics, National Academies of Science. June 14-15, 2012, Washington, DC (with George Hough).

"Practical Demography." Keynote address presented at the Warren Kalbach Conference, March 18-19, 2011, Edmonton Society of Demographers, University of Alberta, Edmonton, Alberta, Canada.

"Developing Small Area Population Estimates for Use in Health Information Systems." Presented in the Introductory Plenary Session at the 19th International Conference of the Forum for Interdisciplinary Mathematics,18-20 December 2010, Patna University, Patna, India. (with J. McKibben and K. Faust).

"Perspectives on the American Community Survey." Presented at the 2010 Conference of the Latin American Association for Population Studies, 15-19 November, Havana, Cuba.

"New Directions for the Decennial Census?" Presented in the Invited Session, What if the 2020 Census Was the First Census: What Would We do?, 2010 Conference of the American Statistical Association, 31 July – 5 August, Vancouver, British Columbia, Canada.

"Demographics and Housing." Presented at the Randall Lewis Seminar, Blakely Center for Sustainable Suburban Development, Riverside, California, 17 June 2010.

"The Possibilities for using the Housing Unit method." Presented at Statistics Canada, Ottawa, Ontario, 28 May, 2009.

"The Future of Suburbs." Presented at Pitney Bowles Business Decisions. Toronto, Ontario, 27 May 09.

"Socio-economic Status and Life Expectancy in the United States: 1970 to 1990." Presented at the School of Public Policy, University of Texas- San Antonio, San Antonio, TX. 21 April 2009.

"Small Area Estimation and Health Information Systems" Presented at the Small Area Measurement Consultation Conference, Institute for Health Metrics and Evaluation, University of Washington. Seattle, WA,10 April 2009.

"Aging and other Population Trends and their Implications for Suburbs." Presented as part of the 'Leadership Lenexa' Seminar Series, Lenexa Chamber of Commerce. Lenexa, KS. 27 June 2008.

"How the Changing U.S. Census will Affect Decision-Making." Presented at the Randall Lewis Seminar, Blakely Center for Sustainable Suburban Development, Riverside, California, 15 May 2008.

"An Evaluation of Persons Per Household (PPH) Data Generated By the American Community Survey: A Demographic Perspective." Presented at the American Community Survey, Multi-Year Estimates Meeting, 15 November 2006, U.S. Census Bureau, Suitland, Maryland.

"Counting the Gulf Coast: A Demographer Gauges Katrina's Impact in Mississippi." Department of Sociology, University of California Irvine, 23 October 207, Irvine, CA.

"Assessing Katrina's Impact on the Mississippi Gulf Coast: A Report on Completed Research." Poster presented at the 2007 Post-Katrina Forum Gulf States Alliance: Network Science and Recovery, 19-21 August, Biloxi, MS (with R. Forgette, M. Van Boening).

"The Needs of Researchers in Regard to Population Estimates." Conference on U.S. Census Bureau Population Estimates: Meeting User Needs." Sponsored by Council of Professional Associations on Federal Statistics.19 July 2006. Alexandria, VA.

The Impact of Hurricane Katrina on the Mississippi Gulf Coast." Annual Exhibition of the Coalition for National Science Funding, 7 June 2006. Washington, DC.

"The Impact of Hurricane Katrina on the Mississippi Gulf Coast." Annual CLARITAS Client Conference, 30-29 April, 2006, San Diego, CA.

"The Impact of Hurricane Katrina on the Mississippi Gulf Coast. Annual Meeting of the Population Association of America, Session of the Committee on Population Statistics. 30 March 2006. Los Angeles, CA.

"Demographic Changes Affecting Undergraduate Enrollment in Mississippi." College of Liberal Arts Faculty Forum, 22 March 2005. University of Mississippi.

"The Changing Demography of the CSGS Region." Plenary Keynote Address, Annual Meeting of the Conference of Southern Graduate Schools, 26 February 2005. Biloxi, MS.

"An Evaluation of the American Community Survey: Results from the Oregon Test Site." Presented at the Annual Meeting of the American Statistical Association, August 8th to 10th, 2004. Toronto, Ontario, Canada (with G. Hough).

"Evidence From Oregon." Presented at the Annual Meeting of the Population Association of America, April 1st to 3rd, 2004. Boston, Massachusetts (with G. Hough).

"The Impact of Demographic Factors on Business: Selected Examples." Presented to Faculty of the H.E.L.P. Institute, Kuala Lumpur, Malaysia, 25 April 2003

"Results of the BScBA Program Self-Evaluation Study." Presented at the External Accreditation Peer Review Team's On-Site Visit, Finnish Ministry of Education, Valamo, Finland, October 8-9, 2002.

"Demographic Constraints on Regional Development." Presented at the Technology and Economic Development in the Periphery (TEDIP) Dissemination Seminar, Joensuu University, Savonlinna, Finland, June 13th, 2002.

"International Education in Finland: Issues and Challenges." Presented to the Rural Studies Workshop, Institute for Rural Research Studies, Helsinki University, Mikkeli, Finland, February 1st, 2002

"The International BBA Program of the Helsinki School of Economics and Business Administration." Presented to the President of Finland, Mikkeli, Finland, May 15th, 2001.

"Providing International Education: A Finnish Example of the European Experience." Presented at the 4th Strategy Seminar on Strategic Alliances and Partnerships in International Education, Kuala Lumpur, Malaysia, April 7th, 2001.

"On Measuring Accuracy in Subnational Demographic Estimates." Presented at the National Conference on Population Estimates Methods, Sponsored by the Population Estimates Branch, U.S. Bureau of the Census, June 8th, 1999. Suitland, Maryland (with J. Tayman and C. Barr).

"Census Errors and Census 2000: The Role of Local Government." Presented at the Public Stakeholders Meeting of the Southern Nevada Census 2000 Committee, March 23rd, 1999, Las Vegas, Nevada.

"The Food Consumption Survey." Presented at the Total System Performance Assessment Technical Exchange, U.S. Department of Energy/ U.S. Nuclear Regulatory Commission. Las Vegas, Nevada, November 6th, 1997.

"Amargosa Valley Population Survey." Presented to the U.S. National Advisory Committee on Nuclear Waste, U.S. Nuclear Regulatory Commission. 94th Meeting, Las Vegas, Nevada, September 23rd, 1997.

"An ACS Performance Assessment." Presented in the session "The American Community Survey – Uses and Issues." Annual Meeting of the American Statistical Association, Anaheim, California, August 13th, 1997.

"The Region's Changing Demographics." Presented at the International Council of Shopping Centers' 1996 Meeting, Skamania Lodge, Skamania, Washington, August, 1996.

"Local Population Trends." Presented at the Chamber of Commerce Leadership Program." West Linn, Oregon, March, 1996.

"Oregon's Population Trends." Presented at the Strategic Budget Conference of Oregon State Agency Directors, Salem, Oregon , March, 1996.

"Evaluation Plan for the Arkansas Network Based Technology Deployment Program." Presented at the Workshop on Manufacturing Modernization: Evaluation Practices, Methods and Results. National Institute of Standards and Technology, Atlanta, Georgia, September 18-20, 1994.

"Estimates of the Current Cost of Health Care in Arkansas." Presented to the Governor's Task Force on Health Care Reform. Little Rock, Arkansas, April 13, 1994.

"An Overview of Impact Analysis." Presented at the Local Development Association Meeting, Heber Springs, Arkansas 1993.

"Applied Demography for Urban Studies." Two-day workshop presented at Loyola University, Chicago, Illinois, 1993.

"Confidence Intervals for Net Migration Estimates that Incorporate Measurement Errors in Census." Presented at the Central Arkansas Chapter of the American Statistical Association, November, 1992 (with H. Kintner).

"Demographic Aspects of Labor Force Trends in Arkansas." Presented at the March 5th, 1993 Arkansas Business Leaders Symposium, Arkansas College, Batesville, Arkansas.

"Decennial Census Products and Their Use in Research." Presented in the Research Conference Series, Center for Mental Health Research, University of Arkansas for Medical Sciences, November 18th, 1992.

"Factor Analysis and Related Analytical Techniques." Presented to the Uniformed Services Physicians' Fellowship Program, Madigan Army Medical Center, April 17th, 1992.

"A Variation of the Housing Unit Method for Estimating the Age and Gender Distribution of Small, Rural Areas: A Case Study of the Local Expert Procedure." Presented at the Invited Paper Session Methods of Small Area Population Estimation. Annual Meeting of the American Statistical Association, San Francisco, California, August, 1993 (with J. Carlson, L. Rowe and C. Williams).

"A First Bite in a Seven Course Meal: Results from the 1990 Census." Presented to the City Club of Tacoma, June, 1991 (with W. Opitz).

"A New Method for Projecting Small Area Populations." Presented to the Center for Business and Economic Research, College of Business, University of Nevada, Las Vegas, March, 1991.

"Socio-Economic Impact Analysis for the Yucca Mountain Nuclear Waste Project: Insights from Demography." Presented to the Department of Sociology, Michigan State University, February, 1991.

"Ratio-Correlation as a Short-Term, Subnational Population Forecasting Method: A Case Study Using Washington State Data." Presented to the Demography Division, Statistics Canada, Ottawa, Ontario, February 11, 1991.

"Demographics! Demographics! Demographics!" Presented to members of the Private Industry Council, Pierce County, Washington, March, 1990.

"Marx vs. Malthus: An Empirical Approach to Examining Orthodoxy." Presented in the Colloquium Series "Living In A Fragile Environment," Valparaiso University, January, 1990.

"Small Area Socio-Economic Forecasting," Presented to the Faculty Club, Valparaiso University, January,1990.

"Local, National, and International Demographic Trends." Presented to the Washington Agriculture and Forestry Leadership Program, Pacific Lutheran University, January, 1990.

"Some Problems in Small Area Forecasting." Presented at the ICPSR Summer Program in Quantitative Methods, University of Michigan, July, 1989.

"Washington State Population Issues." Presented at the Washington State Public School Social Studies Educators Retreat, Pilgrim Firs, Washington, October, 1987.

"Why are American Babies Dying Before Their First Birthday?' Presented at the October, 1987 Interdepartmental Colloquium, Pacific Lutheran University.

"Subnational Population Estimation and Its Relation to Emerging Legal Challenges in the United States." Presented at the November, 1986 Brown-bag session of The Population Studies Center, University of Michigan.

"Population Trends in North Central Ohio." Presented at the November, 1986 meeting of The Social Science Club, Firelands College.

"The Multiple Regression Approach to Deriving Local Area Population Estimates." Presented at the April, 1985 meeting of the Northwest Ohio Chapter of The American Statistical Association, Bowling Green, Ohio.

"Population and Enrollment Forecasting." Presented at the March, 1983 meeting of the Anchorage Demographic Group, Anchorage, Alaska.

"Trends in Washington's Population." Presented at the November, 1979 meeting of the Seattle Economists' Club, Seattle, Washington.

X. Testimony

A. Legislative and Regulatory

Oral and written Testimony, "*Why 2+2 Should Never Equal 3: Getting Intercensal Population Estimates Right the First Time*," House Government Reform Subcommittee on Federalism and the Census oversight hearing Washington, DC. September 6, 2006.

Oral and written Testimony, Nuclear Regulatory Commission, Advisory Committee On Nuclear Waste, September 25, 1997, Las Vegas, Nevada.

Oral Testimony on Oregon's Population Trends. Presented to the Interim Committee On Growth Management, Oregon House of Representatives, February, 1996.

Written Testimony on "The Proposed Options For Incorporating Information From The Post-Enumeration Survey into The Intercensal Population Estimates produced By the Bureau of the Census." Public Hearing Docket (No. 920895-2195) U.S. Bureau of the Census. August 31, 1992.

"Results From the 1988 Recycling Survey." Presented to the Subcommittee on Solid Waste Management, Pierce County Council, January, 1989.

Written Testimony on "Plans for Conducting the 1990 Census in Alaska." Subcommittee on Census and Population, Hearing Conducted in Anchorage, Alaska, August 19, 1987.

Written Testimony on "Federal Statistics and National Data Needs." Subcommittee on Energy, Nuclear Proliferation and Government Processes of the Committee on Government Affairs, United States Senate, 98th Congress, 1st Session. Committee Print (S. Print 98-191) Washington: 1984.

Oral and Written Testimony, Labor Committee, Alaska House of Representatives, 1981, 1982, 1983.

Oral and Written Testimony, Finance Committee, Alaska House of Representatives, 1981, 1982, 1983.

Oral and Written Testimony, Finance Committee, Washington State Senate, 1979.

Oral and Written Testimony, Finance Committee, Hawaii State House of Representatives, 1974.

B. Judicial

Deposed and Testifying Expert Witness. 2022. Case A-17-762364-C. Estate of Joseph P. Schrage Jr & Kristina. D. Schrage v. Allan Stahl. Eighth Judicial Court, Clark County, Las Vegas, Nevada.

Deposed and Testifying Witness. 2021. Civil No. CV 6417-203, State of Arizona, General Adjudication of All Rights in the Little Colorado River System and Source, Phoenix, AZ

Deposed and Testifying Expert Witness. 2012. Board of Education, Shelby County, Tennessee et al. v. Memphis City Board of Education et al. / Board of County Commissioners, Shelby County, Tennessee (third party plaintiff) v. Robert E. Cooper et al (third party defendant)." (Constitutionality of a Tennessee state law). Baker, Donelson, Bearman, Caldwell and Berkowitz, PC. Memphis, TN.

Deposed Expert Witness. 2009. "Quest Medical Services v. FMIC." (Demographic Effects of Hurricane Katrina on New Orleans in a case involving a Medical Service Provider). . Podvey, Meanor, Catenacci, Hildner, Cocoziello, and Chattman, P.C., Newark, NJ.

Deposed and Testifying Expert Witness. 2007. "Spring Hill Hospital, Inc. v. Williamson Medical Center and Maury Regional Hospital." (Evaluation of population forecasts in a case involving a proposed hospital). Miller and Martin, PLLC, Nashville.

Deposed and Testifying Expert Witness. 1994. Arkansas Supreme Court. (Statistical evaluation of the accuracy of the number of qualified signatures on a public referendum as determined by a sample).

Deposed Expert Witness. 1983. "Anchorage, et al., vs. J. Hammond et al." (Lawsuit brought by local governments against the state of Alaska on how populations are determined for purposes of state revenue sharing to local governments).

XI. Service

A. Professional

Co-editor, Special Issue on Population Forecasting, *Population Research and Policy Review* (2023) (with J. Baker, I. Grossman, and T. Wilson).

Mortality Expert Panel, Society of Actuaries Research Institute, February, 2022 -

Interview, "Census Bureau's use of Synthetic Data worries Researchers." A story that appears in Associate Press News. May 27, 2021 https://apnews.com/article/census-2020-technology-data-privacy-business-be938fa5db887a0ae6858dff0be217ef

External Advisory Board, Geo-Spatial and Population Studies Research Center, University of New Mexico, April 2019 -

Chair, Estimates and Projections Session I, 2022 Applied Demography Conference February 1st.

Interview: "Information for Real Estate Agents." Wallethub, April 24th, 2019. https://wallethub.com/edu/best-worst-cities-to-be-a-real-estate-agent/18713/#expert=david-a-swanson

Interview: "Demographic Formula Reveals Surprisingly Short Careers for MLB Pitchers." A story that appears in UPI's Science News, August 3rd, 2018 (https://www.upi.com/Demographic-formula-reveals-surprisingly-short-careers-for-MLB-pitchers/3841533304869/).

Editorial Board, *Population Research and Policy Review*, 2014-2021

Advisory Board, Online Program in Applied Demography, Pennsylvania State University, 2017-2021

Advisory Board, Nantucket Data Platform Project, Nantucket, Massachusetts, 2017-2020

Reviewer, Proposals for a special issue of *Population Research and Policy Review*, 2017.

Co-organizer, Conference on Applied Demography and Public Policy, University of Houston, Houston, TX, January, 2017.

Chair, Applied Demography Track Committee, 2017 Program Committee, Population Association of America. 2016-17.

2017 Program Committee, Population Association of America. 2016-2017.

Invited Commentary, "Compare Hawai'i and Mississippi," on the question, "Is Hawai'i a racial paradise?" Zocalo Public Square, September 15th, 2015 (http://www.zocalopublicsquare.org/2015/09/15/is-hawaii-a-racial-paradise/ideas/up-for-discussion/#David+A.+Swanson).

Poster Session Judge, "8th International Conference on Population Geographies, Brisbane, Australia, June 30th to July 3rd, 2015.

Discussant, Session 1130, "Demographic and Statistical Approaches to Small Area Estimation." Population Association of American, April 30th to May 1st, 2014. Boston, MA.

Session Chair, "Mortality and Later Life Health." Social Science History Association, 1-4 November 2012, Vancouver, BC, Canada.

Grant Proposal Reviewer. "FR/38/2-220/11 - Defining the Demographic Prospects of Georgia and Providing their Software," Shosta Rustaveli National Science Foundation of Georgia, Republic of Georgia (December, 2011).

Session Organizer and Chair, “Population Projections,” Applied Demography Conference, 8-10 January 2012, San Antonio, Texas.

Interview: “Experts Predict Bright Future.” A story that appears in The Telegraph. (Calcutta, India) December 21, 2010.

Interview: “Census Bureau releases detailed statistics on smaller Inland areas.” A story written by David Olson that appears in the Press-Enterprise, December 14, 2010

Interview: “Inland area lags behind state, nation in returning census forms.” A story written by David Olson that appears in The Press-Enterprise, March 31, 2010

Interview: “Government 'a Counting: Does the U.S. Census Need a 21st-Century Makeover?.” A story written by Katie Moisse that appears in Scientific American, March 25, 2010

Interview: “Some Hispanics puzzle over race question on census form.” A story written by Randy Cordova that appears in the Arizona Republic, March 23, 2010.

Interview: “The census inspires a sense of civic duty, distrust and fear.” A story written by Robert L. Smith that appears in The Cleveland Plain Dealer, March 16, 2010

Interview: “Campaign counts on snowbird surveys in Palm Springs.” A story written by Kate McGinty that appears in The Desert Sun, March 13, 2010

Interview: “Census Bureau reaching out in Inland area to communities least likely to be counted.” A story written by David Olson that appears in The Press-Enterprise, January 28, 2010

Interview: “Countdown to the Count-up.” A story written by Bettye Miller that appears in UCR: The Magazine of UC Riverside Winter, 2010, pp. 22-23.

Session Chair, “The 2010 Census.” Applied Demography Conference, 10-12 January 2010, San Antonio, Texas.

Session Organizer and Chair, “Expert Witness Work and the Applied Demographer,” Applied Demography Conference, 10-12 January 2010, San Antonio, Texas.

Co-Program Organizer (with Nazrul Hoque and Lloyd Potter), Applied Demography Conference, 10-12 January 2010, San Antonio, Texas.

Discussant, Session 1704, “Using Demography in the Business and Public Sectors.” 2009 Conference of the International Union for the Scientific Study of Population, Marrakech, Morocco, 27 September – 2 October 2009.

Associate Editor, Open Demography Journal, 2009-2010

Facilitator, Census Advisory Committee of Professional Associations, U.S. Census Bureau, 2009-10

Chair, Committee representing the Population Association of America, Census Advisory Committee of Professional Associations, U.S. Census Bureau. 2008-2009

Census Advisory Committee of Professional Associations, U.S. Census Bureau. 2004-2010

Member, Development Committee, Population Association of America, 2008-2013.

Chair and Conference Organizer, Psychology and Social Sciences Section, Mississippi Academy of Sciences, 2007-8.

Chair, Session on "Fertility: Social Issues and Reproduction." Annual Meeting of the Southern Demographic Association, 13 October 2007, Birmingham, Al.

Presenter and Discussant, "Symposium for School Districts that will be affected by the Toyota Assembly Plant near Tupelo. Mississippi." School of Education, University of Mississippi, 30 March 2007.

Organizer, Symposium: "the Psychological and Social Impacts of Hurricane Katrina." 2007 Conference of the Mississippi Academy of Sciences 22 February. Starkville, Mississippi.

Program Organizer, Applied Demography Conference, 9-11 January 2007, San Antonio, TX.

Chair and Conference Organizer, Psychology and Social Sciences Section, Mississippi Academy of Sciences, 2006-7.

Reviewer, Using the American Community Survey: Benefits and Challenges, Committee on Functionality and Usability of Data from the American Community Survey, Committee on National Statistics, National Research Council. Washington, DC: National Academy of Sciences Press. 2007.

Chair, Session on "Anxiety, Ambiguity, and Multiculturalism in Statistical Education," Annual Meeting of the American Statistical Association, 10 August 2006, Seattle, WA

Vice-Chair, Psychology and Social Sciences Section, Mississippi Academy of Sciences, 2005-6.

Local Arrangements Coordinator, Annual Meeting of the Southern Demographic Association University of Mississippi, October, 2005.

Editor, Population Research and Policy Review, Official Journal of the Southern Demographic Association, July 1st, 2004- July 1st, 2007.

Member, Advisory Board, Fulbright Academy of Science and Technology, 2003-2008.

Participant, Users Perspective Meeting, Panel on the Functionality and Usability of Data from the American Community Survey, Committee on National Statistics of the National Academies, April 2005, Washington, DC.

Technical Review Panel Member, Small Business Innovative Initiative Grants, National Institutes of Health, 2002.

Chair, National Committee on Applied Demography, Population Association of America, 2001-2.

Publications Officer, Government Statistics Section, American Statistical Association, 2001-2.

Member, National Committee on Applied Demography, Population Association of America, 1999 to 2003.

Organizer and Moderator, "Population Controls for the American Community Survey," Annual Meeting of the Southern Demographic Association, University of Mississippi, Oxford, Mississippi, November, 2005.

Organizer and Chair, "New Directions in Local Area Estimation and Forecasting,"

Annual Meeting of the Population Association of America, New York, New York. March, 1999

Technical Review Panel Member, Small Business Innovative Initiative Grants, National Institutes of Health, 1997.

Organizer and Chair, Panel Discussion on "Surf's Up! Building, Accessing, and Linking Demography's Internet Sites," Annual Meeting of the Southern Demographic Association, Memphis, Tennessee, October, 1996.

Chair, Session on "Computer Support of Statistical Education," The International Conference On Statistical Education In The Modern World: Ideas, Orientations, Technologies, St. Petersburg, Russia, July, 1996.

Chair, Membership Committee, Population Association of America, 1996 to 1998.

Technical Advisory Committee, Oregon Survey Research Laboratory, University of Oregon, 1996-97.

Textbook Reviewer, *Life in a Business Oriented Society* (by Richard Caston), Allyn and Bacon Publishers, 1996.

Member, Editorial Board, Population Research and Policy Review, 1995 to 1997, 2007-current.

Organizer and Chair, Session on "Estimates and Projection," 1996 Annual Meeting of the Population Association of America.

Co-Organizer, Sessions and Papers on State and Local Demography, 1995 Annual Meeting of the Population Association of America.

Member, Committee on Applied Demography, Population Association of America, 1994 to 1997.

Chair, Session on "Population, Environment and Development," 1994 Annual Meeting of The Southern Demographic Association, Atlanta, Georgia.

Secretary-Treasurer, Southern Demographic Association, 1994-1997 and 2004-2007.

Chair, Session on "Demographics of School and College Enrollment." 1994 Applied Demography Conference, Bowling Green, Ohio.

Organizer, Session on "Should Projections be Privatized?" and Session on "The Utility of Population Projections." 1994 Annual Meeting of the Federal-State Cooperative Program on Population Projections, Miami, Florida.

Member, Delegation to visit U.S. Senators RE the FY 1994 Budget for the U.S. Bureau of the Census, sponsored by The Population Association of American, July, 1993.

Member, Senior Council, Ohio Academy of Science, 1993-95.

Roundtable Discussion Leader on "School District Demography" 1993 Annual Meeting of the Population Association of America, Cincinnati, Ohio.

Organizer, Session on "Methods of Forecasting and Estimating," 1993 Annual Workshop of the National Association for Welfare Research and Statistics, Scottsdale, Arizona.

Arkansas State Representative to the Federal-State Cooperative Program for Population Projections, 1992 to 1995.

Member, National Peer Review Committee, Socio-economic Studies, High Level Radioactive Waste Repository, 1992, Yucca Mountain, Nevada.

Organizer and Chair, Session on “Projection and Forecasting Special Populations,” 1990 North American Conference on Applied Demography, Bowling Green, Ohio.

National Chairman, Federal -State Cooperative Program for Population Projections, 1993-94.

Discussant, Session on “Survey Research to Support Social Statistics,” 1990 Annual Meeting of the American Statistical Association, Anaheim, California.

Panelist, “Applied Demography and the Population Association of America,” given at the 1990 Annual Meeting of the Population Association of America, Toronto, Ontario. May, 1990.

External Examiner, “A Model for Fertility Change,” Ph.D. Dissertation submitted by N. Sugathan, Department of Demography, University of Kerala, 1989.

Participant, National Resource Persons Network, Office of Minority Health Resource Center, U.S. Public Health Service, 1989.

Member, Washington State Child Health Research and Policy Group, 1989-1993.

Discussant, Session on “Is the Non-Metropolitan Population Turnaround Over?” 1989 Annual Meeting of the Rural Sociological Society, Seattle, Washington.

Organizer and Chair, Session on “Demographic Issues and The Law,” 1988 National Conference on Applied Demography, Bowling Green, Ohio.

Chair, State and Local Demography Interest Group, Population Association of America, 1988-90.

Organizer and Chair, Session on Methodological Advances In State and Local Demography. 1988 Annual Meeting of the Population Association of America, New Orleans, Louisiana.

Member, Subcommittee on Academic Outreach, Business Demography Committee, Population Association of America, 1987-1988.

Roundtable Discussion Leader, “Marketing Your Organization’s Demographic Expertise and Resources.” 1987 Annual Meeting of The Population Association of America, Chicago, Illinois.

Judge, North Central Sociological Association Undergraduate Student Paper Competition, 1987.
Co-Organizer, 1st Biennial Conference on Applied Demography, held at Bowling Green State University, September 26-27, 1986.

Member, State Advisory Committee on Population Forecasts, Ohio Data Users Center, Ohio Department of Development, 1986-1987.

Discussant, Session on Estimating and Forecasting Demographic Characteristics of Small Areas, 1986 Annual Meeting of the Population Association of America, San Francisco, California.

Discussant, Session on Estimates and Projections for State and Local Areas, 1985 Annual Meeting of the Population Association of America, Boston, Massachusetts.

Speaker, Panel on Careers in Applied Demography, 1985 Annual Meeting of the Population Association of America, Boston, Massachusetts.

Discussant, Session on Issues in State and Legal Demography, 1984 Annual Meeting of the Population Association of America, Minneapolis, Minnesota.

Alaska State Representative to the Federal State Cooperative Program for Population Projections, 1981-1983.

Discussant, Session on Forecasting Energy Demand, Northwest Utilities Conference, 1980 Annual Meeting, Portland, Oregon.

Discussant, Session on Mathematical Models in Sociology, 1978 Annual Meeting of the Pacific Sociological Association, Spokane, Washington.

Member, Editorial Board, Applied Demography, Population Association of America, 1985 to 1993.

External Examiner, "Unique Competencies of International Non-Governmental Organizations (INGOs): Empirical Explorations from India." Sociology Dissertation by Pranaya Kumar Swain, Ph.D. Candidate, Indian Institute of Technology-Kanpur, Kanpur, Utter Pradesh, India. 1995.

Editorial Referee, Demography, 2022 (1 paper)

Editorial Referee, Demographic Research 2021 (1 paper)

Editorial Referee, Population Research and Policy Review, 2021 (1 paper)

Editorial Referee, Spatial Demography, 2020 (1 paper)

Editorial Referee, Journal of Engineering and Applied Research, 2019 (1 paper)

Editorial Referee Spatial Demography, 2019 (1 paper),

Editorial Referee, Demography, 2018 (1 paper)

Editorial Referee, Canadian Studies in Population, 2018 (1 paper)

Editorial Referee, Journal of Mathematical Biology, 2018 (1 paper)

Editorial Referee, Demography, 2017 (1 paper)

Editorial Referee, Population, Space and Place, 2017 (1 paper)

Editorial Referee, Population Research & Policy Review, 2017 (1 paper)

Editorial Referee, Demography, 2016 (1 paper).

Editorial Referee, Review of Economics and Finance, 2016 (1 paper)

Editorial Referee, Journal of Population Research, 2016 (1 paper)

Editorial Referee, Population Studies, 2015 (1 paper).

Editorial Referee, The American Statistician, 2914 (1 paper)

Editorial Referee, Journal of Population Research. 2014. (1 paper).

Editorial Referee, Journal of Population Research. 2013. (1 paper)

Editorial Referee, Open Demography Journal. 2012. (1 paper)

Editorial Referee, Disasters Journal. 2012 (1 paper)

Editorial Referee, Population Research and Policy Review, 2011 (2 papers)

Editorial Referee, Canadian Journal of Sociology, 2011 (1 paper).

Editorial Referee, Journal of Population Research, 2011 (1 paper).

Editorial Referee, Journal of Population Research, 2010 (1 paper).

Editorial Referee, Population Research and Policy Review, 2010 (1 paper).

Editorial Referee, American Sociological Review, 2010 (1 paper).

Editorial Referee, Demography. 2010 (1 paper).

Editorial Referee, Population Health Metrics. 2010 (1 paper).

Editorial Referee, Journal of Planning Education and Research, 2009 (1 paper).

Editorial Referee, Population Research and Policy Review, 2009 (1 paper).

Editorial Referee, Population Research and Policy Review, 2008 (2 papers).

Editorial Referee, Population Studies, 2008 (1 paper).

Editorial Referee, Journal of the Mississippi Academy of Sciences, 2008 (2 papers) .

Editorial Referee, Population Research and Policy Review, 2007 (1 paper).

Editorial Referee, Journal of Population Research, 2007 (2 papers).

Editorial Referee, City and Community, 2006 (1 paper).

Editorial Referee, Journal of Economic and Social Measurement, 2005 (1 paper).

Editorial Referee, International Journal of Forecasting, 2004 (1 paper).

Editorial Referee, Demography, 2001 (1 paper).

Editorial Referee, Population Research and Policy Review, 1999 (1 paper).

Editorial Referee, International Journal of Forecasting, 1997 (1 paper).

Editorial Referee, Population Research and Policy Review 1996 (1 paper).

Editorial Referee, Demography, 1993 (1 paper).

Editorial Referee, Demography, 1991 (1 paper).

Editorial Referee, Demography, 1987 (1 paper).

Editorial Referee, The Energy Journal, 1987 (1 paper).

Editorial Referee, Demography, 1986 (1 paper).

Editorial Referee, Human Biology, 1985 (1 paper).

Editorial Referee, Demography, 1984 (1 paper).

Editorial Referee, Demography, 1981 (1 paper).

Editorial Referee, Social Biology, 1981 (1 paper).

Editorial Referee, Demography, 1980, (1 paper).

Reviewer, Proceedings of the 1992 International Conference on Applied Demography (1 paper).

B. Academic

Reviewer, Long range demographic and Enrollment projections for California," as part of the "Framework for UC's Growth and Support" project, at the request of the UC Provost, Aimee Dorr, 2017.

Faculty Chair, Graduate Student Awards Committee, Department of Sociology, University of California Riverside, 2016-2017

Faculty Chair, Technology Committee, Department of Sociology, University of California Riverside, 2016-2017.

Faculty Member, Undergraduate Studies Committee, Department of Sociology, University of California Riverside, 2010-2015.

Faculty Chair, Undergraduate Program Review Committee, Department of Sociology, University of California Riverside, 2010-2011.

Interim Director, Blakely Center for Sustainable Suburban Development, University of California Riverside, 2008-2009.

Member, Leadership Institute Steering Committee, University of Mississippi, 2006-7.

Chair, Provost's Task Force on Undergraduate Education, University of Mississippi, 2004-5.

Member, Faculty Grant Review Committee, College of Liberal Arts, University of Mississippi, 2004-5.

Member, Ad Hoc Committee on Off-Campus Programs, College of Liberal Arts, University of Mississippi, 2003-4.

Member, Curriculum and Policy Committee, College of Liberal Arts, University of Mississippi, 2003-7.

BScBA Program Representative, Academic Council, Helsinki School of Economics, 2001-3.

International Summer Term Governing Board, Mikkeli Polytechnic College, 2001-3.

Campus Council, Mikkeli Business Campus, Helsinki School of Economics, 1999-2003.

Member, Dean's Executive Council, School of Urban and Public Affairs, Portland State University, 1995-97.

Member, UALR 2000 Response Group, University of Arkansas at Little Rock, 1994-95.

Mentor in Demography, Arkansas Delta Research, Education and Development Foundation, West Memphis, Arkansas, 1992-93.

Member, Urban Demography Subcommittee, Masters of Social Science Committee, University of Arkansas at Little Rock, 1992-93.

Member, East Campus Facilities Usage Group, Pacific Lutheran University, 1991-92.

Member, Provost's Ad Hoc Committee for Faculty Research, Pacific Lutheran University, 1990-92.

Member, Center For Social Research Committee, Division of Social Sciences, Pacific Lutheran University, 1987-89.

Member, Graduate Studies Committee, Department of Sociology, Bowling Green State University, 1986-87.

Library Representative, Department of Sociology, Bowling Green State University, 1986-87.

Member, Search Committee for the Assistant Director of Research Services, the Graduate College, Bowling Green State University, 1985.

Representative, Washington Community College Computing Consortium, 1981.

President, Sociology Graduate Student Association, University of Hawaii, 1974-75

Member, Executive Committee, Department of Sociology, University of Hawaii, 1974-75
Member, Graduate Admission Committee, Department of Sociology, University of Hawaii, 1975-76.

B. Community

2022 Pro Bono Consulting, Department of City Planning (Kendra Taylor et al.), Atlanta, GA,

2018- Member, Public Advisory Board, Caring Nurses Home Health Service, Las Vegas, NV.

2016 - 2022 President, University of Hawai'i Alumni Association, Las Vegas, NV Chapter

2016 - 2017 Secretary, Board, "Kimo Leads the Way," a non-profit organization in Las Vegas with a mission to ease the suffering of child cancer patients and their Parents.

2015-2016 Vice-President, University of Hawai'i Alumni Association, Las Vegas Chapter

1987- As an annual donor and fund raiser, participate(d) in the endowment of the Demography Scholarship, Western Washington University Foundation, Bellingham, Washington.

2010 As a representative of the University of Hawai'i Alumni Association, represented the University of Hawai'i to prospective university students and their parents at the Laguna Beach High School Annual "College Round-up," 6 October, Laguna Beach, CA,

2008 As a donor, established the David L. Swanson Endowed Scholarship for first generation college students, Eastern Washington University Foundation, Cheney, Washington.

2003-2007 As a donor and fund raiser, helped establish the E. Walter Terrie Endowed Graduate Student Award for the Southern Demographic Association, Florida State University Foundation, Tallahassee, Florida.

2007 Donor, Schiller Scholarship and Jobes Scholarship, Department of Sociology, Pacific Lutheran University, Tacoma, Washington.

2006 Demographic Advisor, Town of Walls, Mississippi (Pro Bono Assistance)

2003-2005 Mississippi State Director, National Association of Medics and Corpsmen.

2001 - As an annual donor and fund raiser, helped establish the Gary K. Sakihara Graduate Student Award, Department of Sociology, University of Hawai'i at Mānoa, University of Hawai'i Foundation, Honolulu, Hawai'i.

2003-2007 Annual donor, unrestricted funds for the Department of Sociology and Anthropology, University of Mississippi Foundation, Oxford, Mississippi

2001-2003 Representative, Savo Provincial Higher Education Council, Mikkeli, Finland

1999-2000 Member, Census 2000 Advisory Committee, City of Las Vegas, Las Vegas, Nevada

1996-1997 Member, Board of Directors, Mt. Hood Brewing Company, Portland, Oregon.

1994-1995 Member, Governor's Task Force on Hispanic Issues, State of Arkansas.

1994. Technical Demographic Advisor, Evangelical Lutheran Church in America, Research and Planning Office, National Headquarters, Chicago, Illinois (Pro Bono Assistance).

1992-1994. Technical Demographic Advisor, Catholic Church Diocese Officer, Little Rock, Arkansas (Pro Bono Assistance).

1993. Technical Coordinator, Governor's Task Force on Health Care Reform, State of Arkansas.

1988-1990. Survey and Research Consultant, Prince of Peace Lutheran Church, Des Moines, Washington (Pro Bono Assistance).

Life Member, 101st Airborne Division Association.

Life Member, National Association of Corpsmen and Medics.

Life Member, Western Washington University Alumni Association

XII. Research and Professional Consulting

Demographic Consultant, Bryan GeoDemographics, 2021-

Wrongful Death Loss Consultant, O'Reilly Law Group, Las Vegas, Nevada. 2019-2022.

Demographic Consultant, "Forecast of Hopi Tribal Members et al." The Hopi Tribe, Kykotsmovi, AZ, 2017-2022.

Demographic and Statistical Consultant, ALCS LLC, Richmond, VA, 2016 - 2018

Course Development Consultant, Department of Sociology, Penn State University, 2016-2017

Demographic Consultant, Watts Guerra, LLC. San Antonio, TX. 2016.

Demographic Consultant. "Conseil Scolaire Francophone de la Columbia-Britannique et al. v. Her Majesty the Queen et al." SCBC, Vancouver registry, No. S103975. McCarthy Tetrault LLP. Vancouver, British Columbia, Canada. 2013-2014.

Demographic Consultant, Kemp Communications, Las Vegas, Nevada. 2011.

Demographic Consultant, "Population Projections." Miller and Martin, PLLC. Nashville, TN. 2010.

Demographic Consultant, Third Wave Research, Madison, WI. "Agent-Based Population Projections. 2009-2010 .

Demographic Consultant, Third Wave Research, Madison, WI. "Population Projections for the Nine Census Divisions, 2010-2020, by Single Years of Age and Sex. 2009.

Demographic Consultant, Kemp Communications, Las Vegas, Nevada. 2009.

Demographic Consultant, McKibben Demographics. "Planning a Charter School in the Lagniappe Area of New Orleans, Louisiana," Grant funded by the Smart Foundation. 2009.

Demographic Consultant, "Quest Diagnostics, Inc. v. FMIC." Podvey, Meanor, Catenacci, Hildner, Cocoziello, and Chattman, P.C., Newark, NJ. 2008-2009

Demographic Consultant, "Socio-Economic Economic Resilience and Dynamic Micro-Economic Analysis for a Large-Scale Catastrophe, Grant funded by The Southeast Regional Research Initiative (SERRI), with R. Forgette and M. Van Boening, University of Mississippi, Principal Investigators, 2009-2010

Demographic Consultant, "Ochsner Clinical Foundation v. Continental Casualty Company." Fisher Kanaris P. C., Chicago, IL, 2007.

Demographic and Statistical Consultant, Hurricane Katrina: Its Impact on the Population and Candidates for Endovascular Surgery in the Primary and Secondary Service Areas of Garden Park Hospital," Lemle and Kelleher, PLLC, Shreveport, LA. 2007.

Demographic Consultant, “Population Projections.” Miller and Martin, PLLC. Nashville, TN. 2006-2007.

Demographic Consultant. “Evaluation of Methods for Estimating the Foreign Born Population.” U.S. Census Bureau. 2006-2008.

Demographic Consultant, “Estimated Number of Employees with Health Insurance by Employee Type (Private Sector and Government), Size of Establishment, and City: Clark County, Nevada.” 2004. Regulatory Economics, Inc. Henderson, NV.

Demographic Consultant, “Estimating and Forecasting the Size of U.S. Lifestyle Segments.” Third Wave Research, Inc. Madison, Wisconsin, 2003; 2002; 1996.

Demographic Consultant, Nevada Consulting Alliance, “Evaluation of Population and Related Projections of Nevada.” 2002.

Demographic Consultant, Nevada Consulting Alliance, “Critique of the State Demographer’s 2002 Population Estimate for Clark County.” 2002.

Consulting Scientist to Consulting Senior Scientist, Science Applications International Corporation, 1988-2002.

Demographic Consultant, Senecio Software, Inc. "Remote Sensing Estimates of Population." 1999-2002.

Demographic Consultant and Consulting Team Leader, Washoe County, Nevada, "Development of a Small Area Population Estimation System. 1999.

Consultant/Resource Faculty, “Applied Demographic Research in Migration.” National Science Foundation (with L. M. Tedrow, Director), 1999.

Demographic Consultant, Parsons Brinckerhoff and SaudConsult, "Review and Revision of the Population Forecast for Jubail, Saudi Arabia." 1999.

Demographic Consultant, Nevada Consulting Alliance, “Revision of the Nevada County-level Economic and Demographic Forecasting Model,” Nevada State Demographer’s Office, 1998-99

Demographic and Statistical Estimation Consultant, “MetroMail Household Income/Asset Estimation Project,” Third Wave Research, Inc. Madison, Wisconsin, 1996-97.

Demographic Consultant and Census Enumerator/Crew Leader Training Instructor, “American Community Survey Evaluation Project,” Multnomah Progress Board, Portland, Oregon, 1997.

Demographic Consultant, “Initial Evaluation of the American Community Survey Portland Test Site Results,” U.S. Bureau of the Census, 1996-97.

Enrollment and Demographic Consultant, “Enrollment Forecasts and Attendance Zone Adjustments,” Hillsboro 1J School District, Oregon, 1995-1996

Enrollment and Demographic Consultant, “Enrollment Forecasts,” Newberg School District Newberg School District, Oregon, 1996.

Demographic Consultant, “Higher Education Trends,” NORED, Inc., Olympia, Washington, 1995

Demographic and Enrollment Consultant, “Enrollment and Market Area Profiles,” Portland Community College, Portland, Oregon, 1995.

Consultant/Resource Faculty, “Applied Demographic Research in Migration” National Science Foundation (with L. M. Tedrow, Director), 1994.

Demographic Consultant, General Motors Research and Development Labs, GM North America Operations Center Michigan, 1988 to 1994.

Demographic Consultant, “Tribal Membership Forecasts,” Lummi Tribal Business Council, Whatcom County, Washington, 1991.

Statistical Consultant, Iceberg Seafoods, Anchorage, Alaska, 1991-92, 1997-99, 2000.

Demographic Consultant, State of Connecticut Department of Health, “Small Area Population Estimation System” (with D. Pittenger and E. Schroeder), 1990.

Survey Research Consultant, Policy Division, Washington State Office of Financial Management, Olympia, Washington, 1990.

Demographic Consultant, Battelle Pacific Northwest Laboratories, Richland, Washington. “Hanford Environmental Dose Reconstruction Project,” Subcontract No. 041581-A-K1. Richland, Washington, 1988-1990.

Survey Research Consultant, Choosing Our Future, Inc., Menlo Park, California, 1984.

Survey Research Consultant, “Household Characteristics and Residential Energy Use,” Pacific Gas and Electric Company, San Francisco, California, 1983-1984.

Demographic Consultant, “Sub-county Estimation,” U.S. Bureau of the Census, 1983.

Population and Enrollment Consultant, Anchorage Community College, 1983

Demographic Consultant, University of Phoenix, 1982.

Demographic Consultant, KVOS TV, Inc., Bellingham, WA., 1972, 1974.

Survey Research Consultant, Ewa Mental Health Clinic, Honolulu, Hawaii, 1975.

Information Systems Consultant, Hawaii Center for Environmental Education, Honolulu, HI. 1973.

Demographic Consultant, America Friends of Hebrew University of Jerusalem, Inc., New York, N. Y., 1973.

XIII. Memberships in Associations

Academic Central, Casualty Actuarial Society (2016 to present)

American Statistical Association (1975 to present)

Canadian Population Society (Life Member)

European Association for Population Studies. (1999 to 2018)

Fulbright Academy for Science and Technology (2003 to 2009)

Fulbright Association (1994-97, 2002 to 2010)

Population Association of America (1975 to present)

Mississippi Academy of Sciences (Life member)

Southern Demographic Association (1992 to present)

Western Social Science Association (2015 to 2017)

XIII. Selected Awards and Honors

2022 E. Walter Terrie Award for State and Local Demography, for ""Boosted Regression Trees for Small-Area Population Forecasting." Selected as the best paper on an applied topic at the 2022 Conference of the Southern Demographic Association, Knoxville, TN (with J. Baker and J. Tayman).

2020-21 Edward A. Dickson Emeritus Professor Award, University of California Riverside

2016 E. Walter Terrie Award for State and Local Demography, for "Using Modified Cohort Change and Child-Woman Ratios in the Hamilton-Perry Forecasting Method." Selected as the best paper on an applied topic at the 2016 Annual Meeting of the Southern Demographic Association, October 12th , 2016, Athens, Georgia. (with J. Tayman).

Fulbright Specialist Roster (in Applied Demography, appointed March 2014 for a five year term).

Merit Increase to Professor VIII, University of California Riverside, (June) 2013.

Certificate of Appreciation, US Census Bureau (for service on behalf of Census 2010). (September) 2010.

Outstanding American Award 2006, National Association of Medics and Corpsmen (for service on behalf of Hurricane Katrina victims).

Research Fellow, Social Science Research Center, Mississippi State University (appointed, October 2005).

RAND "Research Summer Institute" Scholarship (July), 2004,

Fulbright "German Studies Seminar," (June), 2003,

1999 E. Walter Terrie Award for State and Local Demography, for " We are What We Measure: Toward A New Approach for Assessing Population Forecast Accuracy." Selected as the best paper on an applied topic at the 1999 Annual Meeting of the Southern Demographic Association, October 29th, 1999, San Antonio, Texas. (with J. Tayman and C. Barr).

Hammer Award (as part of a research team evaluating the American Community Survey, U.S. Bureau of the Census), Vice-President of the United States of America, July, 1999,

Performance Award, Science Applications International Corporation, 1999.

Task Achievement Program Award, U.S. Department of Energy, Yucca Mountain Project, 1998.

Certificate of Appreciation, Community Based Leadership Institute, Minority Affairs Division, American Association of Retired Persons, 1992.

Fulbright Lecturing Award, 1990-91, Department of Demography, University of Kerala, Trivandrum, India.

Nominee, Outstanding Contributor to Graduate Education, 1985-86, Graduate Student Senate, Bowling Green State University, 1986.

East-West Center Fellowship, 1980. East-West Center, Honolulu, Hawai'i.

Graduate with honors (cum laude), Western Washington State College, 1972.

Alpha Kappa Delta, National Sociology Honorary Society

Phi Theta Kappa, National Community College Honorary Society, Kappa Epsilon Chapter

XIV. Languages

English (US): Native Language
Swedish: Reading and Speaking, Good; Writing, Fair.
Finnish: Reading and Speaking, Poor; Writing, Very Poor.

Expert Report of David A Swanson, Ph.D.

Expert in Demography for the Defendants.

White et al. v. Mississippi State Board of Election Commissioners et al.

5 January 2023

TABLE OF CONTENTS

I, David A. Swanson, affirm the conclusions I express in this report are provided to a reasonable degree of professional certainty.

EXPERT QUALIFICATIONS

1. I am an expert in demography with more than 50 years of experience. I have been retained on behalf of the State Board of Election Commissioners, Tate Reeves, in his official capacity as Governor of Mississippi, Lynn Fitch, in her official capacity as Attorney General of Mississippi, and Michael Watson, in his official capacity as Secretary of State of Mississippi, (hereinafter collectively "the Defendants") as an expert to provide analysis related to State Supreme Court redistricting litigation in the matter of *DYAMONE WHITE; DERRICK SIMMONS; TY PINKINS; CONSTANCE OLIVIA SLAUGHTER HARVEY-BURWELL*, *v. STATE BOARD OF ELECTION COMMISSIONERS; TATE REEVES in his official capacity as Governor of Mississippi; LYNN FITCH in her official capacity as Attorney General of Mississippi; MICHAEL WATSON in his official capacity as Secretary of State of Mississippi.*

2. I graduated with a Bachelor of Science in Sociology (with a minor in mathematics) from Western Washington University in 1972. I earned a graduate diploma in social sciences from the University of Stockholm in 1974, an M.A. in Sociology/Population Studies from the University of Hawai'i Mãnoa in 1976 and a Ph.D. in Sociology/Population Studies from the University of Hawai'i Mãnoa in 1985.

3. I have served in a number of professional association roles, including: general editor for Springer's Applied Demography series; member of the mortality expert panel of the Society of Actuaries Research Institute; Secretary-Treasurer (1995-7 and 2003-7) of the Southern Demographic association; and editor of *Population Research and Policy Review* (2004-7). More recently, I have been on the program committee for the 2022 annual meeting of the Population Association of America and also the program committees for the 2019 Conference on Population and Public Policy and both the 2020 and 2017 annual meetings of the Population Association of America. I have produced 115 refereed sole- and co-authored journal articles, and nine books. I also have edited or co-edited four additional books, with another on the COVID-19 pandemic forthcoming. Google Scholar shows more than 6,000 citations to my work (https://scholar.google.com/citations?user=t7P6qoYAAAAJ&hl=en&oi=ao).

4. My first demographic consulting job was in the spring and summer of 1972 with KVOS TV in Bellingham, Washington. While a graduate student at the Mãnoa campus of the University of Hawai'i, I was employed as a staff researcher with the East-West Population Institute, a unit of the Congressionally funded East-West Center, which adjoins the Mãnoa campus. In late 1976, I accepted a position with the Population,

Economic, and Enrollment Studies Division of the Washington State Office of Financial Management in Olympia, Washington (The Governor's Budget Office), and in 1981, I became the first State Demographer of Alaska. This was followed by private sector, government, and academic positions, to include serving as the State Demographer of Arkansas, Senior Scientist at Science Applications International Corporation, Dean at the Helsinki School of Economics and Business Administration (now part of Aalto University), and Professor & Chair of the Sociology/Anthropology Department at the University of Mississippi. I retired as Emeritus Professor of Sociology at the University of California Riverside in 2018 and was recognized as a "Dickson Professor Emeritus" in 2020-21. I have received a number of awards for my work, including two Fulbrights, and the 2022 "Terrie Award" for presenting the best paper (co-authored with two colleagues) on state and local demography at the annual meeting of the Southern Demographic Association (an award I also won in 1999 and 2016). I also have testified before Congress and State Legislatures and served on the U.S. Census Bureau's Scientific Advisory Committee, 2004-10, chairing it for two years. In November of 2022, I was nominated as one of the candidates to stand for election as the President of the Southern Demographic Association. I am currently a Research Associate (.25 FTE) with the Population Research Center, Portland State University.

5. Not only have I lived and worked in Mississippi, but my 115 refereed journal articles include studies dealing with demography, race, socio-economic status, and mortality in Mississippi (see, e.g., Swanson, 2008; Swanson and Cossman, 2020; Swanson and McGehee, 2009; Swanson and Sanford, 2012; Swanson and Verdugo, 2019). I also gave a recent paper describing the effect on the 2020 census of Mississippi of the Census Bureau's new Disclosure Avoidance System, "Differential Privacy" (Swanson and Cossman, 2021) and was a co-principal investigator on a 2005-6 grant funded by the National Science Foundation to study "Perceptions of Disaster Relief and Recovery: Analyzing the Importance of Social and Kinship Networks Among Hurricane Katrina Refugees on the Mississippi Gulf Coast," which led to a number of refereed journal articles (see, e.g., Chapel et al., 2007; Forgette et al., 2009; Henderson, et al., 2009; Swanson, 2008; Swanson, et al., 2007). I am a lifetime member of the Mississippi Academy of Sciences.

6. I have worked on redistricting cases (see paragraph 9 in this report for a list of these cases) as well as on revising school (K-12) attendance zones, an activity, which while lacking the legal underpinnings of legislative redistricting, shares similarities with the latter in terms of public consequences, analytical methods, GIS mapping, and variables such as age, race and socio-economic status as criteria of interest (Swanson et al., 1997; Swanson et al., 1998). Furthermore, as indicated in the dedication and

acknowledgments, respectively (Morrison and Bryan, 2019: viii, xi), I also played an active role in the development of *Redistricting: A Manual for Practitioners, Analysts, and Citizens*.

7. I been involved in the following court cases as a testifying and/or deposed expert witness:

   - Deposed Expert Witness (testimony expected to be given in April, 2023). 2022. Case No. CV 6417-300, Superior Court of Arizona in and for the County of Apache, General Adjudication of All Rights in the Little Colorado River System and Source, Phoenix, AZ (On behalf of the Hopi Tribe, Review of Population Forecasts done by a Demographer hired by the Navajo Nation). Osborne Maledon, P.A., Phoenix, AZ;
   - Deposed and Testifying Expert Witness. 2022. Case A-17-762364-C. Estate of Joseph P. Schrage Jr & Kristina. D. Schrage v. Allan Stahl. Eighth Judicial Court, Clark County, Las Vegas, Nevada (life expectancy, working life expectancy and present value of lost earnings and benefits). O'Reilly Law Group, Las Vegas, NV;
   - Deposed and Testifying Expert Witness. 2021. Case No. CV 6417-203, Superior Court of Arizona in and for the County of Apache, General Adjudication of All Rights in the Little Colorado River System and Source, Phoenix, AZ (Forecast of Hopi Tribal Population). Osborne Maledon, P.A., Phoenix, AZ;
   - Deposed and Testifying Expert Witness. 2012. Board of Education, Shelby County, Tennessee et al. v. Memphis City Board of Education et al. / Board of County Commissioners, Shelby County, Tennessee (third party plaintiff) v. Robert E. Cooper et al (third party defendant)." (Constitutionality of a Tennessee state law). (School District Enrollment Forecasts). Baker, Donelson, Bearman, Caldwell and Berkowitz, PC. Memphis, TN;
   - Deposed Expert Witness. 2009. "Quest Medical Services v. FMIC." (Demographic Effects of Hurricane Katrina on New Orleans in a case involving a Medical Service Provider). Podvey, Meanor, Catenacci, Hildner, Cocoziello, and Chattman, P.C., Newark, NJ;
   - Deposed and Testifying Expert Witness. 2007. "Spring Hill Hospital, Inc. v. Williamson Medical Center and Maury Regional Hospital." (Evaluation of population forecasts in a case involving a proposed hospital). Miller and Martin, PLLC, Nashville;
   - Deposed and Testifying Expert Witness. 1994. Arkansas Supreme Court. (Statistical evaluation of the accuracy of the number of qualified signatures on a public referendum as determined by a sample); and
   - Deposed Expert Witness. 1983. "Anchorage, et al., vs. J. Hammond et al." (Lawsuit brought by local governments against the state of Alaska on how populations are determined for purposes of state revenue sharing to local governments).

8. I produced the following expert reports as a consultant/potential expert witness in other court cases:

   - Expert Report, Estimated Life Expectancy and Present Value of Household Costs, Z. Kirkson. O'Reilly Law Group, Las Vegas, Nevada. (2019);

     Expert Report, The Potential Number of Claimants in regard to the 2010 Gulf of Mexico Oils Spill and its Sequellae. Watts Guerra, LLC. San Antonio, TX. (2016);

   - Expert Report in the matter of Conseil scolaire francophone de la Colombie-Britannique, Fédération des parents francophones de Colombie-Britannique, et al. v. Her Majesty the Queen in Right of the Province of British Columbia, and the Minister of Education of the Province of British Columbia, Vancouver Registry S103975 in the Supreme Court of British Columbia. Prepared for the Office of the Attorney General, Ministry of Justice, Province of British Columbia, Canada (2014);

   - Expert Report re Title Insurance Loss Model, First American Title Insurance Company, Miller and Martin PLLC, Nashville, TN (2008);

   - Expert Report re Patient Population in the matter of Ochsner Clinical Foundation versus Continental Casualty Company. Fisher and Kanaris PC, Chicago, IL (2008); and

   - Expert Report re Hurricane Katrina: Its Impacts on the Population and Candidates for Endovascular Surgery in the Primary and Secondary Service Areas of Garden Park Hospital as Defined by Hospital Corporation of America. Salloum and Brawley LLP, Nashville, TN (2007).

9. I have served as a consultant to BryanGeoDemographics (BGD) in regard to the following redistricting cases:

   - Singleton v. Morrill, Case 2:21-CV-01291-SGC;
   - Robinson v. Ardoin, Civil Action Nos. 22-211-SDD-SDJ, 22-214-SDD-SDJ;
   - McConchie v. State Board of Elections, No. 1:21-CV-03091; and
   - Caster v. Merrill, Case No. 2:21-CV-1535-AMM.

10. Because of its expertise and experience, I have used the services of Bryan Geodemographics, which under my direction has assembled data, maps and other work products.

11. My full Curriculum Vitae, including my 50 years of demography experience, is attached as Appendix 6.

12. I am being compensated at a rate of $400/hour.

I. EXECUTIVE SUMMARY

13. The *White et al.* case has been brought with the support of numerous expert reports. One of these reports was authored by Mr. William Cooper, whose report included a demographic analysis of the existing SCOMS districts, plus four new proposed alternative districts (including analysis of their characteristics). I will be referring to Mr. Cooper's report throughout my paper. Mr. Cooper's report relies on the use of 2020 voting age population (VAP) – a measure which he uses to argue that MS SCOMS District 1 is a *minority* Black district at 49.3% (see Cooper report at p.19). The appropriate measure would actually be the *citizen* voting age population (or CVAP). That is, the population actually eligible to vote. In regard to the existing Supreme Court of Mississippi (SCOMS) Districts, as shown in *Table III.E.2 2020 Census Voting Age Population for Existing SCOMS Districts* District 1 already has a Black (Citizens of Voting age Population) CVAP majority at 51.0% APB, a fact Mr. Cooper fails to note in his report. Cooper's Illustrative Plan 1 would increase the Black (Any Part Black, "APB") CVAP majority in District 1 to 57.0%, while Illustrative Plan 2 would raise the CVAP %APB to 55.4%, Least Change Plan 1 would raise the CVAP %APB to 54.4%, and Least Change Plan 2 would raise the CVAP %APB to 53.8%. Each of Cooper's plans yield a similar result: an already Black CVAP APB majority in District 1 is increased to a higher level.

14. When compared to the existing Supreme Court Districts, all four of Cooper's alternative plans serve to lessen the diversity of both the White non-Hispanic (WNH) and the APB CVAP populations across the three districts relative to the distribution of the Citizens of Voting Age Population (CVAP) as a whole. As such, the existing Supreme Court districts provide more diversity than do any of Cooper's plans.

15. Cooper does not analyze the existing SCOMS districts or his own alternative districts by traditional redistricting criteria. However, I use two of them to analyze the existing districts and those proposed by Cooper: core retention and compactness. Briefly, core retention is the principle that the core (population) of prior districts be maintained in a redistricting plan and Compactness is the principle that the distance between all parts of a district is minimized (Gallagher, Kreye and Duros, 2020: 14). Core retention is a critical measure in assessing alternate redistricting plans, because it reveals the *gross* changes in each population that was made to achieve the *net* change of the plan. In the cased of Cooper's illustrative plans, I find that significant gross amounts of population are moved around the state in order to achieve the minimal increase in % Black he proposes in his two new illustrative District 1 scenarios. Core retention of the APB CVAP population in Cooper's two illustrative plans is low, only 72.0% overall and 76.9% of APB VAP in District 1 are retained in his Illustrative Plan I and 65.7% overall and 68.6% of APB VAP are retained in his Illustrative Plan II. These core retention

statistics differ from those of the WNH population and the population as a whole. This finding is consistent with my finding that Cooper's plans serve to decrease diversity across the Supreme Court districts. Cooper's two "least change" plans provide higher levels of retention: 89.2% overall and 91.7% in District 1 of APB VAP in his Least Change Plan 1; and 93.6% overall and 97.0% of District 1 in his Least Change Plan II.

16. Concurrent with the requirement to use counties to build districts for legislative districts, Mississippi law also requires legislative districts to be compact (See Paragraph 60 in this report). Cooper implicitly acknowledges the importance of compactness by asserting that his proposed plans meet compactness criteria. His plans are compact because he asserts they are. However, he fails to calculate and show any compactness measures supporting this assertion. Using the Reock, Polsby-Popper, Schwartzberg and Convex Hull measures, I calculated the compactness of each district under the existing plan and each of Cooper's four plans. At an aggregate level, the existing SCOMS plan is the most compact among the five plans analyzed. SCOMS existing District 1 is the most compact District 1 configuration. Cooper's Least Change Plan 1 District 2 yields the most compact District 2 configuration, and Cooper's Least Change Plan 2 District 3 is the most compact District 3 configuration. While there are individual districts that are more compact in Cooper's plans by different compactness measures, each of the alternate plans suggested by Cooper range from somewhat less compact to substantially less compact overall than is offered by the existing SCOMS plan.

17. The boundaries of the existing SCOMS districts not only serve as the geographic basis for elections to the state's Supreme Court, they serve as the geographic basis for elections to the State Transportation Commission and the Public Service Commission. They also serve as the geographic basis for appointments to both the Mississippi Board of Bar Admissions and the Board of Trustees for the State Institutions of Higher Learning (IHL), as well as a number of other boards, to include, per a list provided by the State Attorney General's Office: ABLE Board of Directors (MISS. CODE ANN. § 43-28-7); State Board of Banking Review (MISS. CODE ANN. § 81-3-12); Charter School Authorizer Board (MISS. CODE ANN. § 37-28-7); Board of Cosmetology (MISS. CODE ANN. § 73-7-1); Board of Education (MISS. CODE ANN. § 37-1-1); Electronic Protection Licensing Advisory Board (MISS. CODE ANN. § 73-69-21); Board of Licensure for Professional Engineers and Surveyors (MISS. CODE ANN. § 73-13-5); State Board of Funeral Service (MISS. CODE ANN. § 73-11-43); Mississippi Home Corporation (MISS. CODE ANN. § 43-33-704); Hospital Equipment and Facilities Authority (MISS. CODE ANN. § 41-73-7); Land, Water and Timber Resources Board (MISS. CODE ANN. § 69-46-3); State Board of Medical Licensure (MISS. CODE ANN. § 73-43-3); Board of Nursing Home Administrators

(MISS. CODE ANN. § 73-17-7); Oil and Gas Board (MISS. CODE ANN. § 53-1-5); MS State Personnel Board (MISS. CODE ANN. § 25-9-109); State Board of Veterinary Medicine (MISS. CODE ANN. § 73-39-55. The IHL has a policy that acknowledges the value of diversity for Mississippi, as does an opinion written by Judge William Barbour in the "Magnolia Bar" case and, in addition, a statement by the ACLU in regard to this case. Using indices from the Mississippi Health and Hunger Atlas, I find that the existing Supreme Court Districts provide more population diversity than do any of Cooper's four alternative plans and that Cooper's plans serve to decrease population diversity across the Supreme Court districts.

18. In the Plaintiffs' expert report by Dr. Traci Burch, it is asserted that Mississippi's Black voters are currently disenfranchised. A general assertion in Dr. Burch's report (Figure 4 and accompanying text in her report and *Exhibit IV.A.4 Racial Differences in Voter Turnout and by Education Level* herein) is that White Mississippians turned out to vote in the 2020 election at a higher rate than Black Mississippians, 56.1% to 53.0%, respectively. Dr. Burch's finding is the result of a flawed analysis in which she employed the incorrect "universe" as the denominator in her calculations (the entire population, which includes those under age 18) rather than the correct "universe," the population eligible to vote ("Citizens of Voting Age Population" - CVAP). In referencing the officially published US Census Bureau tables published from the same source she cites (the 2020 Current Population Survey, November Voting supplement found in *Table IV.A.2 2020 Mississippi Voting by Race and Ethnicity*), I find that that when the correct universe, CVAP, is used as the denominator, APB Mississippians turned out at a *higher* rate in the 2020 election than WNH Mississippians: 72.9% to 69.8%. Additionally, I find her estimate of 53.0% "Black Alone or in Combination, non-Hispanic" to be incorrectly calculated.

19. As shown by data from past November Voting Supplements in the Current Population Survey (taken in the even numbered years when federal elections are held, starting in 1964), my finding is consistent with the trend of voting seen in Mississippi since 2004. Except in 2010, both the percent of Black CVAP registered and the percent of Black CVAP voting have been higher in *every survey year* than the percent of WNH CVAP registration and voting, respectively (see *Figures IV.A.1* and *IV.A.2* in this report). In conjunction with this 21st century trend, my finding in regard to the 2020 election also reveals that Dr. James T. Campbell's implication (p. 51 of his report) that Black Mississippians currently register and vote at lower rates than White Mississippians also is mistaken:

> "Under the circumstances prevailing in Mississippi today, and in light of the history from which those circumstances originate, it is my opinion that Black

> Mississippians are not afforded an equal opportunity to elect candidates of their choice in Supreme Court elections."

20. The Voting Supplements of the Current Population Survey (CPS) from 2004 to 2020 do not support Dr. Campbell's opinion. Moreover, the voter registration data in the Voting Supplements of the CPS are consistent with voting registration data collected for Mississippi in sample surveys conducted annually from 2015 to 2021 by the Survey Research Laboratory, Social Science Research Center, Mississippi State University (SSRC). These sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians age 18 and over who are registered to vote is higher than the percent of White Mississippians age 18 and over who are registered to vote. In addition, the SSRC sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians aged 18 and over who report "Always Vote" is higher than the percent of White Mississippians age 18 and over who report "Always Vote." Both the CPS and the SSRC data are consistent with a finding reported for the first time in this report: Statewide, a higher share of the Black population of potential and actual voters is within a quarter mile of a polling place than is the case for the White population of potential and actual voters, an indicator of opportunity for actual and potential Black voters. Moreover, the CPS shows that Black Voter turnout is higher than that of White Voters, a finding consistent with SSRC data.

II. ASSIGNMENT

21. On behalf of the Defendants, I have been asked to independently review and assess the features and characteristics of Mississippi's Supreme Court voting district plan along with plans and reports submitted by White et al. (Plaintiffs), as appropriate to my training, experience and background.

22. In **Section III**, I analyze Supreme Court Districts as well as the state as a whole in terms of population and voting data. I provide an assessment of: First, compliance of the Mississippi Supreme Court plan with redistricting requirements; then, second, core retention, and compactness as outcomes. I also assess the population diversity of the districts using health and hunger indices developed by the University of Mississippi for the state's counties. These indices are themselves correlated with socio-economic status and race.

23. In **Section IV**, I provide an in-depth analysis of Mississippi voter registration and voter turnout statistics and trends using:

- November Voting Supplement of the U.S. Census Bureau's Current Population Survey;
- Mississippi county-specific voter registration and voting frequency data by race from annual statewide surveys conducted from 2015 to 2021 by the Survey Research Laboratory of the Social Science Research Center (SSRC) at Mississippi State University.

24. In **Section V**, I provide Appendices.

25. In forming my opinions, I have considered all materials cited in this report and the appendices. I have also considered some pleadings and other filings in this matter; materials, to include, P. Morrison & T. Bryan, *Redistricting: A Manual for Analysts, Practitioners, & Citizens* (Springer 2019); and U.S. DOJ, Guidance under Section 2 of the Voting Rights Act, 52 U.S.C. 1301, for redistricting and methods of electing government bodies (Sept. 1, 2021). The population, voter registration, and voter turnout, data I use in this report are from standard sources used by demographers, to include census and survey data from the U.S. Census Bureau, as well as survey data from the Social Science Research Center, Mississippi State University. In using these data, I engaged the services of Bryan Geodemographics, an organization experienced in the assembly, summarization, and visualization of demographic and related data, which performed these activities under my direction.

26. I reserve the right to further supplement my report and opinions.

III. CHARACTERISTICS OF MISSISSIPPI SUPREME COURT DISTRICTS

A. Decennial Census

27. The Decennial Census counts people in the United States on a De Jure basis (Wilmoth, 2004: 65) and the U.S. Census Bureau attempts to count everybody once, only once, and in the right place (Cork and Voss, 2006). It is mandated by the Constitution to occur every 10 years, in years ending in zero, to provide the numbers needed to reapportion the House of Representatives, which also results in a reapportionment of the Electoral College. The decennial census numbers also are used by state governments to redraw legislative districts, and the federal government uses the numbers in various funding formulas to distribute some $1.504 trillion in funding for highways, hospitals, schools, and many other purposes (Sullivan, 2020: 1).

28. In order for states to redraw legislative and other districts, the U.S. Census Bureau issues the "PL 94-171 "redistricting data" file in conjunction with the decennial census.[1] Because the decennial census itself does not ask a "citizenship" question and also does not include questions about voting activities, other sources of data produced by the U.S. Census Bureau for itself or for other federal agencies are often used in redistricting activities, to include the PL 94-171 redistricting file, the American Community Survey and the Current Population Survey (Morrison and Bryan, 2019). It is not always the case that the counts or percentages of the same conceptual variables across these different sources will match exactly (Swanson and Van Patten, 1987; U.S. Census Bureau, 2020b: 17-19).

B. Mississippi Population Characteristics

29. Compared to the U.S. as a whole, Mississippi is not as diverse in terms of race and ethnicity. According to the U.S. Census Bureau[2], Mississippi has a 2020 population of 2,961,279 of which: 1,084,481 are Black Alone (36%); 1,658,893 are White Alone (56%); 32,701 are Asian (1%); 16,450 are American Indian or Alaskan Native (0.5%); and 56,860 are "Other" (1.9%). In the 2020 Census, 110,732 Mississippians reported being "two or more races" (3.7%) and 105,220 reported being Hispanic or Latino (3.6%). For the U.S. as a whole: approximately 12.4% of its 2020 population of 331,449,281 is "Black Alone;" 62% is "White Alone;" 5.9% is Asian; 1.1% is American Indian or Alaskan Native; and 8.4% is "other." In the 2020 Census, 33,898,993 Americans reported being "two or more races" 10.2%) and 62,080,044 reported being Hispanic or Latino (18.7%). In Mississippi, 92% of its 2020 population

[1] https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html

[2] https://data.census.gov/cedsci/profile/Mississippi?g=0400000US28

is either "Black Alone" or "White Alone," while in the U.S, 74% of its 2020 population is either "Black Alone" or "White Alone," making Mississippi less racially diverse than the U.S. as a whole. With only 3.6% of its population identifying themselves as Hispanic or Latino, Mississippi is less ethnically diverse than the U.S. as a whole, where 18.7% identify themselves as Hispanic or Latino.

C. Mississippi Supreme Court Geography

30. Mississippi's three Supreme Court election districts are designated along county boundaries, with 22 counties in Supreme Court District 1, 27 counties in District 2, and 33 counties in Supreme Court District 3 – as shown in Appendix 4 Map A. There are 82 counties in Mississippi. Each county is of varying population, ranging from a high of 222,679 in Hinds County, to a low of 1,280 in Issaquena County.[3] All counties in Mississippi are functioning governmental entities, each governed by a board of supervisors and 10 of them have two county seats.[4] Counties appear to have been foundational in the development and maintenance of MS Supreme Court Districts since their inception.[5] Three justices are elected for eight year terms in staggered fashion from each of the three Supreme Court Judicial Districts.[6] An inventory of county assignments to districts from different plans and the cluster analysis herein may be found in Appendix 1A.

31. Appendix 4 Map A shows the current SCOMS District boundaries. These districts serve more than one purpose. They not only form the geographic basis for elections to the Mississippi State Supreme Court, but also for elections regarding the Transportation Commission and the Public Service Commission (Campbell, 2022): In addition they serve as the geographic basis for (1) appointments to the Board of Bar Admissions[7]; (2) the Board of Trustees for the State Institutions of Higher Learning (IHL); and (3) boards identified in paragraph 17. In regard to IHL, four of the 12 Member Board of Trustees for the State Institutions of Higher Learning are appointed by the Governor from each of the three Supreme Court districts.[8] The IHL Board Office is responsible for policy and financial oversight of the eight public institutions of higher learning in

[3] https://www.mississippi-demographics.com/counties_by_population

[4] https://www.mssupervisors.org/mississippi-counties

[5] Provided by MS Attorney General's Office: a copy of "The Code of Mississippi, 1848, Article 11, An Act to Regulate the Districts for the Election of Judges of the High Court of Errors and Appeals and to Change the Terms of Said Court."

[6] https://courts.ms.gov/appellatecourts/sc/sc.php

[7] https://courts.ms.gov/news/2020/10.12.20Board%20of%20Bar%20Admissions.php

[8] http://www.mississippi.edu/board/

Mississippi.[9] The Board's policy statement 102.06 acknowledges the value of diversity for Mississippi.[10] Given that Mississippi is less racially and ethnically diverse than the U.S. as a whole, this is an important policy statement for the state, one not only in line with a statement by the ACLU (2022) in regard to this case but also the 1992 "Magnolia Bar" case concerning the SCOMS districts, in which Judge William Barbour's decision acknowledged the defendants claim that the existing SCOMS districts foster political and socio-economic diversity (Barbour, 1992: line 1417). Any changes that impact the SCOMS districts would have implications not only for the elections regarding the Supreme Court, but also elections for the Transportation Commission and Public Service Commission. In addition, they will impact appointments to the Board of Bar Admissions and the Board of Trustees for the State Institutions of Higher Learning.

D. Mississippi Supreme Court Census Population

32. Using the 2020 Census, there are three important population definitions I use to characterize each of the districts. I start with the voting age population (VAP), within which is the White, non-Hispanic population (WNH) and then the any part Black population (APB). Other minority populations such as Asian, Native Hawaiian and Pacific Islander, American Indian Alaskan Native and "Other" are relatively small in Mississippi and, therefore, not central to this report.[11] The Hispanic population is relevant only insofar as they own a disproportionately large share of non-citizen population, and therefore largely explain the differences between VAP and CVAP estimates. As part of its demographic reporting, the US Census Bureau provides numerous statistics for each race alone and in combination, and also by ethnicity (whether an individual is of Hispanic origin or not). Therefore, an individual could be Black Alone, Black and White or any number of other combinations with other races and ethnicity. For the purpose of this examination, I am using the "Any Part Black" (the "APB" definition). The APB population is used in the plaintiffs' analysis and is outlined by the Department of Justice in their guidance for defining populations in VRA cases.[12] The DOJ Guidance on Federal Statutes Regarding Redistricting and Methods for Electing Public Officials states:

> "The Department of Justice will follow both aggregation methods defined in Part II of the Bulletin. The Department's initial review will be based upon allocating any response that includes White and one of the five other race categories identified in the response. Thus, the total numbers for "Black/African American,"

[9] http://www.mississippi.edu/board/

[10] http://www.mississippi.edu/board/downloads/policiesandbylaws.pdf

[11] https://data.census.gov/table?q=p1&g=0400000US28

[12] https://www.justice.gov/opa/press-release/file/1429486/download

> "Asian," "American Indian/Alaska Native," "Native Hawaiian or Other Pacific Islander," and "Some other race" reflect the total of the single-race responses and the multiple responses in which an individual selected a minority race and White race."
>
> The Department will then move to the second step in its application of the census data by reviewing the other multiple-race category, which is comprised of all multiple-race responses consisting of more than one minority race. Where there are significant numbers of such responses, the Department will, as required by both the OMB guidance and judicial opinions, allocate these responses on an iterative basis to each of the component single-race categories for analysis. Georgia v. Ashcroft, 539 U.S. 461, 473, n.1 (2003)"[13]

33. In *Table III.D.1* (below) one can see that Mississippi's 2020 Voting Age Population (VAP) was 2,277,599 per the 2020 Pl 94-171 redistricting file and when divided into the three SCOMS districts shows 716,402 in District 1 (31% of the total VAP), 796,767 in District 2 (35% of the total VAP), and 764,430 in District 3 (34% of the total VAP), a fairly equitable distribution. As can be seen in this table, approximately 45% of the VAP in District 1 is made up of WNH total and 49.3% of APB total. It is this number, 49.3%, that the Plaintiffs are relying on to characterize D1 as being minority Black. In District 2, approximately 65% of VAP is made up of WNH total while 28% is made up of APB total. In District 3, 62% of the VAP is made up of WNH total with 33% made up of APB total. Clearly, District 1 has the highest percent of APB total of the three while Districts 2 and 3 are clearly majority WNH total.

Table III.D.1 2020 Census Voting Age Population for Existing SCOMS Districts[14]

Existing Districts	VAP	WNH Total	APB Total		% WNH	% APB
1	716,402	324,908	353,091		45.4%	49.3%
2	796,767	517,385	220,412		64.9%	27.7%
3	764,430	473,158	249,577		61.9%	32.6%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

[13] https://www.justice.gov/opa/pr/justice-department-issues-guidance-federal-statutes-regarding-redistricting-and-methods

[14] These statistics correspond in part to those presented in Mr. Cooper's expert declaration: Figure 2: Mississippi – 1990 to 2020 Census Percent Voting Age Population by Race and Ethnicity on P.9.

34. A useful way to look at the distribution of WNH total and APB total across the three districts is to use the coefficient of variation (*CV*). Because the *CV* is a dimensionless number, it can be used to make comparisons across populations with different means (Swanson, 2012: 86). To get to this measure, one starts by computing the mean VAP and its standard deviation across the three districts, which yields 759,199.67 (where 759,199.67 = 2,277,599/3) and a standard deviation of 33,016.67. If each of the three districts had the same number of VAP (approximately 759,200), the standard deviation would be essentially zero. The actual population standard deviation is 33,016.67. When the standard deviation is divided by the mean, one obtains the coefficient of variation (*CV*), which shows the extent of variation relative to the mean. In this case, the *CV* is approximately 0.04 (where 0.04 = 33,016.6/759,199.67). In this regard, I compare the *CV*s for VAP (0.04), WNH total (0.19), and APB total (0.21). The WNH total is about four times higher than that seen for VAP and the APB total is approximately five times higher than that that seen for VAP, which serves to confirm that WNH total and APB total population are less equally distributed across the three districts than the total VAP, irrespective of their means.

35. The plaintiffs put forth four potential alternative plans,[15] each with different features. Using the same procedure I applied to the existing plan (*Table III.D.1* above), I summarize the demographic characteristics of each of these four alternative plans. As shown in *Table III.D.2* (below) for Cooper's Illustrative Plan 1, one can see that Mississippi's 2020 Voting Age Population (VAP) is 2,277,599 per the 2020 Pl 94-171 redistricting file (consistent with the VAP reported in *Table III.D.1* above) . The new District 1 has 40.9% WNH and 55.3 % of APB. This represents an increase of +6.0 percentage points (55.3% - 49.3%) APB in this district over the existing plan. In District 2, 68.3% of VAP is made up of WNH while 23.5% is made up of APB. In District 3, 63.4% of the VAP is made up of WNH with 30.3% made up of APB. Clearly, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

[15] Mr. Cooper's expert declaration:

- Figures 10 and 11: Illustrative Plan 1 on P.27
- Figures 13 and 14: Illustrative Plan 2 on P.30
- Figures 15 and 16: Least Change Plan 1 on P.33 and P.34
- Figures 17 and 18: Least Change Plan 2 on P.35

Table III.D.2 2020 Census Voting Age Population for Cooper Illustrative Plan 1 Districts

Illustrative 1	VAP	WNH Total	APB Total		% WNH	% APB
1	737,689	301,664	407,999		40.9%	55.3%
2	757,569	517,762	178,124		68.3%	23.5%
3	782,341	496,025	236,957		63.4%	30.3%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

36. As shown in *Table III.D.3* (below) for Cooper's Illustrative Plan 2, one can see that the new District 1 has 41.4% WNH and 54.2 % of APB. This represents an increase of +4.9 percentage points (54.2% - 49.3%) APB in this district over the existing plan. In District 2, 65.9% of VAP is made up of WNH while 26.4% is made up of APB. In District 3, 65.5% of the VAP is made up of WNH, with 28.3% made up of APB. Again, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

Table III.D.3 2020 Census Voting Age Population for Cooper Illustrative Plan 2 Districts

Illustrative 2	VAP	WNH Total	APB Total		% WNH	% APB
1	746,385	309,225	404,440		41.4%	54.2%
2	760,360	500,934	200,715		65.9%	26.4%
3	770,854	505,292	217,925		65.5%	28.3%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

37. As shown in *Table III.D.4* (below) for Cooper's Least Change Plan 1, one can see the new District 1 has 42.1% WNH and 53.0 % of APB. This represents an increase of +3.7 percentage points (53.0% - 49.3%) APB in this district over the existing plan. In District 2, 66.0% of VAP is made up of WNH while 26.5% is made up of APB. In District 3, 64.1% of the VAP is made up of WNH with 30.1% made up of APB. Again, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

Table III.D.4 2020 Census Voting Age Population for Cooper Least Change Plan 1 Districts

Least Change 1	VAP	WNH Total	APB Total		% WNH	% APB
1	722,892	304,436	383,099		42.1%	53.0%
2	766,360	505,954	202,788		66.0%	26.5%
3	788,347	505,061	237,193		64.1%	30.1%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

38. As shown in *Table III.D.5* (below) for Cooper's Least Change Plan 2, one can see the new District 1 has 43.3% WNH and 52.0 % of APB. This represents an increase of +2.7 percentage points (52.0% - 49.3%) APB in this district over the existing plan. In District 2, 64.9% of VAP is made up of WNH while 27.7% is made up of APB. In District 3, 64.5% of the VAP is made up of WNH with 29.5% made up of APB. Again, District 1 has the highest percent of APB of the three while Districts 2 and 3 are clearly majority WNH.

Table III.D.5 2020 Census Voting Age Population for Cooper Least Change Plan 2 Districts

Least Change 2	VAP	WNH Total	APB Total		% WNH	% APB
1	738,384	319,492	383,997		43.3%	52.0%
2	796,767	517,385	220,412		64.9%	27.7%
3	742,448	478,574	218,671		64.5%	29.5%
Total	**2,277,599**	**1,315,451**	**823,080**		**57.8%**	**36.1%**

Source: 2020 Census PL94-171; calculations by Bryan GeoDemographics for author.

E. ACS Citizen Voting Age Population Characteristics of Mississippi

39. Each of the plans put forth by the plaintiffs are as remarkable for their features and what they say about them, as what they do not. Conventionally, when a Gingles 1 analysis is done, it includes an analysis not just of the VAP, but of the Citizen VAP (or, "CVAP") as well. Conceptually, the CVAP is a refined measure, withdrawing those who may be of voting age – but by virtue of not being citizens are ineligible to vote. In recent cases, Mr. Cooper includes this important measure.[16] In this case, however, Mr. Cooper does not. Why, one must ask is this the case? As noted in the executive summary, the APB Black CVAP is already a majority at 51.0%. This fact that District 1 is an existing "majority-minority district is contrary to plaintiffs' claim that the SCOMS District 1 is a minority district in need of remediation.

40. The American Community Survey (ACS) is the source of record for CVAP data. The survey is a set of "rolling" sample surveys conducted by the U.S. Census Bureau (Morrison and Bryan, 2019; US Census Bureau, 2020a). It is distinct and different from the Decennial Census and the Current Population Survey, which also are conducted by the U.S. Census Bureau. The ACS provides data that the US Department of Justice commissions and relies on for adjudicating VRA cases.[17] For the purposes of cases just like these, the US Census Bureau began tabulating CVAP data starting back in 2002, and currently produces a new specially tabulated CVAP dataset each year at the request of the US DOJ.[18] The output of this file is composed of estimates of the CVAP by race and ethnicity for different levels of Census geography, as follows:[19]

> "This is a special tabulation of the citizen voting age population and other data from the 2016-2020 5-year American Community Survey (ACS). This is the twelfth release of this special tabulation of ACS data. The first release used the 2005-2009 5-year ACS data, and the data are re-released every year using each subsequent year's 5-year ACS data. These special tabulations provide citizenship voting age data to assist the redistricting process. Data from this and all previous releases are available through the Voting Rights link on the Census Bureau's Redistricting Data Office web site, www.census.gov/rdo."

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[16] See Second Declaration of William S. Cooper in Alabama *Caster v. Merrill* and Exhibit 1 - Decl. of William S. Cooper in *Robinson v. Ardoin* and *Galmon v. Ardoin* and related Louisiana redistricting litigation in 2022 both current SCOTUS cases where he reports and discusses CVAP alongside VAP and its importance in measuring minority populations.

[17] Morrison, P. and T. Bryan (2019). Redistricting: A Manual for Analysts, Practitioners, and Citizens. Springer. Cham, Switzerland

[18] https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/CVap.html

[19] https://www2.census.gov/programs-surveys/decennial/rdo/technical-documentation/special-tabulation/CVAP_2016-2020_ACS_documentation_v3.pdf

41. The US Census Bureau reports a variety of CVAP statistics as part of this special tabulation, including data in total as well as by select racial and ethnic groupings – as seen in *Exhibit III.E.1* (below).

Exhibit III.E.1 American Community Survey DOJ VRA Race and Ethnicity Reporting Classifications

1	Total CVAP
2	Not Hispanic or Latino (NH)
3	American Indian or Alaska Native Alone (NH)
4	Asian Alone (NH)
5	Black or African American Alone (NH)
6	Native Hawaiian or Other Pacific Islander Alone (NH)
7	White Alone (NH)
8	American Indian or Alaska Native and White (NH)
9	Asian and White (NH)
10	Black or African American and White (NH)
11	American Indian or Alaska Native and Black or African American (NH)
12	Remainder of Two or More Race Responses (NH)
13	Hispanic or Latino

Source:https://www2.census.gov/programs-surveys/decennial/rdo/technical-documentation/special-tabulation/CVAP_2016-2020_ACS_documentation_v3.pdf.

42. As discussed in the Mississippi Supreme Court Census Population section above, the DOJ directs that two levels of minority population be produced. In order to create the first-level required DOJ estimate of the Black or African American population, group 5 Black or African American Alone (NH) and group 10 Black or African American and White (NH) are aggregated. In recent cases, this level has proven just to be a demographic exercise. Plaintiffs in cases such as these are commonly going straight to the second-level definition, as follows.

43. In order to create the second-level required DOJ estimate of the any-part Black or African American population, the following are aggregated, group 5 Black or African American Alone (NH) and group 10 Black or African American and White (NH) and group 11 American Indian or Alaska Native and Black or African American (NH). The American Indian or Alaska native combination is the only other Black or African American combination reported.

44. The DOJ does not outline which one of numerous demographic methods they recommend to "allocate these (multi-race) responses on an iterative basis" nor do they

provide the multi-race granularity of reporting afforded by the Decennial Census. While there are more Black or African American population in the ACS in the "Remainder of Two or More Race Responses" category – there is no way to estimate this from the data that the DOJ requests from the Census Bureau to fulfill their own definitions. In this regard, one can think of the estimates provided by Black or African American Alone (NH) and Black or African American and White (NH) and American Indian or Alaska Native and Black or African American as a lower bound of the actual any-part Black CVAP being reported.

45. Again, we have two sources of population data: (1) the Decennial Census from 2020 (Total and Voting Age Population, or "VAP"); and (2) the most recent ACS from 2016-2020 (Citizen Voting Age Population, or "CVAP"). Plaintiffs claim the existing District 1 is a minority district based on 2020 Census VAP data – at 49.3%. Plaintiffs do not present the measure used by their own expert in other cases to measure actual voting strength: CVAP. Cooper's analysis only reports results from the 2020 Decennial Census, which shows a 49.3% VAP bare minority share in existing Supreme Court District 1. When you remove the non-Citizens then examine APB as a share of CVAP the conclusion is different - Supreme Court District 1 is an APB CVAP majority at 51.0% as shown in *Table III.E.2* (below).

46. As long as I am focusing on the population eligible to vote, I need to acknowledge and address the prison populations in Mississippi, where many of the residents are ineligible to vote. It is important to note that the ACS Citizen Voting Age Population, or "CVAP" includes group quarters (e.g. prisons) populations, some of whom are ineligible to vote. The state of Mississippi has three large correctional facilities, which house overwhelmingly Black populations. The Mississippi State Penitentiary, "Parchman" (MSP in Sunflower County), Central Mississippi Correctional Facility (CMCF in Rankin County); and the Southern Mississippi Correctional Institution (SMCI in Greene County) – as shown in Appendix 4 Map B. It is my opinion that because of the size of these facilities, and the share of them that are Black, any analysis is at risk of the misrepresenting CVAP members who are actually eligible to vote. In order to give the Plaintiffs every benefit of the doubt using the CVAP measure – my analysis excludes the estimated Black prisoner population of each of these three facilities – and the districts in which they respectively reside. This exclusion serves to *reduce* the APB CVAP statistic to an estimate of the size of this population that is actually eligible to vote. Retaining and including these three large populations would run the risk of artificially inflating the Black CVAP who are eligible to vote in Mississippi in particular. While it is widely recognized that Mississippi has numerous felons ineligible to vote who are not currently incarcerated, there is no practical way to measure or locate these demographically by district in a meaningful way.

47. For the purpose of demographic measurement of prisoners, it is important to note two things. First, the decennial census often reports estimates of "GQ_Corr" or Group Quarters – Correctional populations that are different from the current actual prisoner populations. For the Mississippi State Penitentiary (MSP), for example, the Decennial Census reported 304 prisoners in Census Block 281339501005056 (with 88 WNH and 212 APB), and 2,790 prisoners in adjacent Census Block 281339501005057 (1,179 WNH and 1,416 APB). This totals 3,094, with 1,267 (41%) WNH and 1,628 (52.6%) APB. For the Census Block Group (BG) 281339501005 containing MSP reported by the ACS CVAP file for the DOJ, there are a reported 4,585 CVAP – 3,165 of which are reported as Black CVAP. Neither the 2020 Decennial Census nor the ACS statistics for the Black population here are consistent with official MS DOC reports. At the time of the writing of this paper, Mississippi Department of Corrections (MS DOC) had published prisoner statistics through March of 2022 – and is on these numbers our analysis relies. As shown in *Table III.E.1* (below) MS DOC reported 1,283 Black prisoners, 665 White prisoners and 20 "other" prisoners at MSP. I use the MS DOC numbers in the analysis – removing them from our CVAP in order to estimate an accurate voter-eligible population. MS DOC reported 1,435 Black prisoners and 1,301 White and 43 other prisoners at the Central Mississippi Correctional Facility (CMCF). MS DOC reported 1,476 Black prisoners, 751 White and 29 other prisoners at the South Mississippi Correctional Institution (SMCI). My analysis includes these three facilities but does not include smaller facilities such as county or youthful offender facilities, private prisons or regional correctional facilities both because of their size and the fact the MS DOC does not break out the prisoners in each of those facilities individually.

Table III.E.1 Mississippi Prisoner Analysis by Race and Ethnicity, March 2022 by Facility

	Black		White		Hispanic		Native American		Asian		Data Unavailabl		TOTAL
LOCATION	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
MSP	1,283	0	665	0	11	0	1	0	7	0	1	0	1,968
CMCF	1,098	337	763	538	17	7	8	5	4	2	0	0	2,779
SMCI	1,476	0	751	0	24	0	4	0	1	0	0	0	2,256
County Jails (approved)	402	2	448	26	10	1	1	0	2	0	4	0	896
County Jails (unapproved)	444	14	416	26	10	1	0	0	4	0	4	1	920
Youthful Offender Facility	11	0	3	0	1	0	0	0	1	0	0	0	16
Private Prisons	2,102	0	861	0	20	0	8	0	4	0	1	0	2,996
Regional Correctional Facilities	2,518	40	1,350	55	69	2	6	1	9	0	0	0	4,050
Community Work Centers	167	16	106	81	2	1	1	1	0	1	0	0	376
Community Trusties	0	0	0	0	0	0	0	0	0	0	0	0	0
TVC	46	0	30	0	0	0	0	0	0	0	0	0	76
Transitional Housing	8	1	4	4	0	0	0	0	0	0	0	0	17
Pending File Review	100	5	52	12	1	0	0	0	1	0	0	0	171
RRP	7	0	15	5	0	0	0	0	0	0	0	0	27
Contempt	0	0	0	1	0	0	0	0	0	0	0	0	1
Court Order	86	0	57	8	0	0	0	0	1	0	0	0	152
TOTAL	10,788	527	6,182	929	207	13	33	7	44	3	13	1	18,747
% OF TOTAL OFFENDERS	57.55%	2.81%	32.98%	4.96%	1.10%	.07%	.18%	.04%	.23%	.02%	.07%	.01%	100.00%

Source: Mississippi Department of Corrections https://www.mdoc.ms.gov/Admin-Finance/MonthlyFacts/03-01-2022.1.pdf

48. The statistics in *Table III.E.1* show there are both large *absolute* numbers of Black prisoners in these facilities, and that there is also a higher *proportionate* number of Black prisoners in the three major prisons in Mississippi than White prisoners overall and by gender. While not all of these prisoners are ineligible to vote, for purposes of this analysis, I assume that they are. I use the MS DOC numbers in my estimates of those eligible to vote by race and ethnicity – removing Black prisoners from APB CVAP in the counties where they are located in order to place a lower boundary on the voter-eligible Black population.

49. *Table III.E.2* (below) shows the CVAP analysis with these prisoners excluded for the existing Supreme Court Districts. In the first row, for District 1, one can see that the CVAP is 705,555. The WNH population is 324,204 and the APB population is 360,356. The percent Black CVAP is shown in the last two columns. The "%APB" column reports the % APB CVAP w*ithout adjustment* for Black prisoners. The "%APB – "Prison Adjusted" column reports the % APB CVAP *with adjustment* for Black prisoners. The numbers shaded in green are higher % Black, and the numbers shaded in red are lower %Black.

50. The % APB CVAP for District 1 (shown in the % APB column) is 51.1%. District 1 in the existing plan contains both MSP and CMCF (combined for 2,718 Black prisoners and 2,029 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 51.0%. That is – under the assumption that all of the prisoners are ineligible to vote, the adjustment for Black prisoners reduces the % Black CVAP eligible to vote by approximately 0.1%. It is clear from this analysis that

regardless of whether you include Black prisoners or not – the APB CVAP in District 1 in the existing plan is currently a "majority minority" population. Further investigation revealed that even if I used the most conservative, restrictive definition of Black (Black Alone, non-Hispanic) of which there are 358,072 in District 1 – one would still find a majority of 50.8%.

Table III.E.2 2020 Census Voting Age Population for Existing SCOMS Districts

Existing Districts	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	705,555	324,204	360,256	2,718	2,029	51.1%	51.0%
2	781,300	527,524	218,180	1,476	780	27.9%	27.8%
3	751,245	479,855	250,322			33.3%	33.3%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations for author by Bryan GeoDemographics using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

51. *Table III.E.3* (below) shows the % APB CVAP under Cooper's Illustrative Plan 1. The % APB CVAP for District 1 (shown in the % APB column) is an *overwhelming* majority of 57.1%. District 1 in this plan contains MSP (with 1,283 Black prisoners and 685 other prisoners). District 2 contains SMCI and CMCF (with 2,911 Black prisoners and 2,124 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the "% APB – Prison Adj." column) is 57.0%. That is, the adjustment for prisoners reduces the % Black CVAP eligible to vote by approximately 0.1%. In this table, it is also interesting to note that the D1 APB population of 414,130 is exactly half of the total APB population of 828,758.

Table III.E.3 2020 Census Voting Age Population for Cooper Illustrative Plan 1 Districts

Illustrative 1	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	725,645	295,443	414,130	1,283	685	57.1%	57.0%
2	740,350	529,260	175,711	2,911	2,124	23.7%	23.5%
3	772,105	506,880	238,917			30.9%	30.9%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations for author by Bryan Geodemographics using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

52. *Table III.E.4* (below) shows the % APB CVAP under Cooper's Illustrative Plan 2. The % APB CVAP for District 1 (shown in the % APB column) is again an *overwhelming* majority of 55.4%. District 1 in this plan contains MSP (with 1,283 Black prisoners and 685 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). District 3 contains CMCF (with 1,435 Black prisoners and 1,344

other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 55.4%. That is – the adjustment for prisoners reduces the % Black CVAP eligible to vote is negligible.

Table III.E.4 2020 Census Voting Age Population for Cooper Illustrative Plan 2 Districts

Illustrative 2	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	734,095	308,563	406,542	1,283	685	55.4%	55.4%
2	747,610	513,335	199,460	1,476	780	26.7%	26.6%
3	756,395	509,685	222,756	1,435	1,344	29.4%	29.4%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations by Bryan GeoDemographics for author using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

53. *Table III.E.5* (below) shows the % APB CVAP under Cooper's Least Change Plan 1. The % APB CVAP for District 1 (shown in the % APB column) is still an *overwhelming* majority of 54.4%. District 1 in this plan contains both MSP and CMCF (combined for 2,718 Black prisoners and 2,029 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 54.4%. That is – the adjustment for prisoners reduces the % Black CVAP eligible to vote is negligible.

Table III.E.5 2020 Census Voting Age Population for Cooper Least Change Plan 1 Districts

Least Change 1	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	718,485	305,683	390,711	2,718	2,029	54.4%	54.4%
2	751,875	516,885	201,241	1,476	780	26.8%	26.6%
3	767,740	509,015	236,806			30.8%	30.8%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations by Bryan GeoDemographics for author using 2016-2020 ACS DOJ CVAP and MS DOC Reported Prisoner Populations.

54. *Table III.E.6* (below) shows the % APB CVAP under Cooper's Least Change Plan 2. The % APB CVAP for District 1 (shown in the % APB column) is still a majority of 53.8%. District 1 in this plan contains both MSP and CMCF (combined for 2,718 Black prisoners and 2,029 other prisoners). District 2 contains SMCI (with 1,476 Black prisoners and 780 other prisoners). The % APB CVAP Prison Adjusted for District 1 (shown in the % APB – Prison Adj. column) is 53.8%. That is – the adjustment for prisoners reduces the % Black CVAP eligible to vote is negligible.

Table III.E.6 2020 Census Voting Age Population for Cooper Least Change Plan 2 Districts

Least Change 2	CVAP	WNH	APB	Black Prisoners	Other Prisoners	% APB	%APB - Prison Adj.
1	728,555	318,494	392,118	2,718	2,029	53.8%	53.8%
2	781,300	527,524	218,180	1,476	780	27.9%	27.8%
3	728,245	485,565	218,460			30.0%	30.0%
Grand Total	**2,238,100**	**1,331,583**	**828,758**	**4,194**	**2,809**	37.0%	37.0%

Source: Calculations by Bryan GeoDemographics for author using 2016-2020 AVS DOJ CVAP and MS DOC Reported Prisoner Populations.

55. *Table III.E.7* (below) shows the percent APB CVAP over time as estimated from the American Community Survey over three segments of time. First from the 2014-2018 5-year ACS DOJ dataset, then from the 2015-2019 5-year ACS DOJ dataset, then from the most recent 2016-2020 5-year ACS DOJ dataset. One can see in the first row of this table that the %APB CVAP population in the current plan was already a majority in the 2014-2018 dataset – and has since grown to 51% in the most recent 2016-2020 ACS DOJ dataset. As expected, in each of Cooper's alternative plans - the %APB CVAP population in the current plan were all already significant majorities in the 2014-2018 ACS DOJ dataset – and has since grown even more significant majorities in the most recent 2016-2020 ACS DOJ dataset. Under each of Cooper's alternative plans, the %APB CVAP grows from an existing majority to a larger majority.

Table III.E.7 CVAP analysis over time: District 1 % APB CVAP under Current Plan compared to Cooper's Plans for 2014-2018, 2015-2019 and 2016-2020

	2014-2018	2015-2019	2016-2020
Current Plan	50.8%	51.0%	51.0%
Illustrative 1	56.8%	57.1%	57.0%
Illustrative 2	54.9%	55.3%	55.4%
Least Change 1	54.1%	54.4%	54.4%
Least Change 2	53.4%	53.7%	53.8%

Source: ACS, as described and discussed in the text; calculations by BryanGeoDemographics for author.

F. Performance of Mississippi Districts Using Traditional Redistricting Principles

56. The state of Mississippi does not have legally required periodic updates to their Supreme Court Districts. As such, Mississippi does not have laws or rules to direct how its Supreme Court districts should be drawn other than what is found in Sec 9-3-1 of the State Code. If plans are put forward to re-draw the SCOMS districts, however, it would be appropriate to follow traditional redistricting principles in general as well as redistricting laws found in Mississippi in evaluating them, as was the situation in the "Magnolia Bar" case (Barbour, 1992).

57. Different states consider and implement different criteria. For example, in some states, including Texas, state constitutions *require* the use of counties to draw certain legislative boundaries, while others just require them to be considered. The Congressional Research Service explains:

> "Many of the 'rules' or criteria for drawing congressional boundaries are meant to enhance fairness and minimize the impact of gerrymandering. These rules, standards, or criteria include assuring population equality among districts within the same state; protecting racial and language minorities from vote dilution while at the same time not promoting racial segregation; promoting geographic compactness and contiguity when drawing districts; minimizing the number of split political subdivisions and 'communities of interest' within congressional districts; and preserving historical stability in the cores of previous congressional districts."[20]

Following the general path found in Cooper's report, I continue under the assumption that these same principles apply to redistricting of the state's Supreme Court districts.

58. The National Conference of State Legislatures (NCSL) is widely recognized as the nation's independent, objective, and bipartisan authority on redistricting matters.[21] The NCSL has published a series of principles that reflect traditional districting principles (or criteria) have been both informed by and adopted by many states. This guidance

[20] https://crsreports.congress.gov/product/pdf/R/R42831/3

[21] https://www.ncsl.org/aboutus/ncslservice/facts-about-ncsl.aspx:

- NCSL is the only organization that advocates solely for states' interests in Washington, D.C.
- NCSL is the only organization that provides support services to legislators and legislative staff.
- NCSL is the only bipartisan organization of its kind with leadership and participation from both sides of the aisle.
- NCSL presents all sides of the issues and provides information based on facts, not politics.
- NCSL promotes the legislative institution as a whole and works to make it stronger and more efficient.
- NCSL's legislator members vote on policy issues that direct the organization's activities on Capitol Hill.
- NCSL's annual Legislative Summit is the largest and most important gathering of the year for legislators and legislative staff.

from the NCSL is the basis of any assessment I make as an expert of individual states or organization's criteria and redistricting plans.

59. These traditional districting principles (or criteria) have been adopted by many states:

- **Compactness:** Having the minimum distance between all the parts of a constituency (a circle, square or a hexagon is the most compact district).
- **Contiguity:** All parts of a district being connected at some point with the rest of the district.
- **Preservation of counties and other political subdivisions:** This refers to not crossing county, city, or town, boundaries when drawing districts.
- **Preservation of communities of interest:** Geographical areas, such as neighborhoods of a city or regions of a state, where the residents have common political interests that do not necessarily coincide with the boundaries of a political subdivision, such as a city or county.
- **Preservation of cores of prior districts:** This refers to maintaining districts as previously drawn, to the extent possible. This leads to continuity of representation.
- **Avoiding pairing incumbents**: This refers to avoiding districts that would create contests between incumbents.

60. Mississippi specifically has codified many of these principles into law for redistricting their legislature and congressional districts. For legislative districts, Mississippi requires districts to be compact, contiguous and to preserve political subdivisions.[22] Mississippi Code § 5-3-101 states:

> In accomplishing the apportionment, the committee shall follow such constitutional standards as may apply at the time of the apportionment and shall observe the following guidelines unless such guidelines are inconsistent with constitutional standards at the time of the apportionment, in which event the constitutional standards shall control:
>
> (a) Every district shall be compact and composed of contiguous territory and the boundary shall cross governmental or political boundaries the least number of times possible; and
>
> (b) Districts shall be structured, as far as possible and within constitutional standards, along county lines; if county lines are fractured, then election district lines shall be followed as nearly as possible.[23]

[22] https://www.ncsl.org/research/redistricting/redistricting-criteria.aspx

[23] https://law.justia.com/codes/mississippi/2016/title-5/chapter-3/standing-joint-legislative-committee-on-reapportionment/section-5-3-101

For congressional districts, Mississippi requires districts to be to be compact, contiguous, to preserve political subdivisions and to preserve communities of interest.[24]

61. For the purpose of drawing alternate SCOMS districts, plaintiffs' expert Mr. William Cooper has applied the law and principles selectively. He has followed the precedent of SCOMS districting and legislative law using entire counties as the building blocks for SCOMS districts (see Mississippi Code § 5-3-101 part (b), "Districts shall be structured, as far as possible and within constitutional standards, along county lines."). He also has used Mississippi's established Planning and Development Districts ("PDDs" as shown in Appendix 4 Map C) as communities of interest to organize and report demographic features of the state (but does not use these in a meaningful way to actually inform the design of his districts).[25] In fact, Mr. Cooper does *not* even attempt to analyze the SCOMS districts using the traditional redistricting principles of core retention and compactness. I, however, analyze the existing districts and each of his proposed four plans using these principles.

Core Retention

62. Courts have recognized the need to preserve the core of a prior established district as a legitimate redistricting criterion,[26] as well as the avoidance of contests between incumbents.[27] Core retention fosters the continuity of political representation. A *Core Retention Analysis* (CRA) also known as a constituency report is simply a demographic accounting of the addition and subtraction of persons that would be brought about by a proposed realignment of a district's existing boundaries, a process consistent with determining core retention (see paragraph 15). A CRA is a way of quantifying precisely how a proposed realignment would affect the continuity of representation among a district's current residents and eligible voters.

63. Core Retention Analysis has usually considered only the total populations of districts in comparisons across plans. Here, I have also broadened this standard demographic model, using standard methodology to present comparisons to alternative redistricting plans, and by also analyzing the core retention of protected group. I refer to this as "differential" CRA. The "differential" being the findings it generates by district between the total population and the Black population. In the matters of voting rights and redistricting – another population besides total can and does frequently yield

[24] https://www.ncsl.org/research/redistricting/redistricting-criteria.aspx

[25] See Cooper expert report at P.10.

[26] *Abrams v. Johnson*, 521 U.S. 74, 84 (1997).

[27] *Bush v. Vera*, 517 U.S. 952 (1996).

significant differences in CRA findings: race and ethnicity. While race cannot be the prevailing factor in drawing a district - in the state of Mississippi and beyond the impact of redistricting on race and ethnic groups is still of significant legal concern. Are there differential impacts to the total population and by race and ethnicity?

64. In each of the following tables, I show the population from each of the original SCOMS districts distributed into each of Cooper's alternative plan districts. In each column, I show the total population impact, the White, non-Hispanic (WNH) impact, and the any part Black (APB) impact. Below the table, I show core retention diagnostics for District 1 (D1) and then the plan as a whole.

DISTRICT 1 (D1) Core Retention Metrics

- The first row (Existing D1 VAP) shows the VAP in D1 of the existing SCOMS plan.
- The second row (Pop Retained in D1) shows the size of the population that was unperturbed by the new plan. As I move forward, this is the population that I will refer to as "retained".
- The third row (Pop Sent Out of D1) is the size of the population that was originally in D1 but was moved to either D2 or D3.
- The fourth row (Pop Added to D1) is the size of the population that was originally in D2 or D3 but was moved in to D1.
- The fifth row (Net Change to D1) is the net of the population sent out of and added to D1. This is the change in population that drives the change in population behind Mr. Cooper's new alternate district estimates.
- The sixth row (D1 core retention) is the percent of the population from the original D1 plan who are retained in the new plan's D1.

Total Plan Core Retention Metrics

- The seventh row (Pop Retained in Original Districts) is the sum of the population left unperturbed in all 3 districts by the new plan.
- The eighth row (Pop Changing Districts) is the sum of the population moved in all 3 districts by the new plan.
- The ninth row (Plan Core Retention) is the percent of the population from the original plan who are retained in the same district under the new plan.
- In *Table III.F.1* (below) one can see the core retention results for Cooper's Illustrative Plan 1. In District 1 (D1), 63.1% of the total population is retained in District 1, but

the drivers of this differ significantly by race and ethnicity. Only *half* (49.7%) of the WNH population from D1 is retained, while 76.9% of the APB population is retained. Across the entire plan, 74.3% of Mississippi's total population is retained in their original district. 75.2% of WNH and 72.0% of APB are retained in their original districts. 585,817 Mississippians, 325,945 WNH and 230,591 APB are moved. While there is no established threshold for core retention, I argue a move of 25.7% of the population (585,817) to a different judiciary in order to change the APB population in D1 by 54,908 is substantial.

Table III.F.1 Core Retention of Illustrative Plan 1

Row	Original SCOMS	Ill Plan 1	2020 VAP	2020 WNH VAP	2020 APB VAP
A	1	1	452,017	161,498	271,547
B		2	120,310	87,901	24,869
C		3	144,075	75,509	56,675
D	**1 Total**		**716,402**	**324,908**	**353,091**
E	2	1	123,748	65,155	54,562
F		2	637,259	429,861	153,255
G		3	35,760	22,369	12,595
H	**2 Total**		**796,767**	**517,385**	**220,412**
I	3	1	161,924	75,011	81,890
J		3	602,506	398,147	167,687
K	**3 Total**		**764,430**	**473,158**	**249,577**
L	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (D)	716,402	324,908	353,091
		Pop Retained in D1 (A):	452,017	161,498	271,547
		Pop Sent Out of D1 (B + C):	264,385	163,410	81,544
		Pop Added to D1 (E + I):	285,672	140,166	136,452
		Net Change to D1 (sent out + added):	21,287	-23,244	54,908
		New D1 VAP:	737,689	301,664	407,999
		D1 Core Retention:	63.1%	49.7%	76.9%
		Pop Retained in Original Districts (A + F + J)	1,691,782	989,506	592,489
		Pop Changing Districts (B + C + E + G + I):	585,817	325,945	230,591
		Plan Core Retention (Pop Retained / Total Pop):	74.3%	75.2%	72.0%

Source: data discussed in text; calculations by Bryan GeoDemographics for author.

65. In *Table III.F.2* (below) one can see the core retention results for Cooper's Illustrative Plan 2. The results are even more significant than in Illustrative Plan 1. In D1, 51.5% of the total population is retained in D1, but the drivers of this again differ significantly by race and ethnicity. *One-thirds* (35.1%) of the WNH population from D1 is retained, while only 68.6% of the APB population is retained. Across the entire plan, 66.8% of Mississippi's total population is retained in their original district. 67.5% of WNH and 65.7% of APB are retained in their original districts. In this plan, 755,429

Mississippians, 426,938 WNH and 281,962 APB are moved. Again while there is no established threshold for core retention, I argue a move of 33.2% of the population (755,429) to a different judiciary in order to change the APB population in D1 by only 51,349 is substantial.

Table III.F.2 Core Retention of Illustrative Plan 2

Row	Original SCOMS	Ill Plan 2	2020 VAP	2020 WNH VAP	2020 APB VAP
A	**1**	1	369,056	114,033	242,268
B		2	71,738	39,631	28,703
C		3	275,608	171,244	82,120
D	**1 Total**		**716,402**	**324,908**	**353,091**
E	**2**	1	77,391	35,211	39,433
F		2	688,622	461,303	172,012
G		3	30,754	20,871	8,967
H	**2 Total**		**796,767**	**517,385**	**220,412**
I	**3**	1	299,938	159,981	122,739
J		3	464,492	313,177	126,838
K	**3 Total**		**764,430**	**473,158**	**249,577**
L	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (D)	716,402	324,908	353,091
		Pop Retained in D1 (A):	369,056	114,033	242,268
		Pop Sent Out of D1 (B + C):	347,346	210,875	110,823
		Pop Added to D1 (E + I):	377,329	195,192	162,172
		Net Change to D1 (sent out + added):	29,983	-15,683	51,349
		New D1 VAP:	746,385	309,225	404,440
		D1 Core Retention:	51.5%	35.1%	68.6%
		Pop Retained in Original Districts (A + F + J)	1,522,170	888,513	541,118
		Pop Changing Districts (B + C + E + G + I):	755,429	426,938	281,962
		Plan Core Retention (Pop Retained / Total Pop):	66.8%	67.5%	65.7%

Source: data discussed in text; calculations by Bryan GeoDemographics for author

66. In *Table III.F.3* (below) one can see the core retention results for Cooper's Least Change Plan 1. The core retention results here are much better than in Illustrative Plans 1 and 2. In D1, 88.4% of the total population is retained. 85.4% of WNH and 91.7% of APB are retained. Across the entire plan, 92.4% of Mississippi's total population is retained in their original district. 94.3% of WNH and 89.2% of APB are retained in their original districts. In this plan, 172,412 Mississippians, 74,458 WNH and 88,566 APB are moved. I would characterize these changes as minimal and not substantially differentiated by race and ethnicity.

Table III.F.3 Core Retention of Least Change Plan 1

Row	Original SCOMS	LC Plan 1	2020 VAP	2020 WNH VAP	2020 APB VAP
A	**1**	1	633,441	277,443	323,812
B		3	82,961	47,465	29,279
C	**1 Total**		**716,402**	**324,908**	**353,091**
D	**2**	1	30,407	11,431	17,624
E		2	766,360	505,954	202,788
F	**2 Total**		**796,767**	**517,385**	**220,412**
G	**3**	1	59,044	15,562	41,663
H		3	705,386	457,596	207,914
I	**3 Total**		**764,430**	**473,158**	**249,577**
J	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (C)	716,402	324,908	353,091
		Pop Retained in D1 (A):	633,441	277,443	323,812
		Pop Sent Out of D1 (B):	82,961	47,465	29,279
		Pop Added to D1 (D + G):	89,451	26,993	59,287
		Net Change to D1 (sent out + added):	6,490	-20,472	30,008
		New D1 VAP:	722,892	304,436	383,099
		D1 Core Retention:	88.4%	85.4%	91.7%
		Pop Retained in Original Districts (A + E + H)	2,105,187	1,240,993	734,514
		Pop Changing Districts (B + D + G):	172,412	74,458	88,566
		Plan Core Retention (Pop Retained / Total Pop):	92.4%	94.3%	89.2%

Source: data discussed in text; calculations by Bryan GeoDemographics for author.

67. *Table III.F.4* (below) one can see the core retention results for Cooper's Least Change Plan 2. The core retention results here are again much better than in Illustrative Plans 1 and 2. In D1, 94.8% of the total population is retained. 93.5% of WNH and 97.0% of APB are retained. Across the entire plan, 95.8% of Mississippi's total population is retained in their original district. 97.2% of WNH and 93.6% of APB are retained in their original districts. In this plan, 96,106 Mississippians, 36,540 WNH and 52,420 APB are moved. I would characterize these changes as minimal and not substantially differentiated by race and ethnicity.

Table III.F.4 Core Retention of Least Change Plan 2

Row	Original SCOMS	LC Plan 2	2020 VAP	2020 WNH VAP	2020 APB VAP
A	**1**	1	679,340	303,930	342,334
B		3	37,062	20,978	10,757
C	**1 Total**		**716,402**	**324,908**	**353,091**
D	**2**	2	796,767	517,385	220,412
E	**2 Total**		**796,767**	**517,385**	**220,412**
F	**3**	1	59,044	15,562	41,663
G		3	705,386	457,596	207,914
H	**3 Total**		**764,430**	**473,158**	**249,577**
I	**Grand Total**		**2,277,599**	**1,315,451**	**823,080**
		Existing D1 VAP (C)	716,402	324,908	353,091
		Pop Retained in D1 (A):	679,340	303,930	342,334
		Pop Sent Out of D1 (B):	37,062	20,978	10,757
		Pop Added to D1 (D + G):	59,044	15,562	41,663
		Net Change to D1 (sent out + added):	21,982	-5,416	30,906
		New D1 VAP:	738,384	319,492	383,997
		D1 Core Retention:	94.8%	93.5%	97.0%
		Pop Retained in Original Districts (A + E + H)	2,181,493	1,278,911	770,660
		Pop Changing Districts (B + D + G):	96,106	36,540	52,420
		Plan Core Retention (Pop Retained / Total Pop):	95.8%	97.2%	93.6%

Source: Data discussed in text; calculations by Bryan GeoDemographics for author.

68. In *Table III.F.5* (below) one sees a comparison of the core retention in total and by race, WNH and APB. There are many communities of interest in Mississippi and differential core retention analysis enables one to demographically quantify the impact of potential changes on one of interest, which in this case would be the existing judicial districts. The CRA shows that Illustrative Plans 1 and 2 are significantly disruptive to large numbers of Mississippians across the state in order to achieve small increases in the percent APB in District 1. The differential CRA shows that the Least Change Plans 1 and 2 are minimally disruptive and do *not* displace large numbers of Mississippians. Least Change Plan 1 has a minimal amount of differential core retention by race (that is, 94.3% CRA for WNH and 89.2% CRA for APB is minimally different from 92.4% overall), while Least Change Plan 2 has virtually no differential core retention by race (that is, 97.2% CRA for WNH and 93.6% CRA for APB is minimally different from 95.8% overall).

Table III.F.5 Core Retention Analysis of SCOMS by Plaintiff Plan

Population		Ill Plan 1	Ill Plan 2	LC Plan 1	LC Plan 2
Total	District 1	63.1%	51.5%	88.4%	94.8%
	Total	74.3%	66.8%	92.4%	95.8%
WNH	District 1	49.7%	35.1%	85.4%	93.5%
	Total	75.2%	67.5%	94.3%	97.2%
APB	District 1	76.9%	68.6%	91.7%	97.0%
	Total	72.0%	65.7%	89.2%	93.6%

Source: 2020 Census Population analyzed with CRA by SCOMS and alternate plaintiff plans. Calculations by Bryan GeoDemographics for author.

Compactness

69. The second traditional redistricting principle I address is the compactness of districts (See paragraph 15). In addition to noting that compactness was a criteria used in the "Magnolia Bar" case (Barbour, 1992), I once again turn to Mississippi Code § 5-3-101 which states for the purpose of legislative redistricting:

> "In accomplishing the apportionment, the committee shall follow such constitutional standards as may apply at the time of the apportionment and shall observe the following guidelines unless such guidelines are inconsistent with constitutional standards at the time of the apportionment, in which event the constitutional standards shall control."
>
> **(a) Every district shall be compact**

70. Within Mr. Cooper's report on Page 4 (P. 4), Mr. Cooper states that he was "asked by the attorneys for the Plaintiffs in this case [have asked me] to determine whether the Black population in Mississippi is "sufficiently large and **geographically compact**" to allow for one of the three at-large districts for the Mississippi Supreme Court to be drawn with a majority Black voting age population, consistent with traditional districting principles." Mr. Cooper goes on to mention the word "compact" six more times in his report as follows:

1. On P.5, Mr. Cooper states at C. Summary of Expert Conclusions 11. "I have reached the following conclusions: • Based on the 2020 Census, Black Mississippians are sufficiently numerous and **geographically compact** to allow for one majority-Black VAP district".
2. On P.6, Mr. Cooper also states at C. Summary of Expert Conclusions 11 "• In addition, Black Mississippians have been sufficiently numerous and **geographically compact** to allow for one majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court based on the prior decennial Census numbers from 1990, 2000, and 2010."
3. On P.24, Mr. Cooper states at A. Illustrative Plans and Traditional Redistricting Principles 46. "The two illustrative plans that I have developed contain three districts— each with one

majority-Black district. Both illustrative plans comply with traditional redistricting principles, including **compactness**".

4. On P.24, Mr. Cooper states at A. Illustrative Plans and Traditional Redistricting Principles 47. "The illustrative plans meet the first Gingles precondition, i.e., they demonstrate that the Black population in Mississippi is sufficiently numerous and **geographically compact** to allow for the creation of at least one 3-member majority Black district."

5. On P.24, Mr. Cooper states at A. Illustrative Plans and Traditional Redistricting Principles 48. "There is no question that Mississippi's Black population is "**geographically compact**." For example, and by way of reference, the nine-single member district plan shown in Exhibit G contains three contiguous majority-Black VAP districts (Districts 4, 5, and 6)—demonstrating beyond a shadow of doubt that **the Black population is compactly distributed** north-to-south in and around the Delta."

71. Mr. Cooper makes statements in his report that he is *certain* that the alternate districts as he has configured them are defensibly compact. In fact, on P.24, Mr. Cooper uses language such as "*there is no question*" and "*beyond a shadow of a doubt.*" Yet the only evidence he offers are his own personal observations and strongly stated beliefs. Mr. Cooper does not appear to have gone through the exercise of actually calculating and measuring the compactness of each district in each plan – an exercise that he *has* done in other cases.[28] At this point, I turn my attention to performing and discussing just such an analysis.

72. Compactness is a tool that can be used in redistricting to compare the relative compactness of existing districts against new districts to determine whether the new districts entail minimal or large-scale changes from the existing districts. There are numerous measures of "compactness" – each using different math and concepts. But what compactness measure does an expert use? The law offers few precise definitions of compactness other than "you know it when you see it," which effectively implies a common understanding of the concept. In contrast, academics have shown that compactness has multiple dimensions and have generated many conflicting measures.[29]

73. There is no professional consensus on a "right" measure, and every widely used measure works differently. A district that is "most compact" by one measure can easily

[28] See Second Declaration of William S. Cooper in Alabama *Caster v. Merrill* and Exhibit 1 - Decl. of William S. Cooper in *Robinson v. Ardoin* and *Galmon v. Ardoin* and related Louisiana redistricting litigation in 2022 both current SCOTUS cases where he reports and discusses CVAP alongside VAP and its importance in measuring minority populations.

[29] "How to Measure Legislative District Compactness If You Only Know it When You See it," https://gking.harvard.edu/presentations/how-measure-legislative-district-compactness-if-you-only-know-it-when-you-see-it-7.

and frequently be less compact by another. Four of the most common measures (Polsby-Popper, Schwartzberg, Reock and Convex Hull) each have unique features[30] so I use each to facilitate a comprehensive analysis of each plan. The analysis includes two tables per plan. The first is the actual scores, by district and by measure including a plan average by measure. The second is a *ranking* by district and by plan. That is – for each district and each measure, how did each score rank (1 being the best score and 5 being the worst)? Last, the tables are thematically shaded based on their performance. Cells in green are the best performing districts, cells in red are poorer performing districts.

Table III.F.6a (below) shows the compactness scores for the existing SCOMS districts, by compactness measure, and *Table III.F.6b* (below) shows the ranks of those scores relative to the other plans. One can compare the average scores and sum these ranks as a means of evaluating the compactness of each plan. For example, using *Table III.F.6b*. For District 1, using the Polsby-Popper Score, the SCOMS plan ranks first, that is, that district, by that measure, out of the five plans (original SCOMS and each of Cooper's alternative plans) is the most compact.

[30] These measures are provided by the widely used professional redistricting software "Maptitude for Redistricting," for example, the software Mr. Cooper has used in the past in other cases such as in Alabama *Caster v. Merrill*. The Reock compactness score is computed by dividing the area of the voting district by the area of the smallest circle that would completely enclose it. Since the circle encloses the district, its area cannot be less than that of the district, and so the Reock compactness score will always be a number between 0 and 1 (which may be expressed as a percentage). The Area/Convex Hull test computes the ratio the district area to the area of the convex hull of the district (minimum convex polygon which completely contains the district). This measure is always between 0 and 1, with 1 being the most compact. The Polsby-Popper (PP) measure is the ratio of the area of the district to the area of a circle whose circumference is equal to the perimeter of the district. This measure also is always between 0 and 1, with 1 being the most compact. The Schwartzberg test (Schwartzberg, 1966) https://core.ac.uk/download/pdf/217207073.pdf is a perimeter-based measure that compares a simplified version of each district to a circle, which is considered to be the most compact shape possible. Unlike other measures, the scale of Schwartzberg values is *above* 1, with *lower* values approaching 1 being most compact. The Polsby-Popper and Schwartzberg ratios place high importance on district perimeter. Thus, they are highly susceptible to bias due to "shoreline complexity." Therefore, districts that are trimmed around shorelines may end up with a low compactness score through no fault of the district's authors and may not necessarily be a true indicator of gerrymandering. This is precisely why it is important to use multiple compactness scores (in this case the Polsby-Popper, Schwartzberg, Reock and Convex Hull measures) and let the reader judge which one is a better fit based on the geography of the district and method of calculation each score uses. A higher score means more compact, but the scores using different measures cannot be directly compared to each other. *See* Azavea White Paper, "Redrawing the Map on Redistricting," (2012), https://cdn.azavea.com/com.redistrictingthenation/pdfs/Redistricting_The_Nation_Addendum.pdf .

Table III.F.6a Compactness Scores of Existing SCOMS Districts

	More is Better			Less is Better
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.15	0.42	0.65	2.55
2	0.31	0.44	0.77	1.79
3	0.40	0.66	0.88	1.58
Average	0.29	0.51	0.77	1.97

Source: See text. Calculations by Bryan GeoDemographics for author.

Table III.F.6b Compactness Rankings of Existing SCOMS Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	1	1	3	1
2	**3**	**3**	**4**	**3**
3	2	1	1	2
Average	2.0	1.7	2.7	2.0

Source: See text. Calculations by Bryan GeoDemographics for author

74. In *Table III.F.6b* one can see that the existing SCOMS districts perform the best or nearly the best for each district, by each measure compared to the other proposed plans. The exception is the Convex Hull measure, which ranks District 1 3rd and District 2 4th out of the five plans. The sum of the ranks for the existing SCOMS plan is 25.

75. *Table III.F.7a* (below) shows the compactness scores for the Cooper Illustrative 1 Plan districts, by compactness measure, and *Table III.F.7b* shows the ranks of those scores relative to the other plans.

Table III.F.7a Compactness Scores of Cooper Illustrative 1 Districts

	More is Better			Less is Better
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.15	0.32	0.74	2.61
2	0.31	0.39	0.80	1.80
3	0.37	0.38	0.79	1.65
Average	0.27	0.36	0.78	2.02

Source: See text. Calculations by Bryan GeoDemographics for author

Table III.F.7b Compactness Ranking of Cooper Illustrative 1 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	2	3	1	2
2	5	4	2	4
3	3	4	2	3
Average	3.3	3.7	1.7	3.0

Source: See text. Calculations by Bryan GeoDemographics for author

76. In *Table III.F.7b* one can see that the Cooper Illustrative 1 Plan districts perform more poorly than the existing SCOMS plan. That is, the plan is less compact. The Convex Hull measure ranks District 1 as 1st with District 2 and District 3 tied for 2nd. The sum of the ranks for the Cooper Illustrative 1 Plan is 35.

Table III.F.8a Compactness Scores of Cooper Illustrative 2 Districts

	More is Better			Less is Better
District	**Polsby-Popper**	**Reock**	**Convex_Hull**	**Schwartzberg**
1	0.12	0.27	0.71	2.85
2	0.38	0.48	0.78	1.62
3	0.29	0.33	0.72	1.85
Average	0.27	0.36	0.74	2.11

Source: See text. Calculations by Bryan GeoDemographics for author

Table III.F.8b Compactness Ranking of Cooper Illustrative Plan 2 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	3	5	2	3
2	2	2	3	2
3	5	5	4	5
Average	3.3	4.0	3.0	3.3

Source: See text. Calculations by Bryan GeoDemographics for author

77. In *Table III.F.8b* one can see that the Cooper Illustrative Plan 2 districts performs even more poorly than the existing SCOMS plan. That is, the plan is less compact. The District 2 configuration generally performs well across the different measures. The sum of the ranks for the Cooper Illustrative Plan 2 is 41.

Table III.F.9a Compactness Scores of Cooper Least Change 1 Districts

	More is Better			Less is Better
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.09	0.29	0.55	3.39
2	0.39	0.50	0.83	1.60
3	0.33	0.41	0.79	1.74
Average	0.27	0.40	0.72	2.24

Source: See text. Calculations by Bryan GeoDemographics for author

Table III.F.9b Compactness Ranking of Cooper Least Change 1 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	5	4	5	5
2	1	1	1	1
3	4	3	3	4

Source: See text. Calculations by Bryan GeoDemographics for author

78. In *Table III.F.9b* one can see that the Cooper Least Change 1 Plan Districts 1 and 3 perform more poorly and the plan overall performs more poorly than the existing SCOMS plan. That is, the plan is less compact overall. The movement of Madison County from District 1 to District 3 significantly distorts the boundaries of District 1 and impairs the compactness of District 3. The sum of the ranks for the Cooper Least Change Plan 1 is 37.

Table III.F.10a Compactness Scores of Cooper Least Change 2 Districts

	More is Better		Less is Better	
District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	0.12	0.35	0.59	2.95
2	0.31	0.44	0.77	1.79
3	0.46	0.54	0.88	1.48
Average	0.30	0.44	0.75	2.07

Source: See text. Calculations by Bryan GeoDemographics for author.

Table III.F.10b Compactness Ranking of Cooper Least Change 2 Districts

District	Polsby-Popper	Reock	Convex_Hull	Schwartzberg
1	4	2	4	4
2	3	3	4	3
3	1	2	1	1
Average	2.7	2.3	3.0	2.7

Source: See text. Calculations by Bryan GeoDemographics for author

79. In *Table III.F.10b* one can see that the Cooper Least Change Plan 2 Districts 1 performs more poorly and the plan overall performs more poorly than the existing SCOMS plan. That is, the plan is less compact. Note that District 2 in this plan is unchanged from the original SCOMS plan. The sum of the ranks for the Cooper Least Change Plan 2 is 32.

80. In summary, the alternate plans suggested by Cooper range from somewhat less compact to substantially less compact when compared to the existing SCOMS plan.

G. Voting Age Population Polling Place Spatial Analysis

81. There is a long history of Black voter suppression in Mississippi. In recent years, much has been written about the impact of Black voter disenfranchisement, driven both by social and legal forms of suppression.[31] In this report, I attempt to measure two elements of Black voter suppression. The first is *causal* and is what I discuss here. "What are the differences in proximity, the differences in the distance (proximity) of Black voting age population to current polling stations compared to all voting age population – and, in particular, the WNH voting age population. My hypothesis for this question was that if the Black voting age population were being systematically disenfranchised by the state of Mississippi, a symptomatic indicator of that would be seeing fewer of them close to polling places, and more of them a great distance from polling places. The second measure I discuss is *evidentiary* (discussed later in Section IV): Does one sees actual evidence of Black voter suppression at the polls today? That is: does one see a difference in Black voter registration and Black voter turnout, which one would expect as an outcome of Black voter disenfranchisement?

[31] https://www.clarionledger.com/in-depth/news/politics/elections/2022/08/23/mississippi-voter-access-roadblocks-vote-despite-voting-rights-act-1965/10201239002/

https://publicintegrity.org/politics/elections/who-counts/more-than-15-of-black-mississippi-residents-permanently-barred-from-voting/

https://dce.olemiss.edu/um-votes-exploring-the-history-of-voting-suppression-in-ms/

https://www.fastcompany.com/90570476/how-voters-are-casting-their-ballot-in-the-state-thats-made-it-hardest-to-vote-in-2020

82. The Statewide Election Management System (or "SEMS") is the election information management system - for which data is provided by local officials. This system supports a wide variety of responsibilities related to elections and based on information from SEMS and by working with assorted county election officials, reporters at the Mississippi Free Press (*MFP*) produced an inventory of polling places for the November 8, 2020 election.[32] Using that inventory, BryanGeoDemographics performed for me an in-depth spatial analysis of the location of those polling places and their proximity to the voting age population in total and by race and ethnicity. This analysis was conducted for the population as a whole and by race and ethnicity for the entire state of Mississippi. This analysis was then conducted for each individual county. This sub-state analysis allows one to aggregate and assign the proximity of total VAP, WNH VAP and Any Part Black VAP to polling places within each existing district in the current SCOMS configuration, as well in each illustrative and least change configuration proposed by Mr. Cooper in his expert report. While each of Mr. Cooper's illustrative and least change plans increases the percent of the Black population in District 1, I wanted to know if the increases he achieved came at the expense of Black voter proximity to the polls. That is, while he increased the number and proportion of Blacks – did he increase (or decrease) the number of Blacks who happen to have close proximal access to the polls. If Mr. Cooper's plans increased the number and proportion of Blacks, but he moved close-poll proximity Blacks *out of* District 1 and moved distant-poll proximity Blacks *into* District 1, one could argue that the actual impact of such plans would be to increase Black voter disenfranchisement and risk *fewer* Blacks actually turning out to vote.

83. I was not selective and did not discriminately select a vintage of polling locations that I expected would have been any more or less favorable to the outcome I was researching.

[32] https://www.sos.ms.gov/press/op-ed-secretary-watson-election-reform-whats-best-mississippi; https://www.mississippifreepress.org/voting-2022

Table III.G.1 Distance of Population to Polling Places by Race Definition

		VAP (A)	WNH VAP (B)	APB VAP (C)
1/4 Mile		546,405	282,127	235,277
1	Share of Distance		51.6%	43.1%
	Share of Pop		21.4%	28.6%
1/2 Mile		972,324	488,114	427,910
2	Share of Distance		50.2%	44.0%
	Share of Pop		37.1%	52.0%
< Mile		1,488,775	785,200	612,982
3	Share of Distance		52.7%	41.2%
	Share of Pop		59.7%	74.5%
> Mile		788,824	530,251	210,098
4	Share of Distance		67.2%	26.6%
	Share of Pop		40.3%	25.5%
Total		2,277,599	1,315,451	823,080
5	Share		57.8%	36.1%

Source: data discussed in text; calculations by Bryan GeoDemographics for author.

84. *Table III.G.1* shows the VAP (at A), the WNH VAP (at B), and the APB VAP (at C) with the sum of the population who are different distances from a polling place. In the first row (at 1) I show the population who are within a quarter mile of a polling place. This number is shown as both a percent of the population that is within that distance (WNH / VAP and APB / VAP), as well as the share of that population of their share within the state (WNH VAP within ¼ mile / WNH VAP and APB VAP within ¼ mile / APB VAP for example). In the second row (at 2) I show the population within ½ a mile. In the third row (at 3) I show the population within 1 a mile. And in the fourth row (at 4) I show the population more than a mile distant from a polling place. At 5 I show that the 1,315,451 WNH VAP are 57.8% of the total Mississippi VAP (MS VAP), and 823,080 APB VAP are 36.1% of MS VAP.

85. Starting with my analysis at ¼ mile. While WNH VAP make up 57.8% of MS VAP, they only make up 51.6% of VAP within ¼ mile of a polling place. Conversely, while APB VAP make up 36.1% of MS VAP, they make up 43.1% of VAP within ¼ mile of a polling place. While 21.4% of WNH VAP live within ¼ mile of a polling place, 28.6% of APB VAP live within ¼ mile of a polling place. By both measures, WNH VAP are *under*-represented and APB VAP are *over*-represented at our measure of closest distance (1/4 mile) to MS polling places.

86. Starting with my analysis at ½ mile. While WNH VAP make up 57.8% of MS VAP, they only make up 50.2% of VAP within ½ mile of a polling place. Conversely, while APB VAP make up 36.1% of MS VAP, they make up 44.0% of VAP within 1/2 mile of a polling place. While 37.1% of WNH VAP live within ½ mile of a polling place,

52.0% of APB VAP live within ½ mile of a polling place. By both measures, again, WNH VAP are *under*-represented and APB VAP are *over*-represented at our next proximal measure (1/2 mile) to MS polling places.

87. Starting with my analysis at < 1 mile. While WNH VAP make up 57.8% of MS VAP, they only make up 52.7% of VAP within 1 mile of a polling place. Conversely, while APB VAP make up 36.1% of MS VAP, they make up 41.2% of VAP within 1 mile of a polling place. While 59.7% of WNH VAP live within 1 mile of a polling place, 74.5% of APB VAP live within 1 mile of a polling place. By both measures, again, WNH VAP are *under*-represented and APB VAP are *over*-represented at our next proximal measure (1 mile) to MS polling places.

88. Now, looking at VAP more than one mile from a polling place. While the WNH VAP makes up 57.8% of MS VAP, it makes up 67.2% of VAP more than a mile from a polling place. Conversely, while the APB VAP makes up 36.1% of MS VAP, it makes up 26.6% of VAP more than a mile from a polling place. While 40.3% of the WNH VAP live more than a mile from a polling place, only 25.5% of the APB VAP live more than a mile from a polling place. By both measures, the WNH VAP is *over*-represented and the APB VAP is *under*-represented at our measure of greatest distance (> 1 mile) to MS polling places.

89. These results suggest that in terms of proximity distance to a polling place, Black voters have more of an opportunity to vote than White voters in Mississippi.

H. Diversity Evaluation of the Supreme Court Districts

90. In conjunction with the lawsuit that led to this report, the ACLU (2022) states "It's far past time that the Supreme Court districts that Mississippi uses to elect its Supreme Court reflect the diversity of the state's population, rather than diminishing the voice of Black voters." Given this statement and the recognition of the importance of political and socio-economic diversity by Judge William Barbour in the "Magnolia Bar" case, which involved SCOMS districting (Barbour, 1992), it is worthwhile here to evaluate the issue of population diversity in conjunction with this case involving SCOMS districts.

91. The ACLU and Judge Barbour are not the only entities to recognize the importance of diversity in Mississippi. Another entity is the Board of Trustees of the State Institutions of Higher Learning, whose members are appointed by The Governor on the basis of the State's Supreme Court Districts. Among the Board's policies and bylaws, as

amended through September 29th, 2022,[33] one finds Policy 102.06 (p. 14), a statement on diversity:

> "One of the strengths of Mississippi is the diversity of its people. This diversity enriches higher education and contributes to the capacity that our students develop for living in a multicultural and interdependent world. Our system of government, rooted in respect for all people and respect for each individual, is based on understanding. Embracing diversity of thought, cultural background, experience, and identity helps to foster inclusive and intellectually enriched campus communities that maximize opportunities for success among all students and employees."

92. Given this statement, the one by the ACLU, and the opinion by Judge Barbour, I conducted an examination of the diversity of the Supreme Court Districts themselves using a demographic "cluster analysis" which is set of tools and algorithms used to classify different objects into groups in such a way that the similarity between two objects is maximal if they belong to the same group and minimal otherwise (Gallesty, 2020). It is the process of grouping individuals or entities with similar characteristics or similar variables (NCSS, 2022). In the case of the entities of interest here - Mississippi counties - one can then examine how these groups are represented in the existing and proposed district plans. The *Mississippi Health and Hunger Atlas* (Haggard, Cafer, and Green, 2017) provides the data for this process, which allows one to construct groups of counties through its indices of health and well-being (See paragraph 96 for a description of these indices). In turn, these groups can be used to assess diversity based on the indices. For example, if the cluster analysis reveals that all of the state's 82 counties can be formed into "k" groups, and each of these "k" groups had the same percent of its counties within a given district, the district in question would be maximally diverse; if all of the counties within a given Supreme Court District were members of the same group, there would be no population diversity within the district.

93. The authors of the *Mississippi Health and Hunger Atlas* note that health and hunger are correlated with socio-economic status (Haggard, Cafer, and Green, 2017:1), which in turn is correlated with race (Massey, 2007). This correlation comes back full circle to health and well-being, via the correlation of race and socio-economic status with one another and to mortality (McGehee, 1994; Stockwell, Swanson, and Wicks, 1988; Swanson and McGehee, 1996; Swanson and Sanford, 2012; Swanson and Tedrow, 2018; Waldron, 2002). These correlations support the argument that the health and hunger indices also serve as indices of race and socio-economic status.

[33] http://www.mississippi.edu/board/downloads/policiesandbylaws.pdf

94. As can be seen in *Exhibit III.H.1*, there are nine variables used to indicate health need and seven to indicate hunger need. As described in the Atlas, these variables are combined and summarized to create a single "needs" index for each county in Mississippi, as described in paragraph 96. Five health variables are combined and summarized with five hunger variables to create a single "performance" index for each county. These two indices formed the input for the cluster analysis. I performed what is known as a NCSS K-Means procedure (NCSS, 2022), the results of which are shown in Appendix 2.

95. The performance levels are based on quintiles (Haggard, Cafer, and Green, 2017:4), which are arranged from very low to very high: "Counties with a very low ranking are in the lowest 20 percent for need or performance. Being in the lowest 20 percent or first quintile means counties either have low need or low performance, depending on the indicator. Counties with a very high ranking are in the highest 20 percent counties for need or performance. For example, a very high ranking for percent of food insecure individuals means that county is in the highest 20 percent, or fifth quintile. This denotes the highest need group for percentages of food insecure people in that county." The health indices were scored similarly.

Exhibit III.H.1 Health and Hunger Needs Atlas Needs and Performance Variables

Need Indicators	Performance Indicators
Health	**Health**
Teen Pregnancy Rate per 1,000 Live Births	Primary Care Physicians per 100,000
Low Birth Weight per 100 Live Births	Other Primary Care Providers per 100,000
Pre-Term Birth Rate per 100 Live Births	Medicaid Enrollees per Primary Care Provider
Adult Obesity Rate	Population Enrolled in Medicaid
Adult Diabetes Rate	Under 18 Enrolled in Medicaid
Adult Hypertension per 100,000 Deaths	
Uninsured Adults	
Uninsured Under 18	
Avg. Miles to Closest Primary Care Provider	
Hunger	**Hunger**
Food Insecure Individuals	SNAP Enrollment (% Total Population)
Children Food Insecure	SNAP Enrollment (% Eligible)
Food Insecure with Hunger	SNAP Enrollment: Children (% Eligible)
Population Income Eligible for SNAP	Local Sustainability Resilience Index
Children Income Eligible for SNAP	Overall Performance Rank
Food Affordability	
Low Food Access Index	

Source: *Mississippi Health and Hunger Atlas*, 2017 (indicators are shown and discussed in pp 2 to 22).

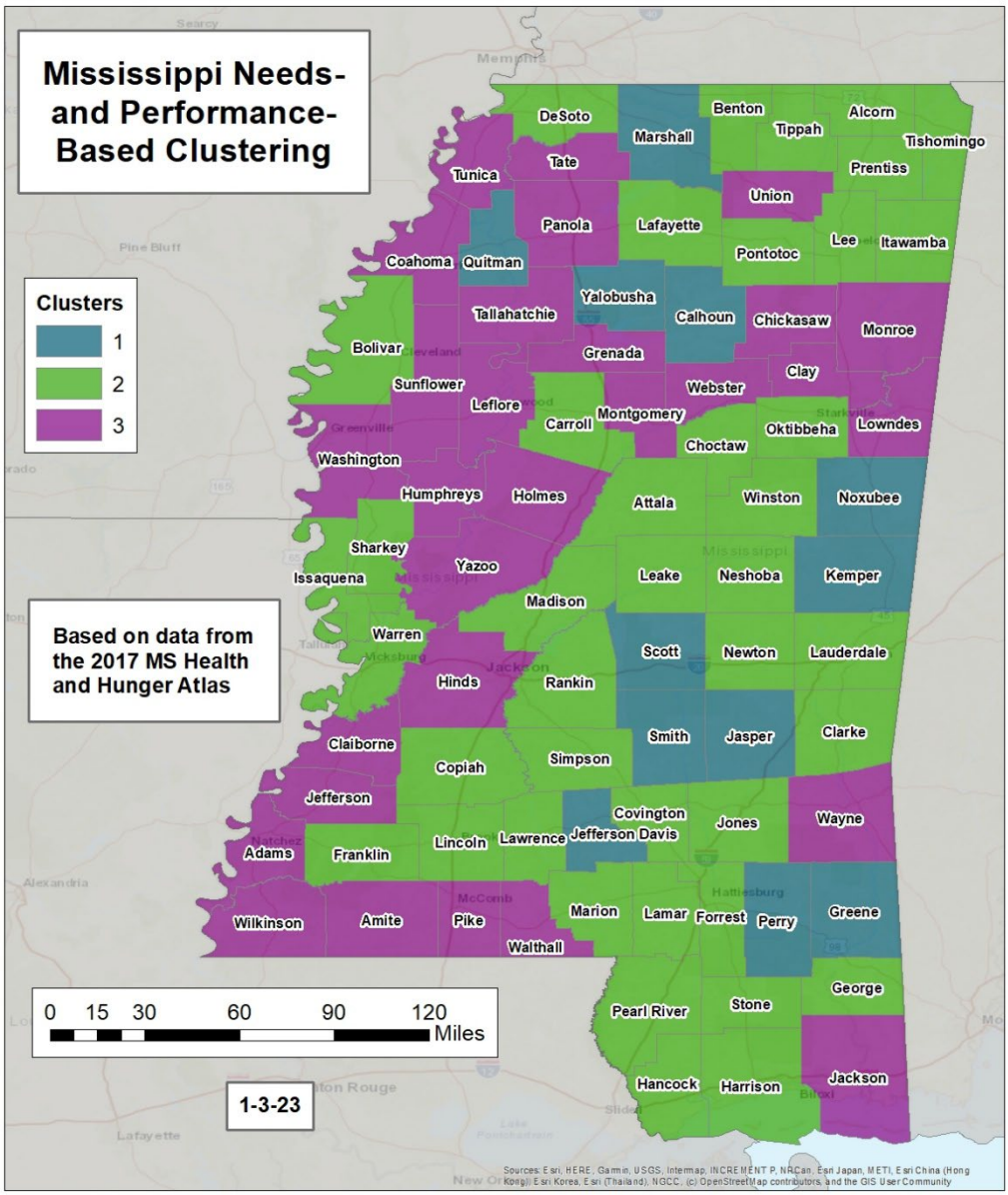
96. The cluster analysis enables us to understand the geographic distribution of population diversity beyond the raw% APB for each county. Using the existing SCOMS districts as a reference (see Appendix 4 Map D), it can be seen that large numbers of high %APB VAP population are generally distributed north and south along the Mississippi river, but there are other concentrations around the state at the county level. District 1 was originally drawn such that it captures much of its APB population along the Mississippi river, but it also extends eastward to capture, among other concentrations, two high APB counties on the eastern edge of Mississippi, Kemper and Noxubee. As will be shown, the current districts each have a given level of population diversity. The cluster analysis enables us to determine if the alternative plans proposed by plaintiffs maintain the level of population diversity found in each of the current districts, increase it, or reduce it.

97. My analysis yielded three clusters as follows: 12 counties in cluster 1 (high need/high performance); 41 counties in cluster 2 (medium need/medium performance); and 29 counties in cluster 3 (high need/low performance). In the remainder of this section, I compare the numbers and types of clusters for the existing SCOMS plans and for each of the plans proposed the Plaintiffs' expert, Mr. Cooper.

98. The overall results can be seen in the map shown as *Exhibit III.H.2*, where 12 counties are clustered into Group 1 (shown in teal), "low need/high performance;" 41 counties are clustered into Group 2 (shown in lime green), "medium "need/medium performance" group; and 29 counties are clustered into Group 3 (shown in purple), "high need/low performance."

99. The counties in each of the three cluster groups would be spread proportionately across the three Supreme Court Districts if diversity was at a maximum. However, unlike group 1, which can be divided by three with no remainder, groups 2 and 3 have fractional remainders. Given this; districts 1, 2 and 3 would have each 4 of the 12 counties in Group 1; districts 1, 2, and 3 would each have 13 of the 41 counties in Group 2, with the remaining two counties placed, respectively, into two of the three districts; and districts 1, 2, and 3 would each have 9 of the 29 counties in Group 3, with the remaining two counties placed, respectively, into two of the three districts. These distributions match the arithmetic means that correspond to the arithmetic means (expressed as percentages) shown in the "b" series of exhibits in this section (see below for a description of the exhibits).

Exhibit III.H.2 Cluster Map Based on Mississippi Needs and Performance Indicators

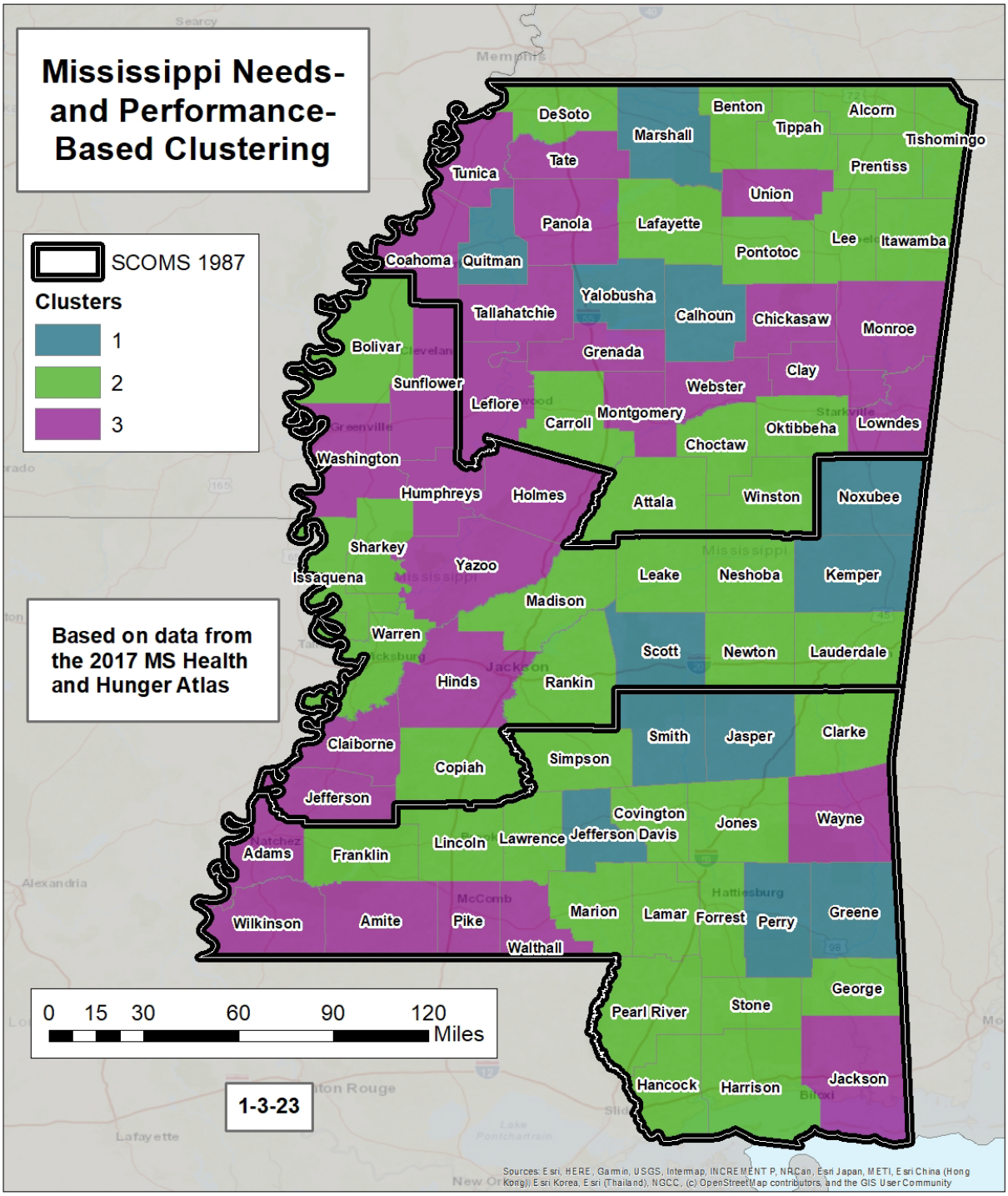


Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

100. Next, I present the cluster analysis results for the existing SCOMS districts, and for each of the four alternate plans presented by Mr. Cooper. The remaining series of fifteen exhibits are presented by each of the five plans, with a map, a table and a chart for each, which is in accordance with the following general layout:

- *Exhibit III.H.#.a* is the map showing the arrangement of counties for the plan
- *Exhibit III.H.#.b* is a chart with the statistics of the cluster analysis for the plan
- *Exhibit III.H.#.c* is a chart of the cluster analysis for the plan

Exhibit III.H.3.a Cluster Map for Existing SCOMS Plan



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

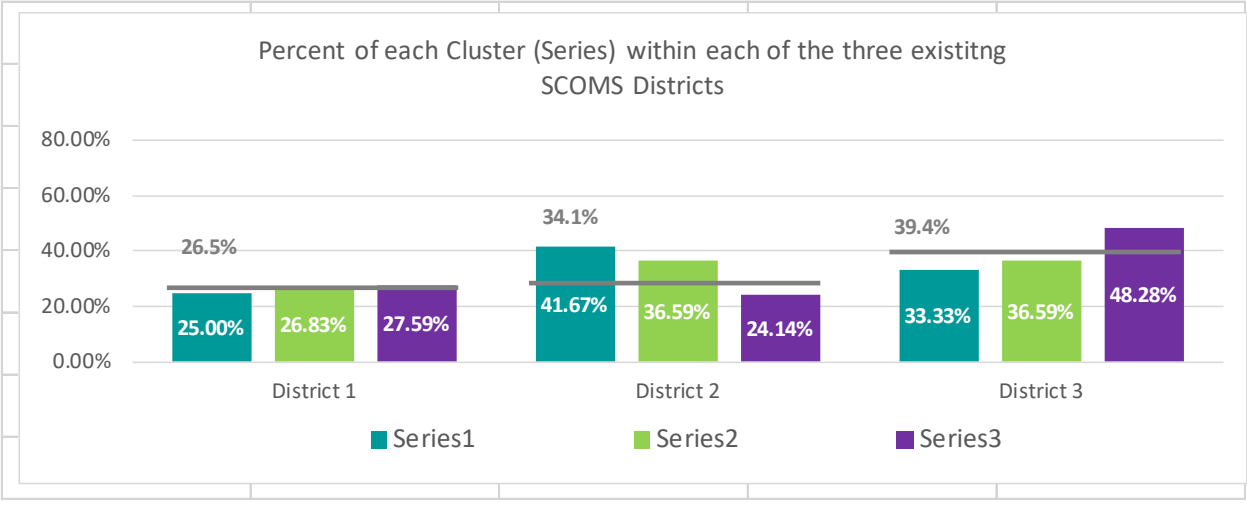
101. *Exhibit III.H.3.a* (above) shows the distribution of counties by cluster group across the three existing Supreme Court Districts. Under the existing plan: District 1 has three of the 12 Group 1 counties (shown in teal), 11 of the 41 Group 2 counties (shown in lime green), and eight of the 29 Group 3 counties (shown in purple); District 2 has five of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green) , and seven of the 29 Group 3 counties (purple); District 3 has four of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and 14 of the 29 Group 3 counties (purple). *Exhibit III.H.3.b* and *Exhibit III.H.3.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three existing districts.

Exhibit III.H.3.b Cluster Analysis Table: Existing SCOMS Plan

Cluster (Series)	District 1	District 2	District 3	Total
1	25.0%	41.7%	33.3%	100.0%
2	26.8%	36.6%	36.6%	100.0%
3	27.6%	24.1%	48.3%	100.0%
mean	26.5%	34.1%	39.4%	
sd	0.01	0.07	0.06	
cv	0.04	0.22	0.16	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculation, table and graph by author.

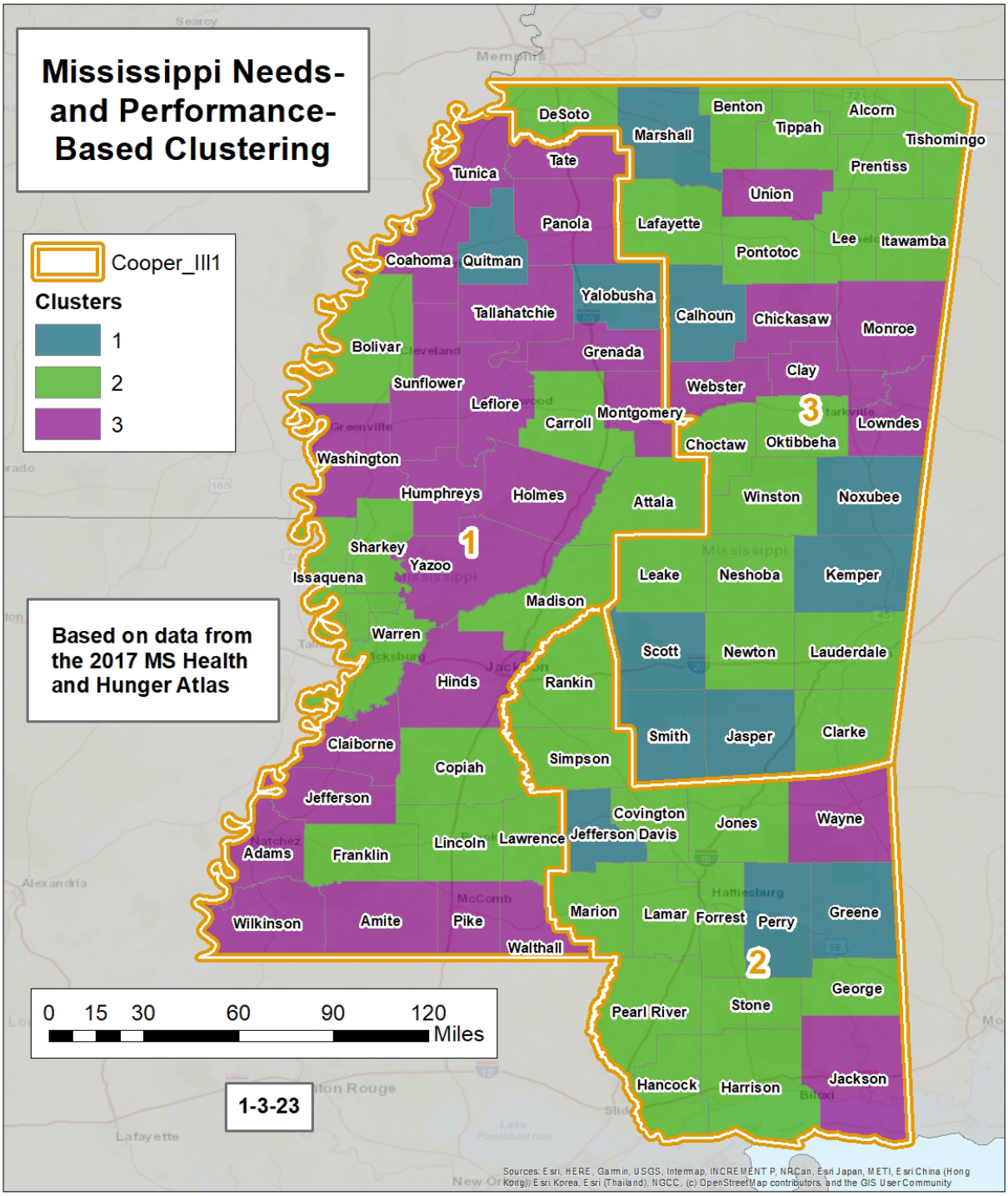
Exhibit III.H.3.c Cluster Analysis Chart: Existing SCOMS Plan



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculation, table and graph by author.

102. In *Exhibit III.H.3.b* and *Exhibit III.H.3.c*, (above) one can see the relative distribution of the cluster groups (labeled as "Series" in the Graph) within each of the three existing Supreme Court Districts numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and Purple = cluster group 3). If all three groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within a given district (which is the arithmetic average of the three groups, as shown approximately by the horizontal bar within each of the three districts). In the case of the Existing Districts, the three groups are nearly distributed equally within existing district 1, Cluster Group 1 (teal bar at 25%), cluster group 2 (lime green at 26.83%) and Cluster group 3 (purple at 27.59%). In existing district 2, the horizontal line shows that cluster groups 1 (teal bar at 41.67%) and 2 (lime green bar at 36.59%) are both higher and closer to one another than either is to group 3 (purple bar at 24.14%), while in existing district 3, groups 1 (teal bar at 33.33%) and 2 (lime green bar at 36.49%) are both lower and closer to one another than either is to group 3 (purple bar at 48.28%). As a way to summarize these results, recall the discussion of the arithmetic mean, standard deviation and coefficient of variation (*CV*) in line item #33, where it is noted that the latter which shows the extent of variation relative to the mean. In District 1, the *CV* is 0.04, in District 2, it is 0.22, and in District 3, it is 0.16. These *CV*s can be interpreted as a measure of the diversity in that the lower they are, the more diversity is equitably distributed. I will compare these *CV* values under the existing set of Supreme Court Districts to those proposed by Cooper, with a focus on District 1.

Exhibit III.H.4.a Cluster Map for Cooper Illustrative Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

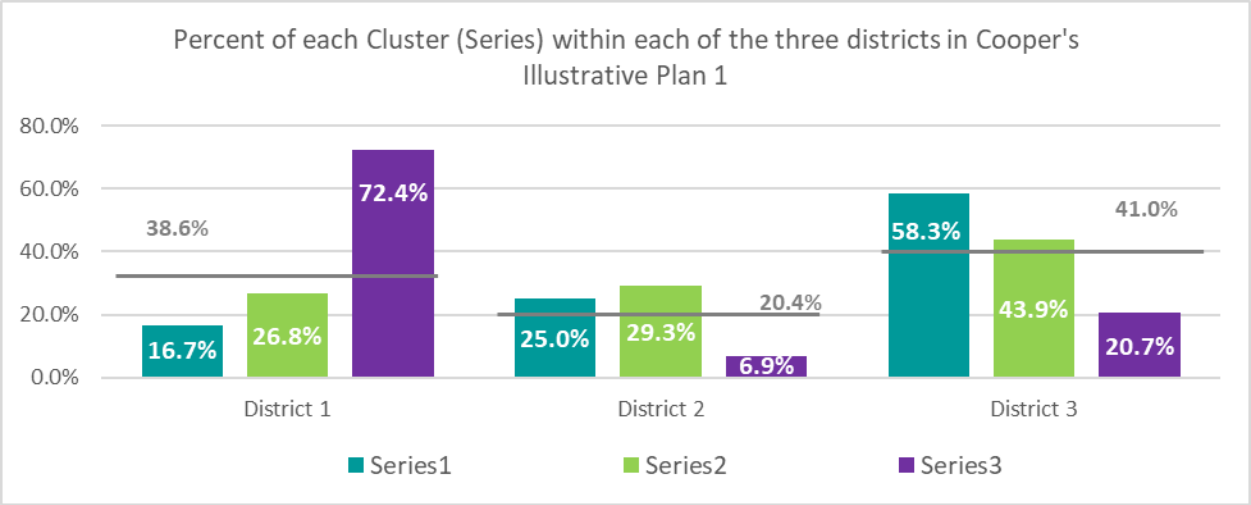
103. *Exhibit III.H.4.a* (above) shows the distribution of counties by cluster group across the three Supreme Court Districts proposed under Cooper's Illustrative Plan I: District 1 has two of the 12 Group 1 counties (shown in teal), 11 of the 41 Group 2 counties (shown in lime green) , and 21 of the 29 Group 3 counties (shown in purple); District 2 has three of the 12 Group 1 counties (teal), 12 of the 41 Group 2 counties (lime green), and two of the 29 Group 3 counties (purple); District 3 has seven of the 12 Group 1 counties (teal), 18 of the 41 Group 2 counties (lime green), and six of the 29 Group 3 counties (purples). *Exhibit III.H.4.b* and *Exhibit III.H.4.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Illustrative Plan 1.

Exhibit III.H.4.b Cluster Analysis Table: Cooper Illustrative Plan 1

Cluster (Series)	District 1	District 2	District 3	Total
1	16.7%	25.0%	58.3%	100.0%
2	26.8%	29.3%	43.9%	100.0%
3	72.4%	6.9%	20.7%	100.0%
mean	38.6%	20.4%	41.0%	
sd	0.24	0.10	0.16	
cv	0.63	0.48	0.38	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

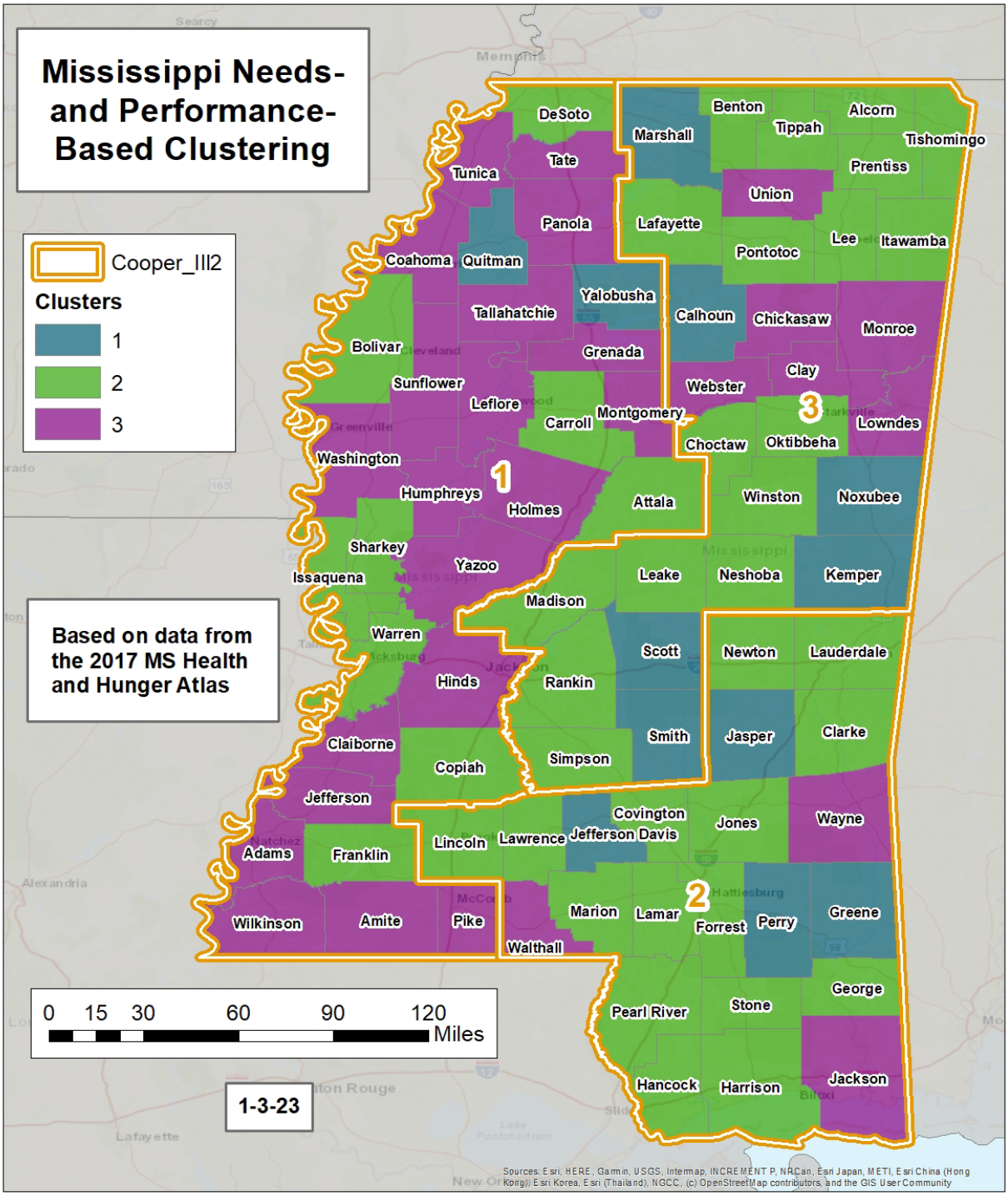
Exhibit III.H.4.c Cluster Analysis Chart: Cooper Illustrative Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

104. In *Exhibit III.H.4.b* and *Exhibit III.H.4.c*, (above) one can see the relative distribution of the cluster groups (labeled as "Series" in the Graph) under Cooper's Illustrative Plan 1, across the three Supreme Court Districts numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within a given district (which is the arithmetic average of the three groups, as shown by the horizontal bar within each of the three districts). In the case of the districts proposed in Cooper's Illustrative Plan 1, the three groups are highly unequally distributed within District 1, with cluster group 3 (purple bar at 72.4%) counties substantially higher than cluster group 1 (teal bar at 16.7%) and group 2 counties (lime green bar at 26.8%) combined. In proposed District 2, the bars show that cluster groups 1 (teal bar at 25.0%) and 2 (lime green bar at 29.3%) are both substantially higher and closer to one another than either is to group 3 (purple bar at 6.9%), while in Cooper's proposed district 3, groups 1 (teal bar at 58.3%) and 2 (lime green bar at 43.9%) are both substantially higher and closer to one another than either is to group 3 (purple bar at 20.7%). Recall that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Illustrative Plan 1, the *CV*s are 0.63 in District 1, 0.48 in District 2, and 0.38 in District 3, all of which are higher than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is 15.75 times higher than the *CV* for District 1 under the existing plan: It decreases diversity by a factor of 15.75.

Exhibit III.H.5.a Cluster Map for Cooper Illustrative Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

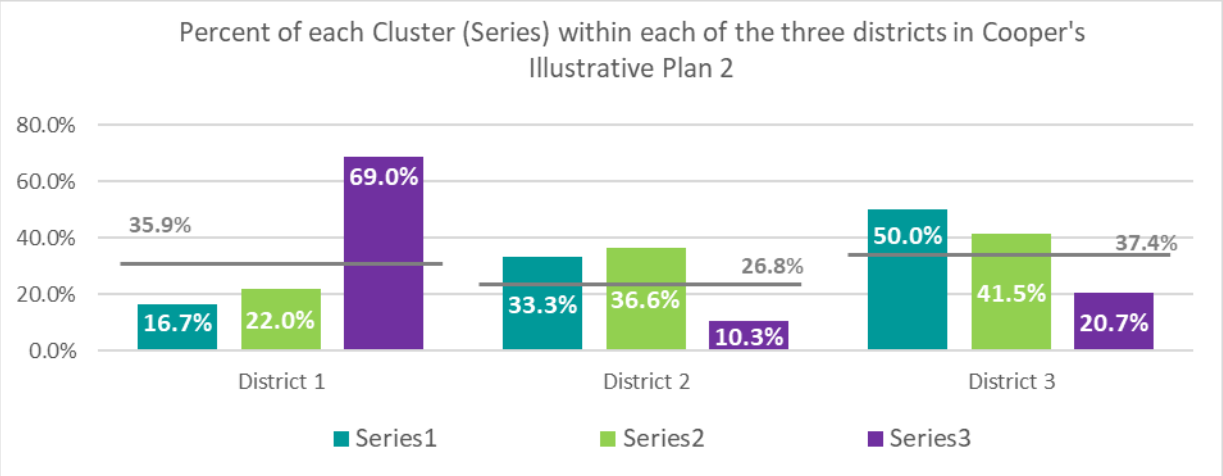
105. *Exhibit III.H.5.a* (above) shows the distribution of counties by cluster group across the three districts proposed under Cooper's Illustrative Plan II. Under this plan: District 1 has two of the 12 Group 1 counties (shown in teal) , nine of the 41 Group 2 counties (shown in lime green), and 20 of the 29 Group 3 counties (shown in lime green); District 2 has four of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and six of the 29 Group 3 counties (purple); District 3 has six of the 12 Group 1 counties (teal) , 17 of the 41 Group 2 counties (lime green) , and two of the 29 Group 3 counties (purple). *Exhibit III.H.5.b* and *Exhibit III.H.5.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Illustrative Plan 2.

Exhibit III.H.5.b Cluster Analysis Table: Cooper Illustrative Plan 2

Cluster (Series)	District 1	District 2	District 3	Total
1	16.7%	33.3%	50.0%	100.0%
2	22.0%	36.6%	41.5%	100.0%
3	69.0%	10.3%	20.7%	100.0%
mean	35.9%	26.8%	37.4%	
sd	0.24	0.12	0.12	
cv	0.66	0.44	0.33	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

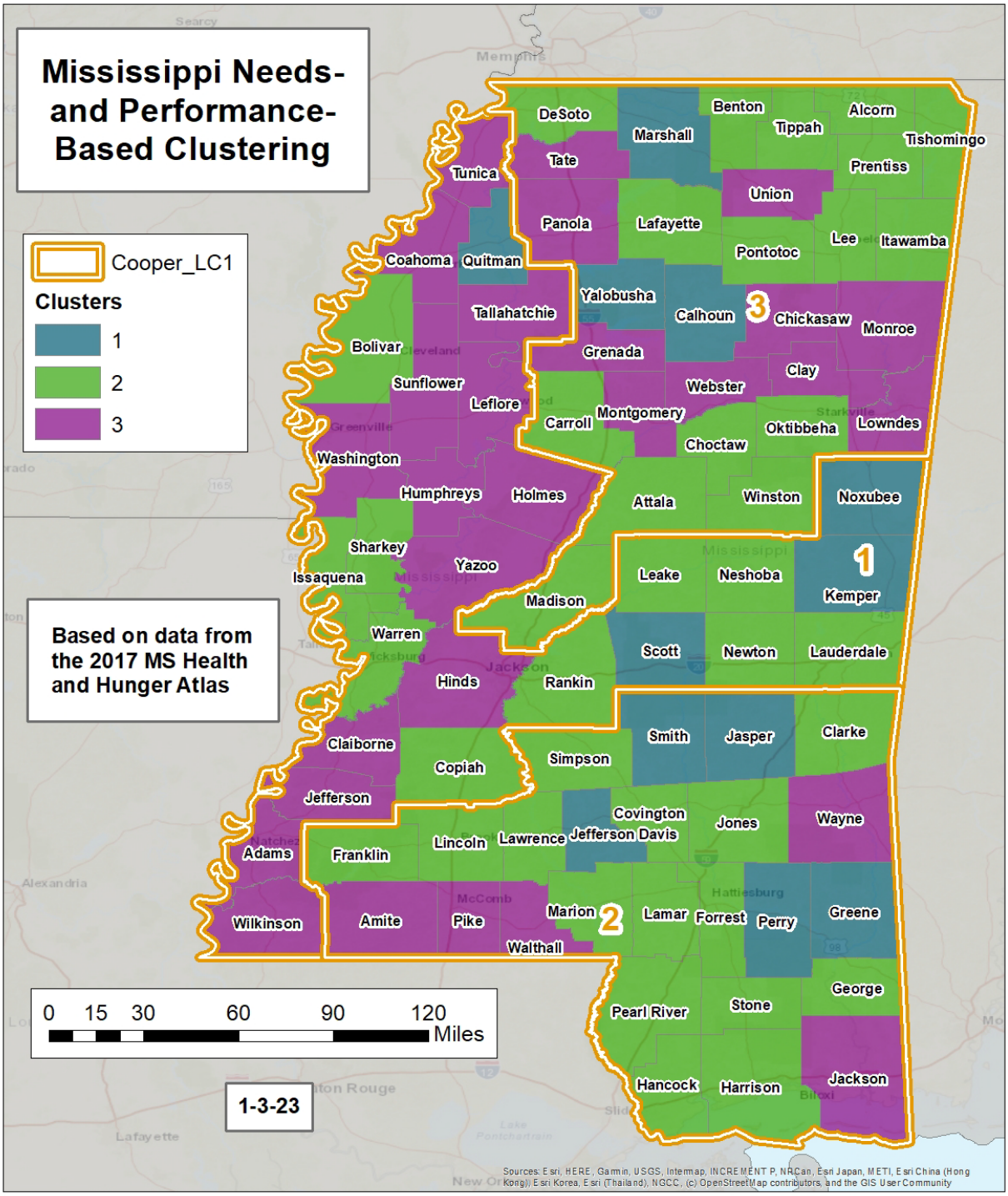
Exhibit III.H.5.c Cluster Analysis Chart: Cooper Illustrative Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

106. In *Exhibit III.H.5.b* and *Exhibit III.H.5.c*, (above), one can see the relative distribution of the cluster groups (Labeled "Series" in the Graph) under Cooper's Illustrative Plan 2, within each of the three Supreme Court Districts numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within a given district (which is the arithmetic average of the three groups, as approximately shown by the horizontal bar within each of the three districts). In the case of these proposed districts, the three groups are unequally distributed within proposed district 1, with cluster group 3 (purple bar at 69.0%) counties substantially higher than both cluster group 1 (teal bar at 16.7%) and cluster group 2 (lime green bar at 22.0%) counties. In proposed district 2, cluster groups 1 (teal bar at 33.3%) and 2 (lime green bar at 36.6%) are both higher and closer to one another than either is to group 3 (purple bar at 10.3%), while in Cooper's proposed district 3, Cluster group 1 (teal bar at 50%) is higher than group 2 (lime green bar at 41.5%), which, in turn, is substantially higher than cluster group 3 (purple bar at 20.7%). Again, recall that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Illustrative Plan 2, the *CV*s are 0.66 in District 1, 0.44 in District 2, and 0.33 in District 3, all of which are higher than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is 16.5 times higher than the *CV* for District 1 under the existing plan: It decreases diversity by a factor of 16.5.

Exhibit III.H.6.a Cluster Map for Cooper Least Change Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

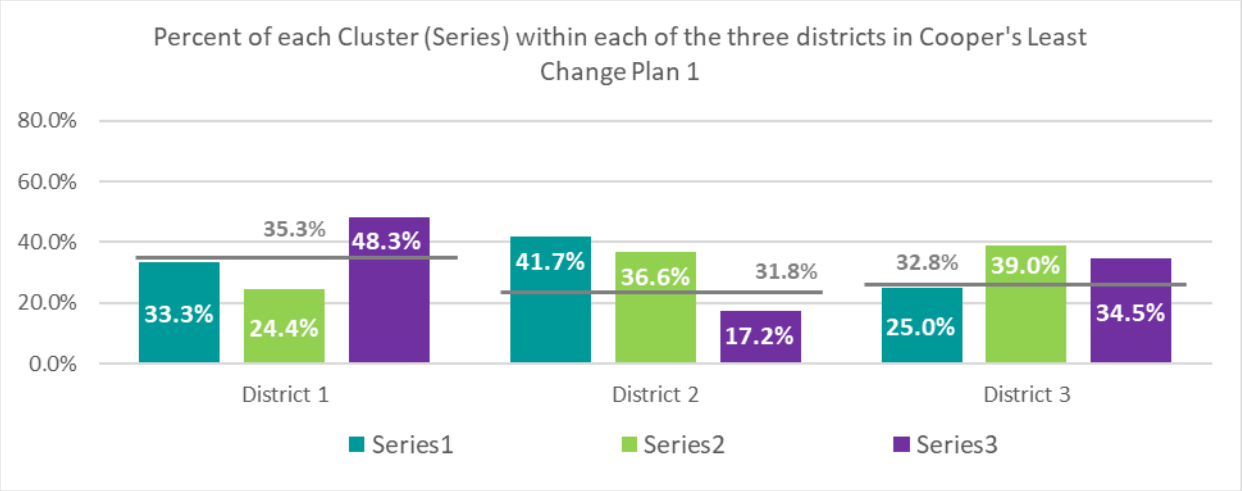
107. *Exhibit III.H.6.a* (above) shows the distribution of counties by cluster group across the three districts proposed under Cooper's Least Change Plan 1. Under this plan: District 1 has four of the 12 Group 1 counties (shown in teal), 10 of the 41 Group 2 counties (shown in lime green), and 14 of the 29 Group 3 counties (shown in purple); District 2 has five of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and five of the 29 Group 3 counties (purple); District 3 has three of the 12 Group 1 counties (teal), 16 of the 41 Group 2 counties (Lime green), and ten of the 29 Group 3 counties (purple). *Exhibit III.H.6.b* and *Exhibit III.H.6.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Least Change Plan 1.

Exhibit III.H.6.b Cluster Analysis Table: Cooper Least Change Plan 1

Cluster (Series)	District 1	District 2	District 3	Total
1	33.3%	41.7%	25.0%	100.0%
2	24.4%	36.6%	39.0%	100.0%
3	48.3%	17.2%	34.5%	100.0%
mean	35.3%	31.8%	32.8%	
sd	0.10	0.11	0.06	
cv	0.28	0.33	0.18	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

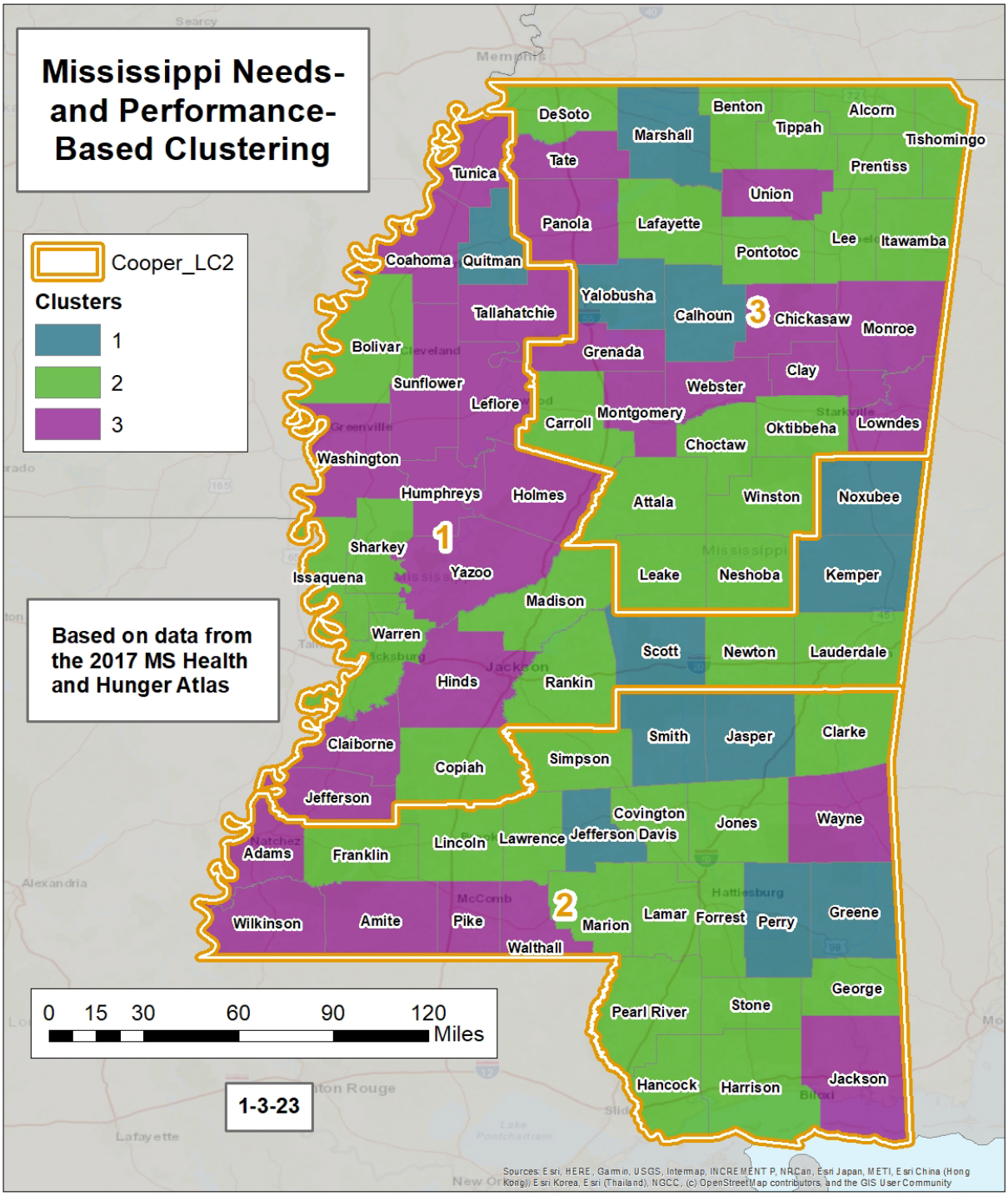
Exhibit III.H.6.c Cluster Analysis Chart: Cooper Least Change Plan 1



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

108. In *Exhibit III.H.6.b* and *Exhibit III.H.6.c*, (above), one can see the relative distribution of the cluster groups (Labeled "Series" in the Graph) within each of the three Supreme Court Districts proposed in Cooper's Least Change Plan 1 numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three cluster groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within each of the three districts proposed under Cooper's Least Change Plan I (which is the arithmetic average of the three groups, as shown by the horizontal bar within each of the three districts). The three groups are not distributed equally within Cooper's proposed District 1, where the graph shows that Cluster groups 1 (teal bar at 33.3%) and 2 (lime green bar at 24.4%) are both lower and closer to one another than either is to Cluster group 3 (purple bar at 48.3%). In proposed District 2, Cluster groups 1 (teal bar at 41.6% and 2 (lime green bar at 36.6%) are substantially higher and closer to one another than either is to Group 3 (purple bar at 17.2%). In Cooper's proposed District 3, Cluster group 1 (teal bar at 25%) is lower than that found for Cluster groups 2 (lime green bar at 39.0%) and 3 (purple bar at 34.5%) which are both closer to one another than either is to Cluster Group 1. Once again, recall that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Least Change Plan 1, the *CV*s are 0.28 in District 1, 0.33 in District 2, and 0.18 in District 3, all of which are higher than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is seven times higher than the *CV* for District 1 under the existing plan: It *decreases* diversity by a factor of seven.

Figure III.H.7.a Cluster Map for Cooper Least Change Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis & calculations by author; map by Bryan GeoDemographics for author.

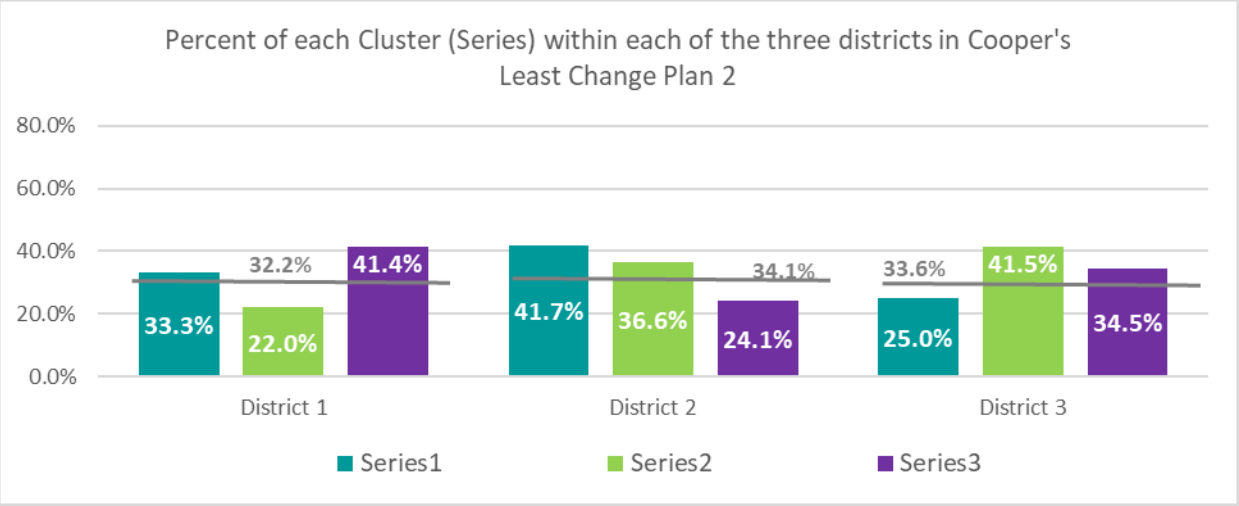
109. *Exhibit III.H.7.a* (above) shows the distribution of counties by cluster group across the three districts proposed under Cooper's Least Change Plan II. Under this plan: District 1 has four of the 12 Group 1 counties (shown in teal), nine of the 41 Group 2 counties (shown in lime green), and 12 of the 29 Group 3 counties (shown in purple); District 2 has five of the 12 Group 1 counties (teal), 15 of the 41 Group 2 counties (lime green), and 10 of the 29 Group 3 counties (purple); District 3 has three of the 12 Group 1 counties (teal), 17 of the 41 Group 2 counties (lime green), and six of the 29 Group 3 counties (purple). *Exhibit III.H.7.b* and *Exhibit III.H.7.c* (below) shows the percent of each cluster in tabular and graphical (labeled "Series" in the graph) form with each of the three districts proposed in Cooper's Least Change Plan 2.

Exhibit III.H.7.b Cluster Analysis Table: Cooper Least Change Plan 2

Cluster (Series)	District 1	District 2	District 3	Total
1	33.3%	41.7%	25.0%	100.0%
2	22.0%	36.6%	41.5%	100.0%
3	41.4%	24.1%	34.5%	100.0%
mean	32.2%	34.1%	33.6%	
sd	0.08	0.07	0.07	
cv	0.25	0.22	0.20	

Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

Exhibit III.H.7.c Cluster Analysis Chart: Cooper Least Change Plan 2



Source: *Mississippi Health and Hunger Atlas*, 2017. K-Means Cluster Analysis, calculations, table and graph by author.

110. In *Exhibit III.H.7.b* and *Exhibit III.H.7.c*, (above), one can see the relative distribution of the cluster groups (Labeled "Series" in the Graph) within each of the three Supreme Court Districts proposed in Cooper's Least Change Plan 2 numerically and graphically (teal = cluster group 1; lime green = cluster group 2, and purple = cluster group 3). If all three cluster groups were proportionately distributed equally within each district, the tops of the colored bars would all be at the same height within each of the three districts proposed under Cooper's Least Change Plan 2 (which is the arithmetic average of the three groups, as shown by the horizontal bar within each of the three districts). The three groups are not distributed equally within Cooper's proposed District 1, where the graph shows that Cluster groups 1 (teal bar at 33.3%) and 2 (lime green bar at 22.0%) are both substantially lower and closer to one another

than either is to Cluster group 3 (purple bar at 41.4%). In proposed District 2, Cluster groups 1 (teal bar at 41.7% and 2 (lime green bar at 36.6%) are both substantially higher and closer to one another than either is to Group 3 (purple bar at 24.1%). In Cooper's proposed District 3, Cluster group 1 (teal bar at 25.0%) is lower than that found for Cluster groups 2 (lime green bar at 41.5%) and 3 (purple bar at 34.5%) which are both closer to one another than either is to Cluster Group 1. Recall, again that for the existing districts that the *CV*s, are as follows: In District 1, the *CV* is 0.04; in District 2, it is 0.22; and in District 3, it is 0.16. Under Cooper's Least Change Plan 2, the *CV*s are 0.25 in District 1, 0.22 in District 2, and 0.20 in District 3, none of which is lower than the corresponding *CV*s found for the existing districts. Notably, the *CV* for District 1 under Cooper's Illustrative Plan 1 is 6.25 times higher than the *CV* for District 1 under the existing plan: It decreases diversity by a factor of 6.25.

111. In summary, each of the four plans proposed by Cooper reduce the level of diversity found in all of the existing three districts and notably do so in regard to District 1.

IV. MISSISSIPPI VOTER REGISTRATION AND TURNOUT

A. Voter Registration and Turnout by Race and Ethnicity in Mississippi

112. A core tenet of the plaintiffs in this case is that Black voters are currently disenfranchised and do not have the same access to voting and do not exercise their right to vote in the same way the Whites in Mississippi do. Here, I examine expert reports written on behalf of the plaintiffs and offer my opinion on current Black voter registration and voting behavior.

113. Measuring voter registration and actual voting in Mississippi by race is a challenge. The state of Mississippi does not record registered voters by race. Given this, the US Census Bureau's Current Population Survey (or "CPS") is used to understand recent voter registration and turnout in Mississippi. Because these data are only available at the whole-state level, I subsequently turn to sample survey data collected by the Survey Research Laboratory, Social Science Research Center, Mississippi State University, to examine sub-state patterns.

114. As part of its regular, on-going Current Population Survey (CPS), the Census Bureau adds periodic supplements asking questions on topics ranging from school enrollment to tobacco use.[34] One such supplement is the "voting and registration" supplement, which is added in November of national voting years.[35] In 2020, the CPS collected information from 134,122 respondents with dozens of detailed questions on voting behavior.[36] The sample is collected for the US as a whole and by state.

115. The US Census Bureau produces two work products from the "voting and registration" supplement. It tabulates and reports the results of the most important questions such as "Did (you/name) vote in the election held on Tuesday, November 3, 2020?" by state and by the most common demographic variables such as age, race, sex and educational attainment. The sample results are then adjusted to estimated population numbers and the results given in 1,000s of persons with 90% margins of error. These tabulations are formal and the resulting reports are viewed as official work products of the Federal Government. [37] When possible, an expert would always start their analysis of registration and voting behavior with a reference to these reports. In addition to these official statistics, the Census Bureau also publishes a "raw data" or "Public Use Microdata Sample" (or "PUMS" file) with data from individual

[34] https://www.census.gov/data/datasets/time-series/demo/cps/cps-supp_cps-repwgt.html

[35] https://www.census.gov/programs-surveys/cps/about/supplemental-surveys.html

[36] https://www2.census.gov/programs-surveys/cps/techdocs/cpsnov20.pdf

[37] https://www.census.gov/data/tables/time-series/demo/voting-and-registration/p20-585.html

respondents, with each weighted to represent the population in the United States they represent. I will discuss the PUMS data in more detail shortly.

116. In the course of examining voter turnout and registration, the first stop was to look at the official tables published by the Census Bureau to see if the statistics desired by race and ethnicity were available for Mississippi. They are in Table 4B, available as an excel file, provides the official statistics on the number and percent registered and voted by race and ethnicity in Mississippi in 2020.[38]

117. *Table IV.A.1* (registration by race and ethnicity) and *Table IV.A.2* (actual voting by race and ethnicity) both present a "Total Population" as well as a "Total Citizen Population" – and show statistics under these categories for several race and ethnicity combinations, such as "White Alone," "Black Alone," "White non-Hispanic," and "Black Alone or in combination". In the online source for these two tables, which is the Census Bureau's Table 4B,[39] it is not clearly stated that the "Total Population" in Table 4B is actually the voting age population ("VAP") and that "Total Citizen Population" is actually the total Citizen Voting Age Population (CVAP). Keep this in mind in reading these two tables and also that the numbers are given in 1,000s.

Table IV.A.1 2020 Mississippi Voter Registration by Race and Ethnicity

Sex, Race, and Hispanic-Origin	Total "VAP" Population	Total citizen population	Total registered	Percent registered (Citizen)	Margin of error [1]
Total	2,212	2,177	1,749	80.4	2.7
Male	1,029	1,015	792	78.0	4.2
Female	1,182	1,162	957	82.4	3.6
White alone	1,350	1,337	1,054	78.8	3.6
White non-Hispanic alone	1,300	1,295	1,026	79.2	3.6
Black alone	792	787	654	83.1	4.1
Asian alone	37	20	9	B	B
Hispanic (of any race)	67	53	34	B	B
White alone or in combination	1,375	1,363	1,079	79.2	3.5
Black alone or in combination	805	799	666	83.4	4.1
Asian alone or in combination	41	24	13	B	B

Source: Table 4B, US Census Bureau (https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx). Numbers do not always add to totals due to sampling and rounding error.

[38] https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx

[39] https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx

118. First, I examined voting registration. *Table IV.A.1* row 1 (highlighted in yellow) reading left to right shows the VAP population (2,212), then the total CVAP population (2,177) then the total CVAP registered to vote (1,749), then the percent CVAP who are registered, (80.4%, where 80.4 ≈ (1,749/2,177)*100).[40]

119. *Table IV.A.1* row 5 (highlighted in yellow) shows voter registration results for White non-Hispanic alone population (in 1,000s). Again, reading left to right and starting in the first column, one can see that the White non-Hispanic alone VAP number is 1,300 and that the White non-Hispanic alone CVAP number is 1,295, of which 1,026 were registered to vote, yielding the results that 79.2% of the White non-Hispanic alone CVAP were registered to vote, where 79.2% ≈ (1,026/1,295)*100.

120. *Table IV.A.1* row 10 (highlighted in yellow) shows voter registration results for Black Alone and in combination (in 1,000s). In this row, one sees 799 Black Alone or in combination CVAP, of whom 666 who were registered to vote, yielding the result that 83.4% of the Black Alone or in combination CVAP were registered to vote, where 83.4% ≈ (666/799)*100.

121. Next, I examined actual voting. *Table IV.A.2* shows in the first row, reading from right to left, the VAP population (2,212), then the total CVAP population (2,177) then the CVAP who voted (1,521), then the percent CVAP who voted (70.3%, where 70.3 ≈ (1,521/2,177)*100).

[40] Note the numbers are in the table are the official reported. Percentages may vary slightly due to rounding.

Table IV.A.2 2020 Mississippi Voting by Race and Ethnicity

	Total "VAP" Population	Total citizen population	Total voted	Percent voted (Citizen)	Margin of error [1]
Total	2,212	2,177	1,531	70.3	3.2
Male	1,029	1,015	680	67.0	4.8
Female	1,182	1,162	850	73.2	4.2
White alone	1,350	1,337	921	68.9	4.1
White non-Hispanic alone	1,300	1,295	904	69.8	4.1
Black alone	792	787	573	72.8	4.9
Asian alone	37	20	8	B	B
Hispanic (of any race)	67	53	23	B	B
White alone or in combination	1,375	1,363	942	69.1	4.0
Black alone or in combination	805	799	582	72.9	4.8
Asian alone or in combination	41	24	11	B	B

Source: Table 4B, US Census Bureau (https://www2.census.gov/programs-surveys/cps/tables/p20/585/table04b.xlsx). Numbers do not always add to totals due to sampling and rounding error.

Table IV.A.2 row 5 (highlighted in yellow) shows voting results for White non-Hispanic alone population (in 1,000s). Reading right to left and starting in the first column, one can again see that the White non-Hispanic alone VAP number is 1,300 and that the White non-Hispanic alone CVAP number is 1,295, of which 904 voted, yielding the result that 69.8% of the White non-Hispanic CVAP voted, where 69.8% ≈ (904/1,295)*100.

122. *Table IV.A.2* row 10 (highlighted in yellow) shows voting results for Black Alone and in combination (in 1,000s). In this row, one sees 799 Black Alone or in Combination CVAP, of whom 582 voted, yielding the result that 72.9% of the Black Alone or in Combination CVAP voted, where 72.9% ≈ (582/799)*100.

123. In examining the CPS results for the White non-Hispanic and the Black Alone or in combination population in Mississippi for the 2020 election, I am left with a decisive conclusion. In 2020 the Black Alone or in Combination population out-registered and out-voted the White non-Hispanic population. It is clear can see that Black Alone or in Combination were registered at a higher level (83.4%) than the White non-Hispanic (79.2%). And in looking at who voted in the 2020 election, Black Alone or in Combination voted at a higher level (72.9%) than the White non-Hispanic (69.8%).

124. Because the registration and voting data are from a sample survey, there are "Margins of Error" (MOEs) provided with them, which provide an estimate of the statistical uncertainty in the sample-based estimates. In the case of the 2020 CPS data, the MOEs are given at a 95% level of confidence. In regard to the 79.2% of the White

Non-Hispanic CVAP registered to vote, the estimated MOE is 3.6, which is interpreted to mean that one can be 95% certain that the actual percent who registered is between 75.6% and 82.8% (79.2 ± 3.6); similarly, in regard to the 83.4% of the Black Alone or in Combination CVAP registered to vote, the estimated MOE is 4.1, which is interpreted to mean that one can be 95% certain that the actual percent who registered is between 79.3% and 87.5% (83.4 ± 4.1). Because the upper end (82.8%) of the 95% MOE of White Non-Hispanic CVAP percent registered does not overlap the 83.4% estimated in the sample survey of the Black Alone or in combination CVAP registered to vote, one can be 95% certain that the actual percent of Black Alone or in Combination CVAP registered to vote in the 2020 Mississippi election is higher than the actual percent of White non-Hispanic CVAP (Swanson, 2012: 13-157). This finding is supported by the fact that the lower end (79.3%) of the 95% MOE of Black Alone or in Combination CVAP does not overlap the 79.2% of the White non-Hispanic CVAP registered to vote (Swanson, 2012: 153-157).

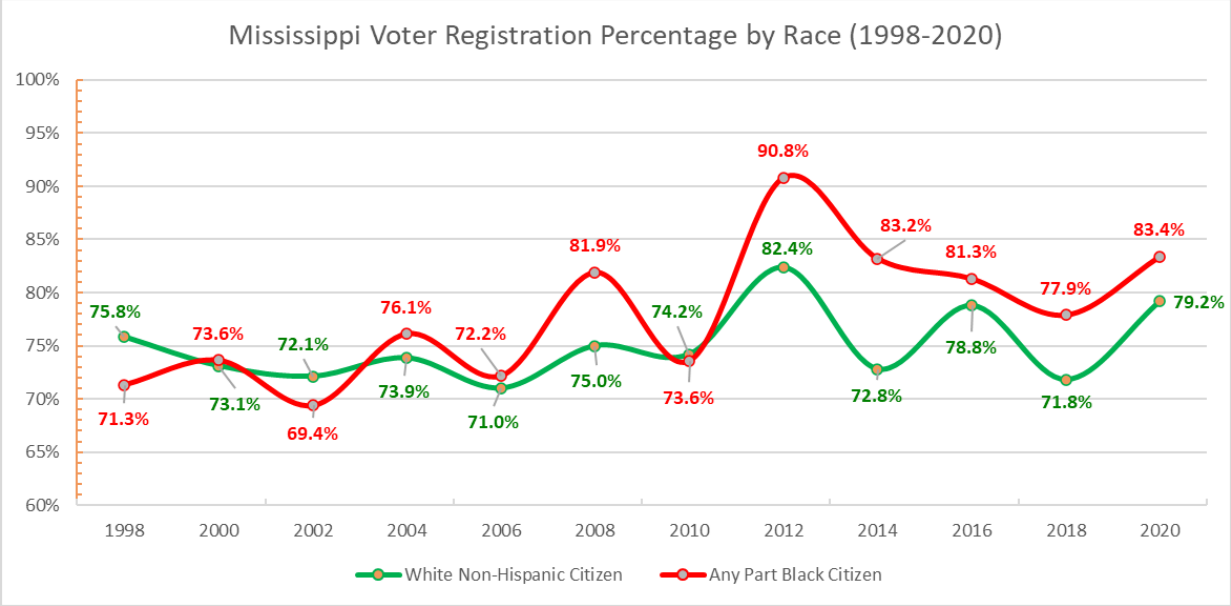
125. In regard to the 69.8% of the White Non-Hispanic CVAP who voted, the estimated MOE is 4.1, which is interpreted to mean that one can be 95% certain that the actual percent who voted is between 65.7% and 73.9% (69.8 ± 4.1); similarly, in regard to the 72.9% of the Black Alone or in Combination CVAP who voted, the estimated MOE is 4.8, which is interpreted to mean that one can be 95% certain that the actual percent who voted is between 68.1% and 77.7% (72.9 ± 4.1). Because the upper end (73.9%) of the 95% MOE of White Non-Hispanic CVAP percent voted overlaps the 72.9% estimated in the sample survey of the Black Alone or in Combination CVAP who voted, one cannot be 95% certain that the actual percent of Black Alone or in combination CVAP who voted in the 2020 Mississippi election is higher than the actual percent of White non-Hispanic CVAP who voted in the 2020 election (Swanson, 2012: 153-157). Using the numbers underlying the 95% level MOEs along with a knowledge of basis inferential statistics, however, one can be 66% certain that the actual percent of Black Alone or in Combination who voted in the 2020 Mississippi election is higher than the actual percent of White non-Hispanic CVAP who did (at a 66% level of confidence, z ≈ 1.00 and with an estimated standard error of .0209, the MOE for this group is 1.21, resulting in the upper 66% MOE bound of 71.0%, where 71.0 = 69.8 +1.21) (Swanson, 2012: 147-150).

126. It is natural to ask if the voter registration and turnout for the 2020 election is an anomaly. In order to investigate this, I examined the historic US Census Bureau's CPS November Supplement the official reports for biannual federal election years. While the Census Bureau has collected voting and registration data since 1964, the CPS has gathered and reported *citizenship* data consistently only since 1998. Since the 2020 data are based on CVAP, I begin my historic analysis in 1998 to ensure data consistency

and comparability with my 2020 analysis to the degree possible (removing noncitizens decreases the voting-age population base, resulting in higher rates for any given election (https://www.census.gov/topics/public-sector/voting/about/faqs.html).

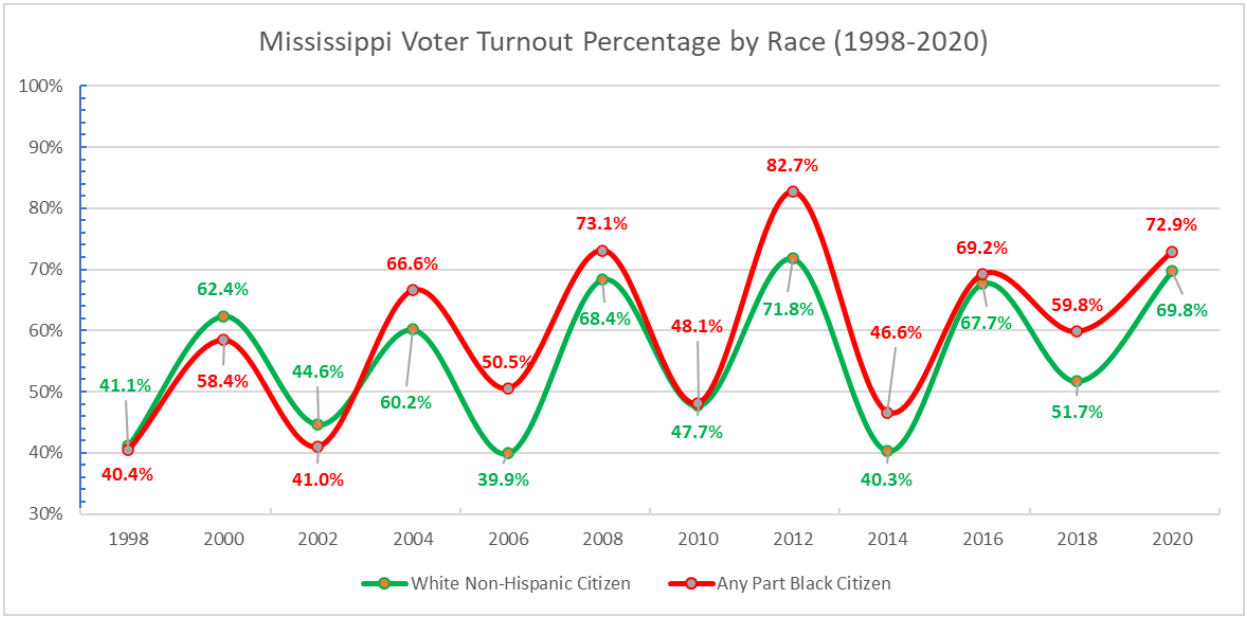
127. In *Exhibit IV.A.1* below, one can see that from each election year from 1998 to 2006, the difference in the percent of registration between White non-Hispanic (WNH) citizens of voting age and any part Black (APB) citizens of voting age was small, being slightly higher or lower based on the election. However, starting in 2008 with Obama's presidential campaign, the percent Black voter registration noticeably exceeded the percent White voter registration. In 2010 (not a presidential election year), the percent Black voter registration declined, and was virtually equal to percent White voter registration. Then in 2012, percent Black voter registration surged again with Obama's second campaign. For every election year since 2012, percent Black voter registration has remained *higher* than percent White voter registration.

Exhibit IV.A.1 Mississippi Voter Registration by Race and Ethnicity History



Source: U.S. Census Bureau, Current Population Survey, November Voting Supplement (biannual by federal election year).

Exhibit IV.A.2 Mississippi Voter Turnout by Race and Ethnicity History



Source: U.S. Census Bureau, Current Population Survey, November Voting Supplement (biannual by federal election year).

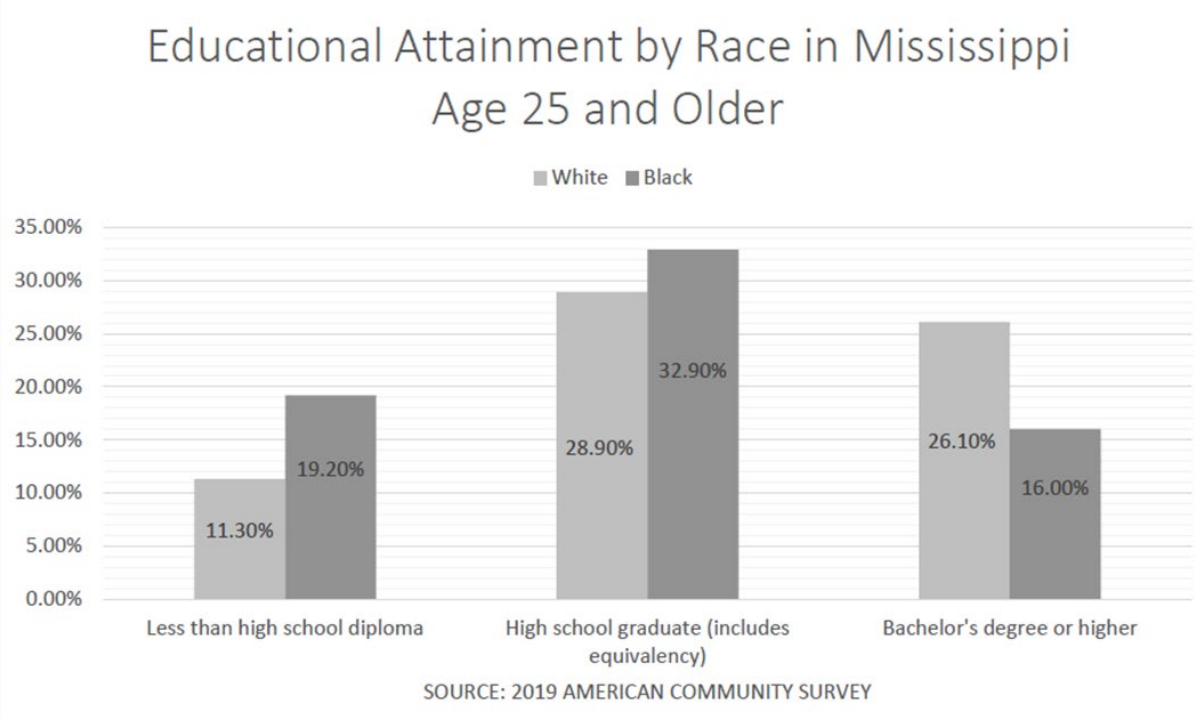
128. In *Exhibit IV.A.2* (above), one sees that from 1998 to 2002, the percent voter *turnout* between White non-Hispanic (WNH) and any part Black (APB) were quite close to each other, each being slightly higher or lower based on the election. But then, starting in 2004, White voter turnout lagged Black voter turnout until 2010. In 2010 (not a presidential election year) the turnout declined to be equal to Whites. Then in 2012 they APB turnout surged even higher for President Obama's second campaign. For every year since, Black voter turnout has been somewhat to much higher than Whites.

129. Now having reported the official US Census Bureau statistics on voter registration and voting turnout by race by year, I turn my attention to the analysis of this subject by the plaintiffs' expert, Dr. Traci Burch[41]. Here I focus on the analysis and interpretations on pages 9-10 of her report. This analysis examines educational attainment by race and ethnicity in Mississippi, then relates these two population characteristics to voter registration and turnout. In Exhibit 3, "Educational Attainment by Race in Mississippi Age 25 and Older" (shown below in *Exhibit IV.A.3*), Dr. Burch accurately reports the percent of Whites and Blacks by educational attainment level from the 2019 American Community Survey (ACS). My analysis of more recent ACS data corroborates her finding that the White population in Mississippi generally enjoys higher educational attainment levels than Blacks do. Her exhibit does not state the definition of "White"

[41] Dr. Traci Burch is an Associate Professor of Political Science at Northwestern University and Research Professor at the American Bar Foundation. She states in her qualifications that "I am widely regarded as an expert on political behavior, barriers to voting, and political participation. Dr. Burch has presented an expert report as part of this case.

and "Black" however. My research shows that this exhibit reports White Alone, non-Hispanic and Black Alone, which is discussed subsequently at length. As in all research, consistency in demographic terms is critical across different analyses. The population put forth in the complaint and then analyzed in the demographer's report (Cooper) is the any part Black, or "APB" population. The Black educational attainment data presented by Dr. Burch are straight from the standard ACS reporting template – which only includes this inconsistent Black definition. Additional work is generally necessary to get the exact race definitions to agree across analyses and would have been necessary here to know educational attainment for APB. I agree with Dr. Burch that any analysis of educational attainment should be based to the population by age who has largely completed whatever the highest level of educational attainment they hope to achieve. Conventionally, that base population is age 25+, and is the definition Dr. Burch reports here from the US Census Bureau's own standard.

Exhibit IV.A.3 Racial Differences in Voter Turnout and by Education Level



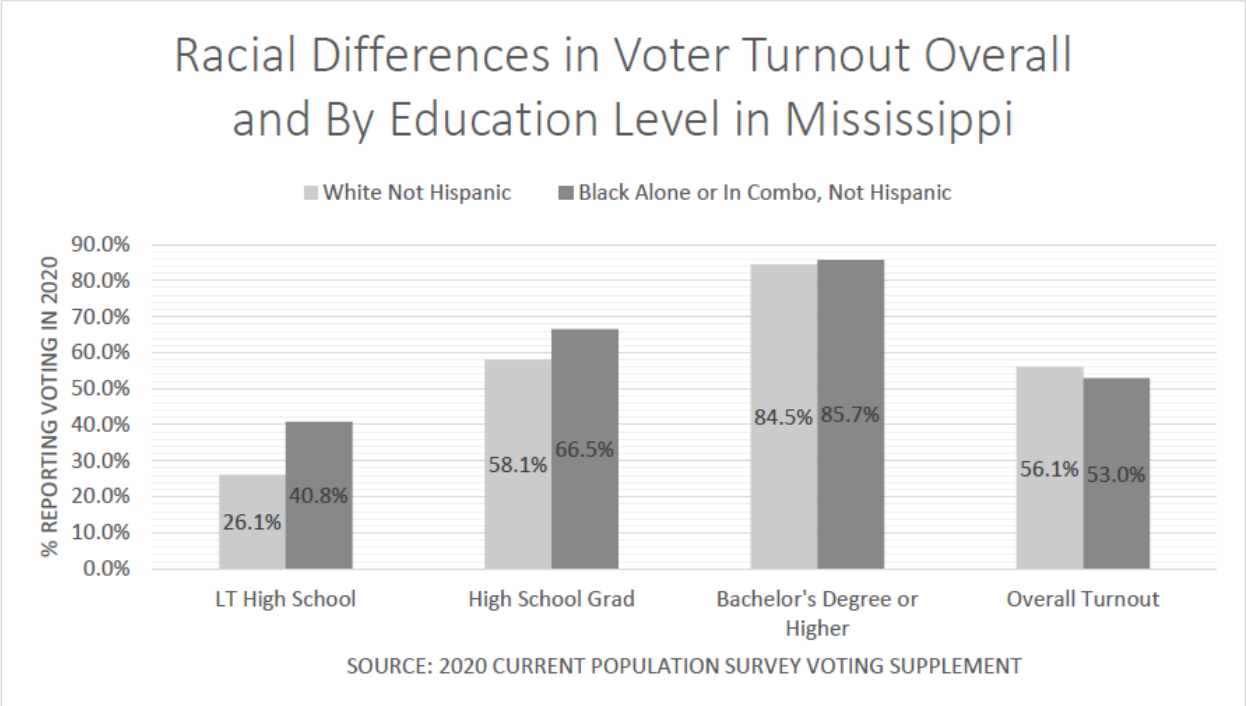
Source: Exhibit 3 (p. 9) in Report by Dr. Tracie. Burch

130. Next, on page 10 of her report, Dr. Burch provides Figure 4 "Racial Differences in Voter Turnout and by Education level" (shown below in *Exhibit IV.A.4*). The statistics in this table are key in supporting Dr. Burch's statement that:

> "Examining voter turnout in Mississippi by race and educational attainment in Figure 4 shows the clear impact of Mississippi's history of educational attainment on voting."

Exhibit IV.A.4 Racial Differences in Voter Turnout and by Education Level

Figure 4: Racial Differences in Voter Turnout Overall and by Education Level in Mississippi. Source: 2020 Current Population Survey Voting and Registration Supplement



Source: Figure 4 (p. 10) in Report by Dr. Traci Burch

131. Here, Dr. Burch is vague about the source of the information she presents in the preceding exhibit and does not describe the steps she undertook to produce it. Since these statistics of voting by education level by state are not readily available in official published tables, I conclude that these estimates were produced with the use of the CPS PUMS (or "raw data") files. In addition to the official statistics reported by the Census Bureau (above in *Tables IV.A.1* and *IV.A.2*), the Census Bureau also publishes a "raw data" or "Public Use Microdata Sample" (or "PUMS" file) with data from individual respondents, with each weighted to represent the population in the United States they represent. These files enable more detailed analysis than provided by the topline reports described above. These files are technically difficult and require both statistical software and expertise in sampling and survey research, demography and statistics. When experts seek more information and details on statistics beyond the high-level tables provided by the Census Bureau, they turn to these files.

132. Because Dr. Burch provides neither a clear definition of the source of her data (was it the tabulated results from the CPS or the PUMS file generated from the CPS?) nor the steps that resulted in the numbers she provides (as replicated here in *Exhibit IV.A.4*), an investigation of the CPS PUMS data is warranted, as is an attempt to replicate her findings. Whatever her method and whatever her definitions: our assumption is that her findings were based on an analysis and interpretation of the CPS "raw data" (or CPS "PUMS") data alluded to earlier. It is there that the investigation turns next.

133. Bryan GeoDemographics has expertise in this area and both downloaded the national 2020 CPS dataset and data dictionary at my request [42] and processed the data in both Excel and SAS to ensure accuracy and reliability. According to the CPS PUMS data dictionary, the variables necessary to generate state-level registration and voting statistics by race are as follows:

- GESTFIPS: Federal Information Processing Standards (FIPS) State Code
- PES 1: Did (you/name) vote in the election held on Tuesday, November 3, 2020?
- PES 2: Were you/Was name) registered to vote in the November 3, 2020 election? (If NOT voted)
- PEEDUCA: Educational Attainment
- PRPERTYP: Type of respondent (child, adult civilian or adult armed forces)
- PTDTRACE: Race
- PEHSPNON: Hispanic Origin
- PRCITSHP: Citizenship Status
- PRTAGE: Respondent Age
- PWSSWGT: Population weight (note: there are numerous weights included in this file. The data dictionary instructs: "There is no supplement weight associated with the November 2020 Voting and Registration supplement. Use the basic CPS weight, PWSSWGT (located in positions 613-622), for tallying the supplement items.)

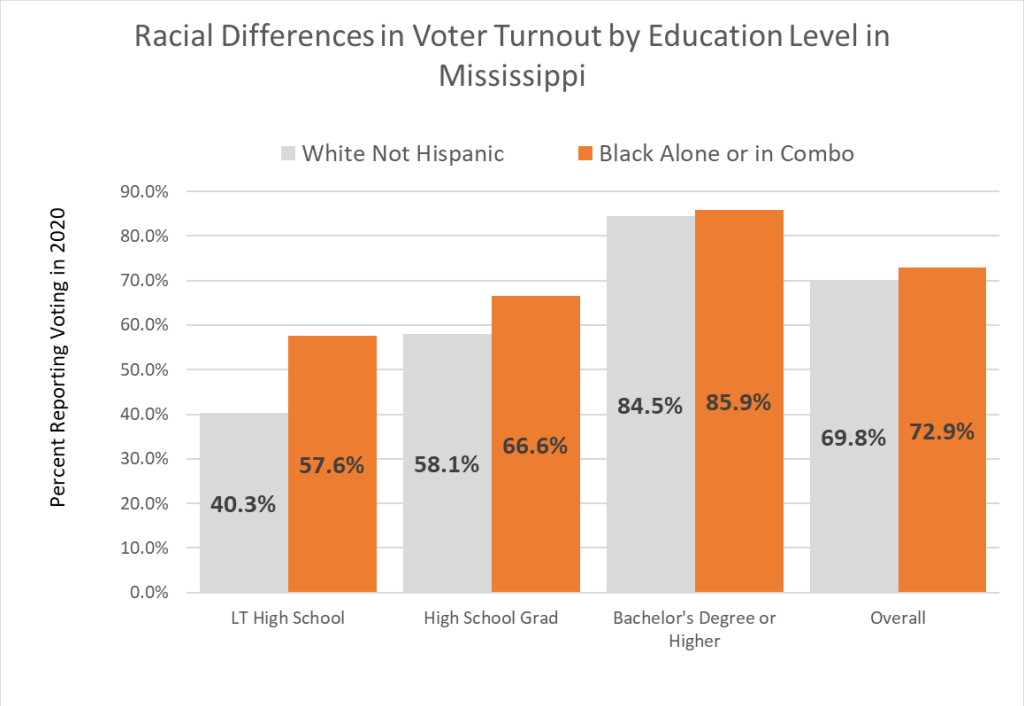
134. In the CPS PUMS data dictionary, it instructs users specifically that the universe for calculating education statistics is PRPERTYP = 2 or 3. That is, the base for educational statistics and their analysis is adults (either civilian or armed forces). In my analysis of the CPS PUMS data, I found the population definitions that appear to be used by Dr. Burch for her education analysis and began my analysis of her voting turnout estimates. I find that Dr. Burch's CPS-based education estimates are based on

[42] https://www2.census.gov/programs-surveys/cps/techdocs/cpsnov20.pdf

the citizen, non-Hispanic population of all ages (*not* adults as she reported earlier with her American Community Survey analysis). "White" is White Alone, and "Black" is APB. Using this definition, I can replicate her % voted statistics by education level precisely. While this is irrelevant for the Bachelor's Degree or Higher population (since anyone with those accomplishments would be an adult anyways), this definition impacts the High School Grad statistics slightly and the "LT high school" statistics *significantly*. By including all ages here, Dr. Burch is effectively measuring what percent of children voted. Not only would that definition be illogical – but it is specifically instructed by the CPS documentation not to do so.

135. The correct population base for the Figure 4 that Dr. Burch presents would be the citizen, age 18+ population. That is, the percent of those who are actually eligible to vote. *Exhibit IV.A.5* shows what the percent voter turnout by race and educational level *would have been* using that correct definition. There are several important observations here. First, when you remove children ineligible to vote from the base, the % voted goes up, as expected. For White, non-Hispanic, less than high school, rises +14.2 percentage points, from 26.1% in Dr. Burch's report to 40.3% here. For APB, less than high school, rises even more +16.8pp from 40.8% in Dr. Burch's report to 57.6% here. Not only is there a significant difference in how each much each group increases, but the *interpretation* of the outcome changes as well. The percent difference between less than high school and high school graduate is significant only for White, non-Hispanic. In examining these results, if one were to argue that one group's voter turnout appears to be suffering more so from a disparity in educational attainment – it would be the White non-Hispanics. Not Blacks. In examining the "Bachelor Degree or Higher" category, one sees that the "Black Alone or in Combination" population out-votes their White non-Hispanic peers there as well.

Exhibit IV.A.5 Racial Differences in Voter Turnout and by Education Level, Based to Citizens of Voting Age in 2020



Source" CPS 2020, November Voting Supplement (U.S. Census Bureau). Graph assembled by Bryan GeoDemographics for author.

136. Next, in examining Dr. Burch's estimate of total voter turnout by race (the last columns in her Figure 4). Dr. Burch's [43] report states (page 10) that:

> "overall, White Mississippians have higher voter turnout than Black Mississippians: 56.1% of White Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens."

137. These numbers provided by Dr. Burch contradict the statistics published by the Census Bureau, reported in *Table IV.A.2 2020 Mississippi Voting by Race and Ethnicity* above – and here I seek to understand why. As with the analysis of voting by educational level – the official CPS PUMS data dictionary is employed, where it instructs users specifically that the universe for calculating voting registration and voting statistics is PRTAGE >=18 and PRCITSHP = 1, 2, 3, or 4. That is, respondent must be voting age (18+) and citizens (code 1, 2, 3 and 4) to be included – otherwise they will be assigned "Not in Universe" and not included in the analysis.

Table IV.A.3 2020 MS Voter Estimates Citizens, Age 18+ by Race and Ethnicity Census Bureau Definition

	No Response	Refused	DK	Not in Unverse	Voted	Not Voted	Total	% Voted
Total	**172,860**	**7,148**	**26,039**	**0**	**1,530,528**	**440,304**	**2,176,877**	**70.3%**
WNH	107,149	4,527	16,586	0	904,127	262,726	1,295,115	**69.8%**
Black Including Hispanic Combinations								
BA (inc. Hisp)	61,542	2,621	7,554	0	573,046	141,975	786,738	72.8%
BA and B-W (inc. Hisp)	61,542	2,621	7,554	0	581,038	145,022	797,777	72.8%
BA and W-B-AI (inc. Hisp)	61,542	2,621	7,554	0	574,373	141,975	788,065	72.9%
APB (inc. Hisp)	61,542	2,621	7,554	0	582,365	145,022	799,104	**72.9%**
Black Non-Hispanic Combinations								
BA NH	61,542	2,621	7,554	0	571,130	140,112	782,959	72.9%
BA and B-W NH	61,542	2,621	7,554	0	575,115	143,158	789,991	72.8%
BA and W-B-AI NH	61,542	2,621	7,554	0	572,457	140,112	784,285	73.0%
APB NH	61,542	2,621	7,554	0	576,442	143,158	791,318	72.8%

Source: 2020 CPS November Voter Supplement PUMS file. Table assembled by Bryan GeoDemographics for author.

138. To begin, my initial analysis of the CPS PUMS data was aimed at replicating the officially published statistics published by the Census Bureau, using these definitions. Using the variables and definitions above, I was able to replicate the published results precisely using the CPS raw (PUMS) data file in *Table IV.A.2* (above). The official statistics published by the Census Bureau match their own internal dataset. Exactly. In *Table IV.A.3* (above) I show the PWSSWGT weights by racial and ethnic category, by response to PES 1: Did (you/name) vote in the election held on Tuesday, November 3, 2020? A complete inventory of variables and weights is shown in Appendix 3.

139. Next, my analysis was aimed at replicating the CPS results published by Dr. Burch. Since she does not present the exact populations or definitions used to calculate her percentages, one must carefully focus on her words:

> "56.1% of White Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens."

140. I explored the CPS raw (PUMS) data file using a variety of variables, definitions and filters. Because Dr. Burch's statistics are a level-shift different than ours, our conjecture is that (as with the education statistics reported above) she included the total *all-age* citizen population as the base of her analysis, rather than using the *citizen*

voting-age population.[44] In analyzing the CPS PUMS data, this would be easy to do. The population weight "PWSSWGT" in the CPS PUMS file is the person weight for the total population. An expert would need to filter any results of the PES1 (Did you vote?) variable to those *eligible to vote* (18+ VAP citizens) separately using the PRTAGE (age) and PRCITSHP (citizenship) variables to get the correct results. Knowing this, I seek to uncover how Dr. Burch arrived at her estimates and conclusions.

141. In *Table IV.A.4* (below), I report different percent voted statistics under a variety of race definitions, assuming Dr. Burch used citizens of all-ages as her universe. All of the following statistics will be misleading because they include children who are ineligible to vote. That population is highlighted in *Table IV.A.4* as "Not in Universe".

142. In the second row, "WNH" (White, non-Hispanic) I calculate an all-age % voted as 56.1%. I believe this "White Not Hispanic" citizen all-age population is the one used in her report since the number matches exactly.

143. Next, I turn to replicating the 53.0% "Black Alone or in Combination, not Hispanic" voting statistic Dr. Burch reports.[45] Referencing *Table IV.A.4*: In the third row, I show APB NH (Any Part Black, non-Hispanic). This is our best guess at Dr. Burch's Black definition, since she uses the words "Black Alone or in Combination, not Hispanic. That definition results in a theoretical % voted statistic of 52.6%. Very close, but not exactly the 53.0% Dr. Burch reports. This exploration continues by looking at various other Black Alone or in combination population definitions. For example:

- The % voted for the BA NH (Black Alone, non-Hispanic) population. That results in a % voted statistic of 53.1%.
- The % voted for the BA and B-W NH (Black Alone and Black-White, non-Hispanic) population. That results in a % voted statistic of 52.6%.
- The % voted for the BA and W-B-AI NH (Black Alone and Black-White, American Indian non-Hispanic) population. That results in a % voted statistic of 53.1%.

144. Having exhausted all permutations of "Black Alone or in Combination," one has a variety of possible estimates from 52.6% to 53.1%. I conclude that Dr. Burch used the citizen, all-ages definition and one of the "Black Alone or in Combination" definitions

[44] I am uncertain why Dr. Burch excludes Black Hispanics, since the complaint states clearly that plaintiffs are considering "any part Black" – which includes Hispanics. Dr. Burch is not clear whether her White Non-Hispanic" is White Alone or in combination.

[45] All statistics are supported by an analytic table produced from the CPS PUMS file shown in Appendix 1

I have tested, and the small difference is attributable to either a small mathematical error or rounding.

Table IV.A.4 2020 MS Voter Estimates Citizens, All Ages by Race and Ethnicity: Dr. Burch Definition Replication Attempt

	No Response	Refused	DK	Not in Unvierse	Voted	Not Voted	Total	% Voted
Total	**172,860**	**7,148**	**26,039**	**687,921**	**1,530,528**	**440,304**	**2,864,799**	53.4%
WNH	107,149	4,527	16,586	315,946	904,127	262,726	1,611,060	**56.1%**
Black Including Hispanic Combinations								
BA (inc. Hisp)	61,542	2,621	7,554	297,536	573,046	141,975	1,084,274	52.9%
BA and B-W (inc. Hisp)	61,542	2,621	7,554	310,215	581,038	145,022	1,107,992	52.4%
BA and W-B-AI (inc. Hisp)	61,542	2,621	7,554	297,536	574,373	141,975	1,085,601	52.9%
APB (inc. Hisp)	61,542	2,621	7,554	310,215	582,365	145,022	1,109,319	52.5%
Black Non-Hispanic Combinations								
BA NH	61,542	2,621	7,554	292,827	571,130	140,112	1,075,785	53.1%
BA and B-W NH	61,542	2,621	7,554	303,549	575,115	143,158	1,093,540	52.6%
BA and W-B-AI NH	61,542	2,621	7,554	292,827	572,457	140,112	1,077,112	53.1%
APB NH	61,542	2,621	7,554	303,549	576,442	143,158	1,094,867	**52.6%**

Source" CPS 2020, November Voting Supplement (U.S. Census Bureau). Table assembled by Bryan GeoDemographics for author.

145. It appears that Dr. Burch fails to acknowledge she used a population base with a minimum age inappropriate for analyzing educational attainment, let alone, eligible to vote. That is, the universe Dr. Burch uses is the entire population. In the case of educational attainment, which includes post-secondary attainment, the minimum age used by the US Census Bureau is 25. For voter registration and voting turnout, not only is the minimum age 18, but, in addition, the appropriate denominator is the population eligible to vote, namely CVAP with the exclusion of felons. Dr. Burch's findings also present a troubling inconsistency. Not only are her reported overall turnout statistics substantively different than those officially reported by the US Census Bureau (hers are replicated here in *Exhibit IV.A.4*, which I compare to my calculations as found in at *Table IV.A.2* above) – but her interpretation presents the *opposite* conclusion of what I arrived at. That is: Blacks register at a lower rate and vote at a lower rate than Whites. The evidence I have found leads me to conclude differently: Blacks neither register nor vote at lower rates than Whites; instead the data show that Blacks register and vote at higher rates than Whites.

146. In sum, I believe Dr. Burch used the CPS PUMS data for her voting analysis. Dr. Burch appears to have applied the citizenship filter properly, the race definitions *somewhat* properly, but neglected to add an age filter to include only adults. The significant consequences of this decision alone are voter registration and turnout statistics and conclusions that are the *opposite* of actual reported, therefore with an *opposite* conclusion reached. The official CPS results showing Black voters out-performing White voters contradict the findings, the conclusions and general arguments of Dr. Burch.

147. There is a fundamental, demographic observation that supports this conclusion. In many states (Mississippi included) minority populations such as Black and Hispanic tend to be younger (Schaeffer, 2019). That is, they make up a larger share of the underage population ineligible to vote. This is the case in Mississippi, where the 2020 total population is 2,961,279, the White Alone population is 1,658,893 (56%) while the Any Part Black population found by summing all combinations of black and other races is 1,123,108 (38%) (https://data.census.gov/table?q=any+part+black,+mississippi&tid=DECENNIALPL2020.P1). As shown in *Table III.D.1* of this report, the 2020 VAP total in Mississippi is 2,277,599 while the White Alone VAP is 1,315,451 (58% of the VAP total)) and the Any Part Black (APB) population is 823,080 (36% of the VAP total). Whites are *over*-represented and Blacks are *under*-represented among VAP relative to their respective total populations. The "*under 18, not eligible to vote* "population total in Mississippi is 683,680 (where 683,680 = 2,961,279 – 2,277,599). The White Alone population *under 18, not eligible to vote* is 343,442 (where 343,442 = 1,658,893 – 1,315,451), which is 21% of the total White Alone population. The APB population *under 18, not eligible to vote* is 300,028 (where 300,028 = 1,123,108 – 823,080, which is 27% of the APB population. Thus, according to the 2020 census of Mississippi, the APB population has a higher percent (27%) that is *under 18, not eligible to vote* than the White Alone population (21%). If an analyst were to include this under voting-age population in a calculation of voting turnout for Whites – it would artificially and incorrectly *inflate* a voter turnout estimate for them. If an analyst were to include this under voting-age population in a calculation of voting turnout for Blacks – it would artificially and incorrectly *decrease* a voter turnout estimate for them. In the end, Dr. Burch's exact estimates and *how* she arrived at them are irrelevant. The conclusion that Whites have higher voter turnout than Blacks is incorrect for the 2020 election and would be incorrect based on *Exhibit IV.A.2* and have been since at least 2004.

B. Voter Registration by Race

148. The Survey Research laboratory of the Social Science Research Center (SSRC) at Mississippi State University (https://srl.ssrc.msstate.edu/) provided me with voter registration and voting frequency data by race as found in annual statewide surveys it has conducted from 2015 to 2021. The data were provided in a SAS file, which I exported into the NCSS statistical analysis package I use. An overview of the data was provided by Dr. John Edwards, the Director of the SSRC Survey Research Laboratory, which also documents the coding in this file. This is found in Appendix 5. As can be seen in Appendix 5, the sample size in each of these seven years is at least 1,500 and across all seven years, approximately 61% of respondents are White and 36%, Black. While the survey asks respondents if they are registered to vote in its annual surveys, it does not ask if they voted in a given election year. Instead it asks respondents a series of questions about the frequency of voting (always vote, nearly always vote, vote part of the time, seldom vote, never vote, with responses "Don't Know" and "refused" classified as missing). Because of the nature of the voting question, it is not directly comparable to the turnout data found in the CPS. However, the results by race within the SSRC data are directly comparable. At this point it should be noted in regard to the voter registration data that I do discuss here that it is the case that while both Blacks and Whites tend to *over-report* voter registration (Cuevas-Molinas, 2017), Blacks may do so at a higher rate than Whites (Fullerton et al., 2007) as is also the case with voting (Jenkins et al., 2012). This caveat would not only apply to the SSRC survey data but also to the CPS, the ACS, and any other survey in the United States that includes questions on voter registration, voting and race.

149. Given this caveat, I used the NCSS "Contingency Tables" procedure[46] to examine race by voter registration by year (See Appendix 5b for the NCSS output of each of these seven runs). I find that in each year, 2015 to 2021, SSRC reports that the percent of Black voter registration exceeds that of White voter registration in Mississippi: In 2015, it is 90.4% for Whites and 93.3% for Blacks; in 2016, it is 91.9% for Whites and 92.8% for Blacks; in 2017, it is 92% for Whites; and 94.2% for Blacks; in 2018, it is 91.2% for Whites and 93.7% for Blacks; in 2019, it is 91.9% for Whites and 94.3% for Blacks; in 2020, it is 91.4% for Whites and 94.5% for Blacks; and in 2021, it is 90.9% for Whites and 94,2% for Blacks. While it may be the case that Blacks over-report voting and voter registration at a higher rate than Whites, the closer proximity to polling places that Blacks have (as discussed in the preceding section) may offset to some degree the likelihood of over-reporting.

[46] https://www.ncss.com/software/ncss/analysis-of-two-way-tables-in-ncss/

150. Again using the NCSS "Contingency Tables" procedure,[47] I now turn to an examination of race by voting frequency by year using the SSRC voting frequency data (See Appendix 5c for the NCSS output of each of these seven runs). I find that in each year, 2015 to 2021, SSRC reports that the percent of Black Mississippians 18 years of age and over who report "Always Vote" exceeds that of White Mississippians age 18 and over who report "Always Vote:" In 2015, it is 61.0% for Whites and 67.3% for Blacks; in 2016, it is 60.1% for Whites and 66.4% for Blacks; in 2017, it is 59.3% for Whites and 64.5 % for Blacks; in 2018, it is 54.5% for Whites and 62.5% for Blacks; in 2019, it is 60.3% for Whites and 65.5% for Blacks; in 2020, it is 68.22% for Whites and 72.1% for Blacks; and in 2021, it is 56.8% for Whites and 66.7% for Blacks. Again, while it may be the case that Blacks over-report voting and voter registration at a higher rate than Whites, the closer proximity to polling places that Blacks have (as discussed in the preceding section) may offset to some degree the likelihood of over-reporting.

151. Given my findings based on the SSRC data and my findings in regard to the CPS, which are based on estimates controlled to the universe of those who are eligible to vote (the definition directed by the Census Bureau and the definition my expertise would lead me to recommend), I disagree with Dr. Burch's claim:

> "…that the overall gap in turnout between Black and White Mississippians exists because the gap in educational opportunities between Black and White Mississippians. Black Mississippians have less access to quality education and therefore have lower educational attainment for the reasons discussed in this section; this lower educational attainment leads to lower voter turnout."

CONCLUSIONS

152. For the reasons stated in this report and illustrated in the appendices, I conclude that Supreme Court District 1 already has a Black (Any Part Black) CVAP majority of 51.1% without a prison adjustment, and 51.0% with a prison adjustment. Mr. Cooper's Illustrative Plan 1 would increase the Black (Any Part Black) CVAP majority in District 1 to approximately 57% Black. Cooper's other illustrative plan and his two "least Change" plans yield a similar result: An already Black CVAP majority in District 1 is increased to a higher level.

153. Core retention of the Black (Any Part Black) VAP population in Cooper's two illustrative plans is low, only 76.9% of the original Black VAP retained in his Illustrative Plan I and 68.7% in his Illustrative Plan II. Cooper's two "least change"

[47] https://www.ncss.com/software/ncss/analysis-of-two-way-tables-in-ncss/

plans provide the highest level of retention of the original Black VAP at 91.7% and 97.0%, respectively.

154. In regard to Compactness, each of the alternate plans suggested by Cooper range from somewhat less compact to substantially less compact than is offered by the existing SCOMS plan.

155. The Supreme Court Districts serve as the geographic basis for elections to the state Transportation Commission and the Public Service Commission. In addition, they serve as the geographic basis for appointments to the Mississippi Board of Bar Admissions and the Board of Trustees for the State Institutions of Higher Learning (IHL) and a number of other boards (see Paragraph 17 for the list of the other boards). The IHL has a policy that acknowledges the value of diversity for Mississippi, as does a statement by the ACLU and a court decision by Judge William Barbour in the 1992 "Magnolia Bar" case involving the SCOMS districts. Using indices from the Mississippi Health and Hunger Atlas, I find that the existing Supreme Court Districts provide more population diversity than do any of Cooper's four alternative plans and that Cooper's plans serve to decrease diversity across the Supreme Court districts. These findings are consistent with my finding that core retention found in Cooper's plans is low.

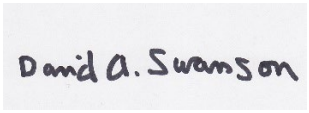
156. One of the findings in Dr. Traci Burch's expert report (Figure 4 and accompanying text in her report) is that White Mississippians turned out to vote in the 2020 election at a higher rate than Black Mississippians, 56.1% to 53.0%, respectively. Dr. Burch's finding is the result of a flawed analysis that employed the incorrect "universe" as the denominator in her calculations (the entire population, including non-citizens, those under age 18) rather than the population eligible to vote ("Citizens of Voting Age Population" - CVAP). Evidence from the same source she cites (the 2020 Current Population Survey, November Voting supplement) shows that when the correct universe, CVAP, is used as the denominator, Black Mississippians turned out at a higher rate in the 2020 election than White Mississippians: 72.9% to 69.8%. As shown by data from past Voting Supplements in the Current Population Survey (taken in the even numbered years when federal elections are held, starting in 1964), my finding is consistent with the trend of voting seen in Mississippi since 2004: Both the percent of Black CVAP registration and the percent of Black CVAP voting have generally been higher than the percent of White non-Hispanic CVAP registration and voting, respectively (see Figures IV.A.1 and IV.A.2 in this report). In conjunction with this 21st century trend, my finding in regard to the 2020 election also reveals that Dr. James T. Campbell's implication (p. 51 of his report) that Black Mississippians currently register and vote at lower rates than White Mississippians also is mistaken:

> "Under the circumstances prevailing in Mississippi today, and in light of the history from which those circumstances originate, it is my opinion that Black Mississippians are not afforded an equal opportunity to elect candidates of their choice in Supreme Court elections."

157. The Voting Supplements of the Current Population Survey from 2004 to 2020 do not support Dr. Campbell's opinion. Moreover, the voter registration data in the Voting Supplements of the Current Population Survey are consistent with annual voting registration data collected for Mississippi in sample surveys from 2015 to 2021 conducted by the Survey Research Laboratory at the Social Science Research Center, Mississippi State University. These sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians age 18 and over who are registered to vote is higher than the percent of White Mississippians age 18 and over who are registered to vote. In addition, the SSRC sample surveys show that for each year, 2015 to 2021, the percent of Black Mississippians aged 18 and over who report "Always Vote" is higher than the percent of White Mississippians age 18 and over who report "Always Vote." Both the CPS and the SSRC data are consistent with a finding reported for the first time in this report: Statewide, a higher share of the Black population of potential and actual voters is within a quarter mile of a polling place than found for the White population of potential and actual voters.

* * *

Submitted: 5 January 2023



David A. Swanson

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APPENDICES

Appendix 1. County Assignments

Generated by author and by Bryan Geodemographics for author

A. Mississippi County Assignments by

- my Needs and Performance Cluster,
- the existing 1987 SCOMS Plan, and
- the Cooper Illustrative Plans 1 and 2 and Least Change Plans 1 and 2

A. Mississippi County Assignments by Needs and Performance Cluster, the existing 1987 SCOMS Plan, and Cooper Illustrative Plans 1 and 2 and Least Change Plans 1 and 2

STCTY	Name	Cluster	SCP_1987	ILL_Plan1	ILL_Plan2	LCP_1	LCP_2
28001	Adams	3	2	1	1	1	2
28003	Alcorn	2	3	3	3	3	3
28005	Amite	3	2	1	1	2	2
28007	Attala	2	3	1	1	3	3
28009	Benton	2	3	3	3	3	3
28011	Bolivar	2	1	1	1	1	1
28013	Calhoun	1	3	3	3	3	3
28015	Carroll	2	3	1	1	3	3
28017	Chickasaw	3	3	3	3	3	3
28019	Choctaw	2	3	3	3	3	3
28021	Claiborne	3	1	1	1	1	1
28023	Clarke	2	2	3	2	2	2
28025	Clay	3	3	3	3	3	3
28027	Coahoma	3	3	1	1	1	1
28029	Copiah	2	1	1	1	1	1
28031	Covington	2	2	2	2	2	2
28033	DeSoto	2	3	3	1	3	3
28035	Forrest	2	2	2	2	2	2
28037	Franklin	2	2	1	1	2	2
28039	George	2	2	2	2	2	2
28041	Greene	1	2	2	2	2	2
28043	Grenada	3	3	1	1	3	3
28045	Hancock	2	2	2	2	2	2
28047	Harrison	2	2	2	2	2	2
28049	Hinds	3	1	1	1	1	1
28051	Holmes	3	1	1	1	1	1
28053	Humphreys	3	1	1	1	1	1
28055	Issaquena	2	1	1	1	1	1
28057	Itawamba	2	3	3	3	3	3
28059	Jackson	3	2	2	2	2	2
28061	Jasper	1	2	3	2	2	2
28063	Jefferson	3	1	1	1	1	1
28065	Jefferson Davis	1	2	2	2	2	2
28067	Jones	2	2	2	2	2	2
28069	Kemper	1	1	3	3	1	1
28071	Lafayette	2	3	3	3	3	3
28073	Lamar	2	2	2	2	2	2
28075	Lauderdale	2	1	3	2	1	1
28077	Lawrence	2	2	1	2	2	2
28079	Leake	2	1	3	3	1	3
28081	Lee	2	3	3	3	3	3
28083	Leflore	3	3	1	1	1	1
28085	Lincoln	2	2	1	2	2	2
28087	Lowndes	3	3	3	3	3	3
28089	Madison	2	1	1	3	3	1
28091	Marion	2	2	2	2	2	2
28093	Marshall	1	3	3	3	3	3
28095	Monroe	3	3	3	3	3	3
28097	Montgomery	3	3	1	1	3	3
28099	Neshoba	2	1	3	3	1	3
28101	Newton	2	1	3	2	1	1
28103	Noxubee	1	1	3	3	1	1
28105	Oktibbeha	2	3	3	3	3	3
28107	Panola	3	3	1	1	3	3
28109	Pearl River	2	2	2	2	2	2
28111	Perry	1	2	2	2	2	2
28113	Pike	3	2	1	1	2	2
28115	Pontotoc	2	3	3	3	3	3
28117	Prentiss	2	3	3	3	3	3
28119	Quitman	1	3	1	1	1	1
28121	Rankin	2	1	2	3	1	1
28123	Scott	1	1	3	3	1	1
28125	Sharkey	2	1	1	1	1	1
28127	Simpson	2	2	2	3	2	2
28129	Smith	1	2	3	3	2	2
28131	Stone	2	2	2	2	2	2
28133	Sunflower	3	1	1	1	1	1
28135	Tallahatchie	3	3	1	1	1	1
28137	Tate	3	3	1	1	3	3
28139	Tippah	2	3	3	3	3	3
28141	Tishomingo	2	3	3	3	3	3
28143	Tunica	3	3	1	1	1	1
28145	Union	3	3	3	3	3	3
28147	Walthall	3	2	1	2	2	2
28149	Warren	2	1	1	1	1	1
28151	Washington	3	1	1	1	1	1
28153	Wayne	3	2	2	2	2	2
28155	Webster	3	3	3	3	3	3
28157	Wilkinson	3	2	1	1	1	2
28159	Winston	2	3	3	3	3	3
28161	Yalobusha	1	3	1	1	3	3
28163	Yazoo	3	1	1	1	1	1

Appendix 2. Cluster Analysis Methodology and Findings

I (David A. Swanson, author) used the NCSS K-Means Procedures to generate the clusters (https://www.ncss.com/software/ncss/clustering-in-ncss/#KMeans) because, I was looking for a small number of clusters (Ideally three) and as stated at this site:

The k-means algorithm was developed by J.A. Hartigan and M.A. Wong of Yale University as a partitioning technique. It is most useful for forming a small number of clusters from a large number of observations. It requires variables that are continuous with no outliers.

The objective of this technique is to divide N observations with P dimensions (variables) into K clusters so that the within-cluster sum of squares is minimized. Since the number of possible arrangements is enormous, it is not practical to expect the single best solution. Rather, this algorithm finds a "local" optimum. This is a solution in which no movement of an observation from one cluster to another will reduce the within-cluster sum of squares. The algorithm may be repeated several times with different starting configurations. The optimum of these cluster solutions is then selected.

I first used Discriminant Analysis (an analytic method related to cluster analysis whereby the clusters are a priori known and a model is constructed such that it can be used to determine into which clusters new cases would be placed) in 1980 (Swanson, 1980). I have used cluster analysis: (1) in work I did with Bryan GeoDemographics in regard to Texas redistricting (2021); (2) to identify value-chain clusters for the Southern Nevada Economic Study (Schlottman, et al., 2006); and (3) as a means of developing cost-effective ways to use the housing unit method to generate municipal population estimates in Washington (Swanson, Randall, and Weisser, 1977).

As the hyperlinked citation above indicates, I used the NCSS statistical package in this analysis (https://www.ncss.com/software/ncss/). I have used this statistical package since the early 1980s.

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

Minimum Iteration Section

Iteration No.	No. of Clusters	Percent of Variation	Bar Chart of Percent
2	2	65.50	||||||||||||||||||
4	3	37.46	||||||||||
8	4	27.17	||||||||
11	5	22.09	|||||||

Iteration Section

Iteration No.	No. of Clusters	Percent of Variation	Bar Chart of Percent
1	2	71.16	||||||||||||||||||||
2	2	65.50	||||||||||||||||||
3	2	71.16	||||||||||||||||||||
4	3	37.46	||||||||||
5	3	37.46	||||||||||
6	3	37.46	||||||||||
7	4	31.16	|||||||||
8	4	27.17	||||||||
9	4	28.23	||||||||
10	5	23.94	|||||||
11	5	22.09	|||||||
12	5	23.05	|||||||

Cluster Means

Variables	Cluster1	Cluster2	Cluster3
NEED	3336.219	2843.865	4209.005
PERFORMANCE	35336.63	12430.18	14721.96
Count	12	41	29

Cluster Standard Deviations

Variables	Cluster1	Cluster2	Cluster3
NEED	313.4394	441.6815	596.8018
PERFORMANCE	10136.39	4359.49	5035.884
Count	12	41	29

F-Ratio Section

Variables	DF1	DF2	Between Mean Square	Within Mean Square	F-Ratio	Prob Level
NEED	2	79	1.585478E+07	238693.8	66.42	0.000000
PERFORMANCE	2	74	2.138707E+09	3.150861E+07	67.88	0.000000

K-Means Cluster Analysis Report (Continued)

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

Distance Section

Row	Cluster	Dist1	Dist2	Dist3
1	3	2.8206	1.1286	0.8646
2	2	3.0464	1.0160	2.7609
3	3	2.0752	1.5413	0.4177
4	2	2.7059	0.4426	2.1869
5	2	0.8837	0.0024	2.4459
6	2	2.2237	0.8380	0.9249
7	1	0.3147	2.2720	2.1611
8	2	1.5612	1.1072	1.2575
9	3	2.7743	1.1912	0.7629
10	2	2.3504	0.4048	2.0125
11	3	2.1922	0.9788	0.7930
12	2	2.4071	0.5780	1.1685
13	3	2.7123	0.9931	0.9013
14	3	2.6813	2.3417	0.5978
15	2	2.3223	0.6454	1.1021
16	2	2.6049	0.4574	1.3497
17	2	3.2453	0.7843	2.4045
18	2	2.5744	0.6066	1.1897
19	2	2.4434	0.4513	2.1151
20	2	2.8640	0.3475	1.9939
21	1	0.4092	1.2905	1.1530
22	3	2.5539	1.2770	0.5196
23	2	3.0582	0.7489	2.4730
24	2	2.8530	0.3209	1.8558
25	3	2.7058	1.0091	0.8807
26	3	2.3578	1.7794	0.1338
27	3	2.4098	2.7226	1.0991
28	2	0.5489	0.3324	2.1111
29	2	2.2431	1.0477	2.5456
30	3	3.2902	2.0881	0.8219
31	1	1.2517	1.4719	1.3304
32	3	2.8899	2.2071	0.5217
33	1	1.0461	1.4971	1.7226
34	2	2.5802	0.1541	1.6266
35	1	0.7766	3.2534	3.2262
36	2	3.2234	0.7173	1.9343
37	2	3.8070	1.5434	3.2150
38	2	3.3681	1.2108	2.9404
39	2	2.0833	0.4834	1.7840
40	2	1.5814	1.0566	1.2988
41	2	2.8715	0.4552	1.6208

K-Means Cluster Analysis Report (Continued)

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

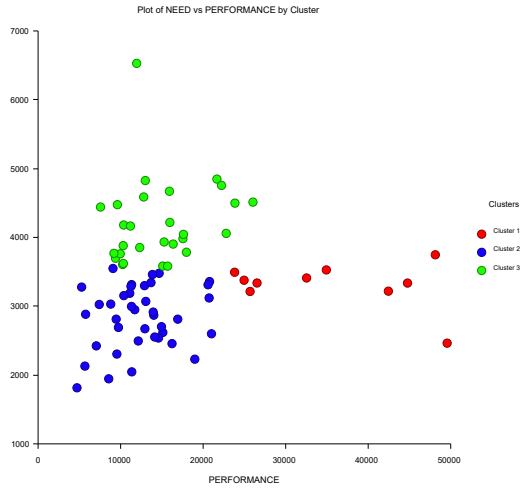
Distance Section (Continued)

Row	Cluster	Dist1	Dist2	Dist3
42	3	4.7564	4.6645	2.9515
43	2	2.6852	0.4494	1.4139
44	3	3.1130	2.0872	0.6438
45	2	3.2244	0.9437	1.5539
46	2	2.3320	0.6374	2.2239
47	1	0.2459	2.5631	2.3324
48	3	2.8570	1.2211	0.8141
49	3	2.8826	1.7057	0.4681
50	2	2.5834	0.5767	1.2230
51	2	2.3610	0.1736	1.6971
52	1	0.0118	0.8931	1.5504
53	2	3.0202	0.5853	1.6904
54	3	2.2810	2.6380	1.0615
55	2	2.6110	0.2274	1.5768
56	1	0.9444	1.6360	1.6793
57	3	3.0493	2.5098	0.8030
58	2	1.5906	0.9557	1.5213
59	2	2.3548	0.1859	1.6403
60	1	1.4677	3.9958	3.6302
61	2	3.5285	1.1583	2.8047
62	1	1.1138	1.5040	1.5209
63	2	2.3090	0.7957	0.9515
64	2	2.5441	0.2239	1.9542
65	1	1.8838	4.0112	4.3408
66	2	2.3282	0.3242	1.9065
67	3	1.6263	1.8967	0.8862
68	3	1.7922	2.5670	1.2726
69	3	2.1011	1.6175	0.3739
70	2	1.7971	0.9708	2.1459
71	2	2.4805	0.4117	2.0976
72	3	1.7167	2.5979	0.1545
73	3	2.7703	1.3313	0.6297
74	3	2.7941	1.6776	0.3830
75	2	2.8289	0.9618	1.0320
76	3	2.1291	0.9984	0.7997
77	3	2.1572	1.4056	0.4253
78	3	2.2807	1.4125	0.3535
79	3	1.9465	1.3303	0.6407
80	2	2.4135	0.2938	1.4527
81	1	1.0111	3.5231	3.4057
82	3	1.9179	2.4254	1.0452

K-Means Cluster Analysis Report (Continued)

Dataset ...\MS COUNTY NEED-PERFORM.NCSS

Plots



Procedure Input Settings

Autosave Inactive

Variables Tab

-- Variables ----------

Cluster Variables:	NEED, PERFORMANCE
Label Variable:	<Empty>

-- Cluster Options ----------

Minimum Clusters:	2
Maximum Clusters:	5
Reported Clusters:	3

-- Other Options ----------

Random Starts:	3
Max Iterations:	25
Percent Missing:	50

Reports Tab

-- Select Reports ----------

Minimum Iteration Report	Checked
Iteration Report	Checked

K-Means Cluster Analysis Report (Continued)

Cluster Means Report	Checked
Cluster Standard Deviations Report	Checked
F-Ratio Report	Checked
Distance Report	Checked
Distance by Cluster Report	Unchecked

-- Report Options ----------

Precision:	Single

Column Names:	Names

Procedure Input Settings (Continued)

Plots Tab

-- Bivariate Plot Format ----------	
Bivariate Plots	Checked
Show Row Numbers	Checked
Show Row Labels	Checked

Storage Tab

-- Storage Variable ----------	
Store Cluster ID in Variable:	C21

Appendix 3. Current Population Survey Calculations

These tables were constructed by Bryan GeoDemographics for the author.

A. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Any-Age Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, Any Age and Citizenship Weighted by PWSSWGT. 40.8% LT HS, 66.5% HS Grad, 85.7% Bachelor's Degree or Higher, 52.6% Overall Calculations – attempting to match 53.0% overall reported.

B. CPS 2020 Voter Supplement PUMS Data Pivot Table, Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black (including Hispanics) Age 18+ and Citizenship Weighted by PWSSWGT. 26.1% LT HS, 58.1% HS Grad, 84.5% Bachelor's Degree or Higher, 56.1% Overall Calculations – attempting to match 56.1% overall reported.

C. CPS 2020 Voter Supplement PUMS Data Pivot Table, CVAP Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black (inc. Hispanic), Age 18+ and Citizenship Weighted by PWSSWGT

D. D. CPS 2020 Voter Supplement PUMS Data Pivot Table, CVAP Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race White Alone, non-Hispanic, Age 18+ and Citizenship Weighted by PWSSWGT

E. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Including Any Age and Filtered to Citizenship (1, 2, 3 or 4)

F. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Reported Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Filtered to Age (18+) and Citizenship (1, 2, 3 or 4)

A. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Figure 4 Black Alone or in Combo non-Hispanic Any-Age Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, Any Age and Citizenship Weighted by PWSSWGT. Note that 52.6% total does not exactly match her 53.0% reported.

Any Part Black, Non-Hispanic Educational Attainment by Vote Status	gestfips	28	* State FIPS Filter to MS								
	PTDTRACE	(Multiple Items)	* Race: Any Part Black								
	PEHSPNON	2	* Ethnicity: Non-Hispanic								
	PRTAGE	(All)	* Age: All								
	PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 and 4	"Citizens"							
PES 1 Response:		No Response	Refused	DK	Not in Universe	Voted	Not Voted	Total	Educational Attainment	% Voted
Not in Universe	-1				2,454,827,960		15,296,850	2,454,827,960		
	< 1st	31					15,296,850	15,296,850		
	7,8	34	10,782,157		39,606,345	52,529,661	25,300,522	128,218,685		
	9	35			177,050,218	83,953,971	37,500,389	298,504,578	LTHS	40.8%
	10	36		12,757,284	226,625,836	168,866,749	98,706,301	506,956,170		
	11	37	56,518,701		71,676,118	251,103,093	192,016,036	571,313,948		
	12	38	44,419,439		43,084,990	222,816,797	79,293,300	389,614,526		
High School Grad	39	257,780,196		59,388,128	22,617,400	2,066,482,470	702,775,694	3,109,043,888	HS GRAD	66.5%
SC	40	103,147,028			0	1,219,123,263	113,048,327	1,435,318,618		
Associates	41	14,249,330				231,224,652	33,159,822	278,633,804	Some College	82.9%
Associates Academic	42	25,966,225		16,153,604		328,004,087	60,076,536	430,200,452		
Bachelor	43	46,728,268				751,449,754	60,052,797	858,230,819		
Masters	44	55,829,070				313,238,748	14,357,337	383,425,155	Bachelors+	85.7%
Professional	45					11,185,702		11,185,702		
PhD	46		13,451,673			64,442,420		77,894,093		
Grand Total		615,420,414	26,208,957	75,541,732	3,035,488,867	5,764,421,367	1,431,583,911	10,948,665,248	Overall	52.6%

B. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Figure 4 White non-Hispanic Any-Age Citizen Voter Turnout by Education Analysis. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, Any Age and Citizenship Weighted by PWSSWGT.

White Alone, Non-Hispanic Educational Attainment by Vote Status										
	gestfips	28	* State Filter							
	PTDTRACE	1	* Race: White Alone							
	PEHSPNON	2	* Ethnicity: Non-Hispanic							
	PRTAGE	(All)	* Age: All							
	PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 and 4	"Citizens"						
		No Response	Refused	DK	Not in Unvierse	Voted	Not Voted	Total	Educational Attainment	% Voted
	Sum of PWSSWGT	Column Labels								
	Row Labels	-9	-3	-2	-1	1	2	Grand Total		
Not in Universe	-1				2,604,525,531			2,604,525,531		
< 1st	31						12,963,304	12,963,304		
1,2,3,4	32					13,589,215		13,589,215		
5,6	33					19,288,678	38,670,925	57,959,603		
7,8	34	21,201,656			51,028,132	21,933,015	98,751,460	192,914,263		
9	35	10,568,938			206,983,755	87,127,841	76,548,901	381,229,435	LTHS	26.1%
10	36	23,303,861			151,302,340	111,628,660	127,651,766	413,886,627		
11	37	12,246,593			93,106,761	92,010,349	144,511,134	341,874,837		
12	38				39,546,824	55,290,229	27,438,980	122,276,033		
Grad	39	444,634,058	12,858,931	35,037,882		2,304,594,122	1,172,578,147	3,969,703,140	HS GRAD	58.1%
SC	40	241,407,765	22,524,873	72,240,109	0	2,275,941,962	482,076,228	3,094,190,937		
Associates	41	10,605,943	9,883,577	13,417,843		467,161,742	56,551,957	557,621,062	Some College	75.7%
Associates Academic	42	76,452,354		32,935,974	12,964,196	870,556,186	131,631,272	1,124,539,982		
Bachelor	43	207,635,697		12,229,524	0	1,780,437,888	200,900,643	2,201,203,752	Bachelors+	84.5%
Masters	44	9,670,844				749,742,442	26,153,444	785,566,730		
Professional	45					115,698,943	16,586,638	132,285,581		
PhD	46	13,762,970				76,269,288	14,240,914	104,273,172		
	Grand Total	1,071,490,679	45,267,381	165,861,332	3,159,457,539	9,041,270,560	2,627,255,713	16,110,603,204	Overall	56.1%

C. CPS 2020 Voter Supplement PUMS Data Pivot Table, matching Dr. Burch's Figure 4 Black Alone or in Combo non-Hispanic Any-Age Voter Turnout by Education Analysis – except filtered to voting age 18+. PES 1 Vote Responses for MS Filtered to Race Any Part Black Non-Hispanic, 18+ and Citizenship Weighted by PWSSWGT.

Any Part Black, Educational Attainment by Vote Status	No Response	Refused	DK	Not in Unvierse	Voted	Not Voted	Total	Educational Attainment	% Voted
28	* State FIPS Filter to MS								
(Multiple Items)	* Race: Any Part Black								
(All)	* Ethnicity: All								
(Multiple Items)	* Age: 18+								
(Multiple Items)	* Citizenship 1, 2, 3 and	"Citizens"							
< 1st						15,296,850	15,296,850		
7,8	10,782,157				52,529,661	25,300,522	88,612,340		
9					83,953,971	37,500,389	121,454,360	LTHS	57.6%
10		12,757,284			168,866,749	98,706,301	280,330,334		
11	56,518,701				251,103,093	192,016,036	499,637,830		
12	44,419,439				222,816,797	79,293,300	346,529,536		
Grad	257,780,196		59,388,128	0	2,066,482,470	721,410,147	3,105,060,941	HS GRAD	66.6%
SC	103,147,028			0	1,259,191,478	113,048,327	1,475,386,833		
Associates	14,249,330				231,224,652	33,159,822	278,633,804	Some College	83.3%
Associates Academic	25,966,225		16,153,604		328,004,087	60,076,536	430,200,452		
Bachelor	46,728,268				751,449,754	60,052,797	858,230,819		
Masters	55,829,070				332,399,660	14,357,337	402,586,067	Bachelors+	85.9%
Professional					11,185,702		11,185,702		
PhD		13,451,673			64,442,420		77,894,093		
	615,420,414	26,208,957	75,541,732	0	5,823,650,494	1,450,218,364	7,991,039,961	Overall	72.9%

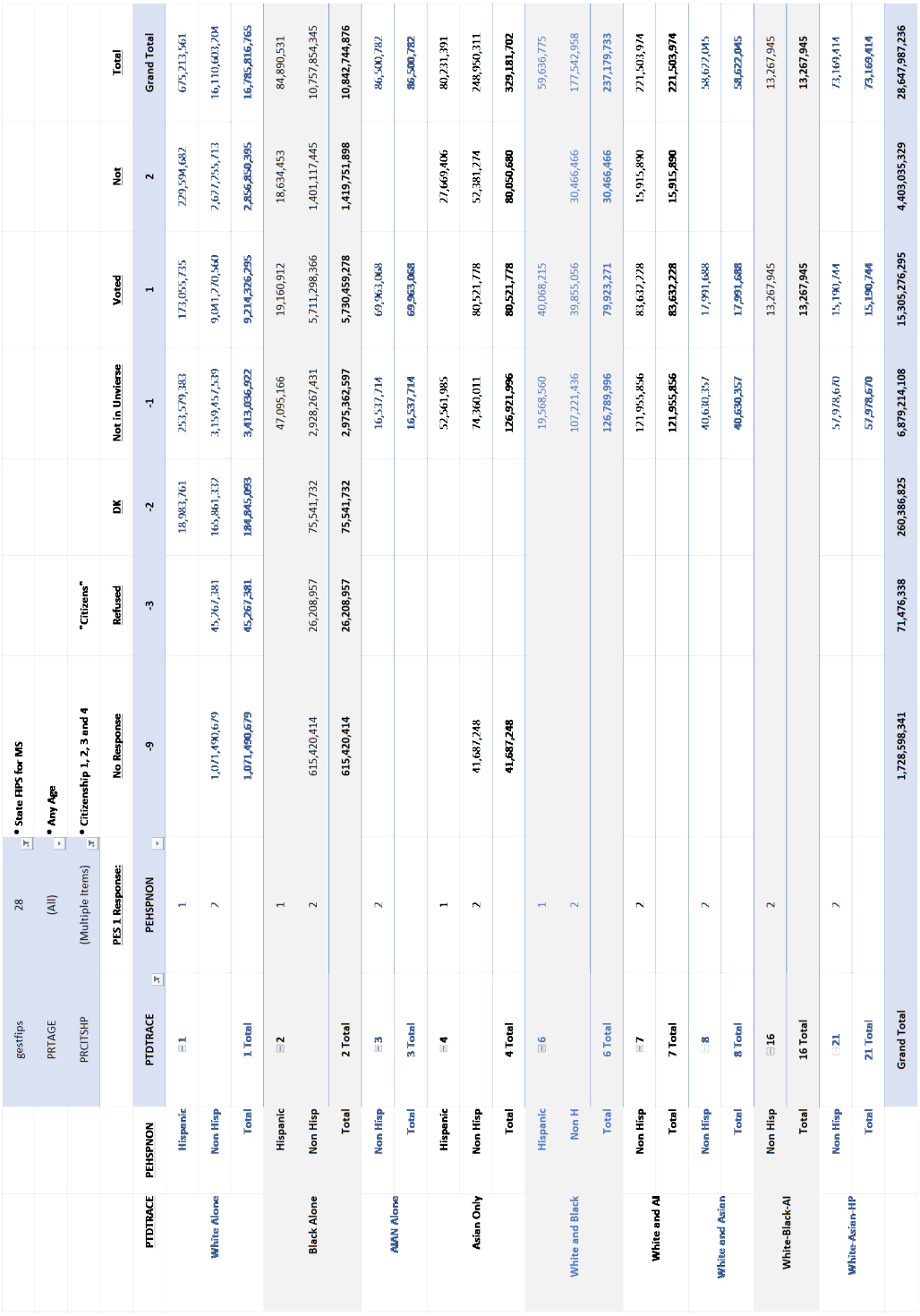
D. CPS 2020 Voter Supplement PUMS Data Pivot Table, matching Dr. Burch's Figure 4 White non-Hispanic Any-Age Voter Turnout by Education Analysis – except filtered to age 18+. PES 1 Vote Responses for MS Filtered to Race White non-Hispanic, 18+ and Citizenship Weighted by PWSSWGT.

White Alone, Non-Hispanic Educational Attainment by Vote Status

gestfips	28	* State FIPS Filter to MS
PTDTRACE	1	* Race: White Alone
PEHSPNON	2	* Ethnicity: All
PRTAGE	(Multiple Items)	* Age: 18+
PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 "Citizens"

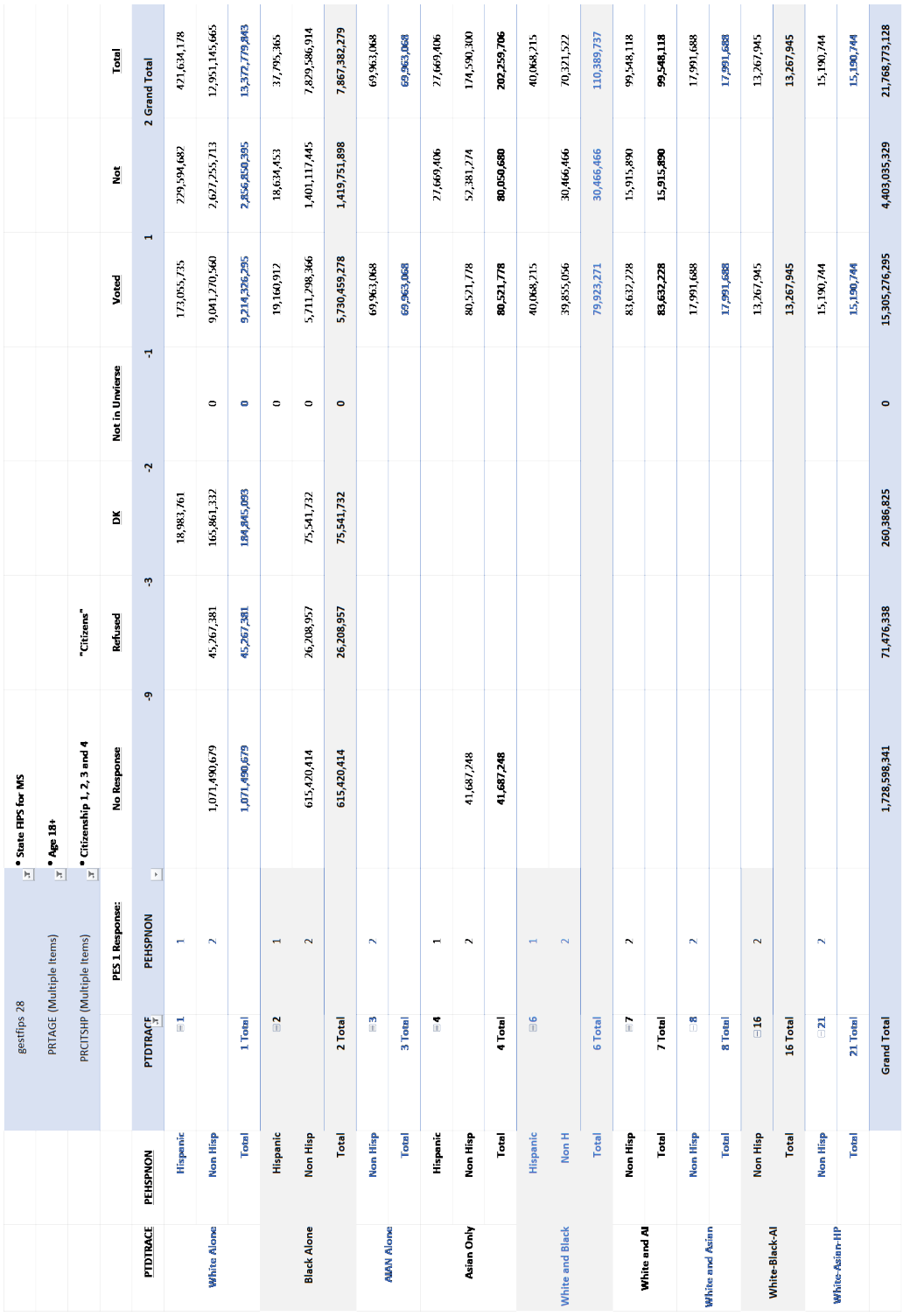
Sum of PWSSWGT	Column Labels	No Response	Refused	DK	Not in Unviverse		Voted	Not Voted	Total	Educational Attainment	% Voted
Row Labels		-9	-3	-2	-1	1	2	Grand Total			
< 1st	31					12,963,304	12,963,304				
1,2,3,4	32				13,589,215		13,589,215				
5,6	33				19,288,678	38,670,925	57,959,603				
7,8	34	21,201,656			21,933,015	98,751,460	141,886,131	LTHS			40.3%
9	35	10,568,938			87,127,841	76,548,901	174,245,680				
10	36	23,303,861			111,628,660	127,651,766	262,584,287				
11	37	12,246,593			92,010,349	144,511,134	248,768,076				
12	38				55,290,229	27,438,980	82,729,209				
Grad	39	444,634,058	12,858,931	35,037,882		2,304,594,122	1,172,578,147	3,969,703,140	HS GRAD		58.1%
SC	40	241,407,765	22,524,873	72,240,109	0	2,275,941,962	482,076,228	3,094,190,937	Some College		75.9%
Associates	41	10,605,943	9,883,577	13,417,843		467,161,742	56,551,957	557,621,062			
Associates Academic	42	76,452,354		32,935,974	0	870,556,186	131,631,272	1,111,575,786			
Bachelor	43	207,635,697		12,229,524	0	1,780,437,888	200,900,643	2,201,203,752			
Masters	44	9,670,844				749,742,442	26,153,444	785,566,730	Bachelors+		84.5%
Professional	45					115,698,943	16,586,638	132,285,581			
PhD	46	13,762,970				76,269,288	14,240,914	104,273,172			
Grand Total		1,071,490,679	45,267,381	165,861,332	0	9,041,270,560	2,627,255,713	12,951,145,665	Overall		69.8%

E. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Dr. Burch's Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Including Any Age and Filtered to Citizenship (1, 2, 3 or 4)



gestfips	28	* State FIPS for MS										
PRTAGE	(All)	* Any Age										
PRCITSHP	(Multiple Items)	* Citizenship 1, 2, 3 and 4	"Citizens"									
		PES 1 Response:	No Response	Refused	DK	Not in Universe	Voted	Not	Total			
PTDTRACE	PEHSPNON	PTDTRACE	PEHSPNON	-9	-3	-2	-1	1	2	Grand Total		
White Alone	Hispanic	1	1			18,983,761	253,579,383	173,055,735	229,594,682	675,213,561		
	Non Hisp		2	1,071,490,679	45,267,381	165,861,332	3,159,457,539	9,041,270,560	2,627,255,713	16,110,603,204		
	Total	1 Total		1,071,490,679	45,267,381	184,845,093	3,413,036,922	9,214,326,295	2,856,850,395	16,785,816,765		
Black Alone	Hispanic	2	1				47,095,166	19,160,912	18,634,453	84,890,531		
	Non Hisp		2	615,420,414	26,208,957	75,541,732	2,928,267,431	5,711,298,366	1,401,117,445	10,757,854,345		
	Total	2 Total		615,420,414	26,208,957	75,541,732	2,975,362,597	5,730,459,278	1,419,751,898	10,842,744,876		
AIAN Alone	Non Hisp	3	2				16,537,714	69,963,068		86,500,782		
	Total	3 Total					16,537,714	69,963,068		86,500,782		
Asian Only	Hispanic	4	1				52,561,985		27,669,406	80,231,391		
	Non Hisp		2	41,687,248			74,360,011	80,521,778	52,381,274	248,950,311		
	Total	4 Total		41,687,248			126,921,996	80,521,778	80,050,680	329,181,702		
White and Black	Hispanic	6	1				19,568,560	40,068,215		59,636,775		
	Non H		2				107,221,436	39,855,056	30,466,466	177,542,958		
	Total	6 Total					126,789,996	79,923,271	30,466,466	237,179,733		
White and AI	Non Hisp	7	2				121,955,856	83,632,228	15,915,890	221,503,974		
	Total	7 Total					121,955,856	83,632,228	15,915,890	221,503,974		
White and Asian	Non Hisp	8	2				40,630,357	17,991,688		58,622,045		
	Total	8 Total					40,630,357	17,991,688		58,622,045		
White-Black-AI	Non Hisp	16	2					13,267,945		13,267,945		
	Total	16 Total						13,267,945		13,267,945		
White-Asian-HP	Non Hisp	21	2				57,978,670	15,190,744		73,169,414		
	Total	21 Total					57,978,670	15,190,744		73,169,414		
		Grand Total		1,728,598,341	71,476,338	260,386,825	6,879,214,108	15,305,276,295	4,403,035,329	28,647,987,236		

F. CPS 2020 Voter Supplement PUMS Data Pivot Table, Matching Reported Voter Turnout by Race Analysis. PES 1 Vote Responses for MS Filtered to Age (18+) and Citizenship (1, 2, 3 or 4)



gestfips 28	• State FIPS for MS										
PRTAGE (Multiple Items)	• Age 18+										
PRCITSHP (Multiple Items)	• Citizenship 1, 2, 3 and 4		"Citizens"								
PES 1 Response:		No Response	Refused	DK	Not in Universe		Voted	Not	2 Grand Total	Total
PTDTRACE	PEHSPNON	-9	-3	-2	-1		1	2		
White Alone	Hispanic			18,983,761			173,055,735	229,594,682	421,634,178	
	Non Hisp	1,071,490,679	45,267,381	165,861,332	0		9,041,270,560	2,627,255,713	12,951,145,665	
	Total	1,071,490,679	45,267,381	184,845,093	0		9,214,326,295	2,856,850,395	13,372,779,843	
Black Alone	Hispanic				0		19,160,912	18,634,453	37,795,365	
	Non Hisp	615,420,414	26,208,957	75,541,732	0		5,711,298,366	1,401,117,445	7,829,586,914	
	Total	615,420,414	26,208,957	75,541,732	0		5,730,459,278	1,419,751,898	7,867,382,279	
AIAN Alone	Non Hisp						69,963,068		69,963,068	
	Total						69,963,068		69,963,068	
Asian Only	Hispanic							27,669,406	27,669,406	
	Non Hisp	41,687,248					80,521,778	52,381,274	174,590,300	
	Total	41,687,248					80,521,778	80,050,680	202,259,706	
White and Black	Hispanic						40,068,715		40,068,715	
	Non H						39,855,056	30,466,466	70,321,522	
	Total						79,923,271	30,466,466	110,389,737	
White and AI	Non Hisp						83,632,228	15,915,890	99,548,118	
	Total						83,632,228	15,915,890	99,548,118	
White and Asian	Non Hisp						17,991,688		17,991,688	
	Total						17,991,688		17,991,688	
White-Black-AI	Non Hisp						13,267,945		13,267,945	
	Total						13,267,945		13,267,945	
White-Asian-HP	Non Hisp						15,190,744		15,190,744	
	Total						15,190,744		15,190,744	
Grand Total		1,728,598,341	71,476,338	260,386,825	0		15,305,276,295	4,403,035,329	21,768,773,128	

Appendix 4. Mississippi Maps

These maps were produced by Bryan Geodemographics for the author.

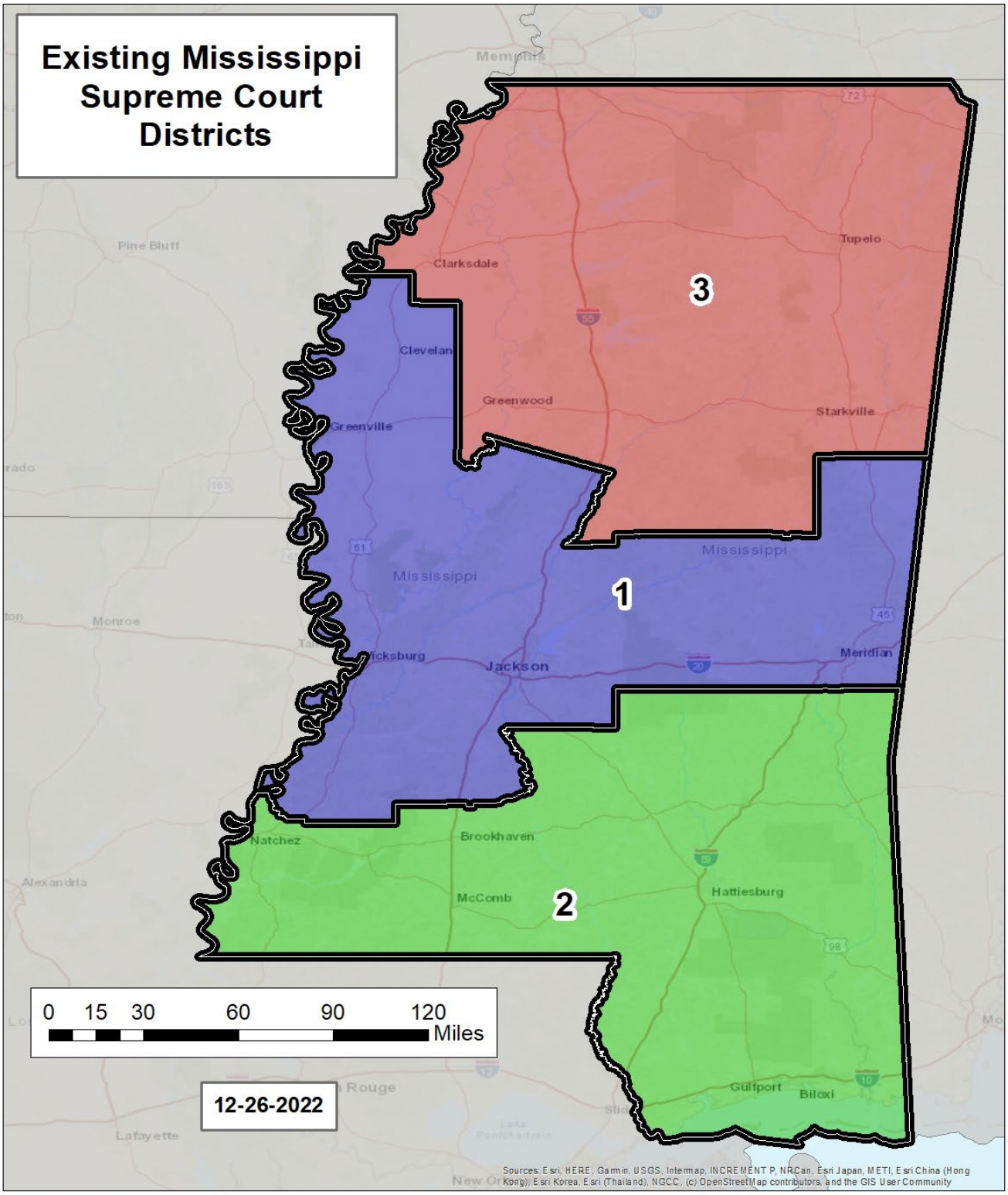
A. Existing MS Supreme Court Districts

B. Existing MS Supreme Court Districts with Major Prisons

C. Existing MS Supreme Court Districts with Planning and Development Districts

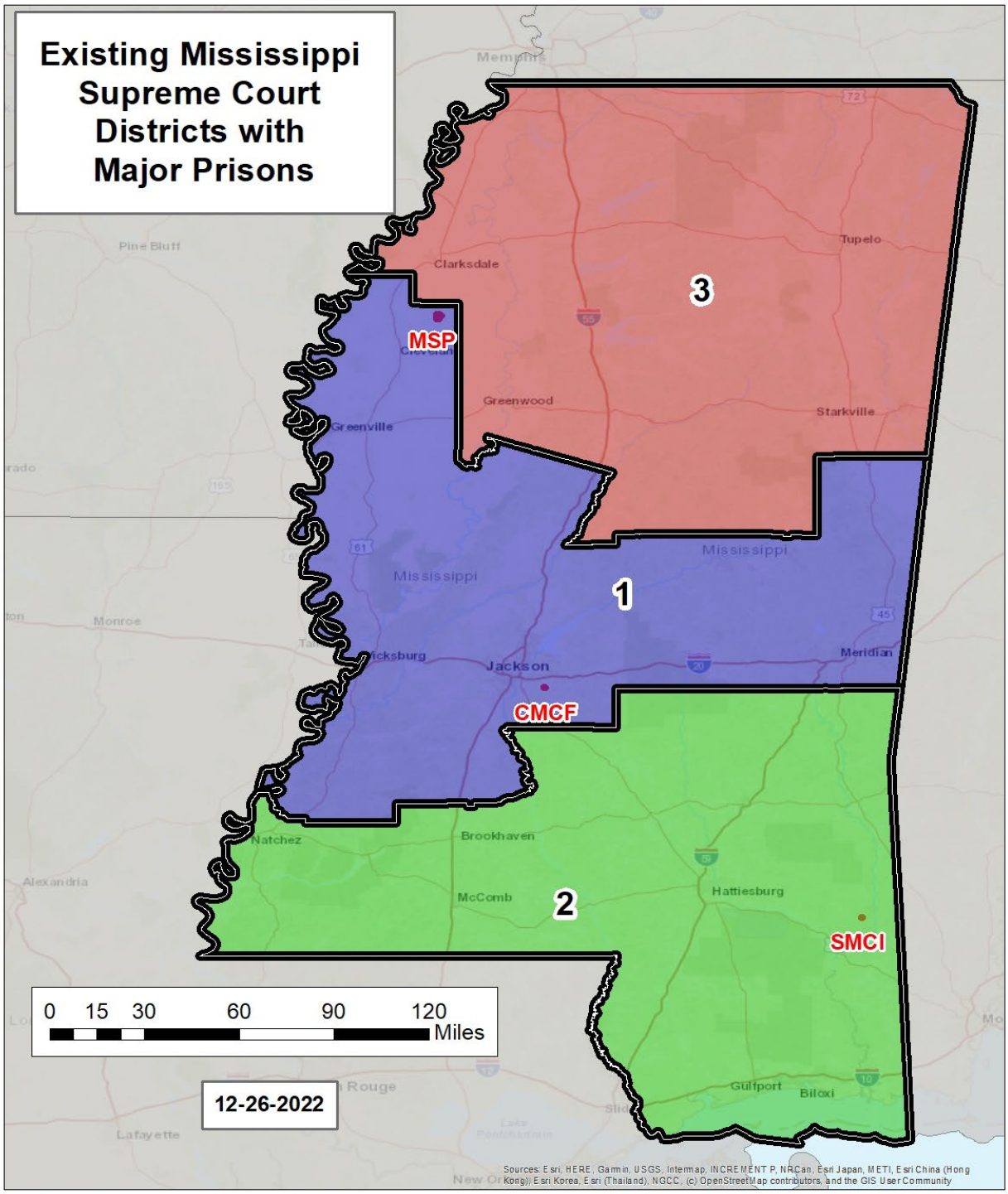
D. Existing MS Supreme Court Districts and Percent VAP APB by County

A. Existing Mississippi Supreme Court Districts



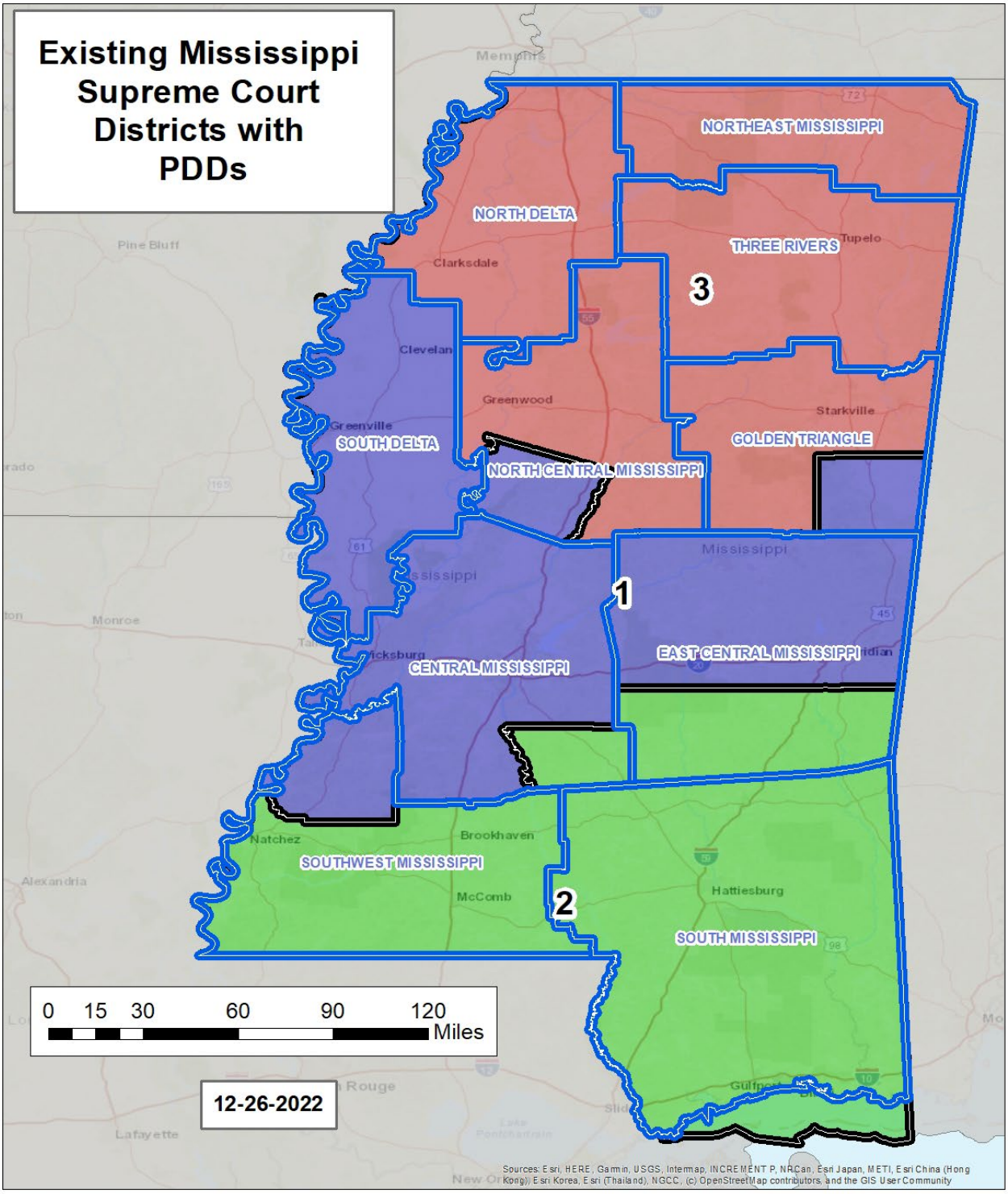
Map compiled for author by Bryan GeoDemographics using data described in text.

B. Existing MS Supreme Court Districts with Major Prisons



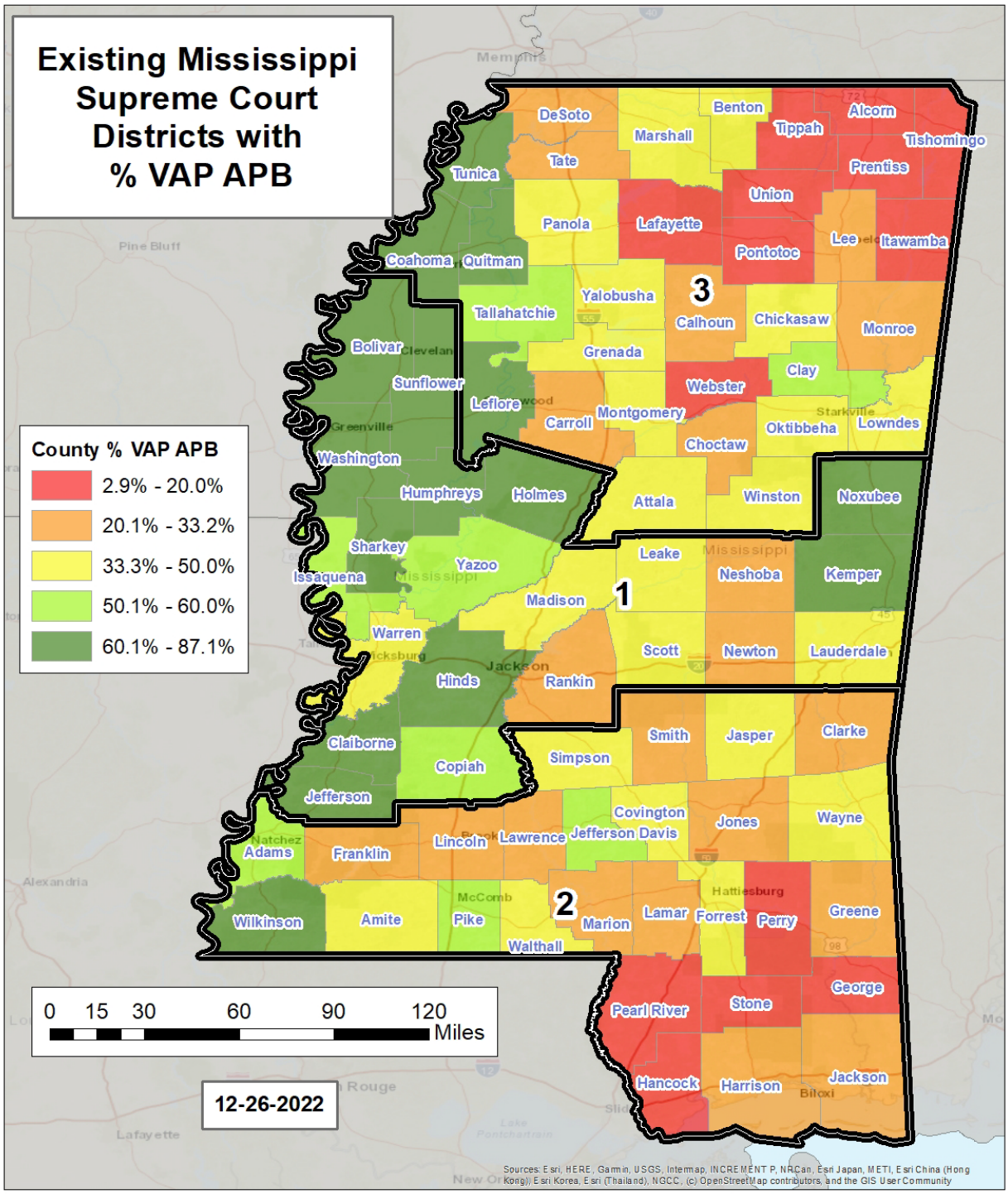
Map compiled for author by Bryan GeoDemographics using data described in text.

C. Existing MS Supreme Court Districts with Planning and Development Districts



Map compiled for author by Bryan GeoDemographics using data described in text.

D. Existing MS Supreme Court Districts and Percent VAP APB by County



Map compiled for author by Bryan GeoDemographics using data described in text.

Appendix 5a. SSRC Survey Overview with Codes

Provided to author by Dr. John Edwards, Director, Survey Research Lab, SSRC, Mississippi State University

Mississippi Voter Registration Status 2015-2021

DataYear

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2015	1578	14.8	14.8	14.8
	2016	1524	14.3	14.3	29.1
	2017	1515	14.2	14.2	43.3
	2018	1500	14.1	14.1	57.3
	2019	1527	14.3	14.3	71.7
	2020	1505	14.1	14.1	85.8
	2021	1518	14.2	14.2	100.0
	Total	10667	100.0	100.0	

RegVote

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Registered to vote	9787	91.8	92.5	92.5
	2 Not Registered to vote	793	7.4	7.5	100.0
	Total	10580	99.2	100.0	
Missing	3 Don't Know	42	.4		
	4 Refused	45	.4		
	Total	87	.8		
Total		10667	100.0		

FreqVote

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Always votes	6216	58.3	62.5	62.5
	2 Nearly always votes	2046	19.2	20.6	83.0
	3 Votes part of the time	831	7.8	8.4	91.4
	4 Seldom votes	414	3.9	4.2	95.5
	5 Never votes	445	4.2	4.5	100.0
	Total	9952	93.3	100.0	
Missing	6 Don't know	38	.4		
	7 Refused	38	.4		
	System	639	6.0		
	Total	715	6.7		
Total		10667	100.0		

County

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Adams County	117	1.1	1.1	1.1
	2 Alcorn County	122	1.1	1.1	2.2
	3 Amite County	52	.5	.5	2.7
	4 Attala County	102	1.0	1.0	3.7
	5 Benton County	39	.4	.4	4.1
	6 Bolivar County	119	1.1	1.1	5.2
	7 Calhoun County	64	.6	.6	5.8
	8 Carroll County	45	.4	.4	6.2
	9 Chickasaw County	77	.7	.7	6.9
	10 Choctaw County	40	.4	.4	7.3
	11 Claiborne County	39	.4	.4	7.7
	12 Clarke County	56	.5	.5	8.2
	13 Clay County	104	1.0	1.0	9.2
	14 Coahoma County	68	.6	.6	9.8
	15 Copiah County	102	1.0	1.0	10.8
	16 Covington County	65	.6	.6	11.4
	17 DeSoto County	261	2.4	2.5	13.9
	18 Forrest County	252	2.4	2.4	16.2
	19 Franklin County	28	.3	.3	16.5
	20 George County	75	.7	.7	17.2
	21 Greene County	41	.4	.4	17.6
	22 Grenada County	79	.7	.7	18.3
	23 Hancock County	155	1.5	1.5	19.8
	24 Harrison County	684	6.4	6.4	26.2
	25 Hinds County	965	9.0	9.1	35.3
	26 Holmes County	83	.8	.8	36.1
	27 Humphreys County	14	.1	.1	36.2
	28 Issaquena County	2	.0	.0	36.2
	29 Itawamba County	80	.7	.8	37.0
	30 Jackson County	468	4.4	4.4	41.4
	31 Jasper County	62	.6	.6	42.0
	32 Jefferson County	36	.3	.3	42.3
	33 Jefferson Davis County	40	.4	.4	42.7
	34 Jones County	213	2.0	2.0	44.7
	35 Kemper County	40	.4	.4	45.1
	36 Lafayette County	176	1.6	1.7	46.7
	37 Lamar County	207	1.9	1.9	48.7
	38 Lauderdale County	274	2.6	2.6	51.2
	39 Lawrence County	46	.4	.4	51.7

County

	Frequency	Percent	Valid Percent	Cumulative Percent
40 Leake County	83	.8	.8	52.5
41 Lee County	351	3.3	3.3	55.8
42 Leflore County	105	1.0	1.0	56.7
43 Lincoln County	138	1.3	1.3	58.0
44 Lowndes County	292	2.7	2.7	60.8
45 Madison County	456	4.3	4.3	65.1
46 Marion County	80	.7	.8	65.8
47 Marshall County	78	.7	.7	66.6
48 Monroe County	169	1.6	1.6	68.2
49 Montgomery County	55	.5	.5	68.7
50 Neshoba County	102	1.0	1.0	69.6
51 Newton County	82	.8	.8	70.4
52 Noxubee County	46	.4	.4	70.8
53 Oktibbeha County	346	3.2	3.3	74.1
54 Panola County	86	.8	.8	74.9
55 Pearl River County	171	1.6	1.6	76.5
56 Perry County	35	.3	.3	76.8
57 Pike County	140	1.3	1.3	78.2
58 Pontotoc County	124	1.2	1.2	79.3
59 Prentiss County	85	.8	.8	80.1
60 Quitman County	23	.2	.2	80.3
61 Rankin County	606	5.7	5.7	86.0
62 Scott County	102	1.0	1.0	87.0
63 Sharkey County	16	.1	.2	87.2
64 Simpson County	87	.8	.8	88.0
65 Smith County	50	.5	.5	88.4
66 Stone County	46	.4	.4	88.9
67 Sunflower County	86	.8	.8	89.7
68 Tallahatchie County	40	.4	.4	90.1
69 Tate County	75	.7	.7	90.8
70 Tippah County	68	.6	.6	91.4
71 Tishomingo County	71	.7	.7	92.1
72 Tunica County	27	.3	.3	92.3
73 Union County	101	.9	1.0	93.3
74 Walthall County	41	.4	.4	93.7
75 Warren County	188	1.8	1.8	95.4
76 Washington County	166	1.6	1.6	97.0
77 Wayne County	65	.6	.6	97.6
78 Webster County	62	.6	.6	98.2

County

		Frequency	Percent	Valid Percent	Cumulative Percent
	79 Wilkinson County	20	.2	.2	98.4
	80 Winston County	65	.6	.6	99.0
	81 Yalobusha County	42	.4	.4	99.4
	82 Yazoo County	65	.6	.6	100.0
	Total	10628	99.6	100.0	
Missing	84 Refused	39	.4		
Total		10667	100.0		

Ethnicity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Hispanic	222	2.1	2.1	2.1
	2 Non-Hispanic	10368	97.2	97.9	100.0
	Total	10590	99.3	100.0	
Missing	3 Don't Know	22	.2		
	4 Refused	55	.5		
	Total	77	.7		
Total		10667	100.0		

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 White	6350	59.5	60.5	60.5
	2 Black	3766	35.3	35.9	96.4
	3 American Indian/Alaska Native	80	.7	.8	97.2
	4 Asian or Pacific Islander	62	.6	.6	97.8
	5 Multi-racial	178	1.7	1.7	99.5
	6 Other	56	.5	.5	100.0
	Total	10492	98.4	100.0	
Missing	7 Not Sure	4	.0		
	8 Refused	171	1.6		
	Total	175	1.6		
Total		10667	100.0		

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Man	4651	43.6	43.8	43.8
	2 Woman	5963	55.9	56.2	100.0
	Total	10614	99.5	100.0	
Missing	4 Refused	53	.5		
Total		10667	100.0		

Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Never attended school or only Kindergarten	4	.0	.0	.0
	2 Grades 1 - 8 (Elementary)	164	1.5	1.5	1.6
	3 Grades 9 - 11 (Some High School)	693	6.5	6.5	8.1
	4 Completed High School or GED equivalent	2695	25.3	25.4	33.5
	5 Some college or vocational program	2338	21.9	22.0	55.6
	6 Completed Associate degree (2-year program)	1400	13.1	13.2	68.8
	7 Completed Bachelors degree (4-year program)	1996	18.7	18.8	87.6
	8 Completed Masters degree	973	9.1	9.2	96.8
	9 Beyond Masters degree	343	3.2	3.2	100.0
	Total	10606	99.4	100.0	
Missing	10 Not Sure	24	.2		
	11 Refused	37	.3		
	Total	61	.6		
Total		10667	100.0		

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	115	1.1	1.1	1.1
	19	180	1.7	1.7	2.9
	20	173	1.6	1.7	4.5
	21	171	1.6	1.7	6.2
	22	154	1.4	1.5	7.7
	23	167	1.6	1.6	9.3
	24	148	1.4	1.4	10.7
	25	135	1.3	1.3	12.0
	26	153	1.4	1.5	13.5
	27	129	1.2	1.3	14.8
	28	143	1.3	1.4	16.2
	29	120	1.1	1.2	17.3
	30	156	1.5	1.5	18.8
	31	131	1.2	1.3	20.1
	32	146	1.4	1.4	21.5
	33	128	1.2	1.2	22.8
	34	152	1.4	1.5	24.2
	35	132	1.2	1.3	25.5
	36	162	1.5	1.6	27.1
	37	156	1.5	1.5	28.6
	38	168	1.6	1.6	30.2
	39	138	1.3	1.3	31.6
	40	144	1.3	1.4	33.0
	41	168	1.6	1.6	34.6
	42	139	1.3	1.3	35.9
	43	139	1.3	1.3	37.3
	44	146	1.4	1.4	38.7
	45	154	1.4	1.5	40.2
	46	177	1.7	1.7	41.9
	47	160	1.5	1.6	43.5
	48	173	1.6	1.7	45.1
	49	167	1.6	1.6	46.8
	50	196	1.8	1.9	48.7
	51	181	1.7	1.8	50.4
	52	192	1.8	1.9	52.3
	53	194	1.8	1.9	54.2
	54	185	1.7	1.8	55.9
	55	205	1.9	2.0	57.9
	56	210	2.0	2.0	60.0

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
57	198	1.9	1.9	61.9
58	209	2.0	2.0	63.9
59	194	1.8	1.9	65.8
60	201	1.9	1.9	67.7
61	208	1.9	2.0	69.8
62	199	1.9	1.9	71.7
63	183	1.7	1.8	73.5
64	201	1.9	1.9	75.4
65	200	1.9	1.9	77.3
66	200	1.9	1.9	79.3
67	153	1.4	1.5	80.8
68	180	1.7	1.7	82.5
69	183	1.7	1.8	84.3
70	180	1.7	1.7	86.0
71	146	1.4	1.4	87.4
72	132	1.2	1.3	88.7
73	128	1.2	1.2	90.0
74	126	1.2	1.2	91.2
75	109	1.0	1.1	92.2
76	98	.9	.9	93.2
77	108	1.0	1.0	94.2
78	88	.8	.9	95.1
79	67	.6	.6	95.7
80	77	.7	.7	96.5
81	55	.5	.5	97.0
82	54	.5	.5	97.5
83	45	.4	.4	98.0
84	40	.4	.4	98.4
85	45	.4	.4	98.8
86	27	.3	.3	99.1
87	14	.1	.1	99.2
88	22	.2	.2	99.4
89	17	.2	.2	99.6
90	12	.1	.1	99.7
91	9	.1	.1	99.8
92	6	.1	.1	99.8
93	7	.1	.1	99.9
94	2	.0	.0	99.9
95	3	.0	.0	100.0

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
	96	2	.0	.0	100.0
	97	2	.0	.0	100.0
	Total	10317	96.7	100.0	
Missing	-99 Refused	350	3.3		
Total		10667	100.0		

Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Household income less than $10,000	670	6.3	8.1	8.1
	2 Household income $10,000 to under $15,000	533	5.0	6.5	14.6
	3 Household income $15,000 to under $20,000	607	5.7	7.4	22.0
	4 Household income $20,000 to under $25,000	539	5.1	6.5	28.5
	5 Household income $25,000 to under $35,000	881	8.3	10.7	39.2
	6 Household income $35,000 to under $50,000	1130	10.6	13.7	52.9
	7 Household income $50,000 to under $75,000	1317	12.3	16.0	68.9
	8 Household income $75,000 to under $100,000	1022	9.6	12.4	81.3
	9 Household income $100,000 to under $150,000	845	7.9	10.3	91.5
	10 Household income $150,000 to under $200,000	366	3.4	4.4	96.0
	11 Household income $200,000 or more	332	3.1	4.0	100.0
	Total	8242	77.3	100.0	
Missing	12 Not Sure	770	7.2		
	13 Refused	1655	15.5		
	Total	2425	22.7		
Total		10667	100.0		

Party

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Republican	3615	33.9	39.6	39.6
	2 Democrat	2999	28.1	32.9	72.5
	3 Independent	2512	23.5	27.5	100.0
	Total	9126	85.6	100.0	
Missing	4 Not sure	811	7.6		
	5 Refused	730	6.8		
	Total	1541	14.4		
Total		10667	100.0		

Party
Lean

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Independent leaning democratic	671	6.3	45.0	45.0
	2 Independent leaning republican	819	7.7	55.0	100.0
	Total	1490	14.0	100.0	
Missing	3 Not sure	799	7.5		
	4 Refused	223	2.1		
	System	8155	76.5		
	Total	9177	86.0		
Total		10667	100.0		

Appendix 5b. NCSS Contingency Table output by year, 2105-2021, SSRC Survey Data on Voter Registration

Analysis based on SSRC data with calculations by author using the NCSS statistical package.

Race Code: 1 = White; 2 = Black
Registered to Vote Code: 1 = Yes; 2 = No; 3 = Don't Know; 4 = Refused.

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2015)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	847	547	1394
2	82	35	117
3	5	1	6
4	3	3	6
Total	937	586	1523

Column Percentages Table

RegVote \ Race	1	2	Total
1	90.39%	93.34%	91.53%
2	8.75%	5.97%	7.68%
3	0.53%	0.17%	0.39%
4	0.32%	0.51%	0.39%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	857.6	536.4	1394.0
2	72.0	45.0	117.0
3	3.7	2.3	6.0
4	3.7	2.3	6.0
Total	937.0	586.0	1523.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(DataYear=2016) AND (Race <> 3,4,5,6,7,8) AND (DataYear = 2016)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	856	488	1344
2	70	36	106
3	2	1	3
4	4	1	5
Total	932	526	1458

Column Percentages Table

RegVote \ Race	1	2	Total
1	91.85%	92.78%	92.18%
2	7.51%	6.84%	7.27%
3	0.21%	0.19%	0.21%
4	0.43%	0.19%	0.34%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	859.1	484.9	1344.0
2	67.8	38.2	106.0
3	1.9	1.1	3.0
4	3.2	1.8	5.0
Total	932.0	526.0	1458.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2017)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	828	507	1335
2	64	29	93
3	3	2	5
4	5	0	5
Total	900	538	1438

Column Percentages Table

RegVote \ Race	1	2	Total
1	92.00%	94.24%	92.84%
2	7.11%	5.39%	6.47%
3	0.33%	0.37%	0.35%
4	0.56%	0.00%	0.35%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	835.5	499.5	1335.0
2	58.2	34.8	93.0
3	3.1	1.9	5.0
4	3.1	1.9	5.0
Total	900.0	538.0	1438.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2018)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote	Race 1	2	Total
1	809	509	1318
2	72	32	104
3	5	1	6
4	1	1	2
Total	887	543	1430

Column Percentages Table

RegVote	Race 1	2	Total
1	91.21%	93.74%	92.17%
2	8.12%	5.89%	7.27%
3	0.56%	0.18%	0.42%
4	0.11%	0.18%	0.14%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote	Race 1	2	Total
1	817.5	500.5	1318.0
2	64.5	39.5	104.0
3	3.7	2.3	6.0
4	1.2	0.8	2.0
Total	887.0	543.0	1430.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2019)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote \ Race	1	2	Total
1	808	528	1336
2	69	27	96
3	1	2	3
4	1	3	4
Total	879	560	1439

Column Percentages Table

RegVote \ Race	1	2	Total
1	91.92%	94.29%	92.84%
2	7.85%	4.82%	6.67%
3	0.11%	0.36%	0.21%
4	0.11%	0.54%	0.28%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote \ Race	1	2	Total
1	816.1	519.9	1336.0
2	58.6	37.4	96.0
3	1.8	1.2	3.0
4	2.4	1.6	4.0
Total	879.0	560.0	1439.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2020)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote	Race 1	2	Total
1	837	466	1303
2	72	25	97
3	3	2	5
4	4	0	4
Total	916	493	1409

Column Percentages Table

RegVote	Race 1	2	Total
1	91.38%	94.52%	92.48%
2	7.86%	5.07%	6.88%
3	0.33%	0.41%	0.35%
4	0.44%	0.00%	0.28%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote	Race 1	2	Total
1	847.1	455.9	1303.0
2	63.1	33.9	97.0
3	3.3	1.7	5.0
4	2.6	1.4	4.0
Total	916.0	493.0	1409.0

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	(Race <> 3,4,5,6,7,8) AND (DataYear = 2021)
Row Variable	RegVote
Column Variable	Race

Counts Table

RegVote	Race 1	2	Total
1	817	490	1307
2	66	28	94
3	12	1	13
4	4	1	5
Total	899	520	1419

Column Percentages Table

RegVote	Race 1	2	Total
1	90.88%	94.23%	92.11%
2	7.34%	5.38%	6.62%
3	1.33%	0.19%	0.92%
4	0.44%	0.19%	0.35%
Total	100.00%	100.00%	100.00%

Expected Counts Assuming Independence Table

RegVote	Race 1	2	Total
1	828.0	479.0	1307.0
2	59.6	34.4	94.0
3	8.2	4.8	13.0
4	3.2	1.8	5.0
Total	899.0	520.0	1419.0

Appendix 5c. NCSS Contingency Table output by year, 2105-2021, SSRC Survey Data on Voting Frequency

Analysis based on SSRC data with calculations by author using the NCSS statistical package

Race Code:
1 = White
2 = Black
3 = AIAN (American Indian, Alaskan Native)
4 = API (Asian, Pacific Islander)
5 = Multiracial
6 = other
7 = not sure
8 = refused

Voting Frequency:
1 = Always Votes
2 = Nearly Always Votes
3 = Votes Part of the Time
4 = Seldom Votes
5 = Never Vote
6 = Don't Know
7 = Refused

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2015
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	517	203	71	31	18	4	3	847
2	368	90	47	25	17	0	0	547
3	5	0	0	0	0	0	0	5
4	1	1	2	1	0	0	0	5
5	10	3	0	0	2	0	0	15
6	1	0	0	0	1	0	0	2
8	12	3	2	1	2	0	0	20
Total	914	300	122	58	40	4	3	1441

The number of rows with at least one missing value is 137

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	61.04%	23.97%	8.38%	3.66%	2.13%	0.47%	0.35%	100.00%
2	67.28%	16.45%	8.59%	4.57%	3.11%	0.00%	0.00%	100.00%
3	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
4	20.00%	20.00%	40.00%	20.00%	0.00%	0.00%	0.00%	100.00%
5	66.67%	20.00%	0.00%	0.00%	13.33%	0.00%	0.00%	100.00%
6	50.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	100.00%
8	60.00%	15.00%	10.00%	5.00%	10.00%	0.00%	0.00%	100.00%
Total	63.43%	20.82%	8.47%	4.02%	2.78%	0.28%	0.21%	100.00%

The number of rows with at least one missing value is 137

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2016
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	560	198	59	34	73	3	5	932
2	349	78	33	17	45	2	2	526
3	4	2	4	1	2	0	0	13
4	1	1	0	1	4	0	0	7
5	13	0	2	2	3	1	0	21
8	17	1	1	2	1	0	3	25
Total	944	280	99	57	128	6	10	1524

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	60.09%	21.24%	6.33%	3.65%	7.83%	0.32%	0.54%	100.00%
2	66.35%	14.83%	6.27%	3.23%	8.56%	0.38%	0.38%	100.00%
3	30.77%	15.38%	30.77%	7.69%	15.38%	0.00%	0.00%	100.00%
4	14.29%	14.29%	0.00%	14.29%	57.14%	0.00%	0.00%	100.00%
5	61.90%	0.00%	9.52%	9.52%	14.29%	4.76%	0.00%	100.00%
8	68.00%	4.00%	4.00%	8.00%	4.00%	0.00%	12.00%	100.00%
Total	61.94%	18.37%	6.50%	3.74%	8.40%	0.39%	0.66%	100.00%

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2017
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	534	185	65	34	73	3	6	900
2	347	73	52	21	37	6	2	538
3	6	2	1	1	1	1	0	12
4	1	2	0	0	2	0	0	5
5	12	4	3	1	4	0	1	25
6	3	2	2	2	4	0	0	13
8	17	2	0	3	0	0	0	22
Total	920	270	123	62	121	10	9	1515

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	59.33%	20.56%	7.22%	3.78%	8.11%	0.33%	0.67%	100.00%
2	64.50%	13.57%	9.67%	3.90%	6.88%	1.12%	0.37%	100.00%
3	50.00%	16.67%	8.33%	8.33%	8.33%	8.33%	0.00%	100.00%
4	20.00%	40.00%	0.00%	0.00%	40.00%	0.00%	0.00%	100.00%
5	48.00%	16.00%	12.00%	4.00%	16.00%	0.00%	4.00%	100.00%
6	23.08%	15.38%	15.38%	15.38%	30.77%	0.00%	0.00%	100.00%
8	77.27%	9.09%	0.00%	13.64%	0.00%	0.00%	0.00%	100.00%
Total	60.73%	17.82%	8.12%	4.09%	7.99%	0.66%	0.59%	100.00%

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2018
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	441	238	69	35	22	2	2	809
2	318	105	52	13	18	3	0	509
3	1	2	1	0	2	0	0	6
4	1	0	1	0	0	0	0	2
5	11	7	2	2	2	1	0	25
6	4	1	0	4	1	0	0	10
7	1	0	0	1	0	0	0	2
8	9	3	0	0	0	0	0	12
Total	786	356	125	55	45	6	2	1375

The number of rows with at least one missing value is 125

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	54.51%	29.42%	8.53%	4.33%	2.72%	0.25%	0.25%	100.00%
2	62.48%	20.63%	10.22%	2.55%	3.54%	0.59%	0.00%	100.00%
3	16.67%	33.33%	16.67%	0.00%	33.33%	0.00%	0.00%	100.00%
4	50.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	100.00%
5	44.00%	28.00%	8.00%	8.00%	8.00%	4.00%	0.00%	100.00%
6	40.00%	10.00%	0.00%	40.00%	10.00%	0.00%	0.00%	100.00%
7	50.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	100.00%
8	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Total	57.16%	25.89%	9.09%	4.00%	3.27%	0.44%	0.15%	100.00%

The number of rows with at least one missing value is 125

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2019
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	487	203	67	36	10	3	2	808
2	346	83	60	16	20	1	2	528
3	7	2	1	0	2	0	0	12
4	2	0	1	1	1	0	0	5
5	14	6	3	1	1	0	0	25
6	5	2	1	1	0	0	0	9
8	11	1	3	1	1	0	1	18
Total	872	297	136	56	35	4	5	1405

The number of rows with at least one missing value is 122

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	60.27%	25.12%	8.29%	4.46%	1.24%	0.37%	0.25%	100.00%
2	65.53%	15.72%	11.36%	3.03%	3.79%	0.19%	0.38%	100.00%
3	58.33%	16.67%	8.33%	0.00%	16.67%	0.00%	0.00%	100.00%
4	40.00%	0.00%	20.00%	20.00%	20.00%	0.00%	0.00%	100.00%
5	56.00%	24.00%	12.00%	4.00%	4.00%	0.00%	0.00%	100.00%
6	55.56%	22.22%	11.11%	11.11%	0.00%	0.00%	0.00%	100.00%
8	61.11%	5.56%	16.67%	5.56%	5.56%	0.00%	5.56%	100.00%
Total	62.06%	21.14%	9.68%	3.99%	2.49%	0.28%	0.36%	100.00%

The number of rows with at least one missing value is 122

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2020
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	571	159	45	41	18	0	3	837
2	336	62	41	12	7	4	4	466
3	4	1	2	2	0	0	0	9
4	5	1	0	2	1	0	0	9
5	5	11	3	5	3	0	0	27
6	0	0	2	0	0	0	0	2
7	2	0	0	0	0	0	0	2
8	20	4	3	2	0	0	1	30
Total	943	238	96	64	29	4	8	1382

The number of rows with at least one missing value is 123

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	68.22%	19.00%	5.38%	4.90%	2.15%	0.00%	0.36%	100.00%
2	72.10%	13.30%	8.80%	2.58%	1.50%	0.86%	0.86%	100.00%
3	44.44%	11.11%	22.22%	22.22%	0.00%	0.00%	0.00%	100.00%
4	55.56%	11.11%	0.00%	22.22%	11.11%	0.00%	0.00%	100.00%
5	18.52%	40.74%	11.11%	18.52%	11.11%	0.00%	0.00%	100.00%
6	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%
7	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
8	66.67%	13.33%	10.00%	6.67%	0.00%	0.00%	3.33%	100.00%
Total	68.23%	17.22%	6.95%	4.63%	2.10%	0.29%	0.58%	100.00%

The number of rows with at least one missing value is 123

Cross Tabulation Report

Dataset	C:\...\SSRC SURVEY DATA BY COUNTY\SSRC SURVEY DATA V1.NCSS
Filter	DataYear = 2021
Row Variable	Race
Column Variable	FreqVote

Counts Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	464	213	79	34	24	2	1	817
2	327	82	40	23	16	2	0	490
3	8	1	1	1	1	0	0	12
4	5	2	3	2	0	0	0	12
5	8	4	2	2	3	0	0	19
6	2	1	1	0	1	0	0	5
8	23	2	4	0	2	0	0	31
Total	837	305	130	62	47	4	1	1386

The number of rows with at least one missing value is 132

Row Percentages Table

Race	FreqVote							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**Total**
1	56.79%	26.07%	9.67%	4.16%	2.94%	0.24%	0.12%	100.00%
2	66.73%	16.73%	8.16%	4.69%	3.27%	0.41%	0.00%	100.00%
3	66.67%	8.33%	8.33%	8.33%	8.33%	0.00%	0.00%	100.00%
4	41.67%	16.67%	25.00%	16.67%	0.00%	0.00%	0.00%	100.00%
5	42.11%	21.05%	10.53%	10.53%	15.79%	0.00%	0.00%	100.00%
6	40.00%	20.00%	20.00%	0.00%	20.00%	0.00%	0.00%	100.00%
8	74.19%	6.45%	12.90%	0.00%	6.45%	0.00%	0.00%	100.00%
Total	60.39%	22.01%	9.38%	4.47%	3.39%	0.29%	0.07%	100.00%

The number of rows with at least one missing value is 132

Appendix 6. David A. Swanson CV (2022 V17)

Curriculum Vitae

David A. Swanson

1 Lake Louise Drive #19
Bellingham, Washington 98229
&
8924 Evening Star Drive
Las Vegas, NV 89134

email: david.swanson@ucr.edu

Webpage : https://profiles.ucr.edu/app/home/profile/dswanson

I. Education

Ph.D.	1985	Sociology/Population Studies	University of Hawai`i
M.A.	1976	Sociology/Population Studies	University of Hawai`i
Graduate Studies Diploma	1974	Social Science/Swedish	University of Stockholm
B.Sc.	1972	Sociology/Mathematics	Western Washington State College

(Credit courses also completed at the University of Puget Sound (9 semester hours) and Columbia Basin College (30 quarter hours)

G.

H. **II. Academic and Related Positions**

A. **Primary Appointments**

Center for Population Research Portland State University	2022-2023	Research Associate
Aoyama Gakuin University, Tokyo, Japan	October 27 to November 11 2018	Visiting Professor
University of California Riverside Department of Sociology	2007 - 2018	Professor of Sociology (emeritus, 2018)
University of Mississippi Department of Sociology & Anthropology	2003-2007	Professor of Sociology and Chair
Helsinki School of Economics Mikkeli Business Campus BScBA Program, BBA & MBA Program	2000 to 2003 1999-2000 1997 to 1999	Dean Acting Dean Visiting Faculty
Portland State University, Department of Urban Studies	1995 to 1997	Professor of Urban Studies
University of Arkansas at Little Rock, College of Business, Institute for Economic Advancement	1992 to 1995	Senior Demographic Specialist

Pacific Lutheran University, Department of Sociology	1987 to 1992	Associate Professor (Tenure Awarded)
Bowling Green State University, Department of Sociology	1985 to 1987 1984 to 1985	Assistant Professor Visiting Instructor
Alaska Department of Labor	1981-1983	State Demographer
Population, Enrollment, and Economic Studies Division, Washington State Office of Financial Management	1977-1981	Research Investigator
East-West Population Institute	1975 to 1977	Staff Researcher

B. Conjoint and Miscellaneous Appointments

M.P.S in Applied Demography Dept. of Sociology & Criminology Penn State University	2019	Lecturer (On-line) Appdem 804 Business Demography Appdem 805 Demog & Public Policy
Center for Studies in Demography & Ecology, University of Washington	2017-	Faculty Affiliate
Demographic and Social Analysis Program, Department of Sociology University of California Irvine	2007- 2019	Affiliated Faculty
Blakely Center for Sustainable Suburban Development University of California Riverside	2008 - 2009	Interim Director
Blakely Center for Sustainable Suburban Development University of California Riverside	2007-2018	Research Associate
Social Science Research Center Mississippi State University	2004-	Research Fellow
Center for Population Studies University of Mississippi	2003-2007	Director
Theodore Roosevelt Institute	2002-2011	Senior Fellow
HELP University, Malaysia	April, 2003	Guest Lecturer

Mikkeli Polytechnic College, International Business Program	Spring, 2001 Spring, 2000	Guest Lecturer in Statistics Guest Lecturer in Statistics
Portland State University Center for Population and Census	1995 -1997	Director
University of Arkansas at Little Rock, Institute for Economic Advancement	1992 -1995	Director, Demographic Research Unit
University of Arkansas for Medical Sciences, National Center for Rural Mental Healthcare Research	1992-1995	Research Scientist
Pacific Lutheran University, Center for Social Research And Public Policy	1987 -1992	Director
Pacific Lutheran University, Department of Sociology	1990-1991	Acting Chair
Bowling Green State University, Population and Society Research Center	1984-1987	Assistant Director for Population Research
University of Alaska, Juneau School of Business Administration	1983	Lecturer
National Science Foundation “Research For Undergraduates" Demographic Research Laboratory Western Washington University	Summer, 1994 Summer, 1991 Summer, 1989 Summer, 1988	Workshop Instructor Workshop Instructor Workshop Instructor Workshop Instructor
ICPSR Summer Program in Quantitative Methods, University of Michigan	July, 1989 July, 1988 July, 1987 July, 1986	Guest Lecturer Workshop Instructor Workshop Instructor Workshop Instructor
Argonne National Laboratory,	Summer, 1987	Faculty Research Participant

III. Teaching Experience

A. Credit Courses

1. Undergraduate Courses

Sociology Courses

Introductory Sociology
Population, Poverty, and Hunger
Introductory Statistics
Research Methods
Urban Sociology

Population Studies/Demography Courses

Introduction to Population Studies
Introduction to Applied Demography
Demographic Analysis and International Business
Market Demographics
Population Analysis
Population Forecasting
The Baby Boom
World Population Issues

i. Business Administration Courses

Introductory Statistics for Business Administration
Business Mathematics
Demographic Methods and International Business
Quantitative Methods in Business
Business Forecasting
Market Demographics
Introduction to SPSS

2. Graduate Courses

Sociology Courses

Research Methods
Multivariate Analysis

Population Studies/Demography Courses

Business Demographics
Demographic Methods
Advanced Market Demographics
Applied Demography
Population Forecasting
Population Estimation Methods

Business Administration Courses

Business Forecasting
Refresher Mathematics for MBA Students
Quantitative Methods

I. **B. Non-Credit and Continuing Education Courses and Topics**

Census and Survey Administration	Population Estimation
Census and Survey Methods	Population Forecasting
Interviewer Training	Enrollment Forecasting

IV. Thesis Supervision

A. Committees chaired

2014. *Overcrowding as a Determinant of Violence in California State Prisons.* B. A. Honors Thesis by John Maldonado. Department of Sociology. University of California Riverside.

2011 *Demographic Analysis and the U.S. Hispanic Population.* Ph.D. Dissertation by Matt Kaneshiro, Department of Sociology, University of California Riverside.

2007. *A Comparison of Housing Unit Estimates to the American Community Survey Master Address File*. Sociology M.A. Thesis completed by A. J. Reese. Department of Sociology and Anthropology, University of Mississippi.

2004 *Towards International Standardisation of Accounting: IAS and the Accounting Practises in Finland and Russia*. Senior (BScBA) Thesis completed by O. Nieminen, Mikkeli Business Campus, Helsinki School of Economics and Business Administration

2003 *The Impact of International Mergers and Acquisitions on Brand Strategies*. Senior (BScBA) Thesis completed by N. Yli-Pirilä, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

2003 *International Franchising and Investment.* Senior (BScBA) Thesis completed by M. Wainwright, Mikkeli Business Campus, Helsinki School of Economics and Business Administration

2002 *Mobile Commerce: Hype or Reality?* Senior (BScBA.) Thesis completed by P. Louko, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

2002 *Transport Perspectives within the European Union.* Senior (BScBA.) Thesis completed by O. Martychtchenko, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

2001 *Investing in African Economies: Inhibitions and Prospects – A General Overview*. Senior (BBA.) Thesis completed by P. Kalubi, Mikkeli Business Campus, Helsinki School of Economics and Business Administration.

1996 *Population Estimation Techniques Using the Housing Unit Method*. Master of Urban Science (M.U.S.) Research Paper completed by Tom Bryan, Department of Urban Studies, Portland State University (Co-chaired with George Hough).

1987 *Measuring Propensity: The Association between Socioeconomic Variables and Differential Migration for Ohio, 1975-1980*. M.A. Thesis completed by K. A. Wright, Department of Sociology, Bowling Green State University.

1986 *Estimation of Net Migration among Major regions in Iraq, 1957- 1977,* M.A. Thesis completed by A. Al-Jiboury, Department of Sociology, Bowling Green State University.

1986 *An Interpretation of the Ratio-Correlation Method of Population Estimation.* M.A. Thesis completed by R. Prevost, Department of Sociology, Bowling Green State University.

B. Committees of which a member

2017 A Descriptive Profile of the Multiracial Asian Population in the United States. Ph.D. Dissertation completed by Sooji Han, Department of Sociology, University of California Riverside

2014 A Spatial Examination of Residency Restriction Legislation: The Impact of Social Disorganization and Social Services. Ph.D. Dissertation completed by Erin Wolbeck, Department of Sociology, University of California Riverside

2012. Exploring the Decision-Making Process in Relation to Legitimacy Assignment. Ph.D. Dissertation completed by Adam Sanford, Department of Sociology, University of California Riverside.

2005 *Unique Competencies of International Non-Governmental Organizations (INGOs): Empirical Explorations from India*. Ph.D. Dissertation completed by Pranaya Kumar Swain, Department of Sociology, Indian Institute of Technology-Kanpur, Kanpur, Utter Pradesh, India (External Examiner).

1991 *The Influence of Parents on the Drinking Patterns of Their Teenage Children*. M.A. Thesis completed by R. D. Jacobsen, Division of Social Sciences, Pacific Lutheran University.

1990 *Austrian National Identity and the Dokumentationsarchis des Osterreichischen Widerstandes*. M.A. Thesis completed by F. Hornquist, Division of Social Science, Pacific Lutheran University.

1989 *A Model for Fertility Change*. Ph.D. Dissertation completed by N. Sugathan, Department of Demography, University of Kerala, (External Examiner).

1989 *The Spruce Program: A Profile of the Participants*. M.A. Thesis completed by K. Roe, Division of Social Science, Pacific Lutheran University.

1986 *A Content Analysis of Music Videos*. M.A. Thesis completed by L. Olsen, Department of Radio, Television, and Film, Bowling Green State University.

1986 *Projection of Flexible Age-specific Migration Rates: An Examination of Pittenger's Simplified Techniques*. M.A. completed by B. Bennett, Department of Sociology, Bowling Green State University.

1986. *Alienation Correlates of Marital Dissolution: A Longitudinal Study*. Ph.D. Dissertation completed by Yvonne Woods, Department of Sociology, Bowling Green State University.

V. <u>Professional Development</u>

Participant in (and Successful completion of) Records Management Training, ALCS, June, 2016

Participant in (and Successful completion of) Information Security Training, ALCS, June, 2016.

Participant, Population Projections Workshop, Association for Latin American Population Studies, 16 November 2010.

Participant, U.S. Census Bureau Workshop, “The American Community Survey,” 22 September 2010.

Participant, U.S. Census Bureau Webinar, “The American Community Survey: Tracking How We Change with Multi-Year Estimates,” 18 November 2009.

Participant, Nielsen Claritas Webinar, “Small Area Population Estimates,” 10 November 2009.

Special Sworn Status. US Census Bureau. 2007 (renewed, 2008).

Participant, “Title 13 Training, Confidentiality and Privacy.” US Census Bureau, Completed, March, 2007 and renewed November 2008.

Participant, “The Basic Course in the Protection of Human Research Subjects,” University of Mississippi, Completed, October, 2005.

Participant, RAND Summer Institute on Aging. RAND, Santa Monica, California. July, 2004.

Participant, Fulbright German Studies Seminar. Berlin, Rostock, and Bonn, Germany. June, 2003.

Participant in (and successful completion of), “Finnish for Foreigners II,” Kuopio University, Kuopio, Finland, July-August, 2001

Participant in (and successful completion of), “Finnish for Foreigners I,” Mikkeli Polytechnic College, Mikkeli, Finland, July, 2000

Participant in (and successful completion of), “Ethics in Business,” Science Applications International Corporation, 1998, 1999

Participant in (and successful completion of), Regulatory and Licensing Training Program, U.S. Department of Energy, Yucca Mountain Project, Las Vegas, Nevada, November, 1998

Participant, “The American Community Survey,” American Statistical Association, Los Angeles, California, August, 1997

Participant, “Marketing and Census 2000,” Seattle, Washington, August, 1996

Participant in and successful completion of), “Refresher Swedish,” Portland State University, Portland, Oregon, Fall, 1995.

Participant in (and successful completion of), “Introductory Finnish,” Portland State University, Portland, Oregon, Fall, 1995

Participant, “Census 2000 Content and Access,” Cincinnati, Ohio, April, 1993.

Participant, “Arkansas State Census Data Center Annual Meeting,” Little Rock, Arkansas, October, 1992.

Participant, “The Strategic Planning Process,” Pacific Lutheran University, January, 1992.

Participant, “1990 Census Content,” U.S. Bureau of the Census (Seattle Regional Office), Pacific Lutheran University, November, 1990.

Participant, “Programs and Products of the U.S. Bureau of the Census,” U.S. Bureau of the Census (Detroit Regional Office) Bowling Green State University, April, 1987.

Participant, “Proposal Writing and Research Administration,” College of Education, Bowling Green State University, Spring Semester, 1987.

Participant, ”An Introduction to the Bootstrap,” Continuing Education Session, American Statistical Association, Chicago, Illinois, August, 1986.

Participant, First Annual Research Conference, U.S. Bureau of the Census, April, 1985.

Participant in (and successful completion of),, “Performance Evaluation for Supervisory Personnel,” Alaska Department of Labor, September, 1983.

Participant, “Planning for the 1990 Census,” Continuing Education Session, American Statistical Association, Toronto, Ontario, Canada, August, 1983.

Participant, (and successful completion of), “Successful Project Management,” Alaska Department of Personnel, Juneau, Alaska, October, 1981.

Participant in (and successful completion of), “MARK-IV Programming,” Informatics, Inc., Olympia, Washington, 1980.

Participant in (and successful completion of), “IBM OS JCL” and “WYLBUR,” Washington State University, Olympia, Washington, 1979.

Participant (and successful completion of), “Zero-Based Budgeting,” Washington Office of Financial Management, Olympia, Washington, 1978.

Participant, “Funding Public Higher Education,” Washington Office of Financial Management-Washington Higher education Coordinating Board, Olympia, Washington, 1977.

Participant, “Didactic Seminar on Causal Modeling,” American Sociological Association, San Francisco, California, August, 1976.

Participant in (and successful completion of), “Swedish I,” “Swedish II,” and “Swedish III,” Stockholm University, Stockholm, Sweden, 1973-74.

Participant, “1970 Census Products and Their Use,” Hawaii Department of Administration, Honolulu, Hawaii, May, 1973.

Participant in (and successful completion of), “Introduction to Basic Assembly Language (BAL) Programming,” University of Hawaii, Honolulu, Hawaii, Spring, 1973.

VI. Research Projects and Grants

J. **A. Research Grants and Contracts Let and Administered**

"Survey of Food Consumption and Lifestyles," Nye and Lincoln counties, Nevada, ($100,000). 1996-97, University of Nevada Las Vegas

“1984 Residential Energy Survey” ($250,000). 1983-84, Walker Information, Inc.

“Cooperative Publication on Alaskan Native Demography” ($4,000). 1984, Alaska Department of Labor.

“Chloropleth Computer Mapping” ($3,500). 1983, Alaska Department of Labor.

“Public Opinion Survey”, Washington State Board for Community College Education, ($25,000). 1981Gilmore Research Group.

"Revision to the Higher Education Enrollment Projection System (HEEPS)," ($5,000), 1980, Washington State Office of Financial Management.

"Population Forecasting System" ($30,000), 1980, Washington State Office of Financial Management.

K. **B. Research Contracts Awarded**

Population Health Impact of Reduced Risk Tobacco Products ($320,000). ALCS, Inc. (Principal Investigator) 2013-2018.

Hopi Tribal Population Dynamics and Forecast ($70,000). Hopi Tribe. 2017-2019.

Population Forecasting System Evaluation ($20,000) Washington State Office of Financial Management (Co-Principal Investigator with J. Tayman), 2015-2016

Accuracy Study ($228,000). ESRI (Co-Principal Investigator, Cropper GIS), 2011-2012.

Population Projections for Native Hawaiians. ($16,078). Policy Analysis and System Evaluation, Kamehameha Schools, Honolulu, Hawaii. March, 2008 (Principal Investigator, McKibben Demographic Research).

Evaluation of methods used to estimate vacancy rates and average persons for households ($25,000), U. S. Bureau of the Census, Summer 2007- Fall 2008.
Multi-Year Estimates, American Community Survey, ($5,500). U. S. Bureau of the Census, Summer, 2007.

Evaluation of Methods used to Estimate the Size and Composition of the Foreign-Born Population ($27,000). U.S. Bureau of the Census, September, 2006 (through Sabre Systems, Inc.), Spring 2007 - Fall 2007.

Enrollment Forecasting and Attendance Boundary Study. ($12,000). Harrison County School District, Biloxi, MS., Fall, 2006. (Principal Investigator, J. McKibben).

Small Area Labor Force and Population Projections. ($7,500). Southern Nevada Regional Planning Commission (Subcontract with Theodore Roosevelt Institute, Las Vegas, NV), Summer, 2006

Population Projections of the Chinese Population by Age and Sex for 22 Selected Counties. ($1,500). Third Wave Research, Inc. Madison, Wisconsin. November 2004.

Population Projections for Native Hawaiians. ($9,871.24). Policy Analysis and System Evaluation, Kamehameha Schools, Honolulu, Hawaii. May 2004.

Forecasting Headcount Enrollment at the Southaven Satellite Campus, ($2,000). Office of Outreach and Continuing Education, University of Mississippi. December 2003.

Estimation and Forecasting of U.S. Lifestyle Segments, 2002 to 2012 ($6,500), Third Wave Research, Inc., Madison, Wisconsin. October, 2002.

Review and Revision of Demographic Forecasts for Jubail, Saudi Arabia ($20,000), Parsons Brinckerhoff, Inc., Jubail, Saudi Arabia, July, 1999.

Demographic Mentoring and Instruction ($3,000), Western Washington University, Bellingham, Washington, 1999.

Washoe County Population Estimation System Development ($24,900), Washoe County Nevada. 1999.

Redesign of the Nevada State Population Forecasting Model ($12,000), Nevada Consulting Alliance/Nevada State Demographer's Office. 1998-99.

Census Enumerator, Crew Leader, and Supervisor Training, Neighborhood Census Project ($2,500), Portland Multnomah Progress Board (funded by a grant from the Anne E. Casey Foundation), Portland, Oregon. 1997.

Evaluating Response Rates for the American Community Survey, Portland Test Site, ($2,000) U.S. Bureau of the Census. 1997.

Estimating Household Income from Incomplete Data ($25,000), Metromail, Inc. 1997.

Liberal Education Profile, Portland State University ($70,000), Portland State University. 1997 (with D. Atkinson).

Forecasting Enrollment and Attendance Zone Changes for the Hillsboro 1J District ($77,000), Hillsboro1J School District, Oregon, 1995-1996 (with D. Lycan, G. Hough, and I. Sharkova).

Forecasting Enrollment for the Newberg School District ($5,000), Newberg School District, Oregon, 1996.

Estimating and Forecasting U.S. Lifestyle Segments, 1990 to 2010 ($5,000), Third Wave Research, Inc. (with T. Bryan and G. Hough)

Omnibus Contract for Income Surveys, Community Development Block Grants ($18,000), Oregon Department of Economic Development, 1996.

Tribal Membership Forecast ($1,400). The Confederated Tribes of the Grand Ronde Community of Oregon, 1995.

"Demographic Services" for Study included in ADAMNA Grant No. P50 MH48197-03, entitled "Center For Rural Mental Health Care Research" ($7,198). University of Arkansas for Medical Sciences, 1992-93.

"Kitsap County Open Space Poll." Consultation and Training of a Volunteer Organization to conduct Polling in support of a proposed open-space Bond Issue, Kitsap County, Washington ($3,000). Kitsap Citizens for Open Space, 1992.

"Pierce County Private Industry Council, Evaluation of Programs." ($25,000). Pierce County Private Industry Council. 1991. (with J. Schiller and K. McDade).

Pierce County Solid Waste Management Survey: ($12,000). Jacobsen Ray McLaughlin and Fillips, Inc., 1991.

"1991 Tacoma-Pierce County Quality of Life Survey." Module on Mental Health Issues ($3,000). Greater Lakes Mental Health Foundation, 1991.

"Implementation of the REMI Socioeconomic Forecasting Model in support of the SAIC/YMPO socioeconomic monitoring program and SCA model development." ($29,000). Science Applications International Corporation, Yucca Mountain Project Office. U.S. Department of Energy, 1991.

"1990 Tacoma-Pierce County Quality of Life Survey." Module on health Issues ($6,000). Tacoma-Pierce County Health Department,.

1990.“Implementation of the REMI Socioeconomic Forecasting Model, in support of the SAIC/YMPO socioeconomic monitoring program and SCA model development.” ($38,000). Science Applications International Corporation, Yucca Mountain Project Office. U.S. Department of Energy, 1990.

“Review and Analysis of the Demographic Module of the EDFS-S REMI Module.” ($6,380). Science Applications International Corporation, Yucca, Mountain Project Office, U.S. Department of Energy, 1989-90.

“Small Area Model Development for the High Level Radioactive Waste Repository.” ($10,000). Battelle Human Affairs Research Centers, 1989.

“1989 Tacoma-Pierce County Solid Waste Management Survey.” module on hazardous and other household wastes ($6,000). Pierce County Waste Management Division, Pierce County, Washington, 1989.

“Pierce County Solid Waste Management Survey.” ($17,000). Pierce County, Washington (Co-Investigator with J. Schiller), 1988.

1988 “Tacoma Area Quality of Life Survey,” module on racial issues ($2,000). Tacoma Urban League (Co-Investigator with J. Schiller), 1988.

“Evaluation of the Demographic Component of the HARC/REMI Economic Demographic Model ($3,000). Battelle Human Affairs Research Centers, 1988.

‘Survey of Applied Demographers.” ($1,500). Population Association of America, 1986-87.

“Life Tables By Sex, 1980 and 1970 and Net Migration By Age and Sex, 1970-80 and 1960-70 For Ohio.” ($750). Final Report submitted to the Ohio Data User’s Center, Department of Development, December, 1984.

“Technical Data Services.” ($2,500). Alaska Reapportionment Board, 1981. 1980 Census Computer Tape Acquisition and Evaluation” ($3,000). Washington State Redistricting Board, 1979.

C. Research Grants Awarded

“Measuring Health Status for Populations with Incomplete Census & Vital Statistics Information: Estimating Life expectancy at Birth.” ($9,861). COR Fellowship. University of California Riverside. 2017.

“Socio-Economic Status, Race, and Life Expectancy in Los Angeles County, 1970-1990: A Proof of Concept Proposal for $20,100 in Funds under Strategic Goal 1. ($20,100) College of Humanities, Arts, and Social Sciences, University of California (Principal Investigator). 2011-2012.

“Virtual Co-laboratory for Policy Analysis in Greater Los Angeles” ($2,300,000). UC Multicampus Research Program and Initiatives, University of California. (Co-Investigator with Richard Arnott et al.). 2010-2014.

“Perceptions of Disaster Relief and Recovery: Analyzing the Importance of Social and Kinship Networks Among Hurricane Katrina Refugees on the Mississippi Gulf Coast.” ($96,212). National Science Foundation (Co-Principal Investigator with F. Forgette and M. Van Boening), 2005-6.

“Interdisciplinary Working Group to Develop a Strategy for the Development of an NICHD Population and Health Research center in Mississippi.” ($9,400). Office of Research and Sponsored Programs, University of Mississippi (Principal Investigator, with Co-Investigators, Fazlay Faruque and Peggy Hewlett). 2005-6.

“Applied Demographic Research in Migration” ($40,000). National Science Foundation (Co-Director with L.M. Tedrow), 1991.

"Applied Demographic Research in Migration" ($40,000). National Science Foundation (Co-Director with L.M. Tedrow), 1989.

"Applied Demographic Research in Migration" ($40,000). National Science Foundation (Co-Director with L.M. Tedrow), 1988.

"VCR Survey" ($1,500). Kaltenborn Foundation (with B. Klopfenstein), 1987.

VCR Survey" ($5,000). National Association of Broadcasters (with B. Klopfenstein), 1987.

"Pilot Survey of VCR Use" ($1,500). Kaltenborn Foundation, 1986.

"Pilot Survey of VCR Use" ($2,730). Bowling Green State University, 1986.

"Socioeconomic Correlates of Infant Mortality: Ohio, 1980" ($90,000). U.S. Department of Health and Human Services. (Co-principal Investigator with E.G. Stockwell and J. Wicks), 1985-86.

D. Program Grants Awarded

"Transition Funding for the BScBA Degree Conversion, Phase II (€100,000), European Union Objective 1 Program (with V-P. Heiskanan). 2002

"Transition funding for the BScBA Degree Conversion, Phase I (€200,000), European Union Objective 1 Program (with V-P. Heiskanen), 2001

"BBA Program Development" (€200,000) European Union Objective 1 Program (with J. Masalin), 2000.

"Academic Challenge: Developing an Applied Demography Program, Bowling Green State University" ($121,336). Ohio Board of Regents (with M. Pugh et al.), 1986.

VII. Publications

A. Books and Monographs

Socio-demographic Perspectives on the COVID-19 Pandemic. (Forthcoming) Co-editor with Richard Verdugo. Information Age Publishing, Charlotte, NC.

Global Populations in Transition (2018). Co-author with Jo Martins and Fei Guo. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Cohort Change Ratios and Their Applications. (2017). Co-author with Jack Baker, Jeff Tayman, and Lucky Tedrow. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

The Frontiers of Applied Demography. (2016) Editor. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

The Washington State Census Board and Its Demographic Legacy. (2016). Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Methods of Demographic Analysis. (2014). Co-author with Farhat Yusuf and Jo Martins. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

A Practitioner's Guide to State and Local Population Projections. (2013). Co-author with Stanley K. Smith and Jeff Tayman. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Subnational Population Estimates. (2012). Co-author with Jeff Tayman. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Opportunities and Challenges for Applied Demography in the 21st Century. (2012). Co-Editor with Nazrul Hoque. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York .
.
Learning Statistics: A Manual for Sociology Students.(2012). Cognella Academic Publishing/University Readers. San Diego, CA.

An Introduction to Consumer Demographics and Behaviour: Markets are People. (2011). Co-author with Farhat Yusuf and Jo Martins. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Estimating Characteristics of the Foreign-Born by Legal Status: An Evaluation of Data and Methods (2011). Co-author with Dean Judson. Springer Briefs in Population Studies, Volume 2, Springer, B.V. Press. Dordrecht, Heidelberg, London, and New York.

CEMAF as a Census Method: A Proposal for a Re-Designed Census and an Independent Census Bureau. (2011). Co-author with Paula Walashek. Springer Briefs in Population Studies, Volume 1, Springer, B.V. Press. Dordrecht, Heidelberg, London, and New York

Applied Demography in the 21st Century. (2008). Co-Editor with Steve Murdock. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

Southern Nevada Regional Economic Study (2006). Co-author with Alan Schlottmann, Robert Schmidt, and Edward Feser. Theodore Roosevelt Institute. Irvine, CA and Las Vegas, NV.

The Methods and Materials of Demography, 2nd Edition.. (2004). Co-Editor with Jacob Siegel. Academic/Elsevier Press: Los Angeles.

Population Projections for States and Local Areas: Methodology and Analysis. (2001). Co-author with Stanley K. Smith and Jeff Tayman. Kluwer Academic /Plenum Press: New York.

Issues In Applied Demography: Proceedings of the 1986 National Conference (1987) Co-Editor with Jerry Wicks. PSRC Press: Bowling Green, Ohio.

Socioeconomic Correlates of Infant Mortality-Ohio, 1980. Final Report for the Maternal and Child Health and Crippled Service Program, Grant MCJ-390520-01 (1986) Co-author with Edward G. Stockwell and Jerry Wicks.

Alaska Population Overview: 1982. Alaska Department of Labor (1983). Editor.

Alaska Population Overview: 1981. Alaska Department of Labor (1982). Editor.

B. Book and Monograph Chapters

Swanson, D. R. Sewell and T. Bryan (2021). The Effect of the Differential Privacy Disclosure Avoidance System Proposed by the Census Bureau on 2020 Census Products: Four Case Studies of Census Blocks in Alaska. pp. 2058-2062 in JSM 2021: Statistics, Data, and the Stories They Tell. American Statistical Association, Alexandria, VA.

“Estimating the underlying infant mortality rates for small populations: A case study of counties in Estonia.” (2021), pp. 3-21 in R. Verdugo (Ed). The Demographic Crisis in Europe: Selected Essays. Information Age Publishing. Charlotte, NC.

"Constructing Life Tables from the Kaiser Permanente Smoking Study and Applying the Results to the Population of the United States." (2020) pp.115-152 in B. Jivetti and M. N. Hoque (eds.). Population Change and Public Policy. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with S. Chow and T. Bryan).

"The Number of Native Hawaiians and Part-Hawaiians in Hawai'i, 1778 to 1900: Demographic Estimates by Age." (2020) pp. 345-356 in B. Jivetti and M. N. Hoque (eds.). Population Change and Public Policy. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

"A Bio-demographic Perspective on Inequality and Life Expectancy: An Analysis of 159 Countries for the Periods 1970-90 and 1990-2010." (2018) pp. 577- 613 in C.R. Rao and A. Rao (eds.), Handbook of Statistics, Vol. 38. Elsevier Press (with L. Tedrow).

"Foreword." (2016). pp. v-vi in T. Wilson, E. Charles-Edwards, and T. Bell (eds.) Demography for Planning and Policy: Australian Case Studies. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

"Demographics and Market Segmentation: China and India." (2016). pp. 3-19 in D. Swanson (ed.) The Frontiers of Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with J. Martins, F. Yusuf, and G. Brooks).

"Census Costs: Rationale for Re-designing Traditional Census Data Collection Methodology with the Census-Enhanced Master Address File" (2016). pp. 287-301 in D. Swanson (ed.) The Frontiers of Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with A. Yacyshyn).

"A Long Term Test of the Accuracy of the Hamilton-Perry Method for Forecasting State Populations by Age."(2016). pp, 491-513 in D. Swanson (ed.) The Frontiers of Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with J. Tayman).

"Exploring Stable Population Concepts from the Perspective of Cohort Change Ratios: Estimating the Time to Stability and Intrinsic *r* from Initial Information and Components of Change." (2016) pp. 227-258 in R. Schoen (ed.). Dynamic Demographic Analysis. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with L. Tedrow and J. Baker).

"An Exploratory Examination of Population and Stability in Afghanistan." (2015). pp. 305-322 in R. Sáenz, N. Rodríguez, and D. Embrick (eds.). The International Handbook of the Demography of Race and Ethnicity. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with S. El-Badry).

"Applied Demography" (2015). pp. 839-844 in: James D. Wright (editor-in-chief). International Encyclopedia of the Social & Behavioral Sciences, 2nd edition, Vol 1. Oxford: Elsevier.

"On the Ratio-correlation Method of Population Estimation and Its Variants." (2014). pp. 93-118 in N. Hoque and L. Potter (eds.). Emerging Techniques in Applied Demography. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with J. Tayman).

"A Loss Function Approach to Examining ACS Estimates: A Case Study of 2010 "Person per Household" Estimates for California Counties" (2012). pp. 98-100 in (D. Cork, Ed.) Case Studies/Agenda Book, Workshop on the Benefits (and Burdens) of the American Community Survey. National Research Council, National Academy of Sciences, Washington, DC. (with George Hough).
http://sites.nationalacademies.org/cs/groups/dbassesite/documents/webpage/dbasse_073124.pdf

"DOMICILE 1.0: An Agent-Based Simulation Model for Population Estimates at the Domicile Level." (2012). pp. 345-370 in N. Hoque and D. A. Swanson (eds.) Opportunities and Challenges for Applied

Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with C. Griffith, M. Knight, and B. Long).

"Introduction." (2012) pp. 1-3 in N. Hoque and D. A. Swanson (eds.) Opportunities and Challenges for Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York (with N. Hoque).

"Disappearing Hispanics? The Case of Los Angeles County, California: 1990-2000." (2011) pp. 95-122 in R. Verdugo (ed.). The Demography of the Hispanic Population: Selected Essays. Charlotte, NC: Information Age Publishing. Charlotte, NC. (with M. Kaneshiro and A. Martinez).

"Applied Demography: Its Business and Public Sector Components." (2008) in Yi Zeng (ed.) The Encyclopedia of Life Support Systems, Demography Volume. UNESCO-EOLSS Publishers. Oxford, England. (with L. Pol).(Online at http://www.eolss.net/).

"Applied Demography at the Beginning of the 21st Century." (2008) pp. 3-12 in S. Murdock and D. Swanson (eds.). Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York. (with S. Murdock).

"Measuring Uncertainty in Population Data Generated by the Cohort-Component Method: A Report on Research in Progress." (2008) pp. 165-189 in S. Murdock and D. Swanson (eds.). Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.

"Opportunities and Challenges for Applied Demography in the 21st Century" (2008). pp. 361-368 in S. Murdock and D. Swanson (eds.). Applied Demography in the 21st Century. Springer B.V. Press. Dordrecht, Heidelberg, London, and New York.. (with S. Murdock).

"Introduction." pp. 1 - 8 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles. (with J. Siegel).

"Internal and Short Distance Migration." pp. 493-522 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles. (with T. Bryan and P. Morrison).

"Population Projections." pp. 561-601 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004).Academic/Elsevier Press: Los Angeles. (with M.V. George, S. Smith, and J. Tayman).

"Glossary and Demography Timeline" pp. 751-786 in J. Siegel and D. Swanson (eds.) The Methods and Materials of Demography, Condensed Edition, Revised. (2004). Academic/Elsevier Press: Los Angeles. (with G.E. Stephan).

"Regional Survey." pp. 3-151 to 3-155 in Viability Assessment for A Repository at Yucca Mountain, Nevada. 1998. U.S. Department of Energy: Washington, D.C.

"Evaluation Approach for the Arkansas Pilot Rural Enterprise Center." pp. 114-119 in P. Shapira and J. Youtie (eds.) Evaluating Industrial Modernization Programs: Practices, Methods, and Results. 1995. Georgia Institute of Technology: Atlanta, GA. (with J. Opitz, C. Franklin, S. Miller, and F. Fenix).

"Confidence Intervals for Net Migration that Incorporate Measurement Errors in Census Counts." pp. 121-140 In K. V. Rao and J. Wicks (eds.) Issues in Applied Demography: Proceedings of the International Conference on Applied Demography. 1994. PSRC Press: Bowling Green, Ohio (with H. Kintner).

"Estimating Vital Rates from Corporate Databases: How Long Will General Motors' Salaried Retirees Live?" pp. 265-297 in H. Kintner, T. Merrick, P. Morrison, and P. Voss (eds.) Demographics: A Casebook For Business and Government. 1994. Westview Press: Boulder, Colorado (with H. Kintner).

"Overview of Demography and Management Issues in Business." pp. 92-93 In J. Wicks and D. Swanson (eds.) Issues in Applied Demography: Proceedings of the 1986 National Conference, 1986. PSRC Press: Bowling Green, Ohio.
1987.

"Public Opinion," Chapter II in A Report to the Governor and the Legislature: The Community College System in Washington. Washington State Board for Community College Education: Olympia, WA 1980. (with R. Bell).

C. Refereed Journal Articles

2022 Global Under-reporting of COVID-19 cases from January 1, 2020 to May 6, 2022." Current Science (https://www.currentscience.ac.in/Volumes/123/06/0741.pdf) (with S. Krantz and A Rao).

2022 Using Taylor's Law to Estimate Variance in Annual Unemployment by State." Review of Economics and Finance (https://refpress.org/ref-vol20-a18/) (with J. Tayman).

2022 "Two New Mathematical Equalities in the Life Table." Canadian Studies in Population (https://doi.org/10.1007/s42650-022-00065-3) (with L.M. Tedrow).

2022 "Forecasting a Tribal Population using the Cohort-Component Method: A Case Study of the Hopi." Population Research and Policy Review (https://doi.org/10.1007/s11113-022-09715-5).

2022 "Taylor's Law and the Relationship between Life Expectancy at Birth and Variance in Age at Death in a Period Life Table. Population Review 61 (1): 31-42. (with L. Tedrow).

2021 "An Example of Converting Clinical Study Mortality Data into a Life Table: The U.S. Population with Sickle Cell Disease." Open Journal of Public Health. 3 (1): 1-5.

2021. "On Mathematical Equalities and Inequalities in the Life Table: Something Old and Something New." Canadian Studies in Population 48 (June): 225-237 https://link.springer.com/article/10.1007/s42650-021-00044-0 (with L. Tedrow).

2021 "Using Synthetic Adjustments and Controlling to Improve County Population Forecasts from the Hamilton-Perry Method." Population Research and Policy Review https://doi.org/10.1007/s11113-021-09646-7 (with J. Tayman and J. Baker).

2021 "The Accuracy of Hamilton-Perry Population Projections for Census Tracts in the United States." Population Research and Policy Review. https://doi.org/10.1007/s11113-020-09601-y (with J. Baker and J. Tayman).

2020 "How Relevant is the Basic Reproductive Number Computed during COVID-19, Especially during Lockdowns?" Infection Control and Hospital Epidemiology Dec 14;1-7. doi: 10.1017/ice.2020.1376. Online ahead of print. (with A. Rao, S. Krantz, M. Bonsall, T. Kurien S. N. Byrareddy, R. Bhat and S. Kurapati).

2020. "Estimating the underlying death rate of a small population: A case study of counties in Kansas, Nebraska, North Dakota, and South Dakota." Transactions of the Kansas Academy of Science 123 (3-4): 353-369 (with J. Baker and A. Kposowa).

2020 "Estimating the Underlying Infant Mortality Rates for Small Populations, Even Those Reporting Zero Infant Deaths: A Case Study of 42 Counties in Mississippi." Journal of the Mississippi Academy of Sciences 65 (2): 183-197 (with R. Cossman).

2019. "A New Estimate of the Hawaiian Population for 1778, the Year of First European Contact." Hŭlili 11 (2): 203-222.

2019. "Estimating the stochastic uncertainty in sample-based estimates of infant mortality in Ghana." Journal of Economic and Social Measurement 44: 161-175. (with J. Baker and A. Kposowa).

2019. "Estimating the underlying infant mortality rates for small populations, even those reporting zero infant deaths: A case study of 66 local health areas in British Columbia." Canadian Studies in Population 46 (2): 173-187

2019. The Civil War's Demographic Impact on White Males in the 11 Confederate States: An Analysis by State and Selected Age Groups." Journal of Political and Military Sociology 46 (1): 1-26 (with R. Verdugo).

2019. "Estimating the underlying infant mortality rates for small populations: An historical study of US counties in 1970." Journal of Population Research 36 (3): 233–244 (with Jack Baker).

2019 Estimating the underlying infant mortality rates for small populations, including those reporting zero infant deaths: A case study of counties in California." Population Review 58 (2): 1-22 (with J. Baker and A. Kposowa).

2018. "A Note on rescaling the arithmetic mean for right-skewed positive distributions. Review of Economics and Finance.14 (4):17-24 DOI Article ID: 1923-7529-2018-04-17-08 (with Jeff Tayman and Tom Bryan).

2017. "Using Modified Cohort Change and Child Woman Ratios in the Hamilton-Perry Forecasting Method." Journal of Population Research 34 (3): 209-231. (with J. Tayman).

2017. "The Civil War's Demographic Impact on White Males in Mississippi." Journal of the Mississippi Academy of Sciences 62 (3). (with R. Verdugo).

2016. "New Insights on the Impact of Coefficient Instability on Ratio-Correlation Population Estimates." Journal of Economic and Social Measurement 41: 121-143 (with J. Tayman).

2015. "On the Relationship among Values of the same Summary Measure of Error when it is used across Multiple Characteristics at the same point in time: An Examination of MALPE and MAPE." Review of Economics and Finance 5 (1): 1-14.

2013. "Consumer Demographics: Welcome to the Dark Side of Statistics." Radical Statistics 108: 38-46.

2012. "Socio-Economic Status and Life Expectancy in the United States, 1990-2010: Are We Reaching the Limits of Human Longevity?". Population Review 51 (2): 16-41 (with A. Sanford).

2012. "Population, the Status of Women, and Stability in Afghanistan." The Southern Africa Journal of Demography 13 (1): 5- 36 (with S. El-Baldry).

2012. "Using Cohort Change Ratios to Estimate Life Expectancy in Populations with Negligible Migration: A New Approach." Canadian Studies in Population 39: 83-90. (with L. Tedrow).

2012. "An Evaluation of Persons per Household (PPH) Data Generated by the American Community Survey: A Demographic Perspective." Population Research and Policy Review 31: 235-266. (with G. Hough).

2011. "On Estimating a De Facto Population and Its Components." Review of Economics and Finance 5:17-31 (with J. Tayman).

2011. "MAPE-R: A Rescaled Measure of Accuracy for Cross-Sectional, Sub-national Forecasts." Journal of Population Research 28: 225-243 (with T. Bryan and J. Tayman).

2011. "Immigration and its Effect on Demographic Change in Spain." The Open Demography Journal 4:22-33 (with R. Verdugo).

2010. "New Directions in the Development of Population Estimates in the United States?". Population Research and Policy Review 29 (6): 797-818 (with J. McKibben).

2010. "Socio-economic Status and Life Expectancy in Indiana, 1970-1990." The Open Demography Journal 3:1-7. (with N. Hoque).

2010 "Business Demography in the 21st Century." Population Research and Policy Review. 29 (1): 1-3 (with F. Yusuf).

2010 "Forecasting the Population of Census Tracts by Age and Sex: An Example of the Hamilton-Perry Method in Action." Population Research and Policy Review 29 (1): 47-63 (with A. Schlottmann and R. Schmidt).

2010. "Teaching Business Demography Using Case Studies". Population Research and Policy Review. 29 (1): 93-104 (With P. Morrison).

2010 "Towards a Comprehensive Quality Assurance System for Degree Programs in Higher Education." The Montana Professor 20(1): 13-20.

2009 "Socio-Economic Status and Life Expectancy in the United States, 1970-1990." Population Review 48 (1): 39-63 (with Mary McGehee and Nazrul Hoque)
(Reprinted in the Special 60th Anniversary Issue of Population Review, 2021)

2009 "The Socio-Demographic and Environmental Effects of Katrina: An Impact Analysis Perspective". The Open Demography Journal.2 (11): 36-46. (with R. Forgette, J. McKibben, M. Van Boening, and L. Wombold).

2009 "Socio-economic Status and Life Expectancy in Florida, 1970 to 1990." The Florida Scientist 72 (3): 242-248. (with M. McGehee).

2009 "Socio-economic Status and Life Expectancy in Mississippi, 1970-1990. Journal of the Mississippi Academy of Sciences 54 (3-4): 190-195 (with M. McGehee).

2009 "Hurricane Katrina: A Case Study of Its Impacts on Medical Service Providers and Their Client Populations." The Open Demography Journal 2: 8-17.

2009 "A Model Growth Curve for Juvenile Age Estimation using Diaphyseal Long Bone Lengths among Ancient Maya Populations." Latin American Antiquity 20 (1): 3-14 (with M. Danforth, G. Wrobel, and C. Armstrong).

2009 "After a Disaster: Lessons in Survey Methodology from Hurricane Katrina." Population Research and Policy Review 28: 67-92 (with T. Henderson, M. Sirois, A. Chia-Chen Chen, C. Airriess, and D. Banks).

2009 "Before, Now, and After: Assessing Hurricane Katrina Relief." Population Research and Policy Review 28: 31-42 (with R. Forgette, B. Dettrey, and M. Van Boening).

2008 "The Demographic Effects of Hurricane Katrina on the Mississippi Gulf Coast: An Analysis by Zipcode." Journal of the Mississippi Academy of Sciences. 53 (4): 213-231.

2008 "Psychologists and Hurricane Katrina: Natural Disaster Response through Training, Public Education, and Research." Training and Education in Professional Psychology 2: 83-88 (with S. Schulenberg, K. Dellinger, A. Koestler, A. Kinnell, R. Forgette, and M. Van Boening).

2008 "Applied Demography in Action: A Case Study of Population Identification." Canadian Studies in Population 35 (1): 133-158.

2007 "On MAPE-R as a Measure of Cross-sectional estimation and forecast accuracy." Journal of Economic and Social Measurement 32 (4): 219-233 (with C. Coleman).

2007 "Assessing Katrina's Demographic and Social Impacts on the Mississippi Gulf Coast." Journal of the Mississippi Academy of Sciences 54 (2): 228-242 (with R. Forgette, M. Van Boening, C. Holley, and A. Kinnell).

2007 "Determinants of Government Aid to Katrina Survivors: Evidence from Survey Data." Southern Economic Journal 74 (2): 344-362. (with W. Chappell, R. Forgette, and M. Van Boening).

2007 "Providing Census Tabulations to Government Security Agencies in the United States: The Case of Arab-Americans." Government Information Quarterly 24(2): 470-487. (with S. El-Badlry).

2006 "The United States Census at the Dawn of the 21st Century." Journal of Economic and Social Measurement. 31(3-4): 139-149. (with Charles G. Renfro).

2006 "The Roots of Conflict over U.S. Census Counts in the Late 20th Century and Prospects for the 21st Century." Journal of Economic and Social Measurement 31 (3-4): 185-205 (with P. Walashek).

2006 "An Evaluation of the American Community Survey: Results from the Oregon Test Site." Population Research and Policy Review 25(3): 257-273. (with G. Hough).

2006 "A Comparison of in-class and Online Student Evaluations" Delta Education Journal 3(2): 37-47.

2005 "Deep Structure Learning and Statistical Literacy." Delta Education Journal 3(1): 41-52.

2004 "Contemporary Developments in Applied Demography within the United States." Journal of Applied Social Science 21 (2): 26-56 (with L. Pol).

2004 "Advancing Methodological Knowledge within State and Local Demography: A Case Study." Population Research and Policy Review 23 (August): 379-398.

2000 "A Note on the Measurement of Accuracy for Subnational Demographic Estimates." Demography 37 (May): 193-201 (with J. Tayman and C. Barr).

1999 "In Search of the Ideal Measure of Accuracy for Subnational Demographic Forecasts." Population Research and Policy Review 18: 387-409 (with J. Tayman and C. Barr).

1998 "Merging Methods and Judgment for K-12 Enrollment Forecasting." Educational Research Service Spectrum 16 (Fall): 24-31 (with G. Hough, R. Lycan, C. Clemans, and J. Rodriguez).

1999 "On the Validity of MAPE as a Measure of Population Forecast Accuracy." Population Research and Policy Review 18: 299-322 (with J. Tayman).

1998 "Toward an Assessment of Continuous Measurement: A Comparison of Returns with 1990 Census Returns for the Portland Test Site." Journal of Economic and Social Measurement . 24: 295-308 (with G. Hough).

1998 "In Defense of the Net Migrant." Journal of Economic and Social Measurement. 24: 155-170 (with S. Smith).

1997 "On Teaching Statistics." Voprosy Statistiki 7: 77-80. (with J. McKibben, *in Russian*)

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VIII. Papers Read at Professional Conferences

A. Contributed Refereed Papers

"Boosted Regression Trees for Small-Area Population Forecasting." Presented at the 2022 Conference of the Southern Demographic Association, Knoxville, TN (with J. Baker and J. Tayman).

"Expert Judgment & Standard Small Area Projection Methods: Population Forecasting for Water District Needs." Presented at the 2022 Conference of the Southern Demographic Association, Knoxville, TN (with T, Bryan, M. Hattendorf, K. Comstock, L. Starosta, and R. Schmidt).

"Repurposing record matching algorithms to identify blocks and block groups affected by Differential Privacy: Progress Report on a Pilot Project." Presented at the 2022 Small Area Estimation Conference, Session on Challenging Problems from SAE and Modern Data Science, May 26 (with T. Bryan).

"Producing Summary Statistics of COVID-19 cases and deaths over time: The case for using geometric measures, not arithmetic ones. Presented at the 2022 Conference of the Canadian Population Association, Session on Covid-19 and Mortality, May 10 (with R. Verdugo, A. Rao, and S. Krantz).

"Boosted Regression Trees for Small-Area Population Forecasting." Presented at the Annual Meeting of the Population Association of America, Session on Challenges Facing Small Area Forecasting and Estimation. Atlanta, GA. February 1st, 2022. (with J. Baker and J. Tayman).

"Taylor's Law and the Relationship between Life Expectancy at Birth and Variance in Age at Death in a Period Life Table." Presented at the Annual Meeting of the Population Association of America, Session on Mathematical Demography. Atlanta, GA. April 9th, 2022. (with L. M. Tedrow).

"Forecasting a Tribal Population using the Cohort-Component Method: A Case Study of the Hopi." Presented at the Annual Meeting of the Population Association of America, Session on Old Wine in New Bottles: Tools for Applied Demographers, Atlanta, GA, April 8th, 2022.

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"Constructing Life Tables from the Kaiser Permanente Smoking Study and Applying the Results to Models Designed to assess the Population Health Impact of Reduced Risk Tobacco Products." Presented at the Population & Public Policy Conference,
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"Leveraging Extant Data to Meet Local Information Needs: A Case Study in Team Applied Demography." Presented at the Annual Meeting of the Population Association of America, March, 2000, Los Angeles, California (with P. Morrison, C. Popoff, I. Sharkova, and J. Tayman).

" We are What We Measure: Toward A New Approach for Assessing Population Forecast Accuracy." Presented at the Annual Meeting of the Southern Demographic Association, October 29th, 1999, San Antonio, Texas. (with J. Tayman and C. Barr).

"On Measuring Accuracy in Subnational Demographic Forecasts." Presented at the 52nd Congress of the International Statistical Institute, Helsinki, Finland, August 18, 1999 (with J. Tayman and C. Barr).

"Population Estimates from Remotely Sensed Data: A Discussion of Recent Technological Developments and Future Research Plans." Presented at the Annual Meeting of the Canadian Population Society, Lennoxville, Quebec, Canada, June, 1999 (with J. Wicks, R. Vincent, and J. Luiz Pereira De Almeida.

"Teaching Statistics to Non-Specialists in an Intercultural Setting: Addressing Issues of Understanding and Retention in a Modern Learning Environment." Presented at the Mid-Term Conference of the Sociology of Education Research Committee, International Sociological Association, Joensuu, Finland, June, 1997. (with J. McKibben).

"A Computer-Based Curriculum For Service Courses In Statistics." Presented at the International Conference On Problems of Statistical Education, St. Petersburg, Russia, July,1996 (with J. McKibben).

"In Defense of The Net Migrant." Presented at the 1996 Annual Meeting of the Population Association of America, New Orleans, Louisiana (with S. Smith).

"What Is Applied Demography?" Presented at the 1996 Annual Meeting of the Population Association of America, New Orleans, Louisiana (with T. Burch and L. Tedrow).

"Alternative Measures For Evaluating Population Forecasts: A Comparison of State, County, and Sub-county Geographic Areas." Presented at the 1995 Annual Meeting of the Population Association of America, San Francisco, California (with J. Tayman).

"Changes in Factories, Changes in Accuracies: On the Relationship Between Economic Structure and the Ratio-Correlation Method of Population Estimation." Presented at the 1994 Annual Meeting of the Southern Demographic Association, Atlanta, Georgia (with J. McKibben).

"Forecasting Health Benefits Populations." Presented at the XIVth International Symposium on Forecasting, Stockholm, Sweden (with H. Kintner).

"Between A Rock and A Hard Place: The Evaluation of Demographic Forecasts." Presented at the XIVth International Symposium on Forecasting, Stockholm, Sweden (with J. Tayman).

"Construction of Confidence Intervals for Population Forecasts Generated by the Cohort-Component Method." Presented at the 1994 Annual Meeting of The Population Association of America, Miami, Florida (with D. Arnold, J. Carlson, H. Kintner, and C. Williams).

"Ties that Bind: Families, Organizational Demography, and Health Benefits." Presented at the 1994 Annual Meeting of The Population of America, Miami, Florida (with H. Kintner).

"Measuring the Utility of Population Projections." Presented at the 1994 Annual Meeting of The Ohio Academy of Science. Toledo, Ohio (with J. Tayman).

"Mean Square Error Confidence Intervals for Intercensal Net Migration Estimates: A Case Study of Arkansas 1980-1990." Presented at the 1993 Annual Meeting of the Southern Demographic Association, New Orleans, Louisiana (with H. Kintner and M. McGehee).

"Estimating Demographic Rates From Employer Administrative Database." Presented at the 1993 Annual Meeting of the International Union for the Scientific Study of Population, Montreal, Quebec (with H. Kintner).

"Evaluation of Ratio-Correlation and Difference-Correlation Methods for Estimating County Populations: The Case of Post-Industrial Indiana." Presented at the 1993 Annual Meeting of the American Statistical Association, San Francisco, California (with J. McKibben).

"Ratio-Correlation: A Short-Term County Population Projection Method." Presented at the 1993 International Symposium on Forecasting. Pittsburgh, Pennsylvania (with D. Beck).

"The Relationship Between Life Expectancy and Socioeconomic Status In Arkansas, 1970 and 1990." Presented at the 1993 Annual Meeting of the Population Association of America, Cincinnati, Ohio.

"Measurement Errors in Census Counts and Estimates of Intercensal Net Migration." Presented at the 1993 Annual Meeting of the Population Association of the America, Cincinnati, Ohio (with H. Kintner).

"Ratio-Correlation as a Short-Term County Population Projection Method: A Case Study for Washington State." Presented at the 1992 Annual Meeting of the Southern Demographic Association , Charleston, South Carolina (with D. Beck).

"Adult Transfer Students: Predicting Who Will Finish and Who Will Drop Out." Presented at the 1992 Annual Meeting of the Pacific Northwest Association of Institutional Researchers and Planners, Bellingham, Washington (with S. Hedman and L. Nelson).

"Measurement Errors in Census Counts and Estimates of Intercensal Net Migration." Presented at the 1992 Annual Meeting of the American Statistical Association, Boston, Massachusetts (with H. Kintner).

"The Disposal of Household Hazardous Waste: Results From a Survey of Pierce County, Washington." Presented at the 1992 Annual Meeting of the Northwest Scientific Association, Bellingham, Washington.

"A Variation of the Housing Unit Method For Estimating the Population of Small, Rural Areas: A Case Study of the Local Expert Procedure." Presented at the 1992 Annual Meeting of the Population Association of America, Denver, Colorado (with J. Carlson and L. Roe).

"A System for Placing Confidence Intervals Around Estimated the Population of Small, Rural Areas: A Case Study of the Local Expert Procedure." Presented at the 1992 Annual Meeting of the Population Association of America, Denver, Colorado (with J. Carlson and L. Roe).

"Perspectives on Change in Employer Health Benefits Populations." Presented at the 1991 Annual Meeting of the Population Association of America, Washington, D.C. (with H. Kintner).

"Evaluating Socioeconomic Impact Models: An Adoption of Winter's Method to the Yucca Mountain Project." Presented at the 1990 Annual Meeting of the American Statistical Association, Anaheim, California (with J. Carlson, J. Hollingsworth, and C. Williams).

"The Development of Small Area Socioeconomic Data to be Utilized for Impact Analysis: Rural Southern Nevada." Presented at the 1990 International High Level Radioactive Waste Management Conference, Las Vegas, Nevada (with J. Carlson and C. Williams).

"Identifying Factors Associated with the Subjective Feelings of One's Quality of Health." Presented at the 1990 U.S. Uniformed Services Conference of Family Physicians, Richmond, Virginia (with W. F. Miser).

"Demographic Issues for Washington State." Session on Regional Demography, 1989 Annual Meeting of the Rural Sociological Society, Seattle, Washington.

"Intercensal Net Migration Among the Three Major Regions of Iraq, 1957-1977." Presented at the 1989 Annual Meeting of the Population Association of America, Baltimore, Maryland (with A. Al-Jiboury).

"VCR Households: A Comparison of Early and Recent Adopters." Presented at the 1988 Annual Meeting of the Broadcast Education Association, Las Vegas, Nevada (with B. Klopfenstein).

"Technical Skills and Training Needs of Applied Demography." Presented at the 1987 Annual Meeting for the American Statistical Association, San Francisco, California (with L. S. Rosen and H. J. Kintner).

"Causes of Death in Infancy and the Proposed Redefinition of the Neonatal Period." Presented at the 1987 Annual Meeting of the North Central Sociological Association, Cincinnati, Ohio (with E. G. Stockwell and J. Wicks).

"The Impact of Census Error Adjustments on Ohio Population Projections." Presented at the 1987 Annual Meeting of the North Central Sociological Association, Cincinnati, Ohio (with K. Vaidya, R. Yehya, B. Bennett and R. Prevost).

"Projecting Household VCR Penetration: A Demographic Approach." Presented at the 1987 Annual Meeting of the Population Association of America, Chicago, Illinois (with B. Klopfenstein).

"A State Based Regression Model For Estimating Substate Life Expectancy: Tests Using 1980 Data." Presented at the 1987 Annual Meeting of the American Statistical Association, San Francisco, California.

"An Analysis of VCR Adopter Characteristics and Behavior." Presented at the 1987 Annual Meeting of the International Communication Association, Montreal, Quebec, Canada (with B. Klopfenstein).

"Estimating Life Expectancy For Health Service Areas: A Test Using 1980 Data For Indiana." Presented at the 1986 Annual Meeting of the American Statistical Association, Chicago, Illinois.

"Converging Trends in the Relationship Between Infant Mortality and Socioeconomic Status." Presented at the 1986 Annual Meeting of the North Central Sociological Association, Toledo, Ohio (with E. Stockwell and J. Wicks).

"Geographic Variation of Longevity in Ohio, 1930 and 1980." Presented at the 1986 Annual Meeting of the North Central Sociological Association, Toledo, Ohio (with E. Stockwell).

"Identifying Extreme Errors in Ratio-Correlation Estimates of Population." Presented at the 1986 Annual Meeting of the Population Association of America, San Francisco, California (with R. Prevost).

"Missing Survey Data in End-Use Energy Models: An Overlooked Problem." Presented at the 1985 Annual Meeting of the American Statistical Association, Las Vegas, Nevada.

"Fecundability Among Ethnic Groups in Hawaii." Presented at the 1985 Annual Meeting of the North Central Sociological Association, Louisville, Kentucky.

"Issues in Energy End-Use Survey Research." Presented at the 1985 Conference of the American Council for an Energy Efficient Society, San Cruz, California (with S. M. Buller, R. J. Canter, L. Guliasi, and R. M. Wong).

"Improving the Measurement of Temporal Change in Regression Models Used for County Population Estimates." Presented at the 1983 Annual Meeting of the Population Association of America, Pittsburgh, Pennsylvania (with B. Baker and J. Van Patten).

"Municipal Population Estimation: Practical and Conceptual Features of the Housing Unit Method." Presented at the 1983 Annual Meeting of the Population Association of America, Pittsburgh, Pennsylvania (with B. Baker and J. Van Patten).

"Getting at the Factors Underlying Trends Using Statistical Decomposition Techniques." Presented at the 1980 Annual Meeting of The College and University Systems Exchange, Phoenix, Arizona.

"Allocation Accuracy in Population in Estimates: An Overlooked Criterion with Fiscal Implications." Presented at the 1980 Annual Meeting of The American Statistical Association, Houston, Texas.

"Graphic Display of Demographic Data." Presented at the 1979 Annual Meeting of The Population Association of America, Philadelphia, Pennsylvania (with L. M. Tedrow).

"A Method of Estimating Annual Age-Standardized Mortality Rates for Counties: Results of a Test Using Washington State Data." Presented at the 1978 Annual Meeting of The American Statistical Association, San Diego, California.

"Preliminary Results of an Evaluation of the Utility of Ridge Regression for Making County Population Estimates." Presented at the 1978 Annual Meeting of the Pacific Sociological Association.

B. Contributed Non-Refereed Papers

"Why Do Group Health Benefit Populations Change Size? A Case Study of General Motors Salaried Population, 1983-1990." Presented at the 1994 Applied Demography Conference, Bowling Green, Ohio (with H. Kintner).

"An Evaluation of the Demographic Components of a Proprietary Economic Forecasting and Simulation System: The REMI Model as used by SAIC, Inc. for the Yucca Mountain Project in Nevada." Presented at the 1994 Applied Demography Conference, Bowling Green, Ohio (with Y. Zhao and J. Carlson).

"On the Utility of Lagged Ratio-Correlation as a Short-Term County Population Projection Method: A Case Study of Washington State." Presented at the 1994 Applied Demography Conference, Bowling Green, Ohio (with J. Tayman and D. Beck).

"The Producers Perspective." Presented at the 1994 Annual Meeting of Federal-State Cooperative Program for Population Projections, Session on The Utility of Population Projections, Miami, Florida.

"Confidence Intervals for Net Migration Estimates that Incorporate Measurement Errors in Census Counts." Presented at the 1992 Applied Demography Conference, Bowling Green, Ohio (with H. Kintner).

"Baseline Projections of Household Solid Waste Generation: A Case Study of Pierce County, Washington." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio.

"Conference Intervals for Estimates of Intercensal Net Migration." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio (with H. Kintner).

"Estimating Migration in a Sparsely-Populated Specialized Economic Area: The Yucca Mountain High-Level Nuclear Waste Repository." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio (with J. Carlson).

"Development of Demographic Data Utilizing Key Informants in Rural Incorporated Places." Presented at the 1990 Applied Demography Conference, Bowling Green, Ohio (with L. K. Roe and J. Carlson).

"Poverty and Infant Mortality." Presented at the June, 1989 Meeting of the Washington State Child Health Research and Policy Group, Seattle, Washington.

"Some Results of the 1988 'Research Experience for Undergraduates' Program in Demography." Poster Session at the 1988 Applied Demography Conference, Bowling Green, Ohio (with L. Tedrow).

"Overview of the Survey of Applied Demographers." Presented at the 1987 Annual Meeting of the Population of Association of America, Chicago, Illinois (with H. Kintner).

"Applied Demography." Presented to the Department of Sociology, Western Washington University, October, 1986.

"Preliminary Results From the 1986 Survey Demographers." Presented at the 1986 Annual Meeting of the Population Association of America, San Francisco, CA (with H. Kintner et al.).

"Survey Findings." Presented at the Public Hearing on Public Affairs Programming and Commercial Television, June, 1984 San Francisco, California.

"Comparative Analysis of Change in Average Household Size With Reference to IRS Data on Average Exemptions Per Return: Census Results From Selected Municipalities in Washington, 1970, 1977, and 1978." Presented at the October, 1979 meeting of The Task Force on Sub-County Population Estimates Federal-State Cooperative Program for Population Estimates, Washington, D. C. (with T. J. Lowe).

"Recent Trends in Household Size for Rural, Predominantly White, Non-Hispanic Communities: Special Census Results From Three Towns in Washington, 1976 and 1979." Presented at the October, 1979 meeting of The Task Force on Sub-County Population Estimates, Federal-State Cooperative Program for Population Estimates, Washington, D. C. (with T. J. Lowe).

IX. Invited Presentations

"Modeling and the Covid-19 Pandemic: A Local Area Perspective." Presented at the Annual Meeting of the Federal-State Cooperative Program for Population Projections (Virtual), May 13-14, 2021.

"Using a Simple Population Forecasting Method to Assess Economic and Health Characteristics of a Population of Interest." Presented at the Department of Public and Regional Economics, Aoyama Gakuin University, Tokyo, Japan, 7 November 2018

"Using a Population Forecasting Method to Assess the Demographic Impact of Natural and Man-made Disasters." Presented at the Department of Sociology, Kyoto University, Kyoto, Japan, 5 November 2018

"Cohort Change Ratios and Their Applications." Presented as part of the Open Seminar, Foreign Scholar Lecture Series, National Institute for Population and Social Security Research, Tokyo, Japan, 31 October 2018 (http://www.ipss.go.jp/int-sem/e/lec2.html)

"On Equality and Inequality in Stationary Populations." Presented at the 4th International Symposium on the Human Mortality Database, Berlin, Germany, May 23, 2017 (with Lucky Tedrow).

"Use of Demography in the Public Sector." presented in an invited session on demography and policy at the 2017 Conference of the Population Association of American, Chicago, IL.

"The Washington State Census Board and Its Demographic Legacy." Presented at the Center for Studies in Demography and Ecology, University of Washington. Seattle, Washington, January 8, 2016.

"Aging in the Western Hemisphere, 2015-2035." Presented at the analytic exchange on Demographic Change and Mobility in Aging Regions to 2035. Co-sponsored by the U.S. National Intelligence Council and the Bureau of Intelligence and Research, U.S. State Department. Arlington, VA. July 17. 2015.

"The Current Status of Applied Demography: A Four-Field View with an Eye toward the Future." Plenary Presentation. 8th International Conference on Population Geographies, University of Queensland, Brisbane, Australia. July 1-3, 2015.

"A New Estimate of the Hawaiian Population for 1778, the Year of First European Contact." Presented as part of the Colloquium Series, Department of Sociology, University of Hawai'i. February 13th, 2015.

"Measuring Uncertainty in Population Forecasts: A New Approach Employing the Hamilton-Perry Method." Presented at the Population Institute Methods Workshop, Penn State University, June 24th, 2014. State College, PA (with Jeff Tayman).

"Measuring Uncertainty in Population Forecasts: A New Approach Employing the Hamilton-Perry Method." Presented at the Annual Conference of the Federal-State Cooperative Program for Population Projections, Boston, MA, April 30th, 2014. (with Jeff Tayman).

"Measuring Uncertainty in Population Forecasts: A New Approach." Presented at the Joint Eurostat/UNECE Work Session on Demographic Projections, October 29-31, 2013. Rome, Italy (with Jeff Tayman).

"People of the Inland Empire: Changes in Ethnicity, Age and Race, Presented at the "Practically Speaking" Development Series, Center for Sustainable Suburban Development, University of California Riverside, June 11th, 2013. Riverside, CA.

"A Loss Function Approach to Examining ACS Estimates: A Case Study of 2010 "Persons Per Household" Estimates for California Counties." Presented at the Workshop on "The Benefits (and Burdens) of the American Community Survey" sponsored by the Committee on National Statistics, National Academies of Science. June 14-15, 2012, Washington, DC (with George Hough).

"Practical Demography." Keynote address presented at the Warren Kalbach Conference, March 18-19, 2011, Edmonton Society of Demographers, University of Alberta, Edmonton, Alberta, Canada.

"Developing Small Area Population Estimates for Use in Health Information Systems." Presented in the Introductory Plenary Session at the 19th International Conference of the Forum for Interdisciplinary Mathematics,18-20 December 2010, Patna University, Patna, India. (with J. McKibben and K. Faust).

"Perspectives on the American Community Survey." Presented at the 2010 Conference of the Latin American Association for Population Studies, 15-19 November, Havana, Cuba.

"New Directions for the Decennial Census?" Presented in the Invited Session, What if the 2020 Census Was the First Census: What Would We do?, 2010 Conference of the American Statistical Association, 31 July – 5 August, Vancouver, British Columbia, Canada.

"Demographics and Housing." Presented at the Randall Lewis Seminar, Blakely Center for Sustainable Suburban Development, Riverside, California, 17 June 2010.

"The Possibilities for using the Housing Unit method." Presented at Statistics Canada, Ottawa, Ontario, 28 May, 2009.

"The Future of Suburbs." Presented at Pitney Bowles Business Decisions. Toronto, Ontario, 27 May 09.

"Socio-economic Status and Life Expectancy in the United States: 1970 to 1990." Presented at the School of Public Policy, University of Texas- San Antonio, San Antonio, TX. 21 April 2009.

"Small Area Estimation and Health Information Systems" Presented at the Small Area Measurement Consultation Conference, Institute for Health Metrics and Evaluation, University of Washington. Seattle, WA,10 April 2009.

"Aging and other Population Trends and their Implications for Suburbs." Presented as part of the 'Leadership Lenexa' Seminar Series, Lenexa Chamber of Commerce. Lenexa, KS. 27 June 2008.

"How the Changing U.S. Census will Affect Decision-Making." Presented at the Randall Lewis Seminar, Blakely Center for Sustainable Suburban Development, Riverside, California, 15 May 2008.

"An Evaluation of Persons Per Household (PPH) Data Generated By the American Community Survey: A Demographic Perspective." Presented at the American Community Survey, Multi-Year Estimates Meeting, 15 November 2006, U.S. Census Bureau, Suitland, Maryland.

"Counting the Gulf Coast: A Demographer Gauges Katrina's Impact in Mississippi." Department of Sociology, University of California Irvine, 23 October 207, Irvine, CA.

"Assessing Katrina's Impact on the Mississippi Gulf Coast: A Report on Completed Research." Poster presented at the 2007 Post-Katrina Forum Gulf States Alliance: Network Science and Recovery, 19-21 August, Biloxi, MS (with R. Forgette, M. Van Boening).

"The Needs of Researchers in Regard to Population Estimates." Conference on U.S. Census Bureau Population Estimates: Meeting User Needs." Sponsored by Council of Professional Associations on Federal Statistics.19 July 2006. Alexandria, VA.

The Impact of Hurricane Katrina on the Mississippi Gulf Coast." Annual Exhibition of the Coalition for National Science Funding, 7 June 2006. Washington, DC.

"The Impact of Hurricane Katrina on the Mississippi Gulf Coast." Annual CLARITAS Client Conference, 30-29 April, 2006, San Diego, CA.

"The Impact of Hurricane Katrina on the Mississippi Gulf Coast. Annual Meeting of the Population Association of America, Session of the Committee on Population Statistics. 30 March 2006. Los Angeles, CA.

"Demographic Changes Affecting Undergraduate Enrollment in Mississippi." College of Liberal Arts Faculty Forum, 22 March 2005. University of Mississippi.

"The Changing Demography of the CSGS Region." Plenary Keynote Address, Annual Meeting of the Conference of Southern Graduate Schools, 26 February 2005. Biloxi, MS.

"An Evaluation of the American Community Survey: Results from the Oregon Test Site." Presented at the Annual Meeting of the American Statistical Association, August 8th to 10th, 2004. Toronto, Ontario, Canada (with G. Hough).

"Evidence From Oregon." Presented at the Annual Meeting of the Population Association of America, April 1st to 3rd, 2004. Boston, Massachusetts (with G. Hough).

"The Impact of Demographic Factors on Business: Selected Examples." Presented to Faculty of the H.E.L.P. Institute, Kuala Lumpur, Malaysia, 25 April 2003

"Results of the BScBA Program Self-Evaluation Study." Presented at the External Accreditation Peer Review Team's On-Site Visit, Finnish Ministry of Education, Valamo, Finland, October 8-9, 2002.

"Demographic Constraints on Regional Development." Presented at the Technology and Economic Development in the Periphery (TEDIP) Dissemination Seminar, Joensuu University, Savonlinna, Finland, June 13th, 2002.

"International Education in Finland: Issues and Challenges." Presented to the Rural Studies Workshop, Institute for Rural Research Studies, Helsinki University, Mikkeli, Finland, February 1st, 2002

"The International BBA Program of the Helsinki School of Economics and Business Administration." Presented to the President of Finland, Mikkeli, Finland, May 15th, 2001.

"Providing International Education: A Finnish Example of the European Experience." Presented at the 4th Strategy Seminar on Strategic Alliances and Partnerships in International Education, Kuala Lumpur, Malaysia, April 7th, 2001.

"On Measuring Accuracy in Subnational Demographic Estimates." Presented at the National Conference on Population Estimates Methods, Sponsored by the Population Estimates Branch, U.S. Bureau of the Census, June 8th, 1999. Suitland, Maryland (with J. Tayman and C. Barr).

"Census Errors and Census 2000: The Role of Local Government." Presented at the Public Stakeholders Meeting of the Southern Nevada Census 2000 Committee, March 23rd, 1999, Las Vegas, Nevada.

"The Food Consumption Survey." Presented at the Total System Performance Assessment Technical Exchange, U.S. Department of Energy/ U.S. Nuclear Regulatory Commission. Las Vegas, Nevada, November 6th, 1997.

"Amargosa Valley Population Survey." Presented to the U.S. National Advisory Committee on Nuclear Waste, U.S. Nuclear Regulatory Commission. 94th Meeting, Las Vegas, Nevada, September 23rd, 1997.

"An ACS Performance Assessment." Presented in the session "The American Community Survey – Uses and Issues." Annual Meeting of the American Statistical Association, Anaheim, California, August 13th, 1997.

"The Region's Changing Demographics." Presented at the International Council of Shopping Centers' 1996 Meeting, Skamania Lodge, Skamania, Washington, August, 1996.

"Local Population Trends." Presented at the Chamber of Commerce Leadership Program." West Linn, Oregon, March, 1996.

"Oregon's Population Trends." Presented at the Strategic Budget Conference of Oregon State Agency Directors, Salem, Oregon , March, 1996.

"Evaluation Plan for the Arkansas Network Based Technology Deployment Program." Presented at the Workshop on Manufacturing Modernization: Evaluation Practices, Methods and Results. National Institute of Standards and Technology, Atlanta, Georgia, September 18-20, 1994.

"Estimates of the Current Cost of Health Care in Arkansas." Presented to the Governor's Task Force on Health Care Reform. Little Rock, Arkansas, April 13, 1994.

"An Overview of Impact Analysis." Presented at the Local Development Association Meeting, Heber Springs, Arkansas 1993.

"Applied Demography for Urban Studies." Two-day workshop presented at Loyola University, Chicago, Illinois, 1993.

"Confidence Intervals for Net Migration Estimates that Incorporate Measurement Errors in Census." Presented at the Central Arkansas Chapter of the American Statistical Association, November, 1992 (with H. Kintner).

"Demographic Aspects of Labor Force Trends in Arkansas." Presented at the March 5th, 1993 Arkansas Business Leaders Symposium, Arkansas College, Batesville, Arkansas.

"Decennial Census Products and Their Use in Research." Presented in the Research Conference Series, Center for Mental Health Research, University of Arkansas for Medical Sciences, November 18th, 1992.

"Factor Analysis and Related Analytical Techniques." Presented to the Uniformed Services Physicians' Fellowship Program, Madigan Army Medical Center, April 17th, 1992.

"A Variation of the Housing Unit Method for Estimating the Age and Gender Distribution of Small, Rural Areas: A Case Study of the Local Expert Procedure." Presented at the Invited Paper Session Methods of Small Area Population Estimation. Annual Meeting of the American Statistical Association, San Francisco, California, August, 1993 (with J. Carlson, L. Rowe and C. Williams).

"A First Bite in a Seven Course Meal: Results from the 1990 Census." Presented to the City Club of Tacoma, June, 1991 (with W. Opitz).

"A New Method for Projecting Small Area Populations." Presented to the Center for Business and Economic Research, College of Business, University of Nevada, Las Vegas, March, 1991.

"Socio-Economic Impact Analysis for the Yucca Mountain Nuclear Waste Project: Insights from Demography." Presented to the Department of Sociology, Michigan State University, February, 1991.

"Ratio-Correlation as a Short-Term, Subnational Population Forecasting Method: A Case Study Using Washington State Data." Presented to the Demography Division, Statistics Canada, Ottawa, Ontario, February 11, 1991.

"Demographics! Demographics! Demographics!" Presented to members of the Private Industry Council, Pierce County, Washington, March, 1990.

"Marx vs. Malthus: An Empirical Approach to Examining Orthodoxy." Presented in the Colloquium Series "Living In A Fragile Environment," Valparaiso University, January, 1990.

"Small Area Socio-Economic Forecasting," Presented to the Faculty Club, Valparaiso University, January,1990.

"Local, National, and International Demographic Trends." Presented to the Washington Agriculture and Forestry Leadership Program, Pacific Lutheran University, January, 1990.

"Some Problems in Small Area Forecasting." Presented at the ICPSR Summer Program in Quantitative Methods, University of Michigan, July, 1989.

"Washington State Population Issues." Presented at the Washington State Public School Social Studies Educators Retreat, Pilgrim Firs, Washington, October, 1987.

"Why are American Babies Dying Before Their First Birthday?' Presented at the October, 1987 Interdepartmental Colloquium, Pacific Lutheran University.

"Subnational Population Estimation and Its Relation to Emerging Legal Challenges in the United States." Presented at the November, 1986 Brown-bag session of The Population Studies Center, University of Michigan.

"Population Trends in North Central Ohio." Presented at the November, 1986 meeting of The Social Science Club, Firelands College.

"The Multiple Regression Approach to Deriving Local Area Population Estimates." Presented at the April, 1985 meeting of the Northwest Ohio Chapter of The American Statistical Association, Bowling Green, Ohio.

"Population and Enrollment Forecasting." Presented at the March, 1983 meeting of the Anchorage Demographic Group, Anchorage, Alaska.

"Trends in Washington's Population." Presented at the November, 1979 meeting of the Seattle Economists' Club, Seattle, Washington.

X. Testimony

A. Legislative and Regulatory

Oral and written Testimony, "*Why 2+2 Should Never Equal 3: Getting Intercensal Population Estimates Right the First Time*," House Government Reform Subcommittee on Federalism and the Census oversight hearing Washington, DC. September 6, 2006.

Oral and written Testimony, Nuclear Regulatory Commission, Advisory Committee On Nuclear Waste, September 25, 1997, Las Vegas, Nevada.

Oral Testimony on Oregon's Population Trends. Presented to the Interim Committee On Growth Management, Oregon House of Representatives, February, 1996.

Written Testimony on "The Proposed Options For Incorporating Information From The Post-Enumeration Survey into The Intercensal Population Estimates produced By the Bureau of the Census." Public Hearing Docket (No. 920895-2195) U.S. Bureau of the Census. August 31, 1992.

"Results From the 1988 Recycling Survey." Presented to the Subcommittee on Solid Waste Management, Pierce County Council, January, 1989.

Written Testimony on "Plans for Conducting the 1990 Census in Alaska." Subcommittee on Census and Population, Hearing Conducted in Anchorage, Alaska, August 19, 1987.

Written Testimony on "Federal Statistics and National Data Needs." Subcommittee on Energy, Nuclear Proliferation and Government Processes of the Committee on Government Affairs, United States Senate, 98th Congress, 1st Session. Committee Print (S. Print 98-191) Washington: 1984.

Oral and Written Testimony, Labor Committee, Alaska House of Representatives, 1981, 1982, 1983.

Oral and Written Testimony, Finance Committee, Alaska House of Representatives, 1981, 1982, 1983.

Oral and Written Testimony, Finance Committee, Washington State Senate, 1979.

Oral and Written Testimony, Finance Committee, Hawaii State House of Representatives, 1974.

B. Judicial

Deposed and Testifying Expert Witness. 2022. Case A-17-762364-C. Estate of Joseph P. Schrage Jr & Kristina. D. Schrage v. Allan Stahl. Eighth Judicial Court, Clark County, Las Vegas, Nevada.

Deposed and Testifying Witness. 2021. Civil No. CV 6417-203, State of Arizona, General Adjudication of All Rights in the Little Colorado River System and Source, Phoenix, AZ

Deposed and Testifying Expert Witness. 2012. Board of Education, Shelby County, Tennessee et al. v. Memphis City Board of Education et al. / Board of County Commissioners, Shelby County, Tennessee (third party plaintiff) v. Robert E. Cooper et al (third party defendant)." (Constitutionality of a Tennessee state law). Baker, Donelson, Bearman, Caldwell and Berkowitz, PC. Memphis, TN.

Deposed Expert Witness. 2009. "Quest Medical Services v. FMIC." (Demographic Effects of Hurricane Katrina on New Orleans in a case involving a Medical Service Provider). . Podvey, Meanor, Catenacci, Hildner, Cocoziello, and Chattman, P.C., Newark, NJ.

Deposed and Testifying Expert Witness. 2007. "Spring Hill Hospital, Inc. v. Williamson Medical Center and Maury Regional Hospital." (Evaluation of population forecasts in a case involving a proposed hospital). Miller and Martin, PLLC, Nashville.

Deposed and Testifying Expert Witness. 1994. Arkansas Supreme Court. (Statistical evaluation of the accuracy of the number of qualified signatures on a public referendum as determined by a sample).

Deposed Expert Witness. 1983. "Anchorage, et al., vs. J. Hammond et al." (Lawsuit brought by local governments against the state of Alaska on how populations are determined for purposes of state revenue sharing to local governments).

XI. Service

A. Professional

Co-editor, Special Issue on Population Forecasting, *Population Research and Policy Review* (2023) (with J. Baker, I. Grossman, and T. Wilson).

Mortality Expert Panel, Society of Actuaries Research Institute, February, 2022 -

Interview, "Census Bureau's use of Synthetic Data worries Researchers." A story that appears in Associate Press News. May 27, 2021 https://apnews.com/article/census-2020-technology-data-privacy-business-be938fa5db887a0ae6858dff0be217ef

External Advisory Board, Geo-Spatial and Population Studies Research Center, University of New Mexico, April 2019 -

Chair, Estimates and Projections Session I, 2022 Applied Demography Conference February 1st.

Interview: "Information for Real Estate Agents." Wallethub, April 24th, 2019. https://wallethub.com/edu/best-worst-cities-to-be-a-real-estate-agent/18713/#expert=david-a-swanson

Interview: "Demographic Formula Reveals Surprisingly Short Careers for MLB Pitchers." A story that appears in UPI's Science News, August 3rd, 2018 (https://www.upi.com/Demographic-formula-reveals-surprisingly-short-careers-for-MLB-pitchers/3841533304869/).

Editorial Board, *Population Research and Policy Review*, 2014-2021

Advisory Board, Online Program in Applied Demography, Pennsylvania State University, 2017-2021

Advisory Board, Nantucket Data Platform Project, Nantucket, Massachusetts, 2017-2020

Reviewer, Proposals for a special issue of *Population Research and Policy Review*, 2017.

Co-organizer, Conference on Applied Demography and Public Policy, University of Houston, Houston, TX, January, 2017.

Chair, Applied Demography Track Committee, 2017 Program Committee, Population Association of America. 2016-17.

2017 Program Committee, Population Association of America. 2016-2017.

Invited Commentary, "Compare Hawai'i and Mississippi," on the question, "Is Hawai'i a racial paradise?" Zocalo Public Square, September 15th, 2015 (http://www.zocalopublicsquare.org/2015/09/15/is-hawaii-a-racial-paradise/ideas/up-for-discussion/#David+A.+Swanson).

Poster Session Judge, "8th International Conference on Population Geographies, Brisbane, Australia, June 30th to July 3rd, 2015.

Discussant, Session 1130, "Demographic and Statistical Approaches to Small Area Estimation." Population Association of American, April 30th to May 1st, 2014. Boston, MA.

Session Chair, "Mortality and Later Life Health." Social Science History Association, 1-4 November 2012, Vancouver, BC, Canada.

Grant Proposal Reviewer. "FR/38/2-220/11 - Defining the Demographic Prospects of Georgia and Providing their Software," Shosta Rustaveli National Science Foundation of Georgia, Republic of Georgia (December, 2011).

Session Organizer and Chair, “Population Projections,” Applied Demography Conference, 8-10 January 2012, San Antonio, Texas.

Interview: “Experts Predict Bright Future.” A story that appears in The Telegraph. (Calcutta, India) December 21, 2010.

Interview: “Census Bureau releases detailed statistics on smaller Inland areas.” A story written by David Olson that appears in the Press-Enterprise, December 14, 2010

Interview: “Inland area lags behind state, nation in returning census forms.” A story written by David Olson that appears in The Press-Enterprise, March 31, 2010

Interview: “Government 'a Counting: Does the U.S. Census Need a 21st-Century Makeover?.” A story written by Katie Moisse that appears in Scientific American, March 25, 2010

Interview: “Some Hispanics puzzle over race question on census form.” A story written by Randy Cordova that appears in the Arizona Republic, March 23, 2010.

Interview: “The census inspires a sense of civic duty, distrust and fear.” A story written by Robert L. Smith that appears in The Cleveland Plain Dealer, March 16, 2010

Interview: “Campaign counts on snowbird surveys in Palm Springs.” A story written by Kate McGinty that appears in The Desert Sun, March 13, 2010

Interview: “Census Bureau reaching out in Inland area to communities least likely to be counted.” A story written by David Olson that appears in The Press-Enterprise, January 28, 2010

Interview: “Countdown to the Count-up.” A story written by Bettye Miller that appears in UCR: The Magazine of UC Riverside Winter, 2010, pp. 22-23.

Session Chair, “The 2010 Census.” Applied Demography Conference, 10-12 January 2010, San Antonio, Texas.

Session Organizer and Chair, “Expert Witness Work and the Applied Demographer,” Applied Demography Conference, 10-12 January 2010, San Antonio, Texas.

Co-Program Organizer (with Nazrul Hoque and Lloyd Potter), Applied Demography Conference, 10-12 January 2010, San Antonio, Texas.

Discussant, Session 1704, “Using Demography in the Business and Public Sectors.” 2009 Conference of the International Union for the Scientific Study of Population, Marrakech, Morocco, 27 September – 2 October 2009.

Associate Editor, Open Demography Journal, 2009-2010

Facilitator, Census Advisory Committee of Professional Associations, U.S. Census Bureau, 2009-10

Chair, Committee representing the Population Association of America, Census Advisory Committee of Professional Associations, U.S. Census Bureau. 2008-2009

Census Advisory Committee of Professional Associations, U.S. Census Bureau. 2004-2010

Member, Development Committee, Population Association of America, 2008-2013.

Chair and Conference Organizer, Psychology and Social Sciences Section, Mississippi Academy of Sciences, 2007-8.

Chair, Session on "Fertility: Social Issues and Reproduction." Annual Meeting of the Southern Demographic Association, 13 October 2007, Birmingham, Al.

Presenter and Discussant, "Symposium for School Districts that will be affected by the Toyota Assembly Plant near Tupelo. Mississippi." School of Education, University of Mississippi, 30 March 2007.

Organizer, Symposium: "the Psychological and Social Impacts of Hurricane Katrina." 2007 Conference of the Mississippi Academy of Sciences 22 February. Starkville, Mississippi.

Program Organizer, Applied Demography Conference, 9-11 January 2007, San Antonio, TX.

Chair and Conference Organizer, Psychology and Social Sciences Section, Mississippi Academy of Sciences, 2006-7.

Reviewer, Using the American Community Survey: Benefits and Challenges, Committee on Functionality and Usability of Data from the American Community Survey, Committee on National Statistics, National Research Council. Washington, DC: National Academy of Sciences Press. 2007.

Chair, Session on "Anxiety, Ambiguity, and Multiculturalism in Statistical Education," Annual Meeting of the American Statistical Association, 10 August 2006, Seattle, WA

Vice-Chair, Psychology and Social Sciences Section, Mississippi Academy of Sciences, 2005-6.

Local Arrangements Coordinator, Annual Meeting of the Southern Demographic Association University of Mississippi, October, 2005.

Editor, Population Research and Policy Review, Official Journal of the Southern Demographic Association, July 1st, 2004- July 1st, 2007.

Member, Advisory Board, Fulbright Academy of Science and Technology, 2003-2008.

Participant, Users Perspective Meeting, Panel on the Functionality and Usability of Data from the American Community Survey, Committee on National Statistics of the National Academies, April 2005, Washington, DC.

Technical Review Panel Member, Small Business Innovative Initiative Grants, National Institutes of Health, 2002.

Chair, National Committee on Applied Demography, Population Association of America, 2001-2.

Publications Officer, Government Statistics Section, American Statistical Association, 2001-2.

Member, National Committee on Applied Demography, Population Association of America, 1999 to 2003.

Organizer and Moderator, "Population Controls for the American Community Survey," Annual Meeting of the Southern Demographic Association, University of Mississippi, Oxford, Mississippi, November, 2005.

Organizer and Chair, "New Directions in Local Area Estimation and Forecasting,"

Annual Meeting of the Population Association of America, New York, New York. March, 1999

Technical Review Panel Member, Small Business Innovative Initiative Grants, National Institutes of Health, 1997.

Organizer and Chair, Panel Discussion on "Surf's Up! Building, Accessing, and Linking Demography's Internet Sites," Annual Meeting of the Southern Demographic Association, Memphis, Tennessee, October, 1996.

Chair, Session on "Computer Support of Statistical Education," The International Conference On Statistical Education In The Modern World: Ideas, Orientations, Technologies, St. Petersburg, Russia, July, 1996.

Chair, Membership Committee, Population Association of America, 1996 to 1998.

Technical Advisory Committee, Oregon Survey Research Laboratory, University of Oregon, 1996-97.

Textbook Reviewer, *Life in a Business Oriented Society* (by Richard Caston), Allyn and Bacon Publishers, 1996.

Member, Editorial Board, Population Research and Policy Review, 1995 to 1997, 2007-current.

Organizer and Chair, Session on "Estimates and Projection," 1996 Annual Meeting of the Population Association of America.

Co-Organizer, Sessions and Papers on State and Local Demography, 1995 Annual Meeting of the Population Association of America.

Member, Committee on Applied Demography, Population Association of America, 1994 to 1997.

Chair, Session on "Population, Environment and Development," 1994 Annual Meeting of The Southern Demographic Association, Atlanta, Georgia.

Secretary-Treasurer, Southern Demographic Association, 1994-1997 and 2004-2007.

Chair, Session on "Demographics of School and College Enrollment." 1994 Applied Demography Conference, Bowling Green, Ohio.

Organizer, Session on "Should Projections be Privatized?" and Session on "The Utility of Population Projections." 1994 Annual Meeting of the Federal-State Cooperative Program on Population Projections, Miami, Florida.

Member, Delegation to visit U.S. Senators RE the FY 1994 Budget for the U.S. Bureau of the Census, sponsored by The Population Association of American, July, 1993.

Member, Senior Council, Ohio Academy of Science, 1993-95.

Roundtable Discussion Leader on "School District Demography" 1993 Annual Meeting of the Population Association of America, Cincinnati, Ohio.

Organizer, Session on "Methods of Forecasting and Estimating," 1993 Annual Workshop of the National Association for Welfare Research and Statistics, Scottsdale, Arizona.

Arkansas State Representative to the Federal-State Cooperative Program for Population Projections, 1992 to 1995.

Member, National Peer Review Committee, Socio-economic Studies, High Level Radioactive Waste Repository, 1992, Yucca Mountain, Nevada.

Organizer and Chair, Session on “Projection and Forecasting Special Populations,” 1990 North American Conference on Applied Demography, Bowling Green, Ohio.

National Chairman, Federal -State Cooperative Program for Population Projections, 1993-94.

Discussant, Session on “Survey Research to Support Social Statistics,” 1990 Annual Meeting of the American Statistical Association, Anaheim, California.

Panelist, “Applied Demography and the Population Association of America,” given at the 1990 Annual Meeting of the Population Association of America, Toronto, Ontario. May, 1990.

External Examiner, “A Model for Fertility Change,” Ph.D. Dissertation submitted by N. Sugathan, Department of Demography, University of Kerala, 1989.

Participant, National Resource Persons Network, Office of Minority Health Resource Center, U.S. Public Health Service, 1989.

Member, Washington State Child Health Research and Policy Group, 1989-1993.

Discussant, Session on “Is the Non-Metropolitan Population Turnaround Over?” 1989 Annual Meeting of the Rural Sociological Society, Seattle, Washington.

Organizer and Chair, Session on “Demographic Issues and The Law,” 1988 National Conference on Applied Demography, Bowling Green, Ohio.

Chair, State and Local Demography Interest Group, Population Association of America, 1988-90.

Organizer and Chair, Session on Methodological Advances In State and Local Demography. 1988 Annual Meeting of the Population Association of America, New Orleans, Louisiana.

Member, Subcommittee on Academic Outreach, Business Demography Committee, Population Association of America, 1987-1988.

Roundtable Discussion Leader, “Marketing Your Organization’s Demographic Expertise and Resources.” 1987 Annual Meeting of The Population Association of America, Chicago, Illinois.

Judge, North Central Sociological Association Undergraduate Student Paper Competition, 1987.
Co-Organizer, 1st Biennial Conference on Applied Demography, held at Bowling Green State University, September 26-27, 1986.

Member, State Advisory Committee on Population Forecasts, Ohio Data Users Center, Ohio Department of Development, 1986-1987.

Discussant, Session on Estimating and Forecasting Demographic Characteristics of Small Areas, 1986 Annual Meeting of the Population Association of America, San Francisco, California.

Discussant, Session on Estimates and Projections for State and Local Areas, 1985 Annual Meeting of the Population Association of America, Boston, Massachusetts.

Speaker, Panel on Careers in Applied Demography, 1985 Annual Meeting of the Population Association of America, Boston, Massachusetts.

Discussant, Session on Issues in State and Legal Demography, 1984 Annual Meeting of the Population Association of America, Minneapolis, Minnesota.

Alaska State Representative to the Federal State Cooperative Program for Population Projections, 1981-1983.

Discussant, Session on Forecasting Energy Demand, Northwest Utilities Conference, 1980 Annual Meeting, Portland, Oregon.

Discussant, Session on Mathematical Models in Sociology, 1978 Annual Meeting of the Pacific Sociological Association, Spokane, Washington.

Member, Editorial Board, Applied Demography, Population Association of America, 1985 to 1993.

External Examiner, "Unique Competencies of International Non-Governmental Organizations (INGOs): Empirical Explorations from India." Sociology Dissertation by Pranaya Kumar Swain, Ph.D. Candidate, Indian Institute of Technology-Kanpur, Kanpur, Utter Pradesh, India. 1995.

Editorial Referee, Demography, 2022 (1 paper)

Editorial Referee, Demographic Research 2021 (1 paper)

Editorial Referee, Population Research and Policy Review, 2021 (1 paper)

Editorial Referee, Spatial Demography, 2020 (1 paper)

Editorial Referee, Journal of Engineering and Applied Research, 2019 (1 paper)

Editorial Referee Spatial Demography, 2019 (1 paper),

Editorial Referee, Demography, 2018 (1 paper)

Editorial Referee, Canadian Studies in Population, 2018 (1 paper)

Editorial Referee, Journal of Mathematical Biology, 2018 (1 paper)

Editorial Referee, Demography, 2017 (1 paper)

Editorial Referee, Population, Space and Place, 2017 (1 paper)

Editorial Referee, Population Research & Policy Review, 2017 (1 paper)

Editorial Referee, Demography, 2016 (1 paper).

Editorial Referee, Review of Economics and Finance, 2016 (1 paper)

Editorial Referee, Journal of Population Research, 2016 (1 paper)

Editorial Referee, Population Studies, 2015 (1 paper).

Editorial Referee, The American Statistician, 2914 (1 paper)

Editorial Referee, Journal of Population Research. 2014. (1 paper).

Editorial Referee, Journal of Population Research. 2013. (1 paper)

Editorial Referee, Open Demography Journal. 2012. (1 paper)

Editorial Referee, Disasters Journal. 2012 (1 paper)

Editorial Referee, Population Research and Policy Review, 2011 (2 papers)

Editorial Referee, Canadian Journal of Sociology, 2011 (1 paper).

Editorial Referee, Journal of Population Research, 2011 (1 paper).

Editorial Referee, Journal of Population Research, 2010 (1 paper).

Editorial Referee, Population Research and Policy Review, 2010 (1 paper).

Editorial Referee, American Sociological Review, 2010 (1 paper).

Editorial Referee, Demography. 2010 (1 paper).

Editorial Referee, Population Health Metrics. 2010 (1 paper).

Editorial Referee, Journal of Planning Education and Research, 2009 (1 paper).

Editorial Referee, Population Research and Policy Review, 2009 (1 paper).

Editorial Referee, Population Research and Policy Review, 2008 (2 papers).

Editorial Referee, Population Studies, 2008 (1 paper).

Editorial Referee, Journal of the Mississippi Academy of Sciences, 2008 (2 papers) .

Editorial Referee, Population Research and Policy Review, 2007 (1 paper).

Editorial Referee, Journal of Population Research, 2007 (2 papers).

Editorial Referee, City and Community, 2006 (1 paper).

Editorial Referee, Journal of Economic and Social Measurement, 2005 (1 paper).

Editorial Referee, International Journal of Forecasting, 2004 (1 paper).

Editorial Referee, Demography, 2001 (1 paper).

Editorial Referee, Population Research and Policy Review, 1999 (1 paper).

Editorial Referee, International Journal of Forecasting, 1997 (1 paper).

Editorial Referee, Population Research and Policy Review 1996 (1 paper).

Editorial Referee, Demography, 1993 (1 paper).

Editorial Referee, Demography, 1991 (1 paper).

Editorial Referee, Demography, 1987 (1 paper).

Editorial Referee, The Energy Journal, 1987 (1 paper).

Editorial Referee, Demography, 1986 (1 paper).

Editorial Referee, Human Biology, 1985 (1 paper).

Editorial Referee, Demography, 1984 (1 paper).

Editorial Referee, Demography, 1981 (1 paper).

Editorial Referee, Social Biology, 1981 (1 paper).

Editorial Referee, Demography, 1980, (1 paper).

Reviewer, Proceedings of the 1992 International Conference on Applied Demography (1 paper).

B. Academic

Reviewer, Long range demographic and Enrollment projections for California," as part of the "Framework for UC's Growth and Support" project, at the request of the UC Provost, Aimee Dorr, 2017.

Faculty Chair, Graduate Student Awards Committee, Department of Sociology, University of California Riverside, 2016-2017

Faculty Chair, Technology Committee, Department of Sociology, University of California Riverside, 2016-2017.

Faculty Member, Undergraduate Studies Committee, Department of Sociology, University of California Riverside, 2010-2015.

Faculty Chair, Undergraduate Program Review Committee, Department of Sociology, University of California Riverside, 2010-2011.

Interim Director, Blakely Center for Sustainable Suburban Development, University of California Riverside, 2008-2009.

Member, Leadership Institute Steering Committee, University of Mississippi, 2006-7.

Chair, Provost's Task Force on Undergraduate Education, University of Mississippi, 2004-5.

Member, Faculty Grant Review Committee, College of Liberal Arts, University of Mississippi, 2004-5.

Member, Ad Hoc Committee on Off-Campus Programs, College of Liberal Arts, University of Mississippi, 2003-4.

Member, Curriculum and Policy Committee, College of Liberal Arts, University of Mississippi, 2003-7.

BScBA Program Representative, Academic Council, Helsinki School of Economics, 2001-3.

International Summer Term Governing Board, Mikkeli Polytechnic College, 2001-3.

Campus Council, Mikkeli Business Campus, Helsinki School of Economics, 1999-2003.

Member, Dean's Executive Council, School of Urban and Public Affairs, Portland State University, 1995-97.

Member, UALR 2000 Response Group, University of Arkansas at Little Rock, 1994-95.

Mentor in Demography, Arkansas Delta Research, Education and Development Foundation, West Memphis, Arkansas, 1992-93.

Member, Urban Demography Subcommittee, Masters of Social Science Committee, University of Arkansas at Little Rock, 1992-93.

Member, East Campus Facilities Usage Group, Pacific Lutheran University, 1991-92.

Member, Provost's Ad Hoc Committee for Faculty Research, Pacific Lutheran University, 1990-92.

Member, Center For Social Research Committee, Division of Social Sciences, Pacific Lutheran University, 1987-89.

Member, Graduate Studies Committee, Department of Sociology, Bowling Green State University, 1986-87.

Library Representative, Department of Sociology, Bowling Green State University, 1986-87.

Member, Search Committee for the Assistant Director of Research Services, the Graduate College, Bowling Green State University, 1985.

Representative, Washington Community College Computing Consortium, 1981.

President, Sociology Graduate Student Association, University of Hawaii, 1974-75

Member, Executive Committee, Department of Sociology, University of Hawaii, 1974-75
Member, Graduate Admission Committee, Department of Sociology, University of Hawaii, 1975-76.

B. Community

2022 Pro Bono Consulting, Department of City Planning (Kendra Taylor et al.), Atlanta, GA,

2018- Member, Public Advisory Board, Caring Nurses Home Health Service, Las Vegas, NV.

2016 - 2022 President, University of Hawai'i Alumni Association, Las Vegas, NV Chapter

2016 - 2017 Secretary, Board, "Kimo Leads the Way," a non-profit organization in Las Vegas with a mission to ease the suffering of child cancer patients and their Parents.

2015-2016 Vice-President, University of Hawai'i Alumni Association, Las Vegas Chapter

1987- As an annual donor and fund raiser, participate(d) in the endowment of the Demography Scholarship, Western Washington University Foundation, Bellingham, Washington.

2010 As a representative of the University of Hawai'i Alumni Association, represented the University of Hawai'i to prospective university students and their parents at the Laguna Beach High School Annual "College Round-up," 6 October, Laguna Beach, CA,

2008 As a donor, established the David L. Swanson Endowed Scholarship for first generation college students, Eastern Washington University Foundation, Cheney, Washington.

2003-2007 As a donor and fund raiser, helped establish the E. Walter Terrie Endowed Graduate Student Award for the Southern Demographic Association, Florida State University Foundation, Tallahassee, Florida.

2007 Donor, Schiller Scholarship and Jobes Scholarship, Department of Sociology, Pacific Lutheran University, Tacoma, Washington.

2006 Demographic Advisor, Town of Walls, Mississippi (Pro Bono Assistance)

2003-2005 Mississippi State Director, National Association of Medics and Corpsmen.

2001 - As an annual donor and fund raiser, helped establish the Gary K. Sakihara Graduate Student Award, Department of Sociology, University of Hawai'i at Mānoa, University of Hawai'i Foundation, Honolulu, Hawai'i.

2003-2007 Annual donor, unrestricted funds for the Department of Sociology and Anthropology, University of Mississippi Foundation, Oxford, Mississippi

2001-2003 Representative, Savo Provincial Higher Education Council, Mikkeli, Finland

1999-2000 Member, Census 2000 Advisory Committee, City of Las Vegas, Las Vegas, Nevada

1996-1997 Member, Board of Directors, Mt. Hood Brewing Company, Portland, Oregon.

1994-1995 Member, Governor's Task Force on Hispanic Issues, State of Arkansas.

1994. Technical Demographic Advisor, Evangelical Lutheran Church in America, Research and Planning Office, National Headquarters, Chicago, Illinois (Pro Bono Assistance).

1992-1994. Technical Demographic Advisor, Catholic Church Diocese Officer, Little Rock, Arkansas (Pro Bono Assistance).

1993. Technical Coordinator, Governor's Task Force on Health Care Reform, State of Arkansas.

1988-1990. Survey and Research Consultant, Prince of Peace Lutheran Church, Des Moines, Washington (Pro Bono Assistance).

Life Member, 101st Airborne Division Association.

Life Member, National Association of Corpsmen and Medics.

Life Member, Western Washington University Alumni Association

XII. Research and Professional Consulting

Demographic Consultant, Bryan GeoDemographics, 2021-

Wrongful Death Loss Consultant, O'Reilly Law Group, Las Vegas, Nevada. 2019-2022.

Demographic Consultant, "Forecast of Hopi Tribal Members et al." The Hopi Tribe, Kykotsmovi, AZ, 2017-2022.

Demographic and Statistical Consultant, ALCS LLC, Richmond, VA, 2016 - 2018

Course Development Consultant, Department of Sociology, Penn State University, 2016-2017

Demographic Consultant, Watts Guerra, LLC. San Antonio, TX. 2016.

Demographic Consultant. "Conseil Scolaire Francophone de la Columbia-Britannique et al. v. Her Majesty the Queen et al." SCBC, Vancouver registry, No. S103975. McCarthy Tetrault LLP. Vancouver, British Columbia, Canada. 2013-2014.

Demographic Consultant, Kemp Communications, Las Vegas, Nevada. 2011.

Demographic Consultant, "Population Projections." Miller and Martin, PLLC. Nashville, TN. 2010.

Demographic Consultant, Third Wave Research, Madison, WI. "Agent-Based Population Projections. 2009-2010 .

Demographic Consultant, Third Wave Research, Madison, WI. "Population Projections for the Nine Census Divisions, 2010-2020, by Single Years of Age and Sex. 2009.

Demographic Consultant, Kemp Communications, Las Vegas, Nevada. 2009.

Demographic Consultant, McKibben Demographics. "Planning a Charter School in the Lagniappe Area of New Orleans, Louisiana," Grant funded by the Smart Foundation. 2009.

Demographic Consultant, "Quest Diagnostics, Inc. v. FMIC." Podvey, Meanor, Catenacci, Hildner, Cocoziello, and Chattman, P.C., Newark, NJ. 2008-2009

Demographic Consultant, "Socio-Economic Economic Resilience and Dynamic Micro-Economic Analysis for a Large-Scale Catastrophe, Grant funded by The Southeast Regional Research Initiative (SERRI), with R. Forgette and M. Van Boening, University of Mississippi, Principal Investigators, 2009-2010

Demographic Consultant, "Ochsner Clinical Foundation v. Continental Casualty Company." Fisher Kanaris P. C., Chicago, IL, 2007.

Demographic and Statistical Consultant, Hurricane Katrina: Its Impact on the Population and Candidates for Endovascular Surgery in the Primary and Secondary Service Areas of Garden Park Hospital," Lemle and Kelleher, PLLC, Shreveport, LA. 2007.

Demographic Consultant, “Population Projections.” Miller and Martin, PLLC. Nashville, TN. 2006-2007.

Demographic Consultant. “Evaluation of Methods for Estimating the Foreign Born Population.” U.S. Census Bureau. 2006-2008.

Demographic Consultant, “Estimated Number of Employees with Health Insurance by Employee Type (Private Sector and Government), Size of Establishment, and City: Clark County, Nevada.” 2004. Regulatory Economics, Inc. Henderson, NV.

Demographic Consultant, “Estimating and Forecasting the Size of U.S. Lifestyle Segments.” Third Wave Research, Inc. Madison, Wisconsin, 2003; 2002; 1996.

Demographic Consultant, Nevada Consulting Alliance, “Evaluation of Population and Related Projections of Nevada.” 2002.

Demographic Consultant, Nevada Consulting Alliance, “Critique of the State Demographer’s 2002 Population Estimate for Clark County.” 2002.

Consulting Scientist to Consulting Senior Scientist, Science Applications International Corporation, 1988-2002.

Demographic Consultant, Senecio Software, Inc. "Remote Sensing Estimates of Population." 1999-2002.

Demographic Consultant and Consulting Team Leader, Washoe County, Nevada, "Development of a Small Area Population Estimation System. 1999.

Consultant/Resource Faculty, “Applied Demographic Research in Migration.” National Science Foundation (with L. M. Tedrow, Director), 1999.

Demographic Consultant, Parsons Brinckerhoff and SaudConsult, "Review and Revision of the Population Forecast for Jubail, Saudi Arabia." 1999.

Demographic Consultant, Nevada Consulting Alliance, “Revision of the Nevada County-level Economic and Demographic Forecasting Model,” Nevada State Demographer’s Office, 1998-99

Demographic and Statistical Estimation Consultant, “MetroMail Household Income/Asset Estimation Project,” Third Wave Research, Inc. Madison, Wisconsin, 1996-97.

Demographic Consultant and Census Enumerator/Crew Leader Training Instructor, “American Community Survey Evaluation Project,” Multnomah Progress Board, Portland, Oregon, 1997.

Demographic Consultant, “Initial Evaluation of the American Community Survey Portland Test Site Results,” U.S. Bureau of the Census, 1996-97.

Enrollment and Demographic Consultant, “Enrollment Forecasts and Attendance Zone Adjustments,” Hillsboro 1J School District, Oregon, 1995-1996

Enrollment and Demographic Consultant, “Enrollment Forecasts,” Newberg School District Newberg School District, Oregon, 1996.

Demographic Consultant, “Higher Education Trends,” NORED, Inc., Olympia, Washington, 1995

Demographic and Enrollment Consultant, “Enrollment and Market Area Profiles,” Portland Community College, Portland, Oregon, 1995.

Consultant/Resource Faculty, “Applied Demographic Research in Migration” National Science Foundation (with L. M. Tedrow, Director), 1994.

Demographic Consultant, General Motors Research and Development Labs, GM North America Operations Center Michigan, 1988 to 1994.

Demographic Consultant, “Tribal Membership Forecasts,” Lummi Tribal Business Council, Whatcom County, Washington, 1991.

Statistical Consultant, Iceberg Seafoods, Anchorage, Alaska, 1991-92, 1997-99, 2000.

Demographic Consultant, State of Connecticut Department of Health, “Small Area Population Estimation System” (with D. Pittenger and E. Schroeder), 1990.

Survey Research Consultant, Policy Division, Washington State Office of Financial Management, Olympia, Washington, 1990.

Demographic Consultant, Battelle Pacific Northwest Laboratories, Richland, Washington. “Hanford Environmental Dose Reconstruction Project,” Subcontract No. 041581-A-K1. Richland, Washington, 1988-1990.

Survey Research Consultant, Choosing Our Future, Inc., Menlo Park, California, 1984.

Survey Research Consultant, “Household Characteristics and Residential Energy Use,” Pacific Gas and Electric Company, San Francisco, California, 1983-1984.

Demographic Consultant, “Sub-county Estimation,” U.S. Bureau of the Census, 1983.

Population and Enrollment Consultant, Anchorage Community College, 1983

Demographic Consultant, University of Phoenix, 1982.

Demographic Consultant, KVOS TV, Inc., Bellingham, WA., 1972, 1974.

Survey Research Consultant, Ewa Mental Health Clinic, Honolulu, Hawaii, 1975.

Information Systems Consultant, Hawaii Center for Environmental Education, Honolulu, HI. 1973.

Demographic Consultant, America Friends of Hebrew University of Jerusalem, Inc., New York, N. Y., 1973.

XIII. Memberships in Associations

Academic Central, Casualty Actuarial Society (2016 to present)

American Statistical Association (1975 to present)

Canadian Population Society (Life Member)

European Association for Population Studies. (1999 to 2018)

Fulbright Academy for Science and Technology (2003 to 2009)

Fulbright Association (1994-97, 2002 to 2010)

Population Association of America (1975 to present)

Mississippi Academy of Sciences (Life member)

Southern Demographic Association (1992 to present)

Western Social Science Association (2015 to 2017)

XIII. Selected Awards and Honors

2022 E. Walter Terrie Award for State and Local Demography, for ""Boosted Regression Trees for Small-Area Population Forecasting." Selected as the best paper on an applied topic at the 2022 Conference of the Southern Demographic Association, Knoxville, TN (with J. Baker and J. Tayman).

2020-21 Edward A. Dickson Emeritus Professor Award, University of California Riverside

2016 E. Walter Terrie Award for State and Local Demography, for "Using Modified Cohort Change and Child-Woman Ratios in the Hamilton-Perry Forecasting Method." Selected as the best paper on an applied topic at the 2016 Annual Meeting of the Southern Demographic Association, October 12th , 2016, Athens, Georgia. (with J. Tayman).

Fulbright Specialist Roster (in Applied Demography, appointed March 2014 for a five year term).

Merit Increase to Professor VIII, University of California Riverside, (June) 2013.

Certificate of Appreciation, US Census Bureau (for service on behalf of Census 2010). (September) 2010.

Outstanding American Award 2006, National Association of Medics and Corpsmen (for service on behalf of Hurricane Katrina victims).

Research Fellow, Social Science Research Center, Mississippi State University (appointed, October 2005).

RAND "Research Summer Institute" Scholarship (July), 2004,

Fulbright "German Studies Seminar," (June), 2003,

1999 E. Walter Terrie Award for State and Local Demography, for " We are What We Measure: Toward A New Approach for Assessing Population Forecast Accuracy." Selected as the best paper on an applied topic at the 1999 Annual Meeting of the Southern Demographic Association, October 29th, 1999, San Antonio, Texas. (with J. Tayman and C. Barr).

Hammer Award (as part of a research team evaluating the American Community Survey, U.S. Bureau of the Census), Vice-President of the United States of America, July, 1999,

Performance Award, Science Applications International Corporation, 1999.

Task Achievement Program Award, U.S. Department of Energy, Yucca Mountain Project, 1998.

Certificate of Appreciation, Community Based Leadership Institute, Minority Affairs Division, American Association of Retired Persons, 1992.

Fulbright Lecturing Award, 1990-91, Department of Demography, University of Kerala, Trivandrum, India.

Nominee, Outstanding Contributor to Graduate Education, 1985-86, Graduate Student Senate, Bowling Green State University, 1986.

East-West Center Fellowship, 1980. East-West Center, Honolulu, Hawai'i.

Graduate with honors (cum laude), Western Washington State College, 1972.

Alpha Kappa Delta, National Sociology Honorary Society

Phi Theta Kappa, National Community College Honorary Society, Kappa Epsilon Chapter

XIV. Languages

English (US): Native Language
Swedish: Reading and Speaking, Good; Writing, Fair.
Finnish: Reading and Speaking, Poor; Writing, Very Poor.

THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE; DERRICK SIMMONS; TY PINKINS; CONSTANCE OLIVIA SLAUGHTER HARVEY-BURWELL — **PLAINTIFFS**

VS. — **CIVIL ACTION NO. 4:22-cv-00062-SA-JMV**

STATE BOARD OF ELECTION COMMISSIONERS; TATE REEVES ***in his official capacity as Governor of Mississippi*****; LYNN FITCH** ***in her official capacity as Attorney General of Mississippi*****; MICHAEL WATSON** ***in his official capacity as Secretary of State of Mississippi*** — **DEFENDANTS**

DECLARATION OF DAVID A. SWANSON, Ph.D.

I, David A. Swanson, Ph.D., do hereby declare as follows:

1. My name is David A. Swanson. I am an adult resident citizen of Whatcom County, Washington. I have personal knowledge of the facts and matters set forth herein and am otherwise fully competent to offer the testimony hereafter stated.
2. I was retained by Defendants to analyze a report submitted by Plaintiffs' expert Dr. Traci Burch (120206_Dr. Burch Rebuttal Report.Final.Signed(2721085.100)) in this litigation. I was asked to check the accuracy of her use of data in supporting her opinions and, if necessary, to collect and examine data tending to support opinions to the contrary.
3. My qualifications to offer the opinions presented in my report and in this declaration are stated in ¶¶ 1-11 of my report.

As I discuss in detail in this report, I find, in summary, that Dr. Burch's Rebuttal Report contains major errors. These errors, combined with several critical oversights, render her opinion invalid.

4. My observations of Dr. Burch's work are that she:

(1) claims that the Current Population Survey (CPS) is unreliable,[1] therefore causing her to turn to a new data set, The "Cooperative Election Survey" (CES) for "validated voters." However, the CES is itself linked back to the CPS to establish weights for "validated voters," a fact which she does not acknowledge;

(2) claims on the basis of an extremely small sample that the CES data showed that 74% of the White Mississippi respondents who said they voted actually did so, while 57% of the Black Mississippi respondents did so.

(3) uses a weighting scheme in her "logistic regression" analyses that is not recommended by the authors of the CES study and compounding this failure by declaring that there were "statistically significant" coefficients in her two sample-based logistic regression models, both of which, in fact, turn out to be not statistically significant when the recommended weighting scheme is used. That is, Dr. Burch fails to create logistic regression models from which she can make inferences from the CES samples to the populations in question;

(4) incorrectly identifies the counties in Mississippi Supreme Court District 1 in her "Ecological Inference" Model of District 1 by erroneously excluding Bolivar County and erroneously including Adams County; and

(5) compares White voters to Non-White Voters in her two Ecological Inference models, one for District 1 and the other for the state as a whole, when, in fact the question is in regard to White Voters and Black Voters.

5. Because of these and other errors and oversights I discuss in the report that follows, I find Dr. Burch has no valid opinion regarding White voters relative to Black Voters both in MS Supreme Court District 1 and in Mississippi as a whole. As such, her "findings" do not rebut my conclusion or change my opinion that Black Mississippians are able to participate effectively in the political process in MS Supreme Court District 1 and in the state as a whole.

[1] Burch rebuttal report, page 4: "Because, as discussed above, turnout estimates in the CPS are unreliable not just because of overreporting in general, but because of differences in overreporting by race in particular, I conducted additional analyses which employed alternative methods of looking at turnout by race that do not rely on self-reported voter turnout."

6. Next, I examine the background of Dr. Burch's original expert report and the contents of her supplemental report that lead to my conclusions. At page 10 of her initial expert report, Dr. Burch offered the following opinion:

> "Black people in Mississippi have had less access to quality education and therefore have lower educational attainment for the reasons discussed in this section; this lower educational attainment leads to lower voter turnout."

The data supporting this opinion was her calculation on page 10 of her expert report that:

> "56.1% of white Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens."

7. Figure 4, found on page 10 of Dr. Burch's expert report, shows that the calculation supporting this opinion relied upon the 2020 Current Population Survey ("CPS") Voting Supplement, official data collected by the United States Census Bureau. In conducting a "quality control" assessment of this calculation by Dr. Burch, I first examined historical CPS data provided by the Census Bureau and found, as stated in ¶ 128 of my expert report, that Black voter turnout exceeded White voter turnout in Mississippi every year since 2012. Moreover, as stated in ¶ 137 of my expert report, I found that the official 2020 CPS data claimed to have been used by Dr. Burch in generating her calculation contradicted the opinion she formed from this calculation. Instead of showing that 2020 voter turnout by White Mississippians exceeded the 2020 voter turnout by Black Mississippians, it showed that the turnout by the latter exceeded the turnout by the former.

8. As stated in ¶ 149 of my expert report, I found that in using the official 2020 CPS data to come to her opinion, Dr. Burch neglected to use the correct age filters so that only those 18 years and over who are eligible to vote would be included in her calculations. These errors led, in turn, to her erroneous opinion that White voter turnout was higher than Black voter turnout in Mississippi. When the correct age filters are applied, the same CPS data used by Dr. Burch show that Black voter turnout is higher than White voter turnout in Mississippi, which contradicts not only the opinion found in her expert report, but also to the adherence of this erroneous opinion found in her rebuttal.

9. In a further effort to substantiate my finding from the CPS that Black voter turnout exceeds White voter turnout in Mississippi (and has for some time) while simultaneously examining Dr. Burch's opinion that an "overall gap in turnout between Black and white Mississippians exists," also found on page 10 of her expert report, I examined a second set of data. The Social Science Research Center at Mississippi State University has conducted annual statewide surveys of registration and voting frequency from 2015 to 2021. In ¶ 148-151 of my report, I determined that these additional data also indicated that Black voter turnout generally exceeds White voter turnout in Mississippi.

10. In response to my findings, Dr. Burch submitted a rebuttal report (120206_Dr. Burch Rebuttal Report.Final.Signed(2721085.100)) on February 6, 2023. She admits at page 3 of this rebuttal report that, as I pointed out in my declaration of March 8, 2023, she miscalculated White and Black voter turnout in Mississippi's 2020 general election because she failed to use the correct age filters in her analysis. The CPS educational question is only asked if persons aged 15 years and over and she erroneously included those under 18 in the portion of her analysis related to educational attainment (i.e., she included those aged 15, 16, and 17, who are not eligible to vote). In providing her estimate of overall voter turnout, Dr. Burch compounds this error by including even more of those who are not eligible to vote, namely all of those under the age of 18, to include infants. Overlooking her errors for the moment, I find that, in spite of the fact that she relied on CPS data in her in her expert report, she now states at page 4 of her rebuttal that she has now determined that "turnout estimates in the CPS are unreliable." This statement repudiates not only her own expert report,but disregards the fact that the CPS represents a nationally recognized source of record for statistics on voter registration and voter turnout on which, like Dr. Burch, I relied in my expert report.

11. Dr. Burch reveals on page 4 of her rebuttal report that she now relies upon for the first time the "2020 Cooperative Election Study" (CES) as a remedial dataset. This national dataset has been available and has been used by experts in the field for many years. This data set has a number of issues in regard to its Mississippi sample. First, the 2020 CPS data that Dr. Burch originally relied upon has 2,548 total respondents, and 1,657 voting-age respondents. By comparison, the CES that Dr. Burch turns to remediate the CPS has 462 voting-age respondents. Generally speaking, when a survey sample is being used to analyze extremely small populations, the largest sample possible is most beneficial. What Dr. Burch asserts is that while the CPS has a larger sample size, that larger sample in its entirety is flawed, it cannot be relied upon, and another source with ¼ the sample size should be the appropriate source of record for measuring voter turnout in Mississippi.

12. An issue that frequently stands out in survey samples that are weighted to represent a population (such as the CES using 462 people to represent nearly 2.3 million voting age population in Mississippi)[2] is that more rare populations that have unique combinations of characteristics tend to have high weights that carry the risk of significantly and disproportionately impacting statistics using those respondents – and impacting the interpretation and conclusions based on them.

[2] See: https://pages.nyu.edu/jackson/design.of.social.research/Readings/Johnson%20-%20Introduction%20to%20survey%20weights%20%28PRI%20version%29.pdf for a general discussion of sample survey weighting.

13. There are glaring examples of this problem in the CES. One feature that stands out among its many issues is that the answers for four Black respondents – who count as 51 respondents in reporting survey results when they are weighted using the "commonPostweight."[3] Because the sum of the CommonPostweights in the survey is 419 – that means those four respondents are actually representing 12% of Mississippi's total sample and 29% of its Black sample. While even one of those respondents could end up changing the results of a table if it found its way into a given analytic cell – the consequences of all four of those respondents being grouped together could be disastrously misleading. With these four respondents forming a potentially influential set of cases in the small subsample she uses in her analysis, Dr. Burch is clearly ignoring the warning found in the CES Study Guide (Ansolabehere, Schaffner, and Luks, 2021: 23): "… we advise caution when analyzing very small subsamples as random measurement error may lead to faulty inferences about analyzing very small subpopulations."

14. In her rebuttal report, Dr. Burch touts the value of the CES in enabling the researcher to look beyond self-reported voting behavior, on page 4-5:

> Because much of the bias in turnout estimates based on the CPS has to do with differential overreporting of voting by race,11 it is necessary to examine alternative sources that do not depend on self-reporting of turnout to estimate turnout by race in Mississippi. First, I examine the 2020 Cooperative Election Study (CES), which contains a sample of 462. Mississippi adults (unweighted). The CES, although it is a survey, independently validates voter registration and turnout for respondents by attempting to match respondents to a database of registered voters maintained by Catalist, a corporation that maintains a national database of voters. Catalist updates their information on voter registration and history with data directly from states. In my analysis, I use the measure of validated voter turnout rather than self-reported voter turnout to estimate racial gaps in turnout, distinguishing this survey from the unvalidated self-reported turnout from CPS or Mississippi State University analyzed by Dr. Swanson.

15. Based on Dr. Burch's advocacy of the benefits of the CES, and her discussion of how it enables validation of voters by matching to Catalist, and the direction by the authors of the CES:

> "We recommend the use of "vvweight" or "vvweight_post" any time researchers wish to characterize the opinions, behaviors, or traits of voters or registered voters. The "vv" stands for

[3] Respondent 1236855389 has a weight of 10.1, respondent 1247704425 has a weight of 11.3, respondent 1248507989 has a weight of 14.3 and respondent 1259768185 has a weight of 15. Combined – these four respondents count for 51.7.

> "voter validated" and these weights are missing for all respondents who were not validated as (active) registered voters."

I anticipated an analysis of the CES leveraging the powerful technique of matching voters who said they voted to those who actually voted.

16. On page 6 Burch observes:

> CES allows us to examine overreporting of voting. Comparing self-reported voter turnout to validated voter turnout shows substantial overreporting of voting. The CES team **was able to validate** in Catalist that 74% of the White Mississippi respondents who said they voted actually did so, but **were only able to validate** that 57% of the Black Mississippi respondents who said they voted did so. Thus, as the CES shows, corroborating the recent work of Ansolabehere et al. discussed supra, differential over-reporting of voter turnout by race is an important phenomenon that affects estimates of voter turnout in Mississippi and demonstrates the problems with relying only on self-reported voting to estimate racial differences in turnout.[4]

17. In the footnote of this discussion, Dr. Burch states: "For this analysis, which includes reported voter turnout, I weighted the sample by the variable "commonpostweight." After writing at length about the power that CES has in validating voters and reading the CES technical documentation instructing users to use "vvweight or vvweight_post any time researchers wish to characterize the opinions behavior or traits of *voters or registered voters*" (see page 16) it is inexplicable why Dr. Burch would instead use a weight (commonpostweight) that the CES technical documentation says *not to use* for the analysis Dr. Burch performs. Next, I perform a statistical investigation in an effort to understand the effect of her choice.

18. I attempted to replicate Dr. Burch's results (See Appendix B for a discussion of approaches to validating voters from the CES technical documentation). Dr. Burch appears to use the third and most rigorous method, just without using the correct weights. In Figure 1.1 I show the self-identification variable "cc20_401."

[4] Emphasis added by the author

Figure 1.1: CC20_401 Self-reported voting variable

Voted in 2020
Which of the following statements best describes you?
CC20_401

Voted in 2020	N
I did not vote in the election this November.	1317
I thought about voting this time – but didn't.	620
I usually vote, but didn't this time.	432
I attempted to vote but did not or could not.	433
I definitely voted in the November 2020 General Election.	45660
N	48462

19. Next, in Figure 1.2 I show the CL_2020GVM variable – which is the Catalist variable showing whether the respondent actually voted. A combination of "I definitely voted" from Figure 1.1 and any response to Figure 1.2 would be the number of validated voters, divided by everyone who said they definitely voted.

Figure 1.2 CL_2020GVM Self-reported voting variable

CL_2020gvm - How respondent voted in 2020 general election (if missing, respondent did not have a record of voting)

1. absentee
2. earlyVote
3. mail
4. polling
5. unknown

20. In Table 1.1, for white voters, I show the CC20_401 (self-reported voting) variable at the top, for those who "definitely voted". On the left of Table 1.1, I show the responses for CL_2020gvm. Associated with the code of "5" under the first column, we can see in the second column of Table 1.1 that there were 127 (weighted) white respondents (135 unweighted) who reported they voted and were validated (we just don't know in what manner they voted). Continuing on to the "NA" code in the first column, we can see in the second column that there were 45 (weighted) white respondents (49 unweighted) who reported that they voted but were not validated. In this case, the 127 weighted White voters who were validated divided by 172, the total number of weighted White respondents who stated that they voted yields an estimate of 73.6% white– matching Dr. Burch's estimate. The problem here is that this estimate is using the incorrect "commonpostweight".

Table 1.1 Calculation of Validated white Voters Using "Commonpostweight"

inputstate	28
race	White
	Def Voted
5	127
NA	45
Grand Total	**172**
Voted and Validated	**73.6%**

21. Similarly in Table 1.2, for Black voters, I show the CC20_401 (self-reported voting) variable at the top, for those who "definitely voted". On the left of Table 1.2, I show the responses for CL_2020gvm. Associated with the code "5" under the first column, we can see in the second column of Table 1.2, that there are 81 (weighted) Black respondents (52 unweighted) who reported they voted and were validated (we just don't know in what manner they voted). Continuing on to the "NA" code in the first column, we can see in the second column that there were 61 Black respondents (35 unweighted) who reported they voted but were not validated. In this case, the 81 weighted Black voters divided by the 143 weighted Black respondents who stated they voted yields an estimate of 57.1% – matching Dr. Burch's estimate. The problem here again is that this estimate is generated using the incorrect "commonpostweight".

Table 1.2 Calculation of Validated Black Voters Using "Commonpostweight"

inputstate	28
race	Black
	Def Voted
5	81
NA	61
Grand Total	**143**
Voted and Validated	**57.1%**

22. Using the incorrect weighting scheme,"commonpostweight," it appears that: (1) 73.6 percent of Whites who reported voting actually did vote; and (2) 57.1 percent of Blacks who reported voting actually did vote. However, a different story emerges when the correct weighting system is used.

Table 1.3 Calculation of Validated white Voters Using the Correct Weighting Scheme, "vvweight_post"

inputstate	28
race	White
	Def Voted
5	115
NA	6
Grand Total	**121**
Voted and Validated	95.1%

23. On the left of Table 1.3, I show the responses for CL_2020gvm. Associated with the code "5" in the first column of Table 1.3 we can see in the second column that there are 115 (weighted) White respondents (134 unweighted) who reported they voted and were validated. Associated with the "NA" in the first column, we can see in the second column that there are 6 (weighted) White respondents (6 unweighted) who reported they voted but were not validated. In this case, the 115 weighted White "validated voters" divided by the 121 weighted White respondents who reported they voted yields an estimate of 95.1% "Whites who voted and were validated."

Table 1.4 Calculation of Validated Black Voters Using the Correct Weighting Scheme, "vvweight_post"

inputstate	28
race	Black
	Def Voted
5	70
NA	15
Grand Total	**85**
Voted and Validated	82.8%

24. On the left of Table 1.4, I show the responses for CL_2020gvm. Associated with the code "5" in the first column of Table 1.4, we can see that in the second column that there are 70 (weighted) Black respondents (52 unweighted) who reported they voted and were validated. Continuing on to the "NA" in the first Column, we can see in the second column that there are 15 (weighted) Black respondents (9 unweighted) who reported they voted but were not validated. In this case, the 70 weighted Black "validated voters" divided by the 85 weighted Black respondents who said they voted yields an estimate of 82.8% "Blacks who voted and were validated."

25. Had she used the correct weighting scheme, "vvweight_post," Dr. Burch would have found that 95.1% of White respondents and 82.8% of Black respondents correctly reported that they voted. While we can see that this less of a difference than found using the incorrect weighting scheme used by Dr. Burch (12.3 % vs. 16.5%), it is here that we begin to see the strain of the CES small sample size. Using the vvweight_post, there are only 6 non-validated white voters (both weighted and unweighted), and only 9 non-validated Black

voters (15 weighted). That is – the numerator for estimating rates of validated voting from the CES for Mississippi are 6 white respondents (out of 140, representing approximately 1.3 million white, NH VAP from the 2020 Census) and 9 Black respondents (out of 61, representing approximately 800,000 any part Black VAP from the 2020 Census). This difference of 12.3% between validated Black and white voters (both based on single-digit sample sizes) *is not statistically significant*, per the results of an Aspin-Welch Unequal Variance, Two sample T-test I ran with α =.05, which yielded p = 0.9743 (NCSS, https://www.ncss.com/wp-content/themes/ncss/pdf/Procedures/NCSS/Two-Sample_T-Test.pdf). See Appendix C. The irony is that Dr. Burch repeatedly touts the strength of a survey-based voter validation system that in the end she fails both to understand and use correctly.

26. As we can now see, Dr. Burch's "finding" regarding the validation of White and Black voters in Mississippi is inaccurate for two reasons. First, she used the incorrect weights. Second, even had she used the correct weights, she would have found there was no statistically significant difference between the validated White and Black voters had she conducted an appropriate statistical test. As you will see, in the following section, I continue to examine her use of incorrect weights and failing to take into account sample size when I examine the logistic regression models constructed by Dr. Burch.

27. In combination with Dr. Burch's statement at page 4 of her rebuttal that "turnout estimates in the CPS are unreliable" it is, indeed, ironic that the "Cooperative Election Survey," the data set to which she turned because, unlike the CPS, it contains "validated voting results," the CES (Ansolabehere, Schaffner, and Luks, 2021: 16) weights these validated voters using the CPS:

> "A second set of weights was constructed after matching the survey to Catalist. Respondents for whom there was a validated voter registration record were weighted using the same approach as described above, but this time to ensure that those individuals were representative of registered voters (according to the 2020 CPS)."

28. Thus, in her use of CES data because it has "validated voters," Dr. Burch's analysis is again tied to the CPS, a data set she declared has turnout estimates that are unreliable. In conjunction with this new data set she introduces two new analytic methods, logistic regression and ecological inference. I now turn to an examination of her logistic regression analysis.

Burch's Logistic Regression model(s)

29. I find a number of problems with the discussion of the logistic model(s) Dr. Burch constructed, including but not limited to, her failure to:

    (1) fully document the input data from the Current Election Study (CES) and not making it clear that she used only 460 of the 462 cases for Mississippi;

    (2) adequately describe the characteristics of her logistic model(s) in that, among other omissions, she does not describe the "fit" of her model to the data and whether or not any of the assumptions underlying a logistic regression model were violated;

    (3) identify the statistical package she used to generate the logistic model(s), which turned out to be SPSS;

    (4) include in her rebuttal the fact that there are exceptional weights in the CES Mississippi sample, which places a lot of explanatory burden on only a few subjects such that if these subjects were eliminated, the characteristics of her logistic model(s) would change substantially (See paragraph 10);

    (5) report that "Model 1" only correctly classifies 57.5 percent of the voters found in the Mississippi CES sample into the correct category, which is not much better than simply flipping a fair coin for which we would expect to be correct in calling "heads" 50 percent of the time (see Appendix A); and

    (6) report that she used a weighting scheme not recommended by the authors of the CES study guide for the type of analysis she conducted and compounding that failure by declaring that there were "statistically significant" coefficients in her sample-based logistic regression model labeled as "Model 1" (shown in Table 2 of her rebuttal) and that if the recommended weighting scheme had been used, that there are no "statistically significant" coefficients in "Model 1."

30. This final and 6th failure essentially renders moot the other problems with her logistic model(s) and inconsequential the discussion she provides of them in her rebuttal because "Model 1" cannot be used to infer from the incorrectly weighted sample data to the "universe" that the sample represents.

31. Before turning to the discussion of the incorrect weights used by Dr. Burch in her logistic regression models, I provide a simple description of weighting for purposes of clarification and understanding.

32. In many sample surveys, the proportion of respondents in the survey with a given characteristic does not match the same proportion found in the entire population of interest. When this occurs, "weighting" is used to make the survey results consistent with what is expected for the entire population (Kish, 1965).

33. As an illustration, I adapt a discussion of gender-based weights from Swanson (1997). In this situation, it was known the frequency of females in the sample for a given community

is not equal to its frequency in the population. Using Amargosa Valley, Nevada, as an illustration, 61.5% (120) of the 195 adults sampled in this community were female, but they only constitute 49% (221) of the total population (452). This "over-representation" of females (and "under-representation" of males) in the sample survey needs to be taken into account in order to correctly infer from the sample to the population as a whole. Using the population and sample data, the "weight" that will do this for females is found by multiplying the total sample (195) by the proportion of females in the population (.49) and dividing this quotient by the number of females in the sample (120), a process that yields (195*.49)/120 = 0.796, which can be rounded to 0.80. For males, this process yields (195*.51)/75 = 1.326, which can be rounded to 1.3.

34. These weights for females and males, respectively, would be applied to the survey respondents by gender to obtain results that would apply to the population as a whole. As a simple illustration, if the 120 females in the sample all answered "yes" to a question and the 75 males all answered "no," the sample would show that 61.5% answered "yes." In order to apply this to the population by taking into account the over-representation of females, we multiply .615 by 0.80, which yields 0.49. That is, 49% of the population of adults in Amargosa Valley, NV replied "yes" to this question.

35. The CES weighting scheme is much more complicated than the preceding example, but underneath all of the complications, it is simply trying to get the sample survey results to the level where they represent the population the sample is intended to represent.

36. Turning now, to the CES, in looking at which of four weighting schemes to use in analyzing data taken from the CES study, here are the recommendations as found in the CES Study Guide (Ansolabehere, Schaffner, and Luks, 2021: 16-17):

"Using Weights

Note that the 2020 CES Common Content includes weights for both the Pre-Election and Post Election waves of the study. The weights are constructed to ensure that the sample is representative of different populations – either adult Americans or adult Americans who are registered to vote.

Variable name	Respondent group Target population
commonweight	All respondents Adults
commonpostweight	Answered both waves Adults
vvweight	Matched to validated registration record Registered adults
vvweight_post	Answered both waves & matched to registration record Registered adults

We recommend the use of "commonweight" any time researchers wish to characterize the opinions and behaviors of adult Americans. However, use "commonpostweight" when you wish to characterize the opinions and behaviors of adult Americans but you are using any items from the post-election wave of the questionnaire. We recommend the use of "vvweight" or "vvweight_post" any time researchers wish to characterize the opinions, behaviors, or traits of voters or registered voters. The "vv" stands for "voter validated" and these

weights are missing for all respondents who were not validated as (active) registered voters. This approach differs from previous cycles when all respondents received a value for "vvweight" and those weights were not designed solely for use with voters or registered voters. If seeking to characterize the opinions, behaviors, or traits of voters, use "vvweight" or "vvweight_post" in conjunction with the vote validation variables."

37. Dr. Burch uses logistic regression to show that white subjects in the CES sample for Mississippi who report as having voted are more likely to be validated than Black subjects in the MS CES sample. In so doing, she uses the "commonweight," which as can be seen above in the excerpt is designed for characterizing the opinions and behaviors of adult Americans in general. However, she uses the "validation" variable in her logistic model, which according to the same excerpt, needs the "commonpostweight" because she is reaching across to the post-election wave, where the validation of "I voted" takes place. Thus, she has not used the weight recommended in the CES Study Guide (Ansolabehere, Schaffner, and Luks (2021: 16-17).

38. In using "commonweight," the incorrect weighting scheme for her analysis, Dr. Burch reports in Table 2 of her rebuttal that two of the three coefficients (including the "constant") in "Model 1" are statistically significant, where *** = P<.001, ** = P<.01, and * = P<.05. In displaying these "p values" she is indicating that she is using a hypothesis test to assess the validity of her model for the entire population that the sample represents (Swanson, 2012: 131-240).

Variable name	coefficient	p level
Black	-0.545	**
Other race	-1.246	
Constant	0.388	***

39. When using "commonpostweight," the recommended weight for going across into the post-election time period, the coefficients change in value and neither the Black variable nor the constant is statistically significant, a finding I made after replicating her logistic analysis with "commonweight," the "incorrect weight" and subsequently using "commonpostweight," the recommended weight for an analysis that reaches into the post-election period (See the Appendix for the NCSS output of these two models, with the replication of Burch's incorrectly weighted model in Appendix A and the logistic regression model that results when the correctly weighting scheme is used in Appendix B)

Variable name	coefficient	p level
Black	-0.308	(p = .12289), not statistically significant because p > 0.05
Other race	-1.19123	(p = .12849), not statistically significant because p > 0.05
Constant	0.15301	(p = .08171), not statistically significant because p > 0.05

40. Essentially, when the recommended weights are used, one cannot statistically infer (which is what we need to do because the CES data are a sample) that Dr. Burch has constructed a logistic regression model that proves her point. That is, following the path she selected, which was to use hypothesis testing in regard to the model's coefficients, we cannot reject the null hypothesis that each of these three coefficients assembled from the sample data **do not** represent the corresponding coefficient that would be found if we had the entire voting age population data set to analyze. Thus, Dr. Burch has not constructed a valid logistic regression model that represents the entire voting age population in Mississippi.

41. It is important to note that a colleague of mine, L.M. Tedrow, a research associate at Western Washington University, confirmed the results I found using the NCSS statistical package by using the same package that Dr. Burch used, SPSS.

Variable name	coefficient	p level
Black	-0.308	(p = .12289), not statistically significant because p > 0.05
Other race	-1.19123	(p = .12849), not statistically significant because p > 0.05
Constant	0.15301	(p = .08171), not statistically significant because p > 0.05

Here is the confirmatory SPSS output provided by Mr. Tedrow.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	-.308	.200	2.380	1	.123	.735
	otherrace	-1.191	.784	2.311	1	.128	.304
	Constant	.201	.131	2.334	1	.127	1.222

a. Variable(s) entered on step 1: black, other race.

42. Dr. Burch's "findings" in regard to using logistic regression in conjunction with the CES data neither rebuts my conclusion nor changes my opinion concerning the ability of Black Mississippians to participate effectively in the political process. As I showed in my initial report: Black people vote at higher rates than White people.

The Ecological Inference Model for District 1

43. In constructing her Ecological Inference (EI) model of existing District 1, Dr. Burch erroneously included Adams County (a county in existing District 2) and erroneously excluded Bolivar Country (a county in existing District 1). Again, following my "quality control" protocol, I discovered this by examining the file I was provided that was represented by Plaintiffs as the file Dr. Burch used in her EI analysis of District 1 ("neweicentraldist for EI," a text document). In checking this file, I found that there were 32 block groups with the Adams County Code (28001.....) and zero block groups with the Bolivar County code (28011.....). There should have been 28 of the latter in this file, as is found in the file I was provided that was represented by Plaintiff as the file Dr. Burch used in her EI analysis of Mississippi as a whole ("dataforEI2," a text document).

44. In her Ecological Inference analysis she uses "non-white," not Black, as can be seen in Figure 4 on page 11 of her rebuttal report. So, she is now expressing an opinion about White voters relative to non-white voters, not an opinion about White voters relative to Black voters.

45. On page 10 of her rebuttal, Dr. Burch states that she places the Hispanic population (regardless of race) into the "nonwhite" category she employs in her EI analysis by using "…block group data on the citizen voting age population by race, distinguishing non-Hispanic white population from the non-White population." In so doing, she places White Hispanics of voting age into her non-white category, along with Asian, American Indian and Alaskan Natives, and "other" Non-Black people of voting age. This action serves to further dilute Dr. Burch's ability to provide an opinion about White voters relative to Black voters in District 1.

46. Coupled with her error of excluding all of the 28 Bolivar County block groups from her EI analysis of District 1 and erroneously including all 32 of the Adams County block groups, the fact that she compares white voters to non-white votes, leads me to conclude that Dr. Burch has neither an opinion on District 1 (in terms of its correct definition) nor an opinion regarding White voters relative to Black Voters in District 1.

47. Dr. Burch's "findings" in regard to using the Ecological Inference Method in conjunction with the CES data applied to District 1 do not rebut my conclusion or change my opinion

that Black Mississippians are able to participate effectively in the political process. As I showed in my initial report, Blacks vote at higher rates than Whites in District 1.

The Ecological Inference (EI) Model for Mississippi as a Whole

48. As was the case for District 1, in her Ecological Inference analysis for Mississippi as a whole, Dr. Burch uses "non-white," not Black, as can be seen in Figure 4 on page 11 of her rebuttal report. So, she is now expressing an opinion about White voters relative to non-white voters not an opinion about White voters relative to Black voters. Moreover, as noted in #21, she further diluted her ability to provide an opinion about White voters relative to Black voters because she placed Hispanics of any race into the non-white category, which for the state as a whole includes 29,061 White (alone and in combination with other races) Hispanics of voting age, along with Asian, American Indian and Alaskan Natives, and "other" Non-Black people of voting age. As a consequence of these actions, Dr. Burch has no opinion regarding White voters relative to Black Voters in Mississippi as a whole.

49. Dr. Burch's "findings" in regard to using the Ecological Inference Method in conjunction with the CES data relative to Mississippi as a whole do not rebut my conclusion or change my opinion that Black Mississippians are able to participate effectively in the political process. As I showed in my initial report: Blacks vote at higher rates than Whites in Mississippi as a whole.

In summary, I find that Dr. Burch's Rebuttal Report contains major and other errors that along with related oversights render invalid the opinions she presents in it, to include:

(1) claiming that the Current Population Survey (CPS) is unreliable, therefore causing her to turn to a new data set, The Cooperative Election Survey" (CES) for "validated voters." However, the CES is itself linked back to the CPS to establish weights for "validated voters," a fact of which she is either ignorant or ignores;

(2) Claiming on the basis of an extremely small sample that she incorrectly weighted that the CES data showed that 74% of the White Mississippi respondents who said they voted actually did so, while 57% of the Black Mississippi respondents did so.

(3) using a weighting scheme in her "logistic regression" analyses that is not recommended by the authors of the CES study and compounding this failure by declaring that there were "statistically significant" coefficients in her two sample-based logistic regression models, both of which, in fact, turn out to be not statistically significant when the recommended weighting scheme is

used. That is, Dr. Burch fails to create logistic regression models from which she can make inferences from the CES samples to the two populations in question;

(4) incorrectly identifying the counties in MS Supreme Court District 1 in her "Ecological Inference" Model of District 1 by erroneously excluding Bolivar County and erroneously including Adams County; and

(5) comparing White voters to Non-White Voters in her two Ecological Inference models, one for District 1 and the other for the state as a whole, when, in fact the question is in regard to White Voters and Black Voters.

50. Because of these and other errors and oversights, I find Dr. Burch has no valid opinion regarding White voters relative to Black Voters both in MS Supreme Court District 1 and in Mississippi as a whole. As such, her "findings" do not rebut my conclusion or change my opinion that Black Mississippians are able to participate effectively in the political process in MS Supreme Court District 1 and in the state as a whole.

Pursuant to 28 U.S.C. § 1746, I, David A. Swanson, Ph.D., hereby certify under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief at the time of making this declaration.

Executed this the 15th day of September , 2023.

David A. Swanson

DAVID A. SWANSON, PH.D.

References

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Kish, L. 1965. *Survey Sampling*. New York: Wiley.

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APPENDIX

Appendix A. Logistic Regression Results when the incorrect weights are used.

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Run Summary

Item	Value	Item	Value
Y Variable	validvote	Rows Processed	460
Reference Value	0	Rows Used	460
Number of Y-Values	2	Rows for Validation	0
Frequency Variable	commonweight	Rows X's Missing	0
Numeric X Variables	2	Rows Freq Miss. or 0	0
Categorical X Variables	0	Rows Prediction Only	0
Final Log Likelihood	-358.43367	Unique Rows (Y and X's)	6
Model R^2	0.83627	Sum of Frequencies	527.457094326484
Actual Convergence	7.461232E-10	Likelihood Iterations	4
Target Convergence	1E-06	Maximum Iterations	20
Model D.F.	3	Completion Status	Normal Completion
Priors	Equal		

Y Variable Summary

Y validvote	Count	Unique Rows (Y and X's)	Y Proportion	Y Prior	R^2 (Y vs Pred. Probability)	Percent Correctly Classified
0	245.969947668706	3	0.46633	0.50000	0.02252	50.816
1	281.487146657778	3	0.53367	0.50000	0.02252	63.324
Total	527.457094326484	6				57.491

Coefficient Significance Tests

Independent Variable X	Regression Coefficient b(i)	Standard Error Sb(i)	Wald Z-Value H0: β=0	Wald P-Value	Odds Ratio Exp(b(i))
Intercept	0.25268	0.07911	3.194	0.00140	1.28748
black	-0.54495	0.18019	-3.024	0.00249	0.57987
otherrace	-1.24551	0.64877	-1.920	0.05488	0.28779

Coefficient Confidence Intervals

Independent Variable	Regression Coefficient	Standard Error	Lower 95% Confidence	Upper 95% Confidence	Odds Ratio

X	b(i)	Sb(i)	Limit	Limit	Exp(b(i))
Intercept	0.25268	0.07911	0.09764	0.40773	1.28748
black	-0.54495	0.18019	-0.89811	-0.19178	0.57987
otherrace	-1.24551	0.64877	-2.51708	0.02606	0.28779

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Odds Ratios

Independent Variable X	Regression Coefficient b(i)	Odds Ratio Exp(b(i))	Lower 95% Confidence Limit	Upper 95% Confidence Limit
Intercept	0.25268	1.28748	1.10256	1.50340
black	-0.54495	0.57987	0.40734	0.82549
otherrace	-1.24551	0.28779	0.08070	1.02640

Analysis of Deviance

Term Omitted	DF	Deviance	Increase From Model Deviance (Chi²)	P-Value
All	2	728.81738	11.95004	0.00254
black	1	726.08487	9.21753	0.00240
otherrace	1	720.96271	4.09538	0.04300
None(Model)	2	716.86734		

The Prob Level is for testing the significance of that term after considering all other terms.

Log Likelihood & R²

Term(s) Omitted	DF	Log Likelihood	R² of Remaining Term(s)	Reduction From Model R²	Reduction From Saturated R²
All	1	-364.40869	0.00000		
black	1	-363.04243	0.19122	0.64505	0.80878
otherrace	1	-360.48136	0.54968	0.28660	0.45032
None(Model)	2	-358.43367	0.83627	0.00000	0.16373
None(Saturated)	6	-357.26388	1.00000		0.00000

Classification Table

	Estimated		
Actual	**0**	**1**	**Total**
0	124.9911	120.9789	245.9699
1	103.2388	178.2484	281.4872
Total	228.2298	299.2273	527.4571

Percent Correctly classified = 57.5%

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
1	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
2	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
3*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
4*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
5	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
6	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
7*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
8	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
9	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
10	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
11	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
12	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
13	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
14*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||
15*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
16*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
17*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
18	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
19	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
20*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
21	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
22*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
23	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
24	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
25*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||
26	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
27*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
28	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
29*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
30*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
31	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
32	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
33	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
34*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
35*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
36*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
37	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....

38	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
39*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
40*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
41	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
42	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
43*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
44	0	-1.78567	||.....	-0.79495	||.....	0.92572	||||||||||||||
45	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
46*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
47*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
48	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
49	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
50	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
51	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
52*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
53	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
54	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
55*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
56	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
57	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
58*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
59	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
60	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
61*	1	2.93353	|||.....	0.82207	||.....	0.92572	||||||||||||||
62*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
63	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
64	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
65*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
66	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
67	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
68	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
69	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
70*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
71*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
72	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
73*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
74*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
75	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
76*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
77	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
78	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
79	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
80	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
81	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
82*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
83	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
84	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
85*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
86	0	-1.78567	||.....	-0.79495	||.....	0.92572	||||||||||||||
87	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
88*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
89	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
90	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
91	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
92	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....

93*	0	-13.00597	-4.34811		0.46074	
94	1	11.46233	4.49750		0.46074	
95	1	11.46233	4.49750		0.46074	
96*	1	11.15826	3.86756		0.58141	

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
97	1	11.46233		4.49750		0.46074	
98	1	11.46233		4.49750		0.46074	
99*	0	-13.00597		-4.34811		0.46074	
100*	1	11.15826		3.86756		0.58141	
101*	1	11.15826		3.86756		0.58141	
102	0	-9.64124		-3.73948		0.58141	
103*	0	-13.00597		-4.34811		0.46074	
104*	1	11.15826		3.86756		0.58141	
105*	0	-13.00597		-4.34811		0.46074	
106*	1	11.15826		3.86756		0.58141	
107*	0	-13.00597		-4.34811		0.46074	
108*	1	11.15826		3.86756		0.58141	
109	0	-9.64124		-3.73948		0.58141	
110*	1	11.15826		3.86756		0.58141	
111*	1	11.15826		3.86756		0.58141	
112*	1	11.15826		3.86756		0.58141	
113	1	11.46233		4.49750		0.46074	
114	0	-9.64124		-3.73948		0.58141	
115*	0	-13.00597		-4.34811		0.46074	
116*	1	11.15826		3.86756		0.58141	
117	1	11.46233		4.49750		0.46074	
118	1	11.46233		4.49750		0.46074	
119	1	11.46233		4.49750		0.46074	
120	0	-9.64124		-3.73948		0.58141	
121*	0	-13.00597		-4.34811		0.46074	
122*	0	-13.00597		-4.34811		0.46074	
123	1	11.46233		4.49750		0.46074	
124	1	11.46233		4.49750		0.46074	
125	1	11.46233		4.49750		0.46074	
126*	0	-13.00597		-4.34811		0.46074	
127	1	11.46233		4.49750		0.46074	
128	1	11.46233		4.49750		0.46074	
129*	0	-13.00597		-4.34811		0.46074	
130	1	11.46233		4.49750		0.46074	
131*	0	-13.00597		-4.34811		0.46074	
132*	0	-13.00597		-4.34811		0.46074	
133	1	11.46233		4.49750		0.46074	
134	1	11.46233		4.49750		0.46074	
135*	0	-13.00597		-4.34811		0.46074	

136*	0	-13.00597	-4.34811	0.46074		
137*	0	-13.00597	-4.34811	0.46074		
138*	0	-13.00597	-4.34811	0.46074		
139*	1	11.15826	3.86756	0.58141		
140	0	-9.64124	-3.73948	0.58141		
141	1	11.46233	4.49750	0.46074		
142	0	-9.64124	-3.73948	0.58141		
143*	1	11.15826	3.86756	0.58141		
144*	1	11.15826	3.86756	0.58141		

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
145*	0	-13.00597		-4.34811		0.46074	
146	0	-1.78567		-0.79495		0.92572	
147*	1	11.15826		3.86756		0.58141	
148*	1	11.15826		3.86756		0.58141	
149	1	11.46233		4.49750		0.46074	
150*	1	11.15826		3.86756		0.58141	
151*	1	2.93353		0.82207		0.92572	
152	0	-9.64124		-3.73948		0.58141	
153*	1	11.15826		3.86756		0.58141	
154	1	11.46233		4.49750		0.46074	
155	0	-9.64124		-3.73948		0.58141	
156*	0	-13.00597		-4.34811		0.46074	
157*	1	11.15826		3.86756		0.58141	
158	1	11.46233		4.49750		0.46074	
159*	0	-13.00597		-4.34811		0.46074	
160	0	-9.64124		-3.73948		0.58141	
161*	0	-13.00597		-4.34811		0.46074	
162*	0	-13.00597		-4.34811		0.46074	
163*	0	-13.00597		-4.34811		0.46074	
164	1	11.46233		4.49750		0.46074	
165	0	-9.64124		-3.73948		0.58141	
166	1	11.46233		4.49750		0.46074	
167	0	-9.64124		-3.73948		0.58141	
168	1	11.46233		4.49750		0.46074	
169	1	11.46233		4.49750		0.46074	
170	0	-9.64124		-3.73948		0.58141	
171	1	11.46233		4.49750		0.46074	
172	1	11.46233		4.49750		0.46074	
173*	0	-13.00597		-4.34811		0.46074	
174*	0	-13.00597		-4.34811		0.46074	
175	0	-9.64124		-3.73948		0.58141	
176*	0	-13.00597		-4.34811		0.46074	
177*	0	-13.00597		-4.34811		0.46074	
178	1	11.46233		4.49750		0.46074	

179	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
180*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
181*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
182	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
183*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
184*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
185	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
186	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
187	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
188	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
189	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
190	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
191*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
192*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
193	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
194	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
195	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
196*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
197	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
198	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
199	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
200	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
201*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
202*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
203	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
204	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
205*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
206	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
207*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
208	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
209*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
210*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
211*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
212*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
213*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
214	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
215	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
216	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
217	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
218*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
219	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
220*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
221	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....

222*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
223	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
224*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
225*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||||
226	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
227	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
228*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
229	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
230	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
231*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
232	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||||
233	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
234	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
235*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
236	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
237*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
238*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
239*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
240	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
241	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
242*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
243*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
244*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
245	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
246	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
247	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
248	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
249	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
250	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
251	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
252*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
253	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
254	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
255*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
256	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
257	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
258*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
259	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
260*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
261*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
262	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
263*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
264*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....

265*	0	-13.00597	-4.34811	0.46074		
266	0	-9.64124	-3.73948	0.58141		
267	1	11.46233	4.49750	0.46074		
268	1	11.46233	4.49750	0.46074		
269*	0	-13.00597	-4.34811	0.46074		
270*	0	-13.00597	-4.34811	0.46074		
271	1	11.46233	4.49750	0.46074		
272*	1	11.15826	3.86756	0.58141		
273*	1	11.15826	3.86756	0.58141		
274	1	11.46233	4.49750	0.46074		
275*	0	-13.00597	-4.34811	0.46074		
276	1	11.46233	4.49750	0.46074		
277*	0	-13.00597	-4.34811	0.46074		
278	0	-9.64124	-3.73948	0.58141		
279*	1	11.15826	3.86756	0.58141		
280*	0	-13.00597	-4.34811	0.46074		
281	0	-9.64124	-3.73948	0.58141		
282*	1	11.15826	3.86756	0.58141		
283	1	11.46233	4.49750	0.46074		
284*	1	11.15826	3.86756	0.58141		
285	1	11.46233	4.49750	0.46074		
286	0	-9.64124	-3.73948	0.58141		
287	1	11.46233	4.49750	0.46074		
288*	0	-13.00597	-4.34811	0.46074		

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
289*	0	-13.00597		-4.34811		0.46074	
290	1	11.46233		4.49750		0.46074	
291	0	-9.64124		-3.73948		0.58141	
292	0	-9.64124		-3.73948		0.58141	
293	1	11.46233		4.49750		0.46074	
294	1	11.46233		4.49750		0.46074	
295	0	-9.64124		-3.73948		0.58141	
296*	0	-13.00597		-4.34811		0.46074	
297*	1	11.15826		3.86756		0.58141	
298	0	-9.64124		-3.73948		0.58141	
299*	0	-13.00597		-4.34811		0.46074	
300*	0	-13.00597		-4.34811		0.46074	
301*	0	-13.00597		-4.34811		0.46074	
302*	0	-13.00597		-4.34811		0.46074	
303	0	-9.64124		-3.73948		0.58141	
304	0	-9.64124		-3.73948		0.58141	
305	0	-9.64124		-3.73948		0.58141	
306*	0	-13.00597		-4.34811		0.46074	
307	0	-9.64124		-3.73948		0.58141	

308*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
309	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
310	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
311*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
312	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
313	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
314	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
315	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
316*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
317*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
318*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
319	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
320*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
321	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
322	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
323*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
324*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
325*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
326*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
327*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
328*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
329	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
330	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
331*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
332	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
333	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
334*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
335*	1	2.93353	|||.....	0.82207	||.....	0.92572	||||||||||||||
336*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
337	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
338	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
339	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
340	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
341*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
342	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
343	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
344*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
345	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
346*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
347	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
348*	1	2.93353	|||.....	0.82207	||.....	0.92572	||||||||||||||
349	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
350*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....

351	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
352*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
353*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
354*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
355	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
356*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
357	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
358	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
359*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
360*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
361*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
362*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
363*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
364	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
365*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
366	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
367	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
368*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
369	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
370*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
371*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
372*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
373*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
374	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
375*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
376*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
377*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
378*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
379	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
380	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
381	0	-1.78567	||..........	-0.79495	||..........	0.92572	||||||||||||||
382*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
383*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
384*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
385*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
386	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
387	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
388	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
389*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
390	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
391*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
392*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
393	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....

394*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
395	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
396	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
397*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
398*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
399	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
400	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
401	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
402	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
403	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
404*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
405*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||
406*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
407	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
408*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
409	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
410*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
411	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
412	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
413*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
414	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
415	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
416	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
417	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
418	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
419	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
420	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
421	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
422	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
423	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
424	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
425	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
426*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
427*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
428	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
429	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
430	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
431*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
432	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report (Continued)

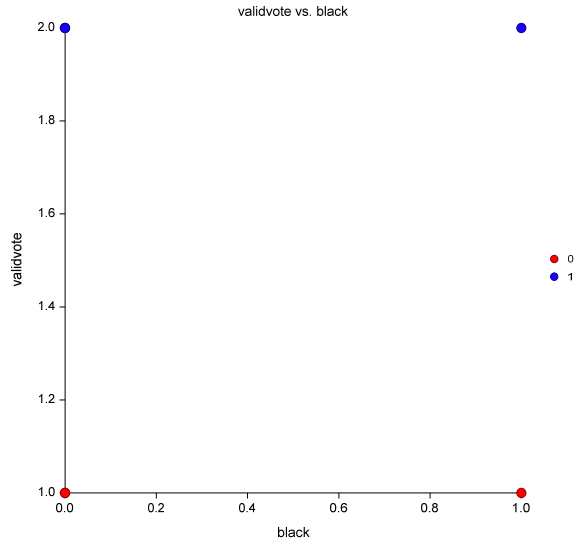
Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
433	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
434*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
435*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
436	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....

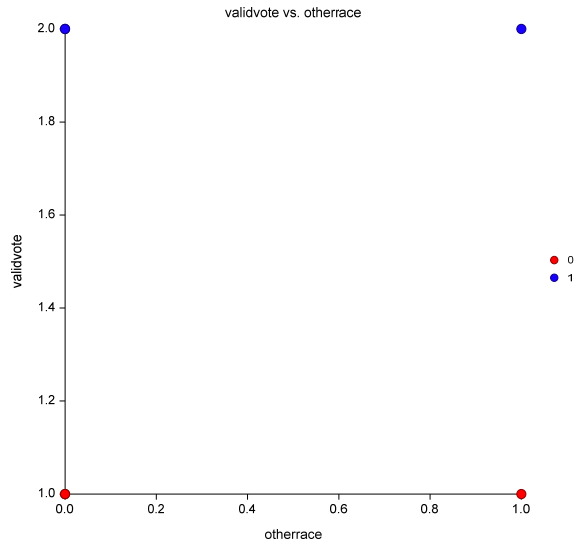
437	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
438	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
439*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
440*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
441	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
442*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
443	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
444*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
445	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
446*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
447*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
448*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
449*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
450*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
451	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
452	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
453	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
454*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
455	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
456	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
457	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
458*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
459	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
460	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....

Logistic Regression Report

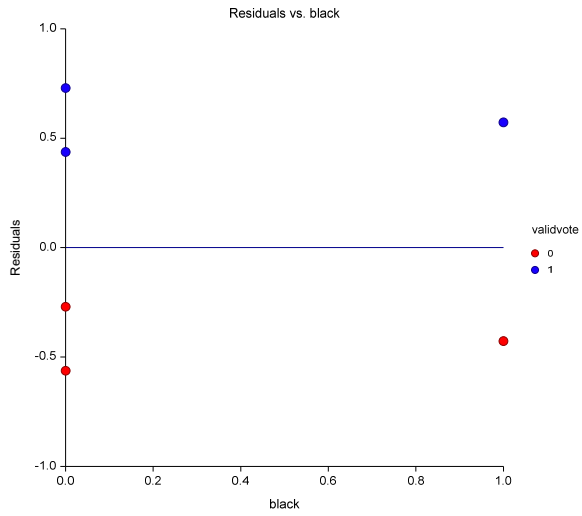
Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

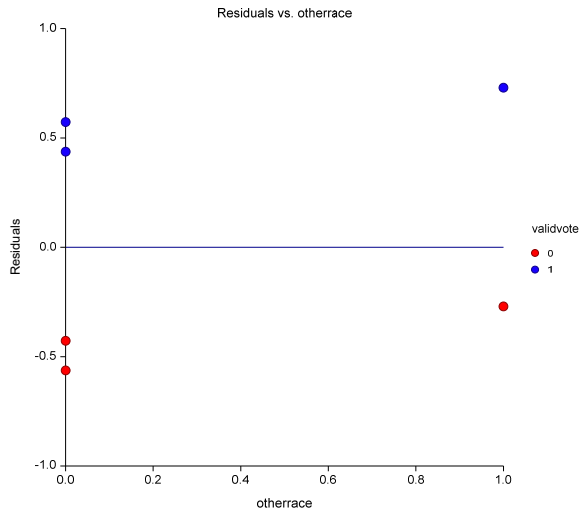
Y vs X's Plots





Simple Residuals vs X's Plots

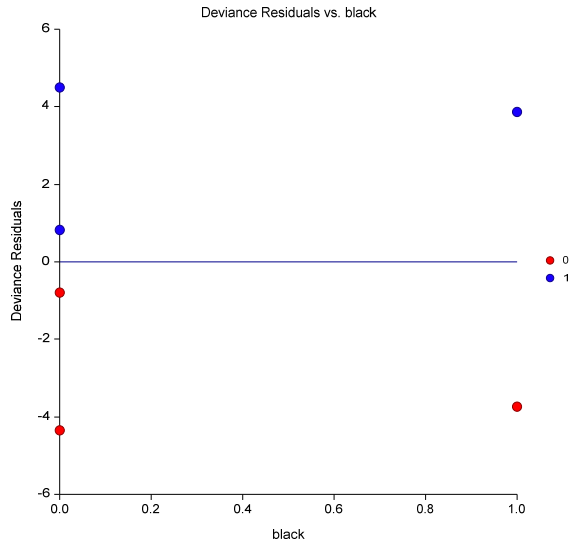


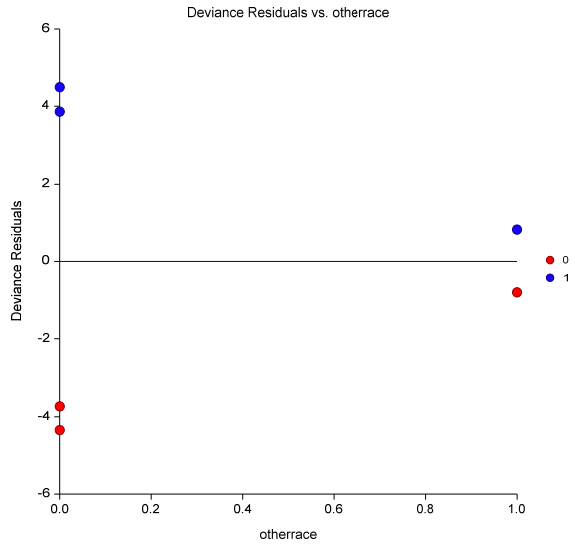


Logistic Regression Report

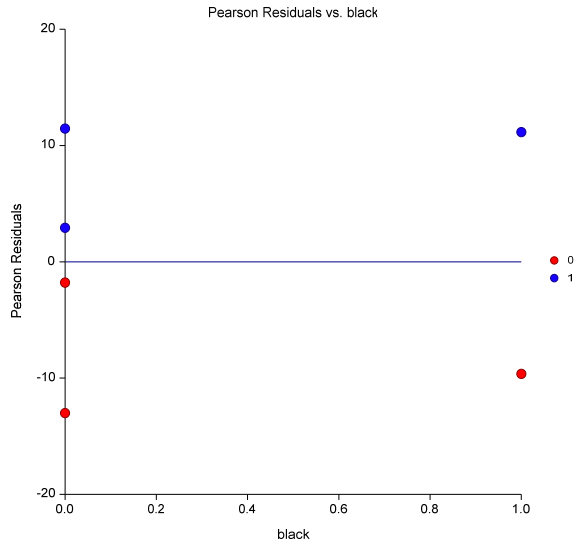
Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

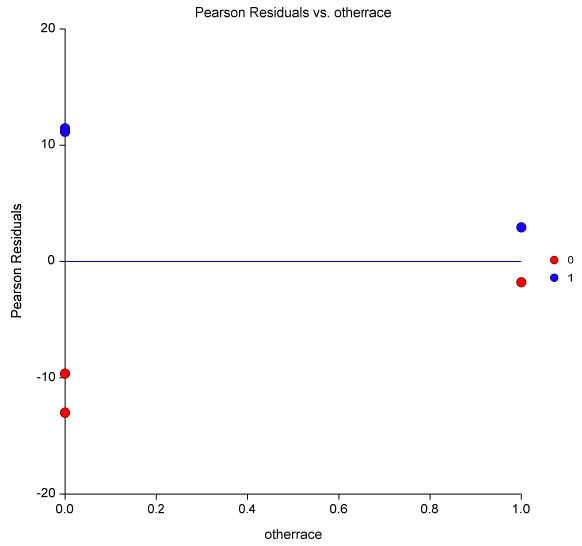
Deviance Residuals vs X's Plots





Pearson Residuals vs X's Plots

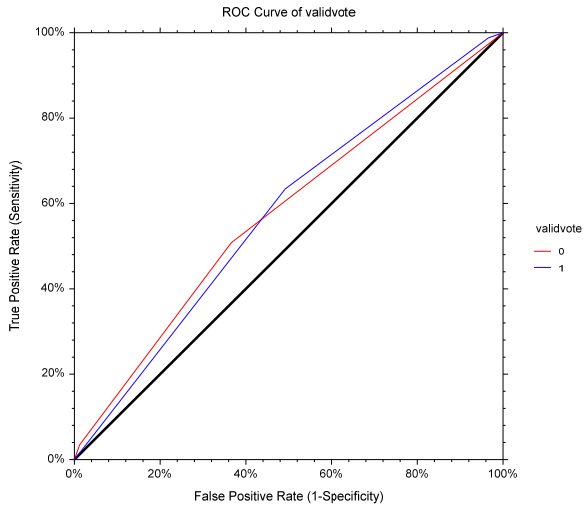


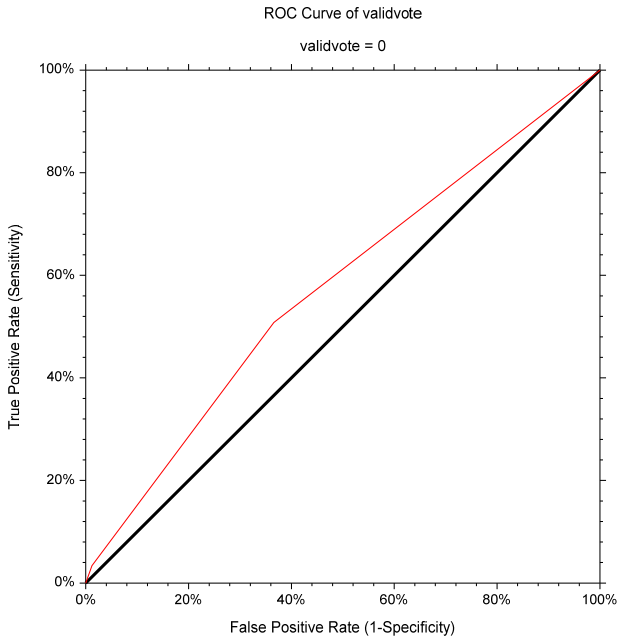


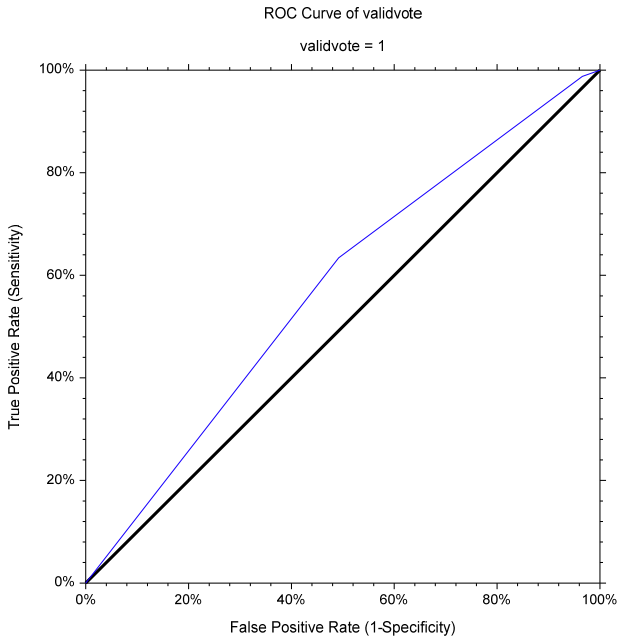
Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

ROC Curves (Combined and Separate)



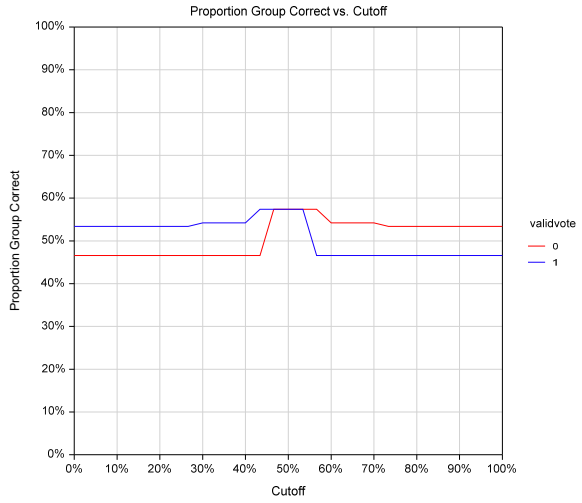

ROC Curve of validvote
validvote = 0
True Positive Rate (Sensitivity)
False Positive Rate (1-Specificity)
0%
20%
40%
60%
80%
100%


ROC Curve of validvote
validvote = 1
True Positive Rate (Sensitivity)
False Positive Rate (1-Specificity)
0%
20%
40%
60%
80%
100%

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Prob Correct vs Cutoff Plot



Procedure Input Settings

Autosave Inactive

Variables, Model Tab

-- Variables ----------

Y:	validvote
Reference Value:	0
Numeric X's:	black, otherrace
Categorical X's:	<Empty>
Frequencies:	commonweight
Validation Filter:	<Empty>

-- Regression Model ----------

Terms:	1-Way
Remove Intercept	Unchecked

·· Prior Y-Value Probabilities (Changes Intercept and Predicted Values) ··········

Priors:	Equal across Y Values

Subset Selection Tab

-- Select the Best Subset from the X's ----------

Search for the Best Subset from the X's	Unchecked

Iteration Tab

-- Iteration Options ----------

Maximum Iterations:	20
Iteration Termination:	0.000001

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Procedure Input Settings (Continued)

Reports Tab

-- Select Reports ----------

·· Summaries

Run Summary	Checked
Y Variable Summary	Checked

·· Subset Selection

Subset Summary	Checked
Subset Detail	Checked

·· Estimation

Coefficient Significance Tests	Checked
Coefficient Confidence Limits	Checked
Odds Ratios	Checked
Estimated Model (Reading Form)	Unchecked
Estimated Model (Transformation Form)	Unchecked

·· Goodness-of-Fit

Analysis of Deviance	Checked
Log-Likelihood and R^2	Checked

·· Classification

Classification Matrix	Checked
Validation Matrix	Checked
ROC Report	Checked

·· Row-by-Row Lists

Row Classification Report:	None
Row Classification Probs Report:	None
Simple Residuals Report:	None

Residuals	Checked
DfBetas	Unchecked
Influence Diagnostics	Unchecked
Residual Diagnostics	Unchecked

Report Options Tab

-- Confidence Levels ----------

Confidence Level:	95

-- Variable and Value Labels ----------

Variable Names:	Names
Value Labels:	Data Values
Stagger label and output if label length is ≥	15

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Procedure Input Settings (Continued)

Report Options Tab (Continued)

-- Decimal Places ----------

Precision:	Single
Probability:	5
Beta (Coefficients):	5
SE(Beta):	5
Z:	3
Log Likelihood:	5
Odds Ratio:	5
DFBeta:	5
Coefficients in Reading Form Model:	2

Plots Tab

-- Select Plots ----------

Y vs X	Checked
ROC Curves (Combined)	Checked
ROC Curve (Separate)	Checked
Residuals vs X	Checked
Skip Reference Value	Checked
Deviance Residuals vs X	Checked
Pearson Residuals vs X	Checked
Pr(Correct) vs Cutoff	Checked

-- ROC Curves and Prob(Correct) vs Cutoff Plot Options ----------

Number Cutoffs:	29

Storage Tab
-- Data Storage Options ----------
Storage Option: Do not store data

Appendix B. NCSS Logistic Regression Results when the correct weights are used.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Run Summary

Item	Value	Item	Value
Y Variable	validvote	Rows Processed	460
Reference Value	0	Rows Used	349
Number of Y-Values	2	Rows for Validation	0
Frequency Variable	commonpostweight	Rows X's Missing	0
Numeric X Variables	2	Rows Freq Miss. or 0	111
Categorical X Variables	0	Rows Prediction Only	0
Final Log Likelihood	-288.15982	Unique Rows (Y and X's)	6
Model R^2	0.94973	Sum of Frequencies	419.122537315027
Actual Convergence	4.048361E-09	Likelihood Iterations	4
Target Convergence	1E-06	Maximum Iterations	20
Model D.F.	3	Completion Status	Normal Completion
Priors	Equal		

Y Variable Summary

Y validvote	Count	Unique Rows (Y and X's)	Y Proportion	Y Prior	R^2 (Y vs Pred. Probability)	Percent Correctly Classified
0	204.557067111209	3	0.48806	0.50000	0.01049	48.550
1	214.565470203818	3	0.51194	0.50000	0.01049	59.957
Total	419.122537315027	6				54.390

Coefficient Significance Tests

Independent Variable X	Regression Coefficient b(i)	Standard Error Sb(i)	Wald Z-Value H0: β=0	Wald P-Value	Odds Ratio Exp(b(i))
Intercept	0.15301	0.08790	1.741	0.08171	1.16534
black	-0.30844	0.19993	-1.543	0.12289	0.73459
otherrace	-1.19123	0.78367	-1.520	0.12849	0.30385

Coefficient Confidence Intervals

Independent Variable X	Regression Coefficient b(i)	Standard Error Sb(i)	Lower 95% Confidence Limit	Upper 95% Confidence Limit	Odds Ratio Exp(b(i))
Intercept	0.15301	0.08790	-0.01926	0.32529	1.16534
black	-0.30844	0.19993	-0.70030	0.08341	0.73459
otherrace	-1.19123	0.78367	-2.72719	0.34473	0.30385

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Odds Ratios

Independent Variable X	Regression Coefficient b(i)	Odds Ratio Exp(b(i))	Lower 95% Confidence Limit	Upper 95% Confidence Limit
Intercept	0.15301	1.16534	0.98093	1.38443
black	-0.30844	0.73459	0.49644	1.08699
otherrace	-1.19123	0.30385	0.06540	1.41161

Estimated Logistic Regression Model(s) in Reading Form

Model for Logit(validvote) = XB when validvote = 1
0.15 - 0.31 * black - 1.19 * otherrace

Estimated Logistic Regression Model(s) in Transformation Form

Model for Logit(validvote) = XB when validvote = 1

0.15301475991198 -0.308441217146693*black -1.1912307058887*otherrace

Each model estimates XB (where Logit(Y) = XB) for a specific Y outcome. To calculate the Y-value probabilities when there are only 2 outcomes, transform the logit using Prob(Y = outcome) = 1/(1+Exp(-XB)) or Prob(Y ≠ outcome) = Exp(-XB)/(1+Exp(-XB)). For the calculation formula to use when there are more than 2 outcomes, see the help documentation.

Analysis of Deviance

Term Omitted	DF	Deviance	Increase From Model Deviance (Chi²)	P-Value

All	2	580.78819	4.46856	0.10707
black	1	578.70605	2.38642	0.12239
otherrace	1	578.94312	2.62349	0.10529
None(Model)	2	576.31963		

The Prob Level is for testing the significance of that term after considering all other terms.

Log Likelihood & R^2

Term(s) Omitted	DF	Log Likelihood	R^2 of Remaining Term(s)	Reduction From Model R^2	Reduction From Saturated R^2
All	1	-290.39410	0.00000		
black	1	-289.35303	0.44253	0.50720	0.55747
otherrace	1	-289.47156	0.39215	0.55759	0.60785
None(Model)	2	-288.15982	0.94973	0.00000	0.05027
None(Saturated)	6	-288.04156	1.00000		0.00000

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Classification Table

Actual	Estimated 0	1	Total
0	99.31236	105.2447	204.5571
1	85.91865	128.6468	214.5655
Total	185.231	233.8915	419.1225

Percent Correctly classified = 54.4%

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
1	1	10.39601	||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
2	1	10.39601	||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
3*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
4*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
5	1	10.39601	||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....

6	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
7*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
8	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
9	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
10	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
11	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
12	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
13	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
14*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
15*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
16*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
17*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
18	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
19	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
20*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
21	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
22*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
23	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
24	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
25*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
26	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
27*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
28	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
29*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
30*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
31	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
32	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
33	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
34*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
35*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
36*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
37	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
38	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
39*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
40*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
41	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
42	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
43*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
44	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
45	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
46*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
47*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
48	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
49	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Residual Report (Continued)

Actual	Pearson	Deviance	Maximum

Row	validvote	Residual		Residual		Hat Diagonal	
50	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
51	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
52*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
53	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
54	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
55*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
56	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
57	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
58*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
59	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
60	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
61*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
62*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
63	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
64	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
65*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
66	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
67	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
68	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
69	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
70*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
71*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
72	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
73*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
74*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
75	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
76*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
77	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
78	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
79	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
80	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
81	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
82*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
83	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
84	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
85*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
86	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
87	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
88*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
89	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
90	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
91	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
92	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
93*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
94	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
95	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
96*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
97	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
98	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS

Y (Ref Value) validvote(0)
Frequency commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
99*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
100*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
101*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
102	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
103*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
104*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
105*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
106*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
107*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
108*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
109	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
110*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
111*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
112*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
113	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
114	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
115*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
116*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
117	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
118	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
119	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
120	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
121*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
122*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
123	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
124	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
125	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
126*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
127	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
128	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
129*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
130	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
131*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
132*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
133	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
134	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
135*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
136*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
137*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
138*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
139*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
140	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
141	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
142	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
143*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
144*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
145*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
146	0	-1.48982	|.....	-0.39661	||.....	0.96226	||||||||||||||
147*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
148*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
149	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
150*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
151*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
152	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
153*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
154	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
155	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
156*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
157*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
158	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
159*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
160	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
161*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
162*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
163*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
164	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
165	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
166	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
167	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
168	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
169	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
170	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
171	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
172	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
173*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
174*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
175	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
176*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
177*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
178	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
179	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
180*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
181*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
182	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
183*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
184*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
185	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
186	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
187	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
188	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
189	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
190	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....

191*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
192*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
193	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
194	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
195	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
196*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
197	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
198	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
199	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
200	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
201*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
202*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
203	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
204	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
205*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||||.....
206	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
207*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
208	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
209*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
210*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
211*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
212*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
213*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
214	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
215	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
216	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
217	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
218*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
219	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
220*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||||.....
221	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
222*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
223	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
224*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
225*	1	2.50368	|||.....	0.40136	||.....	0.96226	||||||||||||||
226	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
227	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
228*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
229	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
230	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
231*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||||.....
232	0	-1.48982	|.....	-0.39661	||.....	0.96226	||||||||||||||
233	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....

234	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
235*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
236	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
237*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
238*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
239*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
240	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
241	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
242*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
243*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
244*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
245	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
246	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
247	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
248	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
249	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
250	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
251	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
252*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
253	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
254	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
255*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
256	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
257	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
258*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
259	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
260*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
261*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
262	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
263*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
264*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
265*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
266	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
267	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
268	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
269*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
270*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
271	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
272*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
273*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
274	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
275*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
276	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

277*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
278	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
279*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
280*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
281	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
282*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
283	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
284*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
285	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
286	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
287	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
288*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
289*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
290	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
291	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
292	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
293	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
294	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
295	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
296*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
297*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
298	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
299*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
300*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
301*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
302*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
303	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
304	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
305	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
306*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
307	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
308*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
309	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
310	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
311*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
312	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
313	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
314	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
315	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
316*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
317*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
318*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....

319	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
320*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
321	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
322	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
323*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
324*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
325*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
326*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
327*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
328*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
329	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
330	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
331*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
332	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
333	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
334*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
335*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
336*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
337	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
338	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
339	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
340	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
341*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
342	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
343	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
344*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
345	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
346*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
347	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
348*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
349	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
350*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
351	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
352*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
353*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
354*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
355	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
356*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
357	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
358	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
359*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
360*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
361*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....

362*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
363*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
364	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
365*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
366	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
367	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
368*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
369	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
370*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
371*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
372*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
373*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
374	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
375*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
376*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
377*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
378*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
379	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
380	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
381	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
382*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
383*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
384*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
385*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
386	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
387	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
388	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
389*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
390	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
391*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
392*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
393	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
394*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
395	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
396	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
397*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
398*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
399	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
400	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
401	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
402	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
403	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
404*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....

405*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
406*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
407	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
408*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
409	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
410*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
411	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
412	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
413*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
414	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
415	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
416	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
417	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
418	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
419	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
420	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
421	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
422	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
423	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
424	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
425	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
426*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
427*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
428	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
429	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
430	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
431*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
432	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
433	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
434*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
435*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
436	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
437	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
438	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
439*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
440*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
441	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
442*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
443	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
444*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
445	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
446*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
447*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....

448*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
449*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
450*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
451	1	10.39601	||||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
452	1	10.39601	||||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
453	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
454*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
455	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
456	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
457	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
458*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
459	1	10.39601	||||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
460	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
1	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
2	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
3*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
4*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
5	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
6	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
7*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
8	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
9	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
10	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
11	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
12	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
13	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
14*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
15*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
16*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
17*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
18	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
19	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
20*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
21	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
22*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
23	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
24	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
25*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
26	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
27*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
28	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
29*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....

30*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
31	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
32	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
33	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
34*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
35*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
36*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
37	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
38	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
39*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
40*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
41	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
42	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
43*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
44	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
45	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
46*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
47*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
48	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
49	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
50	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
51	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
52*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
53	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
54	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
55*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
56	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
57	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
58*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
59	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
60	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
61*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
62*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
63	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
64	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
65*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
66	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
67	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
68	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
69	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
70*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
71*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
72	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

73*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
74*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
75	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
76*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
77	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
78	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
79	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
80	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
81	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
82*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
83	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
84	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
85*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
86	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||
87	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
88*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
89	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
90	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
91	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
92	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
93*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
94	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
95	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
96*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
97	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
98	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
99*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
100*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
101*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
102	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
103*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
104*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
105*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
106*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
107*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
108*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
109	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
110*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
111*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
112*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
113	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
114	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
115*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

116*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
117	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
118	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
119	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
120	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
121*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
122*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
123	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
124	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
125	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
126*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
127	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
128	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
129*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
130	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
131*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
132*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
133	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
134	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
135*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
136*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
137*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
138*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
139*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
140	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
141	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
142	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
143*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
144*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
145*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
146	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
147*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
148*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
149	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
150*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
151*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
152	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
153*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
154	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
155	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
156*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
157*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
158	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

159*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
160	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
161*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
162*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
163*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
164	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
165	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
166	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
167	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
168	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
169	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
170	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
171	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
172	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
173*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
174*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
175	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
176*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
177*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
178	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
179	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
180*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
181*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
182	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
183*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
184*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
185	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
186	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
187	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
188	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
189	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
190	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
191*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
192*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
193	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
194	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
195	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
196*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
197	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
198	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
199	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
200	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
201*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

202*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
203	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
204	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
205*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
206	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
207*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
208	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
209*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
210*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
211*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
212*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
213*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
214	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
215	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
216	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
217	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
218*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
219	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
220*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
221	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
222*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
223	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
224*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
225*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
226	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
227	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
228*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
229	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
230	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
231*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
232	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
233	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
234	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
235*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
236	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
237*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
238*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
239*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
240	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
241	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
242*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
243*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
244*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
245	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
246	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
247	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
248	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
249	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
250	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
251	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
252*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
253	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
254	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
255*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
256	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
257	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
258*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
259	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
260*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
261*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
262	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
263*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
264*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
265*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
266	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
267	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
268	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
269*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
270*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
271	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
272*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
273*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
274	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
275*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
276	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
277*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
278	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
279*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
280*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
281	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
282*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
283	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
284*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
285	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
286	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
287	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
288*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
289*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
290	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
291	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
292	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
293	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
294	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
295	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
296*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
297*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
298	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
299*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
300*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
301*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
302*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
303	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
304	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
305	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
306*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
307	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
308*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
309	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
310	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
311*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
312	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
313	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
314	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
315	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
316*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
317*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
318*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
319	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
320*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
321	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
322	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
323*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
324*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
325*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
326*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
327*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
328*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
329	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
330	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
331*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
332	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
333	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
334*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
335*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
336*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
337	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
338	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
339	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
340	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
341*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
342	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

343	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
344*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
345	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
346*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
347	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
348*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
349	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
350*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
351	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
352*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
353*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
354*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
355	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
356*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
357	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
358	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
359*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
360*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
361*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
362*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
363*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
364	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
365*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
366	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
367	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
368*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
369	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
370*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
371*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
372*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
373*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
374	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
375*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
376*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
377*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
378*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
379	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
380	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
381	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
382*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
383*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
384*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
385*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....

386	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
387	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
388	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
389*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
390	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
391*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
392*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
393	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
394*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
395	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
396	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
397*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
398*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
399	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
400	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
401	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
402	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
403	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
404*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
405*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
406*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
407	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
408*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
409	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
410*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
411	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
412	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
413*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
414	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
415	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
416	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
417	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
418	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
419	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
420	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
421	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
422	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
423	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
424	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
425	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
426*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
427*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
428	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

429	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
430	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
431*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
432	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
433	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
434*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
435*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
436	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
437	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
438	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
439*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
440*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
441	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
442*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
443	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
444*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
445	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
446*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
447*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
448*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
449*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
450*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
451	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
452	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
453	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
454*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
455	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
456	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
457	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
458*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
459	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
460	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
1	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
2	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
3*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
4*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
5	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
6	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
7*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
8	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
9	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
10	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
11	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
12	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
13	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
14*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
15*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
16*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
17*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
18	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
19	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
20*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
21	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
22*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
23	0	0.57746	|||||||||.....	263.80925	|.....	111.47037	||||||||||.....
24	0	0.57746	|||||||||.....	263.80925	|.....	111.47037	||||||||||.....
25*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
26	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
27*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
28	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
29*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
30*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
31	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
32	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
33	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
34*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
35*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
36*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
37	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
38	0	0.57746	|||||||||.....	263.80925	|.....	111.47037	||||||||||.....
39*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
40*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
41	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
42	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
43*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
44	0	0.96226	||||||||||||||	1499.55501	||||.....	56.59278	||||.....
45	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
46*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
47*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
48	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
49	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
50	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
51	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
52*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
53	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
54	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
55*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
56	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
57	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
58*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
59	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
60	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
61*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
62*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
63	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
64	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
65*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
66	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
67	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
68	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
69	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
70*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
71*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
72	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
73*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
74*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
75	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
76*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
77	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
78	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
79	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
80	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
81	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
82*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
83	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
84	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
85*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
86	0	0.96226	||||||||||||||	1499.55501	||||.....	56.59278	||||.....
87	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
88*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
89	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
90	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
91	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
92	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
93*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||

94	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
95	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
96*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
97	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
98	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
99*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
100*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
101*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
102	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
103*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
104*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
105*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
106*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
107*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
108*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
109	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
110*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
111*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
112*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
113	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
114	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
115*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
116*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
117	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
118	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
119	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
120	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
121*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
122*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
123	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
124	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
125	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
126*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
127	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
128	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
129*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
130	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
131*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
132*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
133	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
134	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
135*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

136*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
137*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
138*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
139*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
140	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
141	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
142	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
143*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
144*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
145*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
146	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
147*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
148*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
149	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
150*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
151*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	|||||||||||||
152	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
153*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
154	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
155	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
156*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
157*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
158	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
159*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
160	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
161*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
162*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
163*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
164	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
165	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
166	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
167	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
168	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
169	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
170	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
171	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
172	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
173*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
174*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
175	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
176*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
177*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

178	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
179	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
180*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
181*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
182	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
183*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
184*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
185	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
186	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
187	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
188	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
189	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
190	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
191*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
192*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
193	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
194	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
195	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
196*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
197	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
198	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
199	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
200	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
201*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
202*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
203	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
204	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
205*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
206	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
207*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
208	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
209*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
210*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
211*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
212*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
213*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
214	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
215	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
216	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
217	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
218*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
219	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....

220*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
221	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
222*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
223	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
224*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
225*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
226	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
227	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
228*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
229	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
230	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
231*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
232	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	||||.....
233	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
234	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
235*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
236	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
237*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
238*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
239*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
240	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
241	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
242*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
243*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
244*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
245	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
246	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
247	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
248	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
249	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
250	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
251	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
252*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
253	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
254	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
255*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
256	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
257	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
258*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
259	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
260*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
261*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

262	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
263*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
264*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
265*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
266	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
267	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
268	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
269*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
270*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
271	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
272*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
273*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
274	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
275*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
276	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
277*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
278	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
279*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
280*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
281	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
282*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
283	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
284*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
285	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
286	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
287	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
288*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
289*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
290	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
291	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
292	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
293	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
294	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
295	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
296*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
297*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
298	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
299*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
300*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
301*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
302*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
303	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

<table>
<tr><td>304</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>305</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>306*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>307</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>308*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>309</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>310</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>311*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>312</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>313</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>314</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>315</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>316*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>317*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>318*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>319</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>320*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>321</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>322</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>323*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>324*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>325*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>326*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>327*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>328*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>329</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>330</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>331*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>332</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>333</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>334*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>335*</td><td>1</td><td>0.96226</td><td>|||||||||||||||</td><td>4235.00431</td><td>|||||||||||||||</td><td>159.82785</td><td>|||||||||||||||</td></tr>
<tr><td>336*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
</table>

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

<table>
<tr><th>Row</th><th>Actual validvote</th><th>Hat Diagonal</th><th></th><th>Cook's Distance (C)</th><th></th><th>Cook's Distance (CBar)</th><th></th></tr>
<tr><td>337</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>338</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>339</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>340</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>341*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>342</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>343</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>344*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>345</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
</table>

346*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
347	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
348*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
349	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
350*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
351	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
352*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
353*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
354*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
355	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
356*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
357	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
358	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
359*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
360*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
361*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
362*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
363*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
364	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
365*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
366	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
367	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
368*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
369	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
370*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
371*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
372*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
373*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
374	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
375*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
376*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
377*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
378*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
379	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
380	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
381	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
382*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
383*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
384*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
385*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
386	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
387	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

388	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
389*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
390	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
391*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
392*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
393	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
394*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	|||||||||||...
395	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
396	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
397*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	|||||||||||...
398*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
399	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
400	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
401	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
402	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
403	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
404*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
405*	1	0.96226	||||||||||||||	4235.00431	|||||||||||||	159.82785	|||||||||||||
406*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
407	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
408*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
409	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
410*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	|||||||||||...
411	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
412	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
413*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
414	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
415	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
416	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
417	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
418	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
419	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
420	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
421	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
422	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
423	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
424	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
425	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
426*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
427*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
428	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
429	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
430	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
431*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
432	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
433	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
434*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
435*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
436	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
437	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
438	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	||||.....
439*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
440*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
441	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
442*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
443	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
444*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
445	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
446*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
447*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
448*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
449*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
450*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
451	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
452	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
453	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
454*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
455	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
456	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
457	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
458*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
459	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
460	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
1	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
2	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
3*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
4*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
5	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
6	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
7*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
8	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
9	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
10	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

11	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
12	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
13	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
14*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	|||||||||.....
15*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
16*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
17*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
18	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
19	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
20*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
21	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
22*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
23	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
24	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
25*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	|||||||||.....
26	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
27*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
28	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
29*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
30*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
31	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
32	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
33	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
34*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
35*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
36*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
37	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
38	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
39*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
40*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
41	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
42	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
43*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
44	0	0.96226	|||||||||||||	56.75007	||||.....	58.81234	|||.....
45	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
46*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
47*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
48	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
49	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
50	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
51	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
52*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||

53	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
54	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
55*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
56	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
57	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
58*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
59	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
60	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
61*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	||||||||\.....
62*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
63	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
64	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
65*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
66	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
67	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
68	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
69	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
70*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
71*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
72	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
73*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
74*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
75	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
76*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
77	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
78	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
79	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
80	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
81	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
82*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
83	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
84	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
85*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
86	0	0.96226	|||||||||||||	56.75007	|||||.....	58.81234	|||.....
87	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
88*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
89	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
90	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
91	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
92	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
93*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
94	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
95	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
96*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
97	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
98	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
99*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||
100*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
101*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
102	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
103*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
104*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
105*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
106*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
107*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
108*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
109	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
110*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
111*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
112*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
113	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
114	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
115*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
116*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
117	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
118	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
119	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
120	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
121*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
122*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
123	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
124	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
125	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
126*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
127	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
128	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
129*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
130	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
131*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
132*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
133	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
134	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
135*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
136*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
137*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
138*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
139*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
140	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
141	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
142	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
143*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
144*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
145*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
146	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
147*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
148*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
149	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
150*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
151*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
152	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
153*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
154	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
155	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
156*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
157*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
158	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
159*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
160	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
161*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
162*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
163*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
164	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
165	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
166	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
167	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
168	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
169	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
170	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
171	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
172	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
173*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
174*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
175	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
176*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
177*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
178	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
179	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
180*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
181*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
182	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
183*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
184*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
185	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
186	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
187	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...

188	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
189	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
190	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
191*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
192*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
193	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
194	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
195	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
196*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
197	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
198	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
199	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
200	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
201*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
202*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
203	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
204	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
205*	1	0.57746	|||||||\.....	134.47151	|||||||||...	225.49637	|||||||||||.
206	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
207*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
208	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
209*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
210*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
211*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
212*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
213*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
214	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
215	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
216	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
217	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
218*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
219	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
220*	1	0.57746	|||||||\.....	134.47151	|||||||||...	225.49637	|||||||||||.
221	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
222*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
223	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
224*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
225*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	||||||||\.....
226	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
227	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
228*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
229	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

230	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
231*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
232	0	0.96226	|||||||||||||	56.75007	||||.....	58.81234	|||.....
233	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
234	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
235*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
236	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
237*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
238*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
239*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
240	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
241	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
242*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
243*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
244*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
245	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
246	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
247	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
248	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
249	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
250	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
251	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
252*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
253	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
254	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
255*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
256	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
257	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
258*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
259	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
260*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
261*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
262	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
263*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
264*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
265*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
266	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
267	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
268	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
269*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
270*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
271	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

272*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
273*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
274	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
275*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
276	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
277*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
278	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
279*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
280*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
281	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
282*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
283	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
284*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
285	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
286	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
287	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
288*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
289*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
290	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
291	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
292	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
293	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
294	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
295	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
296*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
297*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
298	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
299*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
300*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
301*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
302*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
303	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
304	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
305	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
306*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
307	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
308*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
309	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
310	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
311*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
312	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
313	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...

314	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
315	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
316*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
317*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
318*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
319	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
320*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
321	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
322	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
323*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
324*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
325*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
326*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
327*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
328*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
329	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
330	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
331*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
332	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
333	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
334*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
335*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
336*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
337	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
338	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
339	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
340	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
341*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
342	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
343	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
344*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
345	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
346*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
347	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
348*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
349	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
350*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
351	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
352*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
353*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
354*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
355	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...

356*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
357	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
358	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
359*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
360*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
361*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
362*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
363*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
364	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
365*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
366	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
367	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
368*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
369	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
370*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
371*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
372*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
373*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
374	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
375*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
376*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
377*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
378*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
379	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
380	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
381	0	0.96226	||||||||||||||	56.75007	||||.....	58.81234	|||.....
382*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
383*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
384*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
385*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
386	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
387	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
388	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
389*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
390	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
391*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
392*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
393	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
394*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
395	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
396	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
397*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

398*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
399	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
400	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
401	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
402	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
403	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
404*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
405*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
406*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
407	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
408*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
409	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
410*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
411	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
412	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
413*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
414	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
415	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
416	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
417	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
418	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
419	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
420	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
421	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
422	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
423	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
424	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
425	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
426*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
427*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
428	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
429	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
430	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
431*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
432	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

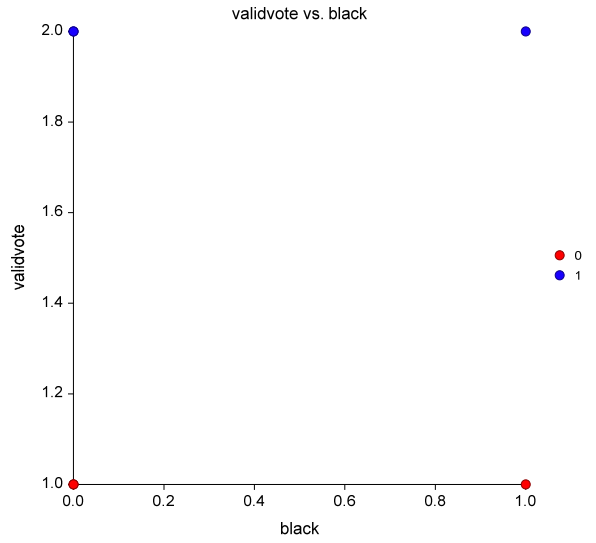
Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
433	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
434*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
435*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
436	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
437	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
438	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
439*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||

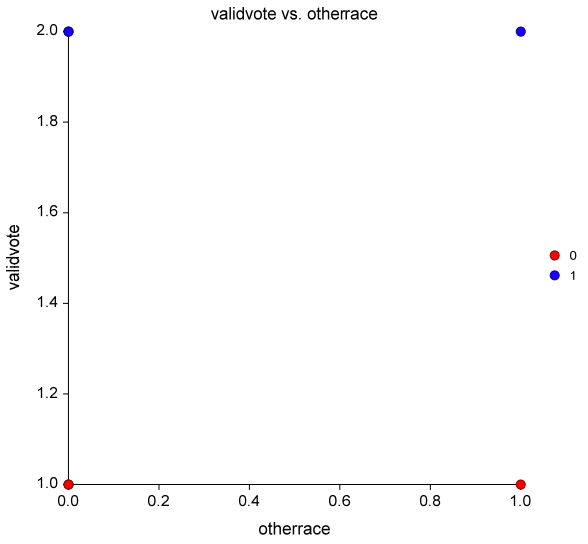
440*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
441	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
442*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
443	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
444*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
445	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
446*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
447*	1	0.57746	|||||||||.....	134.47151	|||||||||||...	225.49637	|||||||||||||.
448*	1	0.57746	|||||||||.....	134.47151	|||||||||||...	225.49637	|||||||||||||.
449*	1	0.57746	|||||||||.....	134.47151	|||||||||||...	225.49637	|||||||||||||.
450*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
451	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	|||||||||||...
452	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	|||||||||||...
453	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
454*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
455	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
456	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
457	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
458*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
459	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	|||||||||||...
460	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...

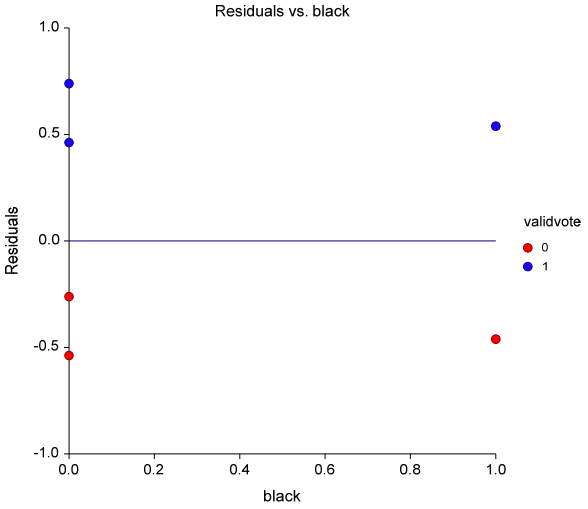
Logistic Regression Report

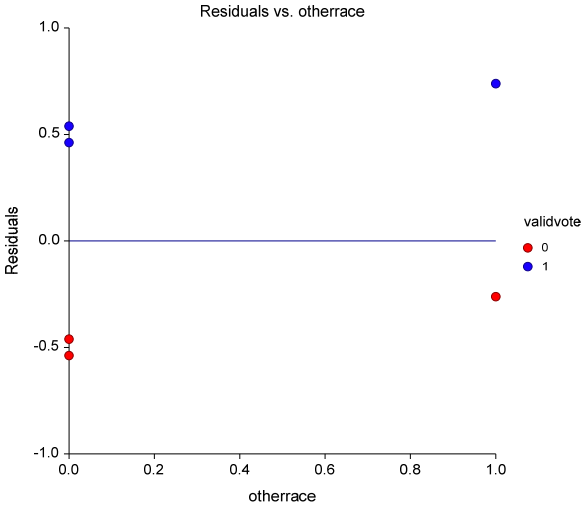
Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Diagnostic Plots



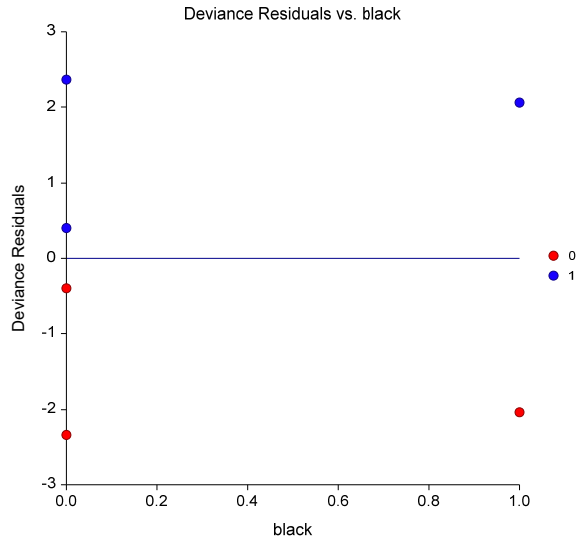

validvote vs. otherrace
validvote
otherrace
2.0
1.8
1.6
1.4
1.2
1.0
0.0
0.2
0.4
0.6
0.8
1.0
0
1

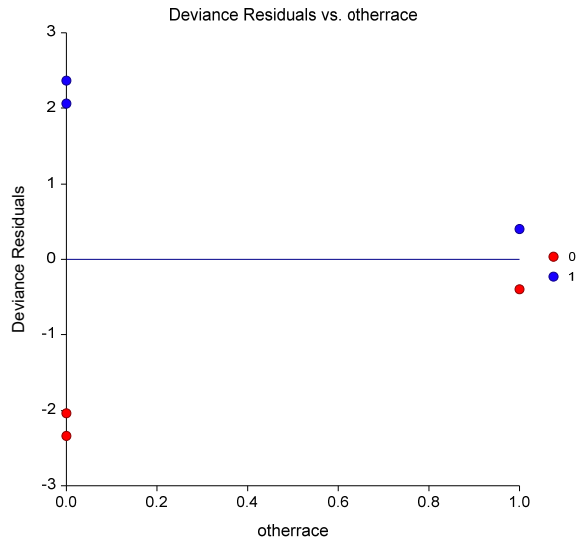

Residuals vs. black
Residuals
black
validvote
0
1
1.0
0.5
0.0
-0.5
-1.0
0.0
0.2
0.4
0.6
0.8
1.0

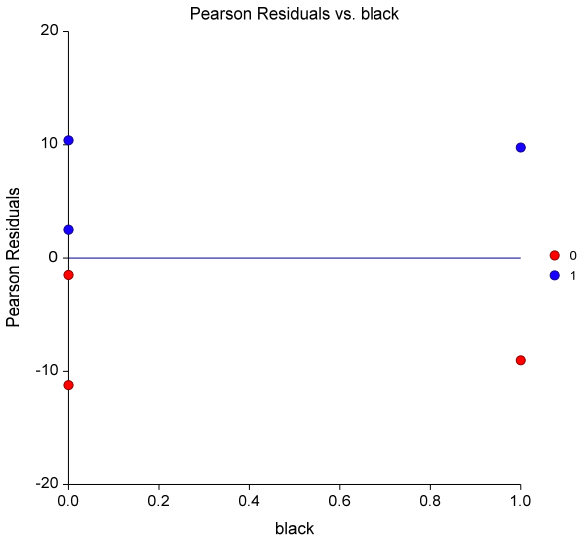

Residuals vs. otherrace
Residuals
otherrace
validvote
0
1
1.0
0.5
0.0
-0.5
-1.0
0.0
0.2
0.4
0.6
0.8
1.0

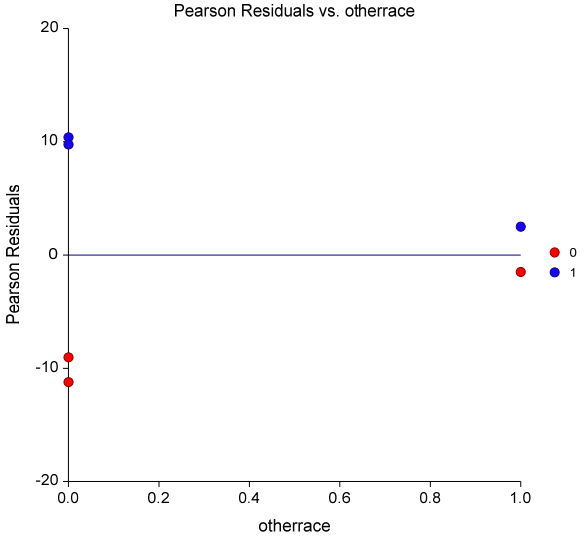
Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight



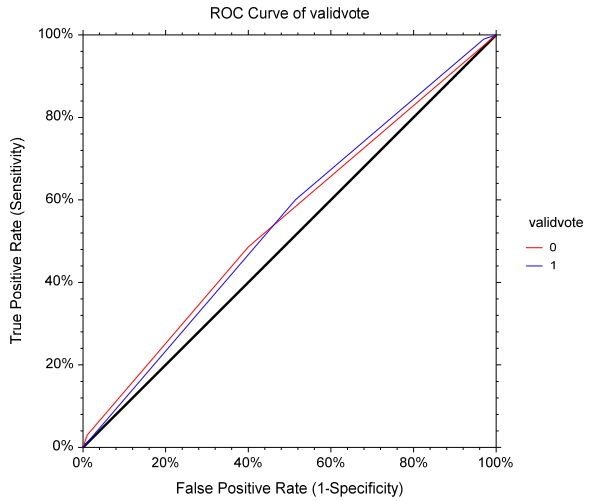


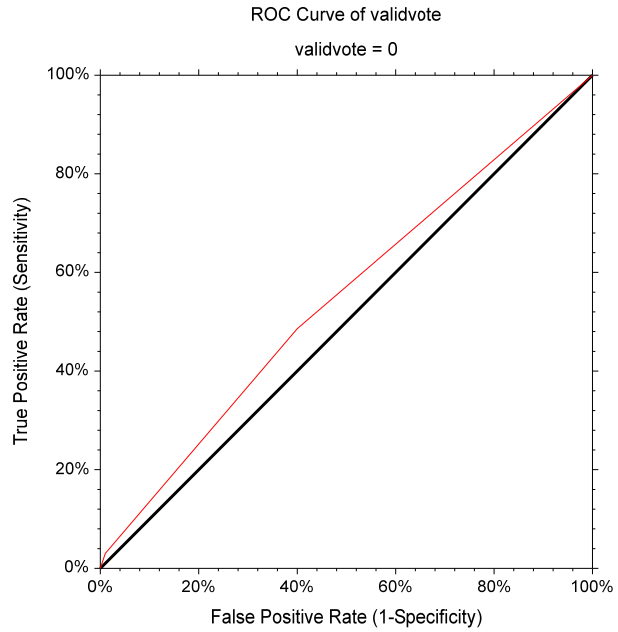

Pearson Residuals vs. black
Pearson Residuals
20
10
0
-10
-20
0.0
0.2
0.4
0.6
0.8
1.0
black
0
1

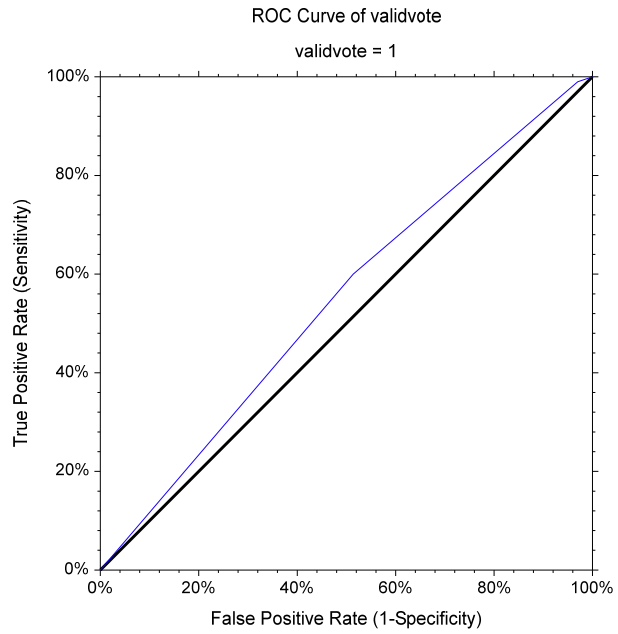

Pearson Residuals vs. otherrace
Pearson Residuals
20
10
0
-10
-20
0.0
0.2
0.4
0.6
0.8
1.0
otherrace
0
1

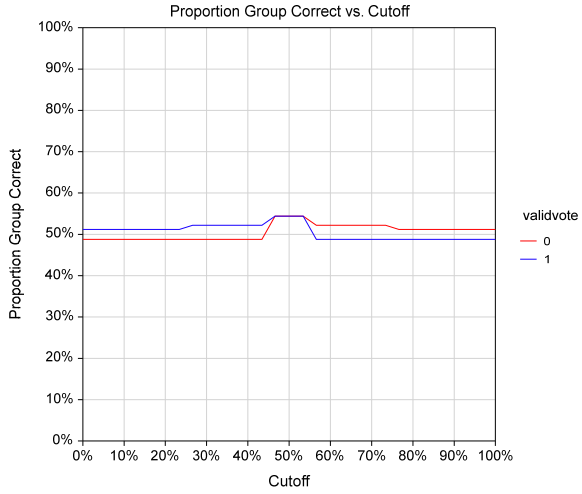
Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight









Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Procedure Input Settings

Autosave Inactive

Variables, Model Tab

-- Variables ----------

Y:	validvote
Reference Value:	0
Numeric X's:	black, otherrace
Categorical X's:	<Empty>
Frequencies:	commonpostweight
Validation Filter:	<Empty>

-- Regression Model ----------

Terms:	1-Way
Remove Intercept	Unchecked

·· Prior Y-Value Probabilities (Changes Intercept and Predicted Values)

Priors:	Equal across Y Values

Subset Selection Tab

-- Select the Best Subset from the X's ----------

Search for the Best Subset from the X's	Unchecked

Iteration Tab

-- Iteration Options ----------

Maximum Iterations:	20
Iteration Termination:	0.000001

Reports Tab

-- Select Reports ----------

·· Summaries

Run Summary	Checked
Y Variable Summary	Checked

·· Subset Selection

Subset Summary	Checked
Subset Detail	Checked

·· Estimation

Coefficient Significance Tests	Checked
Coefficient Confidence Limits	Checked
Odds Ratios	Checked
Estimated Model (Reading Form)	Checked
Estimated Model (Transformation Form)	Checked

·· Goodness-of-Fit

Analysis of Deviance	Checked
Log-Likelihood and R^2	Checked

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Procedure Input Settings (Continued)

Reports Tab (Continued)

·· Classification

Classification Matrix	Checked
Validation Matrix	Checked
ROC Report	Checked

·· Row-by-Row Lists

Row Classification Report:	None
Row Classification Probs Report:	None
Simple Residuals Report:	None
Residuals	Checked
DfBetas	Checked
Influence Diagnostics	Checked
Residual Diagnostics	Checked

Report Options Tab

-- Confidence Levels ----------

Confidence Level:	95

-- Variable and Value Labels ----------

Variable Names:	Names
Value Labels:	Data Values
Stagger label and output if label length is ≥	15

-- Decimal Places ----------

Precision:	Single
Probability:	5
Beta (Coefficients):	5
SE(Beta):	5
Z:	3
Log Likelihood:	5
Odds Ratio:	5
DFBeta:	5
Coefficients in Reading Form Model:	2

Plots Tab

-- Select Plots ----------

Y vs X	Checked
ROC Curves (Combined)	Checked
ROC Curve (Separate)	Checked

Residuals vs X	Checked
Skip Reference Value	Checked
Deviance Residuals vs X	Checked
Pearson Residuals vs X	Checked
Pr(Correct) vs Cutoff	Checked

-- ROC Curves and Prob(Correct) vs Cutoff Plot Options ----------

Number Cutoffs:	29

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Procedure Input Settings (Continued)

Storage Tab

-- Data Storage Options ----------

Storage Option:	Do not store data

Appendix B

There are three possible ways to measure turnout in the 2020 CES using the validation variables. Two use only the “CL_2020gvm" vote validation variable while the third uses this variable in conjunction with self-reported registration (votereg_post) and self-reported turnout (CC20_401).

1. Un-matched as non-voters. The first specification defines voters as respondents with a validated voting record no matter their mode of participation, and defines nonvoters as both matched non-voters and non-matched respondents. This specification retains the integrity of the full CES sample, no missing values are created. The justification for this approach is the fact that the most common reason that Catalist will not have a record for an individual is because that individual is not registered to vote. Indeed, rates of self-reported non-registration and non-voting are much higher among un-matched respondents than among those for whom there is a match.
2. Only matched non-voters as non-voters. The second specification defines nonvoters as only matched non-voters. This specification reduces the CES sample and results in validated turnout estimates that are larger than those in the first specification. However, this specification increases the level of certainty in the identification of non-voters in the CES, because there could possibly be actual voters among nonmatched respondents.
3. Matched non-voters and self-reported non-voters as non-voters. The third specification defines non-voters as (1) matched non-voters, (2) non-matched respondents who reported not being registered to vote in the “votereg_post" question, and (3) non-matched respondents who are self-reported non-voters in the “CC20_401" question. This definition excludes non-matched respondents who are self-reported voters (these individuals would be coded as missing). This definition assumes that self-reported non-voters are honest about their non-participation because there is no incentive to go against the democratic norm of participation.

Appendix C

NCSS 12.0.18

Two-Sample Comparison Report

Dataset ...\VALIDATE VOTED BLACK & WHITE T TEST.NCSS

Confidence Intervals of Means

					95.0% C. I. of μ	
Group	**N**	**Mean**	**Standard Deviation**	**Standard Error**	**Lower Limit**	**Upper Limit**
1	121	0.049	0.218	0.01981818	0.009761379	0.08823862
2	61	0.1475	0.357	0.04570917	0.05606806	0.2389319

Two-Sided Confidence Interval for μ1 - μ2

						95.0% C. I. of μ1 - μ2	
Variance Assumption	**DF**	**Mean Difference**	**Standard Deviation**	**Standard Error**	**T***	**Lower Limit**	**Upper Limit**
Equal	180	-0.0985	0.2723337	0.04276412	1.9732	-0.1828835	-0.01411652
Unequal	83.21	-0.0985	0.4182977	0.04982056	1.9889	-0.1975874	0.0005874241

Equal-Variance T-Test

Alternative Hypothesis	**Mean Difference**	**Standard Error of Difference**	**T-Statistic**	**d.f.**	**Prob Level**	**Reject H0 at α = 0.050**
μ1 - μ2 > 0	-0.0985	0.04276412	-2.3033	180	0.98880	No

Aspin-Welch Unequal-Variance T-Test

Alternative Hypothesis	**Mean Difference**	**Standard Error of Difference**	**T-Statistic**	**d.f.**	**Prob Level**	**Reject H0 at α = 0.050**
μ1 - μ2 > 0	-0.0985	0.04982056	-1.9771	83.21	0.97433	No

Procedure Input Settings

Autosave Inactive

Data Tab

-- Group Summary Values ----------

Group 1 Sample Size: 121

Group 1 Mean:	.049
Group 1 Standard Deviation:	.218
Group 2 Sample Size:	61
Group 2 Mean:	.1475
Group 2 Standard Deviation:	.357

Reports Tab

-- Confidence Intervals ----------

Confidence Level:	95
Confidence Intervals of Each Group Mean	Checked
Confidence Interval of μ1 - μ2	Checked
Limits:	Two-Sided
Confidence Intervals of Each Group Standard Deviation	Unchecked
Confidence Interval of σ1/σ2	Unchecked

Two-Sample Comparison Report

Dataset ...\VALIDATE VOTED BLACK & WHITE T TEST.NCSS

Procedure Input Settings (Continued)

Reports Tab (Continued)

-- Tests ----------

Alpha:	0.05
H0: μ1 - μ2 =	0.0
Ha:	μ1 - μ2 > H0 Value (one-sided)

·· Parametric

Equal-Variance T-Test	Checked
Unequal-Variance T-Test	Checked
Z-Test	Unchecked
Equivalence Test	Unchecked
Power Report for Equal-Variance T-Test	Unchecked
Power Report for Unequal-Variance T-Test	Unchecked

·· Assumptions

Variance-Ratio Test	Unchecked

-- Decimal Places ----------

Means, Differences, and C.I. Limits:	Auto (Up to 7)
Standard Deviations and Standard Errors:	Auto (Up to 7)
P-Values and Powers:	5
Test Statistics:	4

THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE; DERRICK SIMMONS; TY PINKINS; CONSTANCE OLIVIA SLAUGHTER HARVEY-BURWELL — **PLAINTIFFS**

VS. — **CIVIL ACTION NO. 4:22-cv-00062-SA-JMV**

STATE BOARD OF ELECTION COMMISSIONERS; TATE REEVES ***in his official capacity as Governor of Mississippi*****; LYNN FITCH** ***in her official capacity as Attorney General of Mississippi*****; MICHAEL WATSON** ***in his official capacity as Secretary of State of Mississippi*** — **DEFENDANTS**

DECLARATION OF DAVID A. SWANSON, Ph.D.

I, David A. Swanson, Ph.D., do hereby declare as follows:

1. My name is David A. Swanson. I am an adult resident citizen of Whatcom County, Washington. I have personal knowledge of the facts and matters set forth herein and am otherwise fully competent to offer the testimony hereafter stated.
2. I was retained by Defendants to analyze a report submitted by Plaintiffs' expert Dr. Traci Burch (120206_Dr. Burch Rebuttal Report.Final.Signed(2721085.100)) in this litigation. I was asked to check the accuracy of her use of data in supporting her opinions and, if necessary, to collect and examine data tending to support opinions to the contrary.
3. My qualifications to offer the opinions presented in my report and in this declaration are stated in ¶¶ 1-11 of my report.

As I discuss in detail in this report, I find, in summary, that Dr. Burch's Rebuttal Report contains major errors. These errors, combined with several critical oversights, render her opinion invalid.

4. My observations of Dr. Burch's work are that she:

(1) claims that the Current Population Survey (CPS) is unreliable,[1] therefore causing her to turn to a new data set, The "Cooperative Election Survey" (CES) for "validated voters." However, the CES is itself linked back to the CPS to establish weights for "validated voters," a fact which she does not acknowledge;

(2) claims on the basis of an extremely small sample that the CES data showed that 74% of the White Mississippi respondents who said they voted actually did so, while 57% of the Black Mississippi respondents did so.

(3) uses a weighting scheme in her "logistic regression" analyses that is not recommended by the authors of the CES study and compounding this failure by declaring that there were "statistically significant" coefficients in her two sample-based logistic regression models, both of which, in fact, turn out to be not statistically significant when the recommended weighting scheme is used. That is, Dr. Burch fails to create logistic regression models from which she can make inferences from the CES samples to the populations in question;

(4) incorrectly identifies the counties in Mississippi Supreme Court District 1 in her "Ecological Inference" Model of District 1 by erroneously excluding Bolivar County and erroneously including Adams County; and

(5) compares White voters to Non-White Voters in her two Ecological Inference models, one for District 1 and the other for the state as a whole, when, in fact the question is in regard to White Voters and Black Voters.

5. Because of these and other errors and oversights I discuss in the report that follows, I find Dr. Burch has no valid opinion regarding White voters relative to Black Voters both in MS Supreme Court District 1 and in Mississippi as a whole. As such, her "findings" do not rebut my conclusion or change my opinion that Black Mississippians are able to participate effectively in the political process in MS Supreme Court District 1 and in the state as a whole.

[1] Burch rebuttal report, page 4: "Because, as discussed above, turnout estimates in the CPS are unreliable not just because of overreporting in general, but because of differences in overreporting by race in particular, I conducted additional analyses which employed alternative methods of looking at turnout by race that do not rely on self-reported voter turnout."

6. Next, I examine the background of Dr. Burch's original expert report and the contents of her supplemental report that lead to my conclusions. At page 10 of her initial expert report, Dr. Burch offered the following opinion:

> "Black people in Mississippi have had less access to quality education and therefore have lower educational attainment for the reasons discussed in this section; this lower educational attainment leads to lower voter turnout."

The data supporting this opinion was her calculation on page 10 of her expert report that:

> "56.1% of white Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens."

7. Figure 4, found on page 10 of Dr. Burch's expert report, shows that the calculation supporting this opinion relied upon the 2020 Current Population Survey ("CPS") Voting Supplement, official data collected by the United States Census Bureau. In conducting a "quality control" assessment of this calculation by Dr. Burch, I first examined historical CPS data provided by the Census Bureau and found, as stated in ¶ 128 of my expert report, that Black voter turnout exceeded White voter turnout in Mississippi every year since 2012. Moreover, as stated in ¶ 137 of my expert report, I found that the official 2020 CPS data claimed to have been used by Dr. Burch in generating her calculation contradicted the opinion she formed from this calculation. Instead of showing that 2020 voter turnout by White Mississippians exceeded the 2020 voter turnout by Black Mississippians, it showed that the turnout by the latter exceeded the turnout by the former.

8. As stated in ¶ 149 of my expert report, I found that in using the official 2020 CPS data to come to her opinion, Dr. Burch neglected to use the correct age filters so that only those 18 years and over who are eligible to vote would be included in her calculations. These errors led, in turn, to her erroneous opinion that White voter turnout was higher than Black voter turnout in Mississippi. When the correct age filters are applied, the same CPS data used by Dr. Burch show that Black voter turnout is higher than White voter turnout in Mississippi, which contradicts not only the opinion found in her expert report, but also to the adherence of this erroneous opinion found in her rebuttal.

9. In a further effort to substantiate my finding from the CPS that Black voter turnout exceeds White voter turnout in Mississippi (and has for some time) while simultaneously examining Dr. Burch's opinion that an "overall gap in turnout between Black and white Mississippians exists," also found on page 10 of her expert report, I examined a second set of data. The Social Science Research Center at Mississippi State University has conducted annual statewide surveys of registration and voting frequency from 2015 to 2021. In ¶ 148-151 of my report, I determined that these additional data also indicated that Black voter turnout generally exceeds White voter turnout in Mississippi.

10. In response to my findings, Dr. Burch submitted a rebuttal report (120206_Dr. Burch Rebuttal Report.Final.Signed(2721085.100)) on February 6, 2023. She admits at page 3 of this rebuttal report that, as I pointed out in my declaration of March 8, 2023, she miscalculated White and Black voter turnout in Mississippi's 2020 general election because she failed to use the correct age filters in her analysis. The CPS educational question is only asked if persons aged 15 years and over and she erroneously included those under 18 in the portion of her analysis related to educational attainment (i.e., she included those aged 15, 16, and 17, who are not eligible to vote). In providing her estimate of overall voter turnout, Dr. Burch compounds this error by including even more of those who are not eligible to vote, namely all of those under the age of 18, to include infants. Overlooking her errors for the moment, I find that, in spite of the fact that she relied on CPS data in her in her expert report, she now states at page 4 of her rebuttal that she has now determined that "turnout estimates in the CPS are unreliable." This statement repudiates not only her own expert report,but disregards the fact that the CPS represents a nationally recognized source of record for statistics on voter registration and voter turnout on which, like Dr. Burch, I relied in my expert report.

11. Dr. Burch reveals on page 4 of her rebuttal report that she now relies upon for the first time the "2020 Cooperative Election Study" (CES) as a remedial dataset. This national dataset has been available and has been used by experts in the field for many years. This data set has a number of issues in regard to its Mississippi sample. First, the 2020 CPS data that Dr. Burch originally relied upon has 2,548 total respondents, and 1,657 voting-age respondents. By comparison, the CES that Dr. Burch turns to remediate the CPS has 462 voting-age respondents. Generally speaking, when a survey sample is being used to analyze extremely small populations, the largest sample possible is most beneficial. What Dr. Burch asserts is that while the CPS has a larger sample size, that larger sample in its entirety is flawed, it cannot be relied upon, and another source with ¼ the sample size should be the appropriate source of record for measuring voter turnout in Mississippi.

12. An issue that frequently stands out in survey samples that are weighted to represent a population (such as the CES using 462 people to represent nearly 2.3 million voting age population in Mississippi)[2] is that more rare populations that have unique combinations of characteristics tend to have high weights that carry the risk of significantly and disproportionately impacting statistics using those respondents – and impacting the interpretation and conclusions based on them.

[2] See: https://pages.nyu.edu/jackson/design.of.social.research/Readings/Johnson%20-%20Introduction%20to%20survey%20weights%20%28PRI%20version%29.pdf for a general discussion of sample survey weighting.

13. There are glaring examples of this problem in the CES. One feature that stands out among its many issues is that the answers for four Black respondents – who count as 51 respondents in reporting survey results when they are weighted using the "commonPostweight."[3] Because the sum of the CommonPostweights in the survey is 419 – that means those four respondents are actually representing 12% of Mississippi's total sample and 29% of its Black sample. While even one of those respondents could end up changing the results of a table if it found its way into a given analytic cell – the consequences of all four of those respondents being grouped together could be disastrously misleading. With these four respondents forming a potentially influential set of cases in the small subsample she uses in her analysis, Dr. Burch is clearly ignoring the warning found in the CES Study Guide (Ansolabehere, Schaffner, and Luks, 2021: 23): "… we advise caution when analyzing very small subsamples as random measurement error may lead to faulty inferences about analyzing very small subpopulations."

14. In her rebuttal report, Dr. Burch touts the value of the CES in enabling the researcher to look beyond self-reported voting behavior, on page 4-5:

> Because much of the bias in turnout estimates based on the CPS has to do with differential overreporting of voting by race,11 it is necessary to examine alternative sources that do not depend on self-reporting of turnout to estimate turnout by race in Mississippi. First, I examine the 2020 Cooperative Election Study (CES), which contains a sample of 462. Mississippi adults (unweighted). The CES, although it is a survey, independently validates voter registration and turnout for respondents by attempting to match respondents to a database of registered voters maintained by Catalist, a corporation that maintains a national database of voters. Catalist updates their information on voter registration and history with data directly from states. In my analysis, I use the measure of validated voter turnout rather than self-reported voter turnout to estimate racial gaps in turnout, distinguishing this survey from the unvalidated self-reported turnout from CPS or Mississippi State University analyzed by Dr. Swanson.

15. Based on Dr. Burch's advocacy of the benefits of the CES, and her discussion of how it enables validation of voters by matching to Catalist, and the direction by the authors of the CES:

> "We recommend the use of "vvweight" or "vvweight_post" any time researchers wish to characterize the opinions, behaviors, or traits of voters or registered voters. The "vv" stands for

[3] Respondent 1236855389 has a weight of 10.1, respondent 1247704425 has a weight of 11.3, respondent 1248507989 has a weight of 14.3 and respondent 1259768185 has a weight of 15. Combined – these four respondents count for 51.7.

> "voter validated" and these weights are missing for all respondents who were not validated as (active) registered voters."

I anticipated an analysis of the CES leveraging the powerful technique of matching voters who said they voted to those who actually voted.

16. On page 6 Burch observes:

> CES allows us to examine overreporting of voting. Comparing self-reported voter turnout to validated voter turnout shows substantial overreporting of voting. The CES team **was able to validate** in Catalist that 74% of the White Mississippi respondents who said they voted actually did so, but **were only able to validate** that 57% of the Black Mississippi respondents who said they voted did so. Thus, as the CES shows, corroborating the recent work of Ansolabehere et al. discussed supra, differential over-reporting of voter turnout by race is an important phenomenon that affects estimates of voter turnout in Mississippi and demonstrates the problems with relying only on self-reported voting to estimate racial differences in turnout.[4]

17. In the footnote of this discussion, Dr. Burch states: "For this analysis, which includes reported voter turnout, I weighted the sample by the variable "commonpostweight." After writing at length about the power that CES has in validating voters and reading the CES technical documentation instructing users to use "vvweight or vvweight_post any time researchers wish to characterize the opinions behavior or traits of *voters or registered voters*" (see page 16) it is inexplicable why Dr. Burch would instead use a weight (commonpostweight) that the CES technical documentation says *not to use* for the analysis Dr. Burch performs. Next, I perform a statistical investigation in an effort to understand the effect of her choice.

18. I attempted to replicate Dr. Burch's results (See Appendix B for a discussion of approaches to validating voters from the CES technical documentation). Dr. Burch appears to use the third and most rigorous method, just without using the correct weights. In Figure 1.1 I show the self-identification variable "cc20_401."

[4] Emphasis added by the author

Figure 1.1: CC20_401 Self-reported voting variable

Voted in 2020
Which of the following statements best describes you?
CC20_401

Voted in 2020	N
I did not vote in the election this November.	1317
I thought about voting this time – but didn't.	620
I usually vote, but didn't this time.	432
I attempted to vote but did not or could not.	433
I definitely voted in the November 2020 General Election.	45660
N	48462

19. Next, in Figure 1.2 I show the CL_2020GVM variable – which is the Catalist variable showing whether the respondent actually voted. A combination of "I definitely voted" from Figure 1.1 and any response to Figure 1.2 would be the number of validated voters, divided by everyone who said they definitely voted.

Figure 1.2 CL_2020GVM Self-reported voting variable

CL_2020gvm - How respondent voted in 2020 general election (if missing, respondent did not have a record of voting)

1. absentee
2. earlyVote
3. mail
4. polling
5. unknown

20. In Table 1.1, for white voters, I show the CC20_401 (self-reported voting) variable at the top, for those who "definitely voted". On the left of Table 1.1, I show the responses for CL_2020gvm. Associated with the code of "5" under the first column, we can see in the second column of Table 1.1 that there were 127 (weighted) white respondents (135 unweighted) who reported they voted and were validated (we just don't know in what manner they voted). Continuing on to the "NA" code in the first column, we can see in the second column that there were 45 (weighted) white respondents (49 unweighted) who reported that they voted but were not validated. In this case, the 127 weighted White voters who were validated divided by 172, the total number of weighted White respondents who stated that they voted yields an estimate of 73.6% white– matching Dr. Burch's estimate. The problem here is that this estimate is using the incorrect "commonpostweight".

Table 1.1 Calculation of Validated white Voters Using "Commonpostweight"

inputstate	28
race	White
	Def Voted
5	127
NA	45
Grand Total	**172**
Voted and Validated	**73.6%**

21. Similarly in Table 1.2, for Black voters, I show the CC20_401 (self-reported voting) variable at the top, for those who "definitely voted". On the left of Table 1.2, I show the responses for CL_2020gvm. Associated with the code "5" under the first column, we can see in the second column of Table 1.2, that there are 81 (weighted) Black respondents (52 unweighted) who reported they voted and were validated (we just don't know in what manner they voted). Continuing on to the "NA" code in the first column, we can see in the second column that there were 61 Black respondents (35 unweighted) who reported they voted but were not validated. In this case, the 81 weighted Black voters divided by the 143 weighted Black respondents who stated they voted yields an estimate of 57.1% – matching Dr. Burch's estimate. The problem here again is that this estimate is generated using the incorrect "commonpostweight".

Table 1.2 Calculation of Validated Black Voters Using "Commonpostweight"

inputstate	28
race	Black
	Def Voted
5	81
NA	61
Grand Total	**143**
Voted and Validated	**57.1%**

22. Using the incorrect weighting scheme,"commonpostweight," it appears that: (1) 73.6 percent of Whites who reported voting actually did vote; and (2) 57.1 percent of Blacks who reported voting actually did vote. However, a different story emerges when the correct weighting system is used.

Table 1.3 Calculation of Validated white Voters Using the Correct Weighting Scheme, "vvweight_post"

inputstate	28
race	White
	Def Voted
5	115
NA	6
Grand Total	**121**
Voted and Validated	95.1%

23. On the left of Table 1.3, I show the responses for CL_2020gvm. Associated with the code "5" in the first column of Table 1.3 we can see in the second column that there are 115 (weighted) White respondents (134 unweighted) who reported they voted and were validated. Associated with the "NA" in the first column, we can see in the second column that there are 6 (weighted) White respondents (6 unweighted) who reported they voted but were not validated. In this case, the 115 weighted White "validated voters" divided by the 121 weighted White respondents who reported they voted yields an estimate of 95.1% "Whites who voted and were validated."

Table 1.4 Calculation of Validated Black Voters Using the Correct Weighting Scheme, "vvweight_post"

inputstate	28
race	Black
	Def Voted
5	70
NA	15
Grand Total	**85**
Voted and Validated	82.8%

24. On the left of Table 1.4, I show the responses for CL_2020gvm. Associated with the code "5" in the first column of Table 1.4, we can see that in the second column that there are 70 (weighted) Black respondents (52 unweighted) who reported they voted and were validated. Continuing on to the "NA" in the first Column, we can see in the second column that there are 15 (weighted) Black respondents (9 unweighted) who reported they voted but were not validated. In this case, the 70 weighted Black "validated voters" divided by the 85 weighted Black respondents who said they voted yields an estimate of 82.8% "Blacks who voted and were validated."

25. Had she used the correct weighting scheme, "vvweight_post," Dr. Burch would have found that 95.1% of White respondents and 82.8% of Black respondents correctly reported that they voted. While we can see that this less of a difference than found using the incorrect weighting scheme used by Dr. Burch (12.3 % vs. 16.5%), it is here that we begin to see the strain of the CES small sample size. Using the vvweight_post, there are only 6 non-validated white voters (both weighted and unweighted), and only 9 non-validated Black

voters (15 weighted). That is – the numerator for estimating rates of validated voting from the CES for Mississippi are 6 white respondents (out of 140, representing approximately 1.3 million white, NH VAP from the 2020 Census) and 9 Black respondents (out of 61, representing approximately 800,000 any part Black VAP from the 2020 Census). This difference of 12.3% between validated Black and white voters (both based on single-digit sample sizes) *is not statistically significant*, per the results of an Aspin-Welch Unequal Variance, Two sample T-test I ran with α =.05, which yielded p = 0.9743 (NCSS, https://www.ncss.com/wp-content/themes/ncss/pdf/Procedures/NCSS/Two-Sample_T-Test.pdf). See Appendix C. The irony is that Dr. Burch repeatedly touts the strength of a survey-based voter validation system that in the end she fails both to understand and use correctly.

26. As we can now see, Dr. Burch's "finding" regarding the validation of White and Black voters in Mississippi is inaccurate for two reasons. First, she used the incorrect weights. Second, even had she used the correct weights, she would have found there was no statistically significant difference between the validated White and Black voters had she conducted an appropriate statistical test. As you will see, in the following section, I continue to examine her use of incorrect weights and failing to take into account sample size when I examine the logistic regression models constructed by Dr. Burch.

27. In combination with Dr. Burch's statement at page 4 of her rebuttal that "turnout estimates in the CPS are unreliable" it is, indeed, ironic that the "Cooperative Election Survey," the data set to which she turned because, unlike the CPS, it contains "validated voting results," the CES (Ansolabehere, Schaffner, and Luks, 2021: 16) weights these validated voters using the CPS:

> "A second set of weights was constructed after matching the survey to Catalist. Respondents for whom there was a validated voter registration record were weighted using the same approach as described above, but this time to ensure that those individuals were representative of registered voters (according to the 2020 CPS)."

28. Thus, in her use of CES data because it has "validated voters," Dr. Burch's analysis is again tied to the CPS, a data set she declared has turnout estimates that are unreliable. In conjunction with this new data set she introduces two new analytic methods, logistic regression and ecological inference. I now turn to an examination of her logistic regression analysis.

Burch's Logistic Regression model(s)

29. I find a number of problems with the discussion of the logistic model(s) Dr. Burch constructed, including but not limited to, her failure to:

    (1) fully document the input data from the Current Election Study (CES) and not making it clear that she used only 460 of the 462 cases for Mississippi;

    (2) adequately describe the characteristics of her logistic model(s) in that, among other omissions, she does not describe the "fit" of her model to the data and whether or not any of the assumptions underlying a logistic regression model were violated;

    (3) identify the statistical package she used to generate the logistic model(s), which turned out to be SPSS;

    (4) include in her rebuttal the fact that there are exceptional weights in the CES Mississippi sample, which places a lot of explanatory burden on only a few subjects such that if these subjects were eliminated, the characteristics of her logistic model(s) would change substantially (See paragraph 10);

    (5) report that "Model 1" only correctly classifies 57.5 percent of the voters found in the Mississippi CES sample into the correct category, which is not much better than simply flipping a fair coin for which we would expect to be correct in calling "heads" 50 percent of the time (see Appendix A); and

    (6) report that she used a weighting scheme not recommended by the authors of the CES study guide for the type of analysis she conducted and compounding that failure by declaring that there were "statistically significant" coefficients in her sample-based logistic regression model labeled as "Model 1" (shown in Table 2 of her rebuttal) and that if the recommended weighting scheme had been used, that there are no "statistically significant" coefficients in "Model 1."

30. This final and 6th failure essentially renders moot the other problems with her logistic model(s) and inconsequential the discussion she provides of them in her rebuttal because "Model 1" cannot be used to infer from the incorrectly weighted sample data to the "universe" that the sample represents.

31. Before turning to the discussion of the incorrect weights used by Dr. Burch in her logistic regression models, I provide a simple description of weighting for purposes of clarification and understanding.

32. In many sample surveys, the proportion of respondents in the survey with a given characteristic does not match the same proportion found in the entire population of interest. When this occurs, "weighting" is used to make the survey results consistent with what is expected for the entire population (Kish, 1965).

33. As an illustration, I adapt a discussion of gender-based weights from Swanson (1997). In this situation, it was known the frequency of females in the sample for a given community

is not equal to its frequency in the population. Using Amargosa Valley, Nevada, as an illustration, 61.5% (120) of the 195 adults sampled in this community were female, but they only constitute 49% (221) of the total population (452). This "over-representation" of females (and "under-representation" of males) in the sample survey needs to be taken into account in order to correctly infer from the sample to the population as a whole. Using the population and sample data, the "weight" that will do this for females is found by multiplying the total sample (195) by the proportion of females in the population (.49) and dividing this quotient by the number of females in the sample (120), a process that yields (195*.49)/120 = 0.796, which can be rounded to 0.80. For males, this process yields (195*.51)/75 = 1.326, which can be rounded to 1.3.

34. These weights for females and males, respectively, would be applied to the survey respondents by gender to obtain results that would apply to the population as a whole. As a simple illustration, if the 120 females in the sample all answered "yes" to a question and the 75 males all answered "no," the sample would show that 61.5% answered "yes." In order to apply this to the population by taking into account the over-representation of females, we multiply .615 by 0.80, which yields 0.49. That is, 49% of the population of adults in Amargosa Valley, NV replied "yes" to this question.

35. The CES weighting scheme is much more complicated than the preceding example, but underneath all of the complications, it is simply trying to get the sample survey results to the level where they represent the population the sample is intended to represent.

36. Turning now, to the CES, in looking at which of four weighting schemes to use in analyzing data taken from the CES study, here are the recommendations as found in the CES Study Guide (Ansolabehere, Schaffner, and Luks, 2021: 16-17):

"Using Weights

Note that the 2020 CES Common Content includes weights for both the Pre-Election and Post Election waves of the study. The weights are constructed to ensure that the sample is representative of different populations – either adult Americans or adult Americans who are registered to vote.

Variable name	Respondent group Target population
commonweight	All respondents Adults
commonpostweight	Answered both waves Adults
vvweight	Matched to validated registration record Registered adults
vvweight_post	Answered both waves & matched to registration record Registered adults

We recommend the use of "commonweight" any time researchers wish to characterize the opinions and behaviors of adult Americans. However, use "commonpostweight" when you wish to characterize the opinions and behaviors of adult Americans but you are using any items from the post-election wave of the questionnaire. We recommend the use of "vvweight" or "vvweight_post" any time researchers wish to characterize the opinions, behaviors, or traits of voters or registered voters. The "vv" stands for "voter validated" and these

weights are missing for all respondents who were not validated as (active) registered voters. This approach differs from previous cycles when all respondents received a value for "vvweight" and those weights were not designed solely for use with voters or registered voters. If seeking to characterize the opinions, behaviors, or traits of voters, use "vvweight" or "vvweight_post" in conjunction with the vote validation variables."

37. Dr. Burch uses logistic regression to show that white subjects in the CES sample for Mississippi who report as having voted are more likely to be validated than Black subjects in the MS CES sample. In so doing, she uses the "commonweight," which as can be seen above in the excerpt is designed for characterizing the opinions and behaviors of adult Americans in general. However, she uses the "validation" variable in her logistic model, which according to the same excerpt, needs the "commonpostweight" because she is reaching across to the post-election wave, where the validation of "I voted" takes place. Thus, she has not used the weight recommended in the CES Study Guide (Ansolabehere, Schaffner, and Luks (2021: 16-17).

38. In using "commonweight," the incorrect weighting scheme for her analysis, Dr. Burch reports in Table 2 of her rebuttal that two of the three coefficients (including the "constant") in "Model 1" are statistically significant, where *** = P<.001, ** = P<.01, and * = P<.05. In displaying these "p values" she is indicating that she is using a hypothesis test to assess the validity of her model for the entire population that the sample represents (Swanson, 2012: 131-240).

Variable name	coefficient	p level
Black	-0.545	**
Other race	-1.246	
Constant	0.388	***

39. When using "commonpostweight," the recommended weight for going across into the post-election time period, the coefficients change in value and neither the Black variable nor the constant is statistically significant, a finding I made after replicating her logistic analysis with "commonweight," the "incorrect weight" and subsequently using "commonpostweight," the recommended weight for an analysis that reaches into the post-election period (See the Appendix for the NCSS output of these two models, with the replication of Burch's incorrectly weighted model in Appendix A and the logistic regression model that results when the correctly weighting scheme is used in Appendix B)

Variable name	coefficient	p level
Black	-0.308	(p = .12289), not statistically significant because p > 0.05
Other race	-1.19123	(p = .12849), not statistically significant because p > 0.05
Constant	0.15301	(p = .08171), not statistically significant because p > 0.05

40. Essentially, when the recommended weights are used, one cannot statistically infer (which is what we need to do because the CES data are a sample) that Dr. Burch has constructed a logistic regression model that proves her point. That is, following the path she selected, which was to use hypothesis testing in regard to the model's coefficients, we cannot reject the null hypothesis that each of these three coefficients assembled from the sample data **do not** represent the corresponding coefficient that would be found if we had the entire voting age population data set to analyze. Thus, Dr. Burch has not constructed a valid logistic regression model that represents the entire voting age population in Mississippi.

41. It is important to note that a colleague of mine, L.M. Tedrow, a research associate at Western Washington University, confirmed the results I found using the NCSS statistical package by using the same package that Dr. Burch used, SPSS.

Variable name	coefficient	p level
Black	-0.308	(p = .12289), not statistically significant because p > 0.05
Other race	-1.19123	(p = .12849), not statistically significant because p > 0.05
Constant	0.15301	(p = .08171), not statistically significant because p > 0.05

Here is the confirmatory SPSS output provided by Mr. Tedrow.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Black	-.308	.200	2.380	1	.123	.735
	otherrace	-1.191	.784	2.311	1	.128	.304
	Constant	.201	.131	2.334	1	.127	1.222

a. Variable(s) entered on step 1: black, other race.

42. Dr. Burch's "findings" in regard to using logistic regression in conjunction with the CES data neither rebuts my conclusion nor changes my opinion concerning the ability of Black Mississippians to participate effectively in the political process. As I showed in my initial report: Black people vote at higher rates than White people.

The Ecological Inference Model for District 1

43. In constructing her Ecological Inference (EI) model of existing District 1, Dr. Burch erroneously included Adams County (a county in existing District 2) and erroneously excluded Bolivar Country (a county in existing District 1). Again, following my "quality control" protocol, I discovered this by examining the file I was provided that was represented by Plaintiffs as the file Dr. Burch used in her EI analysis of District 1 ("neweicentraldist for EI," a text document). In checking this file, I found that there were 32 block groups with the Adams County Code (28001.....) and zero block groups with the Bolivar County code (28011.....). There should have been 28 of the latter in this file, as is found in the file I was provided that was represented by Plaintiff as the file Dr. Burch used in her EI analysis of Mississippi as a whole ("dataforEI2," a text document).

44. In her Ecological Inference analysis she uses "non-white," not Black, as can be seen in Figure 4 on page 11 of her rebuttal report. So, she is now expressing an opinion about White voters relative to non-white voters, not an opinion about White voters relative to Black voters.

45. On page 10 of her rebuttal, Dr. Burch states that she places the Hispanic population (regardless of race) into the "nonwhite" category she employs in her EI analysis by using "…block group data on the citizen voting age population by race, distinguishing non-Hispanic white population from the non-White population." In so doing, she places White Hispanics of voting age into her non-white category, along with Asian, American Indian and Alaskan Natives, and "other" Non-Black people of voting age. This action serves to further dilute Dr. Burch's ability to provide an opinion about White voters relative to Black voters in District 1.

46. Coupled with her error of excluding all of the 28 Bolivar County block groups from her EI analysis of District 1 and erroneously including all 32 of the Adams County block groups, the fact that she compares white voters to non-white votes, leads me to conclude that Dr. Burch has neither an opinion on District 1 (in terms of its correct definition) nor an opinion regarding White voters relative to Black Voters in District 1.

47. Dr. Burch's "findings" in regard to using the Ecological Inference Method in conjunction with the CES data applied to District 1 do not rebut my conclusion or change my opinion

that Black Mississippians are able to participate effectively in the political process. As I showed in my initial report, Blacks vote at higher rates than Whites in District 1.

The Ecological Inference (EI) Model for Mississippi as a Whole

48. As was the case for District 1, in her Ecological Inference analysis for Mississippi as a whole, Dr. Burch uses "non-white," not Black, as can be seen in Figure 4 on page 11 of her rebuttal report. So, she is now expressing an opinion about White voters relative to non-white voters not an opinion about White voters relative to Black voters. Moreover, as noted in #21, she further diluted her ability to provide an opinion about White voters relative to Black voters because she placed Hispanics of any race into the non-white category, which for the state as a whole includes 29,061 White (alone and in combination with other races) Hispanics of voting age, along with Asian, American Indian and Alaskan Natives, and "other" Non-Black people of voting age. As a consequence of these actions, Dr. Burch has no opinion regarding White voters relative to Black Voters in Mississippi as a whole.

49. Dr. Burch's "findings" in regard to using the Ecological Inference Method in conjunction with the CES data relative to Mississippi as a whole do not rebut my conclusion or change my opinion that Black Mississippians are able to participate effectively in the political process. As I showed in my initial report: Blacks vote at higher rates than Whites in Mississippi as a whole.

In summary, I find that Dr. Burch's Rebuttal Report contains major and other errors that along with related oversights render invalid the opinions she presents in it, to include:

(1) claiming that the Current Population Survey (CPS) is unreliable, therefore causing her to turn to a new data set, The Cooperative Election Survey" (CES) for "validated voters." However, the CES is itself linked back to the CPS to establish weights for "validated voters," a fact of which she is either ignorant or ignores;

(2) Claiming on the basis of an extremely small sample that she incorrectly weighted that the CES data showed that 74% of the White Mississippi respondents who said they voted actually did so, while 57% of the Black Mississippi respondents did so.

(3) using a weighting scheme in her "logistic regression" analyses that is not recommended by the authors of the CES study and compounding this failure by declaring that there were "statistically significant" coefficients in her two sample-based logistic regression models, both of which, in fact, turn out to be not statistically significant when the recommended weighting scheme is

used. That is, Dr. Burch fails to create logistic regression models from which she can make inferences from the CES samples to the two populations in question;

(4) incorrectly identifying the counties in MS Supreme Court District 1 in her "Ecological Inference" Model of District 1 by erroneously excluding Bolivar County and erroneously including Adams County; and

(5) comparing White voters to Non-White Voters in her two Ecological Inference models, one for District 1 and the other for the state as a whole, when, in fact the question is in regard to White Voters and Black Voters.

50. Because of these and other errors and oversights, I find Dr. Burch has no valid opinion regarding White voters relative to Black Voters both in MS Supreme Court District 1 and in Mississippi as a whole. As such, her "findings" do not rebut my conclusion or change my opinion that Black Mississippians are able to participate effectively in the political process in MS Supreme Court District 1 and in the state as a whole.

Pursuant to 28 U.S.C. § 1746, I, David A. Swanson, Ph.D., hereby certify under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge, information, and belief at the time of making this declaration.

Executed this the 15th day of September , 2023.

David A. Swanson

DAVID A. SWANSON, PH.D.

References

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Kish, L. 1965. *Survey Sampling*. New York: Wiley.

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APPENDIX

Appendix A. Logistic Regression Results when the incorrect weights are used.

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Run Summary

Item	Value	Item	Value
Y Variable	validvote	Rows Processed	460
Reference Value	0	Rows Used	460
Number of Y-Values	2	Rows for Validation	0
Frequency Variable	commonweight	Rows X's Missing	0
Numeric X Variables	2	Rows Freq Miss. or 0	0
Categorical X Variables	0	Rows Prediction Only	0
Final Log Likelihood	-358.43367	Unique Rows (Y and X's)	6
Model R^2	0.83627	Sum of Frequencies	527.457094326484
Actual Convergence	7.461232E-10	Likelihood Iterations	4
Target Convergence	1E-06	Maximum Iterations	20
Model D.F.	3	Completion Status	Normal Completion
Priors	Equal		

Y Variable Summary

Y validvote	Count	Unique Rows (Y and X's)	Y Proportion	Y Prior	R^2 (Y vs Pred. Probability)	Percent Correctly Classified
0	245.969947668706	3	0.46633	0.50000	0.02252	50.816
1	281.487146657778	3	0.53367	0.50000	0.02252	63.324
Total	527.457094326484	6				57.491

Coefficient Significance Tests

Independent Variable X	Regression Coefficient b(i)	Standard Error Sb(i)	Wald Z-Value H0: β=0	Wald P-Value	Odds Ratio Exp(b(i))
Intercept	0.25268	0.07911	3.194	0.00140	1.28748
black	-0.54495	0.18019	-3.024	0.00249	0.57987
otherrace	-1.24551	0.64877	-1.920	0.05488	0.28779

Coefficient Confidence Intervals

Independent Variable	Regression Coefficient	Standard Error	Lower 95% Confidence	Upper 95% Confidence	Odds Ratio

X	b(i)	Sb(i)	Limit	Limit	Exp(b(i))
Intercept	0.25268	0.07911	0.09764	0.40773	1.28748
black	-0.54495	0.18019	-0.89811	-0.19178	0.57987
otherrace	-1.24551	0.64877	-2.51708	0.02606	0.28779

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Odds Ratios

Independent Variable X	Regression Coefficient b(i)	Odds Ratio Exp(b(i))	Lower 95% Confidence Limit	Upper 95% Confidence Limit
Intercept	0.25268	1.28748	1.10256	1.50340
black	-0.54495	0.57987	0.40734	0.82549
otherrace	-1.24551	0.28779	0.08070	1.02640

Analysis of Deviance

Term Omitted	DF	Deviance	Increase From Model Deviance (Chi²)	P-Value
All	2	728.81738	11.95004	0.00254
black	1	726.08487	9.21753	0.00240
otherrace	1	720.96271	4.09538	0.04300
None(Model)	2	716.86734		

The Prob Level is for testing the significance of that term after considering all other terms.

Log Likelihood & R²

Term(s) Omitted	DF	Log Likelihood	R² of Remaining Term(s)	Reduction From Model R²	Reduction From Saturated R²
All	1	-364.40869	0.00000		
black	1	-363.04243	0.19122	0.64505	0.80878
otherrace	1	-360.48136	0.54968	0.28660	0.45032
None(Model)	2	-358.43367	0.83627	0.00000	0.16373
None(Saturated)	6	-357.26388	1.00000		0.00000

Classification Table

	Estimated		
Actual	**0**	**1**	**Total**
0	124.9911	120.9789	245.9699
1	103.2388	178.2484	281.4872
Total	228.2298	299.2273	527.4571

Percent Correctly classified = 57.5%

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
1	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
2	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
3*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
4*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
5	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
6	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
7*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
8	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
9	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
10	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
11	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
12	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
13	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
14*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||
15*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
16*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
17*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
18	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
19	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
20*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
21	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
22*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
23	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
24	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
25*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||
26	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
27*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
28	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
29*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
30*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
31	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
32	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
33	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....
34*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
35*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	|||||||.....
36*	0	-13.00597	||||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
37	1	11.46233	|||||||||||..	4.49750	||||||||||||||	0.46074	||||||.....

38	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
39*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
40*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
41	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
42	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
43*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
44	0	-1.78567	||.....	-0.79495	||.....	0.92572	||||||||||||||
45	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
46*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
47*	0	-13.00597	|||||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
48	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
49	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
50	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
51	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
52*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
53	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
54	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
55*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
56	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
57	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
58*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
59	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
60	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
61*	1	2.93353	|||.....	0.82207	||.....	0.92572	||||||||||||||
62*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
63	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
64	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
65*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
66	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
67	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
68	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
69	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
70*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
71*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
72	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
73*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
74*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
75	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
76*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
77	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
78	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
79	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
80	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
81	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
82*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
83	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
84	0	-9.64124	|||||||||....	-3.73948	||||||||||...	0.58141	|||||||.....
85*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	|||||||.....
86	0	-1.78567	||.....	-0.79495	||.....	0.92572	||||||||||||||
87	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
88*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
89	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
90	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
91	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
92	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....

93*	0	-13.00597	-4.34811		0.46074	
94	1	11.46233	4.49750		0.46074	
95	1	11.46233	4.49750		0.46074	
96*	1	11.15826	3.86756		0.58141	

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
97	1	11.46233		4.49750		0.46074	
98	1	11.46233		4.49750		0.46074	
99*	0	-13.00597		-4.34811		0.46074	
100*	1	11.15826		3.86756		0.58141	
101*	1	11.15826		3.86756		0.58141	
102	0	-9.64124		-3.73948		0.58141	
103*	0	-13.00597		-4.34811		0.46074	
104*	1	11.15826		3.86756		0.58141	
105*	0	-13.00597		-4.34811		0.46074	
106*	1	11.15826		3.86756		0.58141	
107*	0	-13.00597		-4.34811		0.46074	
108*	1	11.15826		3.86756		0.58141	
109	0	-9.64124		-3.73948		0.58141	
110*	1	11.15826		3.86756		0.58141	
111*	1	11.15826		3.86756		0.58141	
112*	1	11.15826		3.86756		0.58141	
113	1	11.46233		4.49750		0.46074	
114	0	-9.64124		-3.73948		0.58141	
115*	0	-13.00597		-4.34811		0.46074	
116*	1	11.15826		3.86756		0.58141	
117	1	11.46233		4.49750		0.46074	
118	1	11.46233		4.49750		0.46074	
119	1	11.46233		4.49750		0.46074	
120	0	-9.64124		-3.73948		0.58141	
121*	0	-13.00597		-4.34811		0.46074	
122*	0	-13.00597		-4.34811		0.46074	
123	1	11.46233		4.49750		0.46074	
124	1	11.46233		4.49750		0.46074	
125	1	11.46233		4.49750		0.46074	
126*	0	-13.00597		-4.34811		0.46074	
127	1	11.46233		4.49750		0.46074	
128	1	11.46233		4.49750		0.46074	
129*	0	-13.00597		-4.34811		0.46074	
130	1	11.46233		4.49750		0.46074	
131*	0	-13.00597		-4.34811		0.46074	
132*	0	-13.00597		-4.34811		0.46074	
133	1	11.46233		4.49750		0.46074	
134	1	11.46233		4.49750		0.46074	
135*	0	-13.00597		-4.34811		0.46074	

136*	0	-13.00597	-4.34811	0.46074		
137*	0	-13.00597	-4.34811	0.46074		
138*	0	-13.00597	-4.34811	0.46074		
139*	1	11.15826	3.86756	0.58141		
140	0	-9.64124	-3.73948	0.58141		
141	1	11.46233	4.49750	0.46074		
142	0	-9.64124	-3.73948	0.58141		
143*	1	11.15826	3.86756	0.58141		
144*	1	11.15826	3.86756	0.58141		

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
145*	0	-13.00597		-4.34811		0.46074	
146	0	-1.78567		-0.79495		0.92572	
147*	1	11.15826		3.86756		0.58141	
148*	1	11.15826		3.86756		0.58141	
149	1	11.46233		4.49750		0.46074	
150*	1	11.15826		3.86756		0.58141	
151*	1	2.93353		0.82207		0.92572	
152	0	-9.64124		-3.73948		0.58141	
153*	1	11.15826		3.86756		0.58141	
154	1	11.46233		4.49750		0.46074	
155	0	-9.64124		-3.73948		0.58141	
156*	0	-13.00597		-4.34811		0.46074	
157*	1	11.15826		3.86756		0.58141	
158	1	11.46233		4.49750		0.46074	
159*	0	-13.00597		-4.34811		0.46074	
160	0	-9.64124		-3.73948		0.58141	
161*	0	-13.00597		-4.34811		0.46074	
162*	0	-13.00597		-4.34811		0.46074	
163*	0	-13.00597		-4.34811		0.46074	
164	1	11.46233		4.49750		0.46074	
165	0	-9.64124		-3.73948		0.58141	
166	1	11.46233		4.49750		0.46074	
167	0	-9.64124		-3.73948		0.58141	
168	1	11.46233		4.49750		0.46074	
169	1	11.46233		4.49750		0.46074	
170	0	-9.64124		-3.73948		0.58141	
171	1	11.46233		4.49750		0.46074	
172	1	11.46233		4.49750		0.46074	
173*	0	-13.00597		-4.34811		0.46074	
174*	0	-13.00597		-4.34811		0.46074	
175	0	-9.64124		-3.73948		0.58141	
176*	0	-13.00597		-4.34811		0.46074	
177*	0	-13.00597		-4.34811		0.46074	
178	1	11.46233		4.49750		0.46074	

179	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
180*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
181*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
182	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
183*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
184*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
185	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
186	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
187	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
188	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
189	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
190	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
191*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
192*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
193	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
194	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
195	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
196*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
197	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
198	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
199	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
200	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
201*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
202*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
203	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
204	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
205*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
206	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
207*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
208	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
209*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
210*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
211*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
212*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
213*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
214	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
215	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
216	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
217	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
218*	0	-13.00597	||||||||||||||	-4.34811	|||||||||||.	0.46074	||||||.....
219	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
220*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
221	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....

222*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
223	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
224*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
225*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||||
226	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
227	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
228*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
229	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
230	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
231*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
232	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||||
233	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
234	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
235*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
236	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
237*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
238*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
239*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
240	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
241	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
242*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
243*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
244*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
245	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
246	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
247	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
248	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
249	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
250	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
251	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
252*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
253	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
254	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
255*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
256	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
257	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
258*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
259	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
260*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
261*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....
262	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
263*	1	11.15826	||||||||||||...	3.86756	||||||||||||...	0.58141	||||||||.....
264*	0	-13.00597	||||||||||||||||	-4.34811	||||||||||||||.	0.46074	|||||||.....

265*	0	-13.00597	-4.34811	0.46074		
266	0	-9.64124	-3.73948	0.58141		
267	1	11.46233	4.49750	0.46074		
268	1	11.46233	4.49750	0.46074		
269*	0	-13.00597	-4.34811	0.46074		
270*	0	-13.00597	-4.34811	0.46074		
271	1	11.46233	4.49750	0.46074		
272*	1	11.15826	3.86756	0.58141		
273*	1	11.15826	3.86756	0.58141		
274	1	11.46233	4.49750	0.46074		
275*	0	-13.00597	-4.34811	0.46074		
276	1	11.46233	4.49750	0.46074		
277*	0	-13.00597	-4.34811	0.46074		
278	0	-9.64124	-3.73948	0.58141		
279*	1	11.15826	3.86756	0.58141		
280*	0	-13.00597	-4.34811	0.46074		
281	0	-9.64124	-3.73948	0.58141		
282*	1	11.15826	3.86756	0.58141		
283	1	11.46233	4.49750	0.46074		
284*	1	11.15826	3.86756	0.58141		
285	1	11.46233	4.49750	0.46074		
286	0	-9.64124	-3.73948	0.58141		
287	1	11.46233	4.49750	0.46074		
288*	0	-13.00597	-4.34811	0.46074		

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
289*	0	-13.00597		-4.34811		0.46074	
290	1	11.46233		4.49750		0.46074	
291	0	-9.64124		-3.73948		0.58141	
292	0	-9.64124		-3.73948		0.58141	
293	1	11.46233		4.49750		0.46074	
294	1	11.46233		4.49750		0.46074	
295	0	-9.64124		-3.73948		0.58141	
296*	0	-13.00597		-4.34811		0.46074	
297*	1	11.15826		3.86756		0.58141	
298	0	-9.64124		-3.73948		0.58141	
299*	0	-13.00597		-4.34811		0.46074	
300*	0	-13.00597		-4.34811		0.46074	
301*	0	-13.00597		-4.34811		0.46074	
302*	0	-13.00597		-4.34811		0.46074	
303	0	-9.64124		-3.73948		0.58141	
304	0	-9.64124		-3.73948		0.58141	
305	0	-9.64124		-3.73948		0.58141	
306*	0	-13.00597		-4.34811		0.46074	
307	0	-9.64124		-3.73948		0.58141	

308*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
309	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
310	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
311*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
312	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
313	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
314	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
315	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
316*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
317*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
318*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
319	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
320*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
321	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
322	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
323*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
324*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
325*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
326*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
327*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
328*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
329	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
330	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
331*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
332	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
333	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
334*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
335*	1	2.93353	|||.....	0.82207	||.....	0.92572	||||||||||||||
336*	1	11.15826	||||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
337	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
338	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
339	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
340	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
341*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
342	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
343	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
344*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
345	0	-9.64124	|||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
346*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....
347	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
348*	1	2.93353	|||.....	0.82207	||.....	0.92572	||||||||||||||
349	1	11.46233	||||||||||||..	4.49750	|||||||||||||||	0.46074	|||||||.....
350*	0	-13.00597	|||||||||||||||	-4.34811	|||||||||||||.	0.46074	|||||||.....

351	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
352*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
353*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
354*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
355	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
356*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
357	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
358	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
359*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
360*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
361*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
362*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
363*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
364	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
365*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
366	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
367	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
368*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
369	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
370*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
371*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
372*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
373*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
374	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
375*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
376*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
377*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
378*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
379	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
380	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....
381	0	-1.78567	||..........	-0.79495	||..........	0.92572	||||||||||||||
382*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
383*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
384*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset ...\msexport460.NCSS
Y (Ref Value) validvote(0)
Frequency commonweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
385*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
386	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
387	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
388	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
389*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
390	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
391*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
392*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
393	1	11.46233	||||||||||..	4.49750	|||||||||||||	0.46074	|||||||.....

394*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
395	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
396	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
397*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
398*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
399	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
400	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
401	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
402	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
403	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
404*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
405*	1	2.93353	|||.....	0.82207	||.....	0.92572	|||||||||||||
406*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
407	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
408*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
409	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
410*	1	11.15826	|||||||||||...	3.86756	|||||||||||...	0.58141	||||||||.....
411	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
412	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
413*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
414	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
415	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
416	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
417	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
418	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
419	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
420	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
421	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
422	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
423	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
424	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
425	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
426*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
427*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
428	1	11.46233	|||||||||||..	4.49750	|||||||||||||	0.46074	||||||.....
429	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
430	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
431*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
432	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Residual Report (Continued)

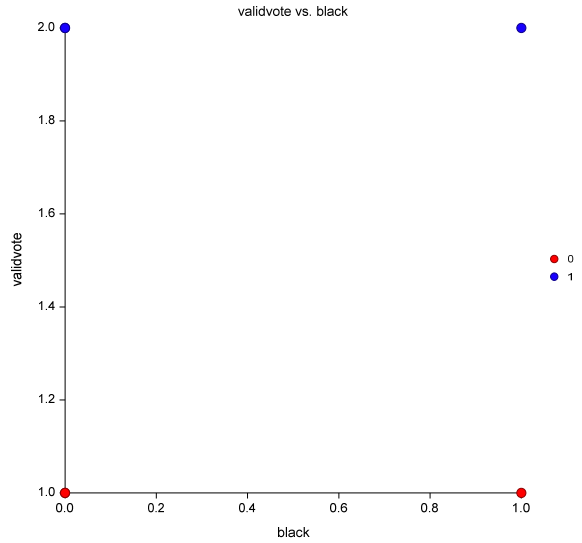
Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
433	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....
434*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
435*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	||||||.....
436	0	-9.64124	||||||||||....	-3.73948	|||||||||||...	0.58141	||||||||.....

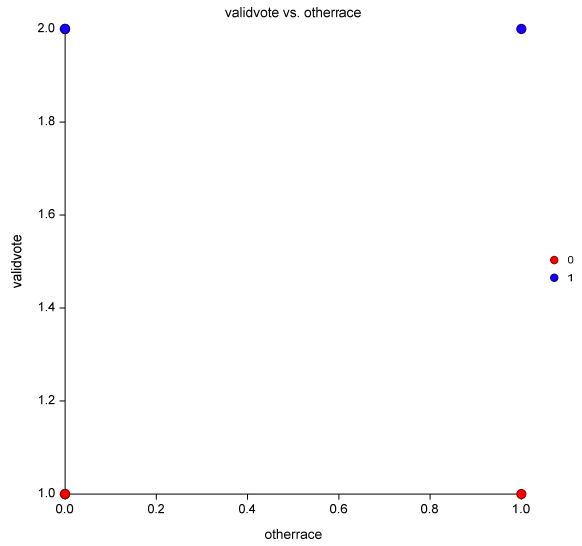
437	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
438	0	-1.78567	||.....	-0.79495	||.....	0.92572	|||||||||||||
439*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
440*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
441	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
442*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
443	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
444*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
445	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
446*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
447*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
448*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
449*	1	11.15826	||||||||||...	3.86756	||||||||||...	0.58141	||||||||.....
450*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
451	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
452	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
453	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
454*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
455	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
456	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
457	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....
458*	0	-13.00597	|||||||||||||	-4.34811	||||||||||||.	0.46074	|||||||.....
459	1	11.46233	||||||||||||..	4.49750	||||||||||||||	0.46074	|||||||.....
460	0	-9.64124	||||||||||....	-3.73948	||||||||||...	0.58141	||||||||.....

Logistic Regression Report

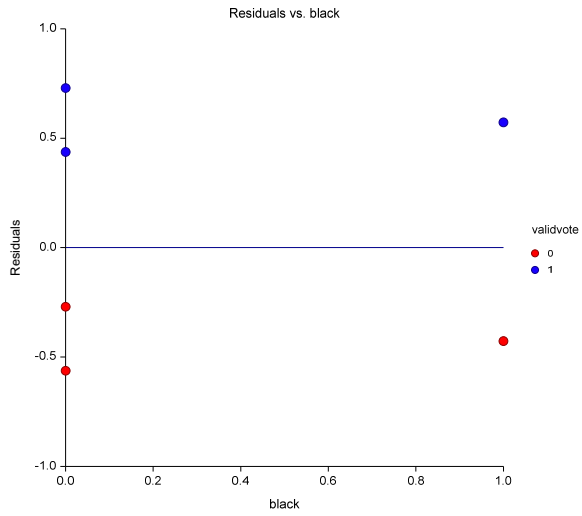
Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

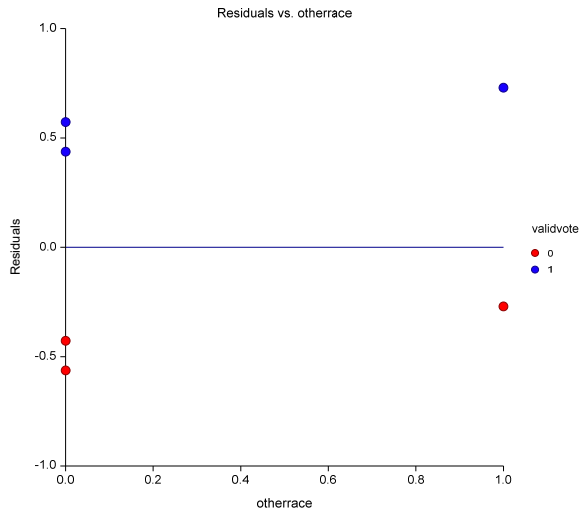
Y vs X's Plots





Simple Residuals vs X's Plots

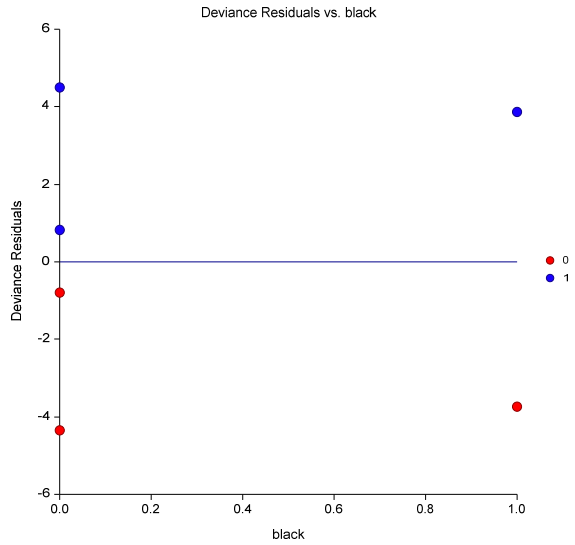


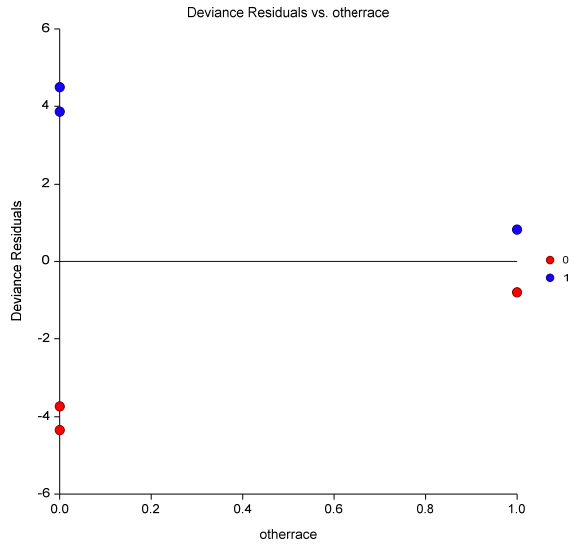


Logistic Regression Report

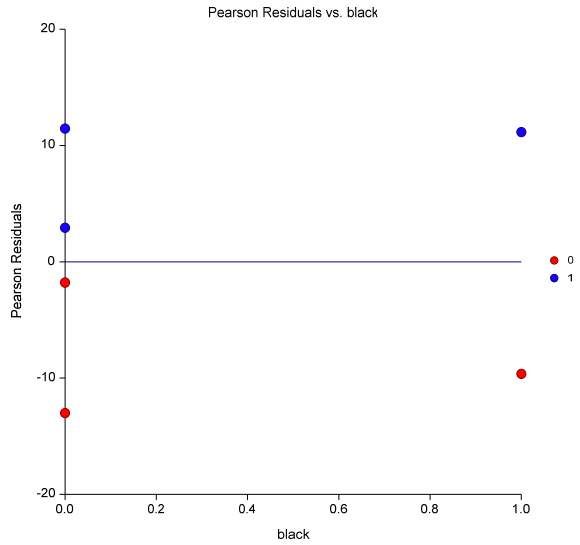
Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

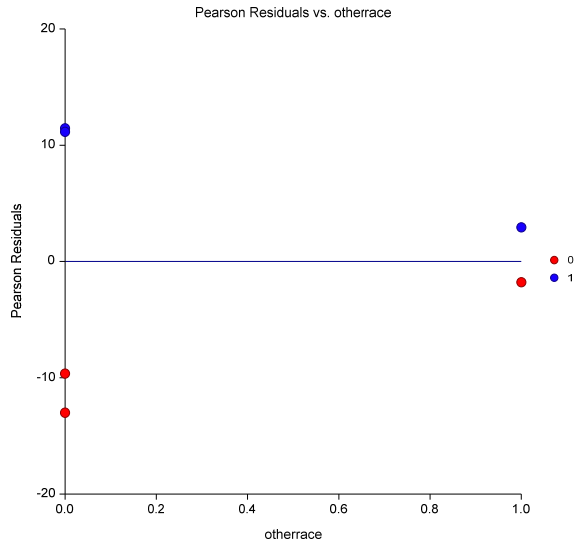
Deviance Residuals vs X's Plots





Pearson Residuals vs X's Plots

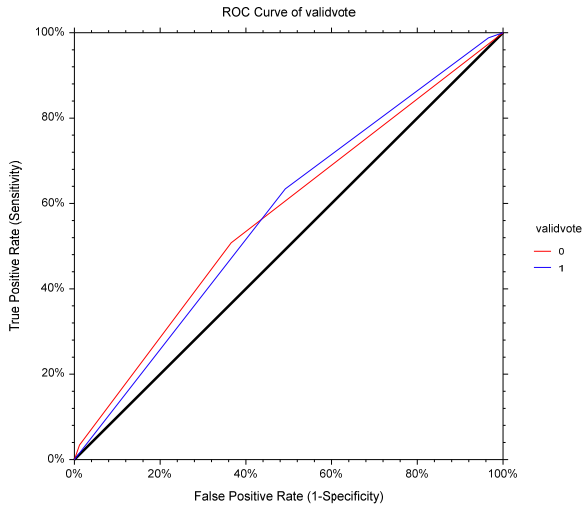


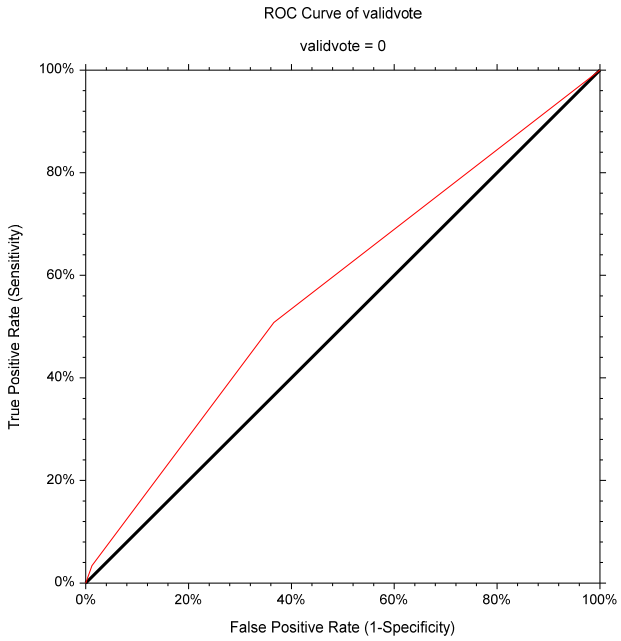


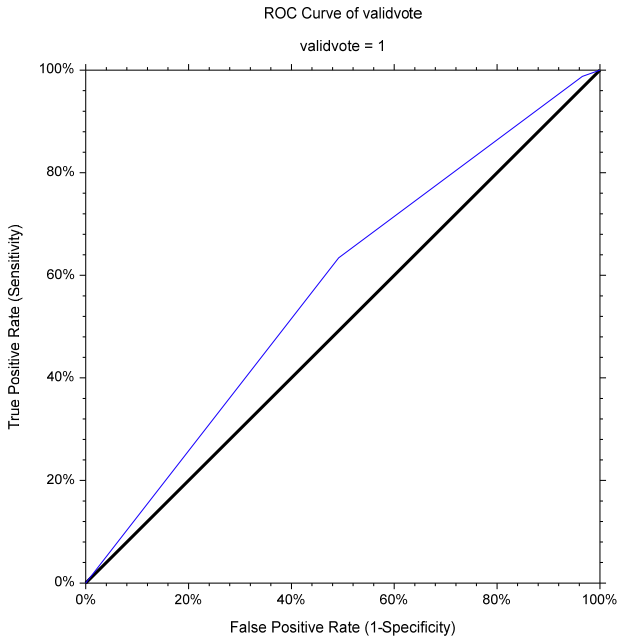
Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

ROC Curves (Combined and Separate)



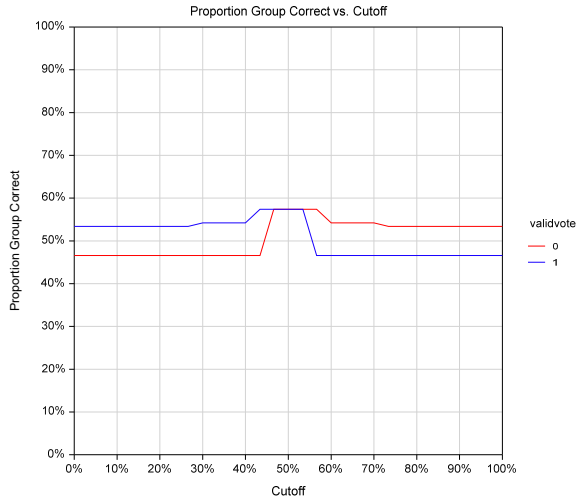

ROC Curve of validvote
validvote = 0
True Positive Rate (Sensitivity)
False Positive Rate (1-Specificity)
0%
20%
40%
60%
80%
100%


ROC Curve of validvote
validvote = 1
True Positive Rate (Sensitivity)
False Positive Rate (1-Specificity)
0%
20%
40%
60%
80%
100%

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Prob Correct vs Cutoff Plot



Procedure Input Settings

Autosave Inactive

Variables, Model Tab

-- Variables ----------

Y:	validvote
Reference Value:	0
Numeric X's:	black, otherrace
Categorical X's:	<Empty>
Frequencies:	commonweight
Validation Filter:	<Empty>

-- Regression Model ----------

Terms:	1-Way
Remove Intercept	Unchecked

·· Prior Y-Value Probabilities (Changes Intercept and Predicted Values) ··········

Priors:	Equal across Y Values

Subset Selection Tab

-- Select the Best Subset from the X's ----------

Search for the Best Subset from the X's	Unchecked

Iteration Tab

-- Iteration Options ----------

Maximum Iterations:	20
Iteration Termination:	0.000001

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Procedure Input Settings (Continued)

Reports Tab

-- Select Reports ----------

·· Summaries

Run Summary	Checked
Y Variable Summary	Checked

·· Subset Selection

Subset Summary	Checked
Subset Detail	Checked

·· Estimation

Coefficient Significance Tests	Checked
Coefficient Confidence Limits	Checked
Odds Ratios	Checked
Estimated Model (Reading Form)	Unchecked
Estimated Model (Transformation Form)	Unchecked

·· Goodness-of-Fit

Analysis of Deviance	Checked
Log-Likelihood and R^2	Checked

·· Classification

Classification Matrix	Checked
Validation Matrix	Checked
ROC Report	Checked

·· Row-by-Row Lists

Row Classification Report:	None
Row Classification Probs Report:	None
Simple Residuals Report:	None

Residuals	Checked
DfBetas	Unchecked
Influence Diagnostics	Unchecked
Residual Diagnostics	Unchecked

Report Options Tab

-- Confidence Levels ----------

Confidence Level:	95

-- Variable and Value Labels ----------

Variable Names:	Names
Value Labels:	Data Values
Stagger label and output if label length is ≥	15

Logistic Regression Report

Dataset	...\msexport460.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonweight

Procedure Input Settings (Continued)

Report Options Tab (Continued)

-- Decimal Places ----------

Precision:	Single
Probability:	5
Beta (Coefficients):	5
SE(Beta):	5
Z:	3
Log Likelihood:	5
Odds Ratio:	5
DFBeta:	5
Coefficients in Reading Form Model:	2

Plots Tab

-- Select Plots ----------

Y vs X	Checked
ROC Curves (Combined)	Checked
ROC Curve (Separate)	Checked
Residuals vs X	Checked
Skip Reference Value	Checked
Deviance Residuals vs X	Checked
Pearson Residuals vs X	Checked
Pr(Correct) vs Cutoff	Checked

-- ROC Curves and Prob(Correct) vs Cutoff Plot Options ----------

Number Cutoffs:	29

Storage Tab
-- Data Storage Options ----------
Storage Option: Do not store data

Appendix B. NCSS Logistic Regression Results when the correct weights are used.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Run Summary

Item	Value	Item	Value
Y Variable	validvote	Rows Processed	460
Reference Value	0	Rows Used	349
Number of Y-Values	2	Rows for Validation	0
Frequency Variable	commonpostweight	Rows X's Missing	0
Numeric X Variables	2	Rows Freq Miss. or 0	111
Categorical X Variables	0	Rows Prediction Only	0
Final Log Likelihood	-288.15982	Unique Rows (Y and X's)	6
Model R^2	0.94973	Sum of Frequencies	419.122537315027
Actual Convergence	4.048361E-09	Likelihood Iterations	4
Target Convergence	1E-06	Maximum Iterations	20
Model D.F.	3	Completion Status	Normal Completion
Priors	Equal		

Y Variable Summary

Y validvote	Count	Unique Rows (Y and X's)	Y Proportion	Y Prior	R^2 (Y vs Pred. Probability)	Percent Correctly Classified
0	204.557067111209	3	0.48806	0.50000	0.01049	48.550
1	214.565470203818	3	0.51194	0.50000	0.01049	59.957
Total	419.122537315027	6				54.390

Coefficient Significance Tests

Independent Variable X	Regression Coefficient b(i)	Standard Error Sb(i)	Wald Z-Value H0: β=0	Wald P-Value	Odds Ratio Exp(b(i))
Intercept	0.15301	0.08790	1.741	0.08171	1.16534
black	-0.30844	0.19993	-1.543	0.12289	0.73459
otherrace	-1.19123	0.78367	-1.520	0.12849	0.30385

Coefficient Confidence Intervals

Independent Variable X	Regression Coefficient b(i)	Standard Error Sb(i)	Lower 95% Confidence Limit	Upper 95% Confidence Limit	Odds Ratio Exp(b(i))
Intercept	0.15301	0.08790	-0.01926	0.32529	1.16534
black	-0.30844	0.19993	-0.70030	0.08341	0.73459
otherrace	-1.19123	0.78367	-2.72719	0.34473	0.30385

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Odds Ratios

Independent Variable X	Regression Coefficient b(i)	Odds Ratio Exp(b(i))	Lower 95% Confidence Limit	Upper 95% Confidence Limit
Intercept	0.15301	1.16534	0.98093	1.38443
black	-0.30844	0.73459	0.49644	1.08699
otherrace	-1.19123	0.30385	0.06540	1.41161

Estimated Logistic Regression Model(s) in Reading Form

Model for Logit(validvote) = XB when validvote = 1
0.15 - 0.31 * black - 1.19 * otherrace

Estimated Logistic Regression Model(s) in Transformation Form

Model for Logit(validvote) = XB when validvote = 1

0.15301475991198 -0.308441217146693*black -1.1912307058887*otherrace

Each model estimates XB (where Logit(Y) = XB) for a specific Y outcome. To calculate the Y-value probabilities when there are only 2 outcomes, transform the logit using Prob(Y = outcome) = 1/(1+Exp(-XB)) or Prob(Y ≠ outcome) = Exp(-XB)/(1+Exp(-XB)). For the calculation formula to use when there are more than 2 outcomes, see the help documentation.

Analysis of Deviance

Term Omitted	DF	Deviance	Increase From Model Deviance (Chi²)	P-Value

All	2	580.78819	4.46856	0.10707
black	1	578.70605	2.38642	0.12239
otherrace	1	578.94312	2.62349	0.10529
None(Model)	2	576.31963		

The Prob Level is for testing the significance of that term after considering all other terms.

Log Likelihood & R^2

Term(s) Omitted	DF	Log Likelihood	R^2 of Remaining Term(s)	Reduction From Model R^2	Reduction From Saturated R^2
All	1	-290.39410	0.00000		
black	1	-289.35303	0.44253	0.50720	0.55747
otherrace	1	-289.47156	0.39215	0.55759	0.60785
None(Model)	2	-288.15982	0.94973	0.00000	0.05027
None(Saturated)	6	-288.04156	1.00000		0.00000

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Classification Table

Actual	Estimated 0	1	Total
0	99.31236	105.2447	204.5571
1	85.91865	128.6468	214.5655
Total	185.231	233.8915	419.1225

Percent Correctly classified = 54.4%

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
1	1	10.39601	||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
2	1	10.39601	||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
3*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
4*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
5	1	10.39601	||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....

6	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
7*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
8	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
9	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
10	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
11	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
12	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
13	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
14*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
15*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
16*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
17*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
18	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
19	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
20*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
21	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
22*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
23	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
24	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
25*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
26	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
27*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
28	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
29*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
30*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
31	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
32	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
33	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
34*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
35*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
36*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
37	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
38	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
39*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
40*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
41	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
42	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
43*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
44	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
45	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
46*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
47*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
48	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
49	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Residual Report (Continued)

Actual	Pearson	Deviance	Maximum

Row	validvote	Residual		Residual		Hat Diagonal	
50	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
51	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
52*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
53	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
54	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
55*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
56	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
57	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
58*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
59	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
60	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
61*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
62*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
63	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
64	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
65*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
66	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
67	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
68	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
69	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
70*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
71*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
72	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
73*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
74*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
75	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
76*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
77	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
78	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
79	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
80	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
81	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
82*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
83	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
84	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
85*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
86	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
87	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
88*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
89	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
90	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
91	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
92	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
93*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
94	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
95	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
96*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
97	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
98	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS

Y (Ref Value) validvote(0)
Frequency commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
99*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
100*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
101*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
102	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
103*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
104*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
105*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
106*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
107*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
108*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
109	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
110*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
111*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
112*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
113	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
114	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
115*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
116*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
117	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
118	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
119	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
120	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
121*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
122*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
123	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
124	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
125	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
126*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
127	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
128	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
129*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
130	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
131*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
132*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
133	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
134	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
135*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
136*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
137*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
138*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
139*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
140	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
141	1	10.39601	||||||||||||||..	2.36709	||||||||||||||||	0.44911	|||||||.....
142	0	-9.03138	||||||||||||||...	-2.03870	||||||||||||||...	0.57746	|||||||.....
143*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
144*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....
145*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
146	0	-1.48982	|.....	-0.39661	||.....	0.96226	||||||||||||||
147*	1	9.76123	||||||||||||||..	2.06318	||||||||||||||..	0.57746	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
148*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
149	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
150*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
151*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
152	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
153*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
154	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
155	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
156*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
157*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
158	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
159*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
160	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
161*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
162*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
163*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
164	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
165	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
166	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
167	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
168	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
169	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
170	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
171	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
172	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
173*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
174*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
175	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
176*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
177*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
178	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
179	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
180*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
181*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
182	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
183*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
184*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
185	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
186	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
187	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
188	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
189	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
190	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....

191*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
192*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
193	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
194	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
195	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
196*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
197	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
198	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
199	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
200	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
201*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
202*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
203	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
204	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
205*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||||.....
206	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
207*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
208	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
209*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
210*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
211*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
212*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
213*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
214	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
215	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
216	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
217	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
218*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
219	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
220*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||||.....
221	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
222*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
223	0	-9.03138	||||||||||||...	-2.03870	||||||||||||...	0.57746	|||||||||.....
224*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
225*	1	2.50368	|||.....	0.40136	||.....	0.96226	||||||||||||||
226	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
227	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
228*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
229	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
230	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....
231*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||||.....
232	0	-1.48982	|.....	-0.39661	||.....	0.96226	||||||||||||||
233	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	|||||||.....

234	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
235*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
236	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
237*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
238*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
239*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
240	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
241	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
242*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
243*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
244*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
245	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
246	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
247	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
248	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
249	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
250	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
251	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
252*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
253	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
254	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
255*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
256	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
257	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
258*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
259	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
260*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
261*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
262	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
263*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
264*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
265*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
266	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	|||||||.....
267	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
268	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
269*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
270*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
271	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
272*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
273*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	|||||||.....
274	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....
275*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
276	1	10.39601	||||||||||||..	2.36709	||||||||||||||	0.44911	||||||.....

277*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
278	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
279*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
280*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
281	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
282*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
283	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
284*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
285	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
286	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
287	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
288*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
289*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
290	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
291	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
292	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
293	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
294	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
295	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
296*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
297*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
298	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
299*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
300*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
301*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
302*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
303	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
304	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
305	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
306*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
307	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
308*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
309	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
310	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
311*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
312	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
313	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
314	1	10.39601	||||||||||.....	2.36709	|||||||||||||||	0.44911	|||||||.....
315	0	-9.03138	||||||||||......	-2.03870	||||||||||......	0.57746	||||||||.....
316*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
317*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....
318*	1	9.76123	||||||||||.....	2.06318	||||||||||.....	0.57746	||||||||.....

319	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
320*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
321	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
322	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
323*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
324*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
325*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
326*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
327*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
328*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
329	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
330	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
331*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
332	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
333	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
334*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
335*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
336*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
337	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
338	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
339	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
340	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
341*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
342	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
343	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
344*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
345	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
346*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
347	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
348*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
349	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
350*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
351	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
352*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
353*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
354*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
355	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
356*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	|||||||.....
357	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	|||||||.....
358	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
359*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
360*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
361*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....

362*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
363*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
364	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
365*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
366	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
367	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
368*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
369	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
370*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
371*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
372*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
373*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
374	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
375*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
376*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
377*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
378*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
379	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
380	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
381	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
382*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
383*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
384*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
385*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
386	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
387	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
388	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
389*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
390	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
391*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
392*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
393	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
394*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
395	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
396	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
397*	1	9.76123	|||||||||||||..	2.06318	|||||||||||||..	0.57746	||||||||.....
398*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....
399	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
400	1	10.39601	|||||||||||||..	2.36709	|||||||||||||||	0.44911	|||||||.....
401	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
402	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
403	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
404*	0	-11.22260	|||||||||||||||	-2.33898	||||||||||||||.	0.44911	|||||||.....

405*	1	2.50368	|||.....	0.40136	||.....	0.96226	|||||||||||||
406*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
407	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
408*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
409	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
410*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....
411	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
412	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
413*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
414	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
415	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
416	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
417	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
418	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
419	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
420	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
421	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
422	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
423	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
424	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
425	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
426*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
427*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
428	1	10.39601	|||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
429	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
430	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
431*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
432	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
433	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
434*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
435*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
436	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
437	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
438	0	-1.48982	|.....	-0.39661	||.....	0.96226	|||||||||||||
439*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
440*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
441	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Report (Continued)

Row	Actual validvote	Pearson Residual		Deviance Residual		Maximum Hat Diagonal	
442*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
443	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
444*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
445	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
446*	0	-11.22260	|||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
447*	1	9.76123	|||||||||||..	2.06318	|||||||||||..	0.57746	||||||||.....

448*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
449*	1	9.76123	||||||||||||..	2.06318	||||||||||||..	0.57746	||||||||.....
450*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
451	1	10.39601	||||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
452	1	10.39601	||||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
453	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
454*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
455	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
456	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
457	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....
458*	0	-11.22260	||||||||||||||	-2.33898	||||||||||||.	0.44911	||||||.....
459	1	10.39601	||||||||||||..	2.36709	|||||||||||||	0.44911	||||||.....
460	0	-9.03138	|||||||||||...	-2.03870	|||||||||||...	0.57746	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
1	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
2	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
3*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
4*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
5	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
6	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
7*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
8	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
9	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
10	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
11	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
12	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
13	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
14*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
15*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
16*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
17*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
18	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
19	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
20*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
21	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
22*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
23	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
24	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
25*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
26	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
27*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....
28	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
29*	0	-20.08375	|||||||||||||.	19.74307	||||||||||||..	5.03686	|.....

30*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
31	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
32	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
33	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
34*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
35*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
36*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
37	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
38	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
39*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
40*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
41	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
42	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
43*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
44	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
45	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
46*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
47*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
48	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
49	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
50	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
51	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
52*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
53	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
54	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
55*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
56	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
57	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
58*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
59	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
60	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
61*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
62*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
63	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
64	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
65*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
66	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
67	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
68	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
69	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
70*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
71*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
72	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

73*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
74*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
75	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
76*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
77	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
78	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
79	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
80	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
81	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
82*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
83	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
84	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
85*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
86	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||
87	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
88*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
89	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
90	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
91	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
92	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
93*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
94	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
95	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
96*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
97	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
98	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
99*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
100*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
101*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
102	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
103*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
104*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
105*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
106*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
107*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
108*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
109	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
110*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
111*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
112*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
113	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
114	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
115*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

116*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
117	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
118	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
119	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
120	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
121*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
122*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
123	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
124	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
125	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
126*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
127	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
128	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
129*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
130	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
131*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
132*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
133	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
134	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
135*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
136*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
137*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
138*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
139*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
140	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
141	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
142	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
143*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
144*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
145*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
146	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
147*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
148*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
149	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
150*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
151*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
152	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
153*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
154	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
155	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
156*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||||..	5.03686	|.....
157*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
158	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

159*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
160	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
161*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
162*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
163*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
164	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
165	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
166	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
167	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
168	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
169	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
170	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
171	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
172	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
173*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
174*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
175	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
176*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
177*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
178	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
179	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
180*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
181*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
182	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
183*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
184*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
185	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
186	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
187	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
188	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
189	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
190	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
191*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
192*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
193	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
194	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
195	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
196*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
197	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
198	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
199	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
200	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
201*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

202*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
203	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
204	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
205*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
206	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
207*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
208	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
209*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
210*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
211*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
212*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
213*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
214	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
215	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
216	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
217	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
218*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
219	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
220*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
221	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
222*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
223	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
224*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
225*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
226	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
227	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
228*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
229	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
230	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
231*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
232	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
233	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
234	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
235*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
236	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
237*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
238*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
239*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
240	0	20.95992	||||||||||||||	-21.90187	||||||||||||||	0.00000	|.....
241	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
242*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
243*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
244*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
245	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
246	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
247	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
248	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
249	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
250	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
251	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
252*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
253	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
254	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
255*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
256	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
257	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
258*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
259	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
260*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
261*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
262	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
263*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
264*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
265*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
266	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
267	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
268	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
269*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
270*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
271	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
272*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
273*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
274	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
275*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
276	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
277*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
278	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
279*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
280*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
281	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
282*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
283	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
284*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
285	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
286	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
287	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
288*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
289*	0	-20.08375	|||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
290	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
291	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
292	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
293	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
294	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
295	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
296*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
297*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
298	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
299*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
300*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
301*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
302*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
303	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
304	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
305	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
306*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
307	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
308*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
309	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
310	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
311*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
312	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
313	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
314	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
315	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
316*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
317*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
318*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
319	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
320*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
321	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
322	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
323*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
324*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
325*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
326*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
327*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
328*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
329	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
330	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
331*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
332	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
333	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
334*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
335*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
336*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
337	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
338	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
339	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
340	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
341*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
342	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

343	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
344*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
345	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
346*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
347	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
348*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
349	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
350*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
351	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
352*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
353*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
354*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
355	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
356*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
357	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
358	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
359*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
360*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
361*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
362*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
363*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
364	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
365*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
366	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
367	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
368*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
369	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
370*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
371*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
372*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
373*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
374	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
375*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
376*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
377*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
378*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
379	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
380	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
381	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
382*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
383*	0	-20.08375	||||||||||||||.	19.74307	||||||||||||..| 5.03686	|.....
384*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
385*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....

386	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
387	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
388	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
389*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
390	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
391*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
392*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
393	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
394*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
395	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
396	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
397*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
398*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
399	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
400	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
401	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
402	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
403	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
404*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
405*	1	-0.22785	|.....	0.00000	|.....	1.59732	|.....
406*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
407	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
408*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
409	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
410*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
411	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
412	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
413*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
414	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
415	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
416	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
417	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
418	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
419	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
420	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
421	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
422	0	6.38662	||||.....	0.00000	|.....	-44.77268	||||||||||||||
423	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
424	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
425	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
426*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
427*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
428	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....

429	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
430	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
431*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
432	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
433	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
434*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
435*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
436	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
437	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
438	0	6.38662	||||.....	0.00000	|.....	-44.77268	|||||||||||||||
439*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
440*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
441	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

DFBetas Report For validvote = 1 (Continued)

Row	Actual validvote	DFBeta Intercept		DFBeta black		DFBeta otherrace	
442*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
443	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
444*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
445	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
446*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
447*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
448*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
449*	1	-0.54033	|.....	0.56461	|.....	0.00000	|.....
450*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
451	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
452	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
453	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
454*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
455	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
456	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
457	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....
458*	0	-20.08375	||||||||||||||.	19.74307	|||||||||||||..	5.03686	|.....
459	1	0.44216	|.....	-0.43466	|.....	-0.11089	|.....
460	0	20.95992	|||||||||||||||	-21.90187	|||||||||||||||	0.00000	|.....

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
1	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
2	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
3*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
4*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
5	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
6	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
7*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
8	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
9	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
10	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
11	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
12	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
13	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
14*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
15*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
16*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
17*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
18	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
19	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
20*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
21	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
22*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
23	0	0.57746	|||||||||.....	263.80925	|.....	111.47037	||||||||||.....
24	0	0.57746	|||||||||.....	263.80925	|.....	111.47037	||||||||||.....
25*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
26	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
27*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
28	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
29*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
30*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
31	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
32	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
33	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
34*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
35*	1	0.57746	|||||||||.....	308.17036	|.....	130.21478	||||||||||...
36*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
37	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
38	0	0.57746	|||||||||.....	263.80925	|.....	111.47037	||||||||||.....
39*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
40*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
41	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
42	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
43*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
44	0	0.96226	||||||||||||||	1499.55501	||||.....	56.59278	||||.....
45	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....
46*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
47*	0	0.44911	||||||.....	186.38389	|.....	102.67711	|||||||||.....
48	1	0.44911	||||||.....	159.93919	|.....	88.10898	||||||||.....

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
49	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
50	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
51	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
52*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
53	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
54	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
55*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
56	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
57	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
58*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
59	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
60	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
61*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
62*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
63	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
64	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
65*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
66	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
67	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
68	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
69	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
70*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
71*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
72	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
73*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
74*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
75	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
76*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
77	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
78	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
79	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
80	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
81	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
82*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
83	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
84	0	0.57746	|||||||.....	263.80925	|.....	111.47037	||||||||.
85*	1	0.57746	|||||||.....	308.17036	|.....	130.21478	|||||||||..
86	0	0.96226	||||||||||||||	1499.55501	||||.....	56.59278	||||.....
87	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
88*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||
89	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
90	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
91	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
92	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||
93*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||

94	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
95	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
96*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
97	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
98	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
99*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
100*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
101*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
102	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
103*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
104*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
105*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
106*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
107*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
108*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
109	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
110*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
111*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
112*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
113	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
114	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
115*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
116*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
117	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
118	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
119	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
120	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
121*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
122*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
123	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
124	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
125	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
126*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
127	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
128	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
129*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
130	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
131*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
132*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
133	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
134	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
135*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

136*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
137*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
138*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
139*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
140	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
141	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
142	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
143*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
144*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
145*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
146	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
147*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
148*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
149	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
150*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
151*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	|||||||||||||
152	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
153*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
154	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
155	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
156*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
157*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
158	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
159*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
160	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
161*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
162*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
163*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
164	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
165	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
166	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
167	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
168	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
169	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
170	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
171	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
172	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
173*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
174*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
175	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
176*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
177*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

178	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
179	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
180*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
181*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
182	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
183*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
184*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
185	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
186	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
187	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
188	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
189	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
190	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
191*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
192*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
193	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
194	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
195	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
196*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
197	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
198	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
199	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
200	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
201*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
202*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
203	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
204	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
205*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
206	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
207*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
208	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
209*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
210*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
211*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
212*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
213*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
214	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
215	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
216	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
217	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
218*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
219	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....

220*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
221	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
222*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
223	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
224*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
225*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
226	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
227	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
228*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
229	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
230	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
231*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
232	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	||||.....
233	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
234	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
235*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
236	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
237*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
238*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
239*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
240	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
241	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
242*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
243*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
244*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
245	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
246	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
247	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
248	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
249	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
250	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
251	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
252*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
253	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
254	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
255*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
256	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
257	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
258*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
259	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
260*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
261*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

262	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
263*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
264*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
265*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
266	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
267	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
268	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
269*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
270*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
271	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
272*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
273*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
274	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
275*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
276	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
277*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
278	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
279*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
280*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
281	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
282*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
283	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
284*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
285	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
286	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
287	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
288*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
289*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
290	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
291	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
292	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
293	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
294	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
295	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
296*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
297*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
298	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
299*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
300*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
301*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
302*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
303	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

<table>
<tr><td>304</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>305</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>306*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>307</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>308*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>309</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>310</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>311*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>312</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>313</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>314</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>315</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>316*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>317*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>318*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>319</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>320*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>321</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>322</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>323*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>324*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>325*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>326*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>327*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>328*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>329</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>330</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>331*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
<tr><td>332</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>333</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>334*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>335*</td><td>1</td><td>0.96226</td><td>|||||||||||||||</td><td>4235.00431</td><td>|||||||||||||||</td><td>159.82785</td><td>|||||||||||||||</td></tr>
<tr><td>336*</td><td>1</td><td>0.57746</td><td>|||||||||......</td><td>308.17036</td><td>|..............</td><td>130.21478</td><td>||||||||||||...</td></tr>
</table>

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

<table>
<tr><th>Row</th><th>Actual validvote</th><th>Hat Diagonal</th><th></th><th>Cook's Distance (C)</th><th></th><th>Cook's Distance (CBar)</th><th></th></tr>
<tr><td>337</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>338</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>339</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>340</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>341*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>342</td><td>1</td><td>0.44911</td><td>|||||||........</td><td>159.93919</td><td>|..............</td><td>88.10898</td><td>||||||||.......</td></tr>
<tr><td>343</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
<tr><td>344*</td><td>0</td><td>0.44911</td><td>|||||||........</td><td>186.38389</td><td>|..............</td><td>102.67711</td><td>|||||||||......</td></tr>
<tr><td>345</td><td>0</td><td>0.57746</td><td>|||||||||......</td><td>263.80925</td><td>|..............</td><td>111.47037</td><td>||||||||||.....</td></tr>
</table>

346*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
347	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
348*	1	0.96226	||||||||||||||	4235.00431	||||||||||||||	159.82785	||||||||||||||
349	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
350*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
351	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
352*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
353*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
354*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
355	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
356*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
357	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
358	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
359*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
360*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
361*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
362*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
363*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
364	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
365*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
366	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
367	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
368*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
369	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
370*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
371*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
372*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
373*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
374	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
375*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
376*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
377*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
378*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
379	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
380	1	0.44911	|||||||.....	159.93919	|.....	88.10898	|||||||.....
381	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
382*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
383*	0	0.44911	|||||||.....	186.38389	|.....	102.67711	||||||||.....
384*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...

Logistic Regression Report

Dataset ...\NCSSmsexport.NCSS
Y (Ref Value) validvote(0)
Frequency commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
385*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
386	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
387	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

388	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
389*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
390	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
391*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
392*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
393	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
394*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	|||||||||||...
395	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
396	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
397*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	|||||||||||...
398*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
399	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
400	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
401	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
402	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
403	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
404*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
405*	1	0.96226	||||||||||||||	4235.00431	|||||||||||||	159.82785	|||||||||||||
406*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
407	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
408*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
409	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
410*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	|||||||||||...
411	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
412	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
413*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
414	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
415	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
416	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
417	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
418	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
419	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
420	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
421	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....
422	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
423	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
424	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
425	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
426*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
427*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
428	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
429	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
430	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	|||||.....
431*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
432	0	0.57746	||||||||.....	263.80925	|.....	111.47037	|||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Influence Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Cook's Distance (C)		Cook's Distance (CBar)	
433	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
434*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
435*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
436	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
437	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
438	0	0.96226	||||||||||||||	1499.55501	|||||.....	56.59278	||||.....
439*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
440*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
441	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
442*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
443	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
444*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
445	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
446*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
447*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
448*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
449*	1	0.57746	||||||||.....	308.17036	|.....	130.21478	||||||||||...
450*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
451	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
452	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
453	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
454*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
455	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
456	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
457	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....
458*	0	0.44911	||||||.....	186.38389	|.....	102.67711	||||||||.....
459	1	0.44911	||||||.....	159.93919	|.....	88.10898	|||||||.....
460	0	0.57746	||||||||.....	263.80925	|.....	111.47037	||||||||.....

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
1	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
2	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
3*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
4*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
5	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
6	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
7*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
8	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
9	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
10	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

11	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
12	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
13	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
14*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	|||||||||.....
15*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
16*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
17*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
18	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
19	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
20*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
21	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
22*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
23	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
24	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
25*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	|||||||||.....
26	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
27*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
28	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
29*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
30*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
31	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
32	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
33	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
34*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
35*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
36*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
37	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
38	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
39*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
40*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
41	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
42	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
43*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
44	0	0.96226	|||||||||||||	56.75007	||||.....	58.81234	|||.....
45	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
46*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
47*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
48	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
49	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
50	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
51	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
52*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||

53	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
54	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
55*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
56	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
57	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
58*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
59	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
60	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
61*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	||||||||\.....
62*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
63	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
64	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
65*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
66	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
67	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
68	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
69	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
70*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
71*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
72	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
73*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
74*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
75	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
76*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
77	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
78	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
79	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
80	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
81	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
82*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
83	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
84	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
85*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
86	0	0.96226	|||||||||||||	56.75007	|||||.....	58.81234	|||.....
87	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
88*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
89	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
90	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
91	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
92	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
93*	0	0.44911	||||||.....	108.14792	|||||||\.....	228.62377	||||||||||||
94	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
95	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
96*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
97	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
98	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
99*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||
100*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
101*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
102	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
103*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
104*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
105*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
106*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
107*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
108*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
109	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
110*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
111*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
112*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
113	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
114	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
115*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
116*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
117	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
118	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
119	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
120	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
121*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
122*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
123	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
124	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
125	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
126*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
127	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
128	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
129*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
130	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
131*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
132*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
133	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
134	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
135*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
136*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
137*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
138*	0	0.44911	||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
139*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
140	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
141	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
142	0	0.57746	||||||||.....	115.62666	||||||||\.....	193.03618	||||||||||...
143*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
144*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
145*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
146	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
147*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
148*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
149	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
150*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
151*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
152	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
153*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
154	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
155	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
156*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
157*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
158	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
159*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
160	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
161*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
162*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
163*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
164	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
165	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
166	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
167	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
168	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
169	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
170	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
171	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
172	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
173*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
174*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
175	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
176*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
177*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
178	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
179	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
180*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
181*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
182	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
183*	0	0.44911	||||||.....	108.14792	|||||||||.....	228.62377	|||||||||||||
184*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||||.
185	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
186	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
187	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...

188	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
189	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
190	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
191*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
192*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
193	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
194	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
195	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
196*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
197	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
198	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
199	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
200	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
201*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
202*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
203	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
204	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
205*	1	0.57746	|||||||\.....	134.47151	|||||||||...	225.49637	|||||||||||.
206	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
207*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
208	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
209*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
210*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
211*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
212*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
213*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
214	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
215	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
216	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
217	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
218*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
219	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
220*	1	0.57746	|||||||\.....	134.47151	|||||||||...	225.49637	|||||||||||.
221	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
222*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
223	0	0.57746	|||||||\.....	115.62666	||||||||\.....	193.03618	||||||||||...
224*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
225*	1	0.96226	|||||||||||||	159.98894	|||||||||||||	166.09627	||||||||\.....
226	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
227	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
228*	0	0.44911	|||||||.....	108.14792	||||||||\.....	228.62377	||||||||||||
229	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

230	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
231*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
232	0	0.96226	|||||||||||||	56.75007	||||.....	58.81234	|||.....
233	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
234	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
235*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
236	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
237*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
238*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
239*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
240	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
241	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
242*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
243*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
244*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
245	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
246	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
247	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
248	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
249	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
250	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
251	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
252*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
253	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
254	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
255*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
256	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
257	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
258*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
259	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
260*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
261*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
262	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
263*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
264*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
265*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
266	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
267	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
268	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
269*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
270*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
271	1	0.44911	||||||.....	93.71207	|||||||.....	196.18596	||||||||||...

272*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
273*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
274	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
275*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
276	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
277*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
278	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
279*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
280*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
281	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
282*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
283	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
284*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
285	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
286	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
287	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
288*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
289*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
290	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
291	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
292	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
293	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
294	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
295	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
296*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
297*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
298	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
299*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
300*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
301*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
302*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
303	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
304	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
305	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
306*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
307	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
308*	0	0.44911	||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
309	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
310	1	0.44911	||||||.....	93.71207	||||||.....	196.18596	||||||||||...
311*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
312	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
313	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...

314	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
315	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
316*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
317*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
318*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
319	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
320*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
321	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
322	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
323*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
324*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
325*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
326*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
327*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
328*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
329	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
330	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
331*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
332	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
333	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
334*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
335*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
336*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
337	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
338	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
339	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
340	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
341*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
342	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
343	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
344*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
345	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
346*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
347	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
348*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
349	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
350*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
351	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...
352*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
353*	0	0.44911	|||||||.....	108.14792	||||||||.....	228.62377	||||||||||||
354*	1	0.57746	||||||||.....	134.47151	|||||||||...	225.49637	|||||||||||.
355	0	0.57746	||||||||.....	115.62666	||||||||.....	193.03618	||||||||||...

356*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
357	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
358	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
359*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
360*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
361*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
362*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
363*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
364	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
365*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
366	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
367	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
368*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
369	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
370*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
371*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
372*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
373*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
374	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
375*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
376*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
377*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
378*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
379	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
380	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
381	0	0.96226	||||||||||||||	56.75007	||||.....	58.81234	|||.....
382*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
383*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
384*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
385*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
386	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
387	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
388	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
389*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
390	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
391*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
392*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
393	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
394*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.
395	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
396	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
397*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	|||||||||||.

398*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
399	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
400	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
401	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
402	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
403	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
404*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
405*	1	0.96226	||||||||||||||	159.98894	||||||||||||||	166.09627	|||||||||.....
406*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
407	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
408*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
409	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
410*	1	0.57746	||||||||.....	134.47151	||||||||||...	225.49637	||||||||||||.
411	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
412	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
413*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
414	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
415	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
416	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
417	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
418	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
419	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
420	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
421	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
422	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
423	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
424	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
425	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
426*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
427*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
428	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	||||||||||...
429	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
430	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
431*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
432	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Residual Diagnostics Report For validvote = 1 (Continued)

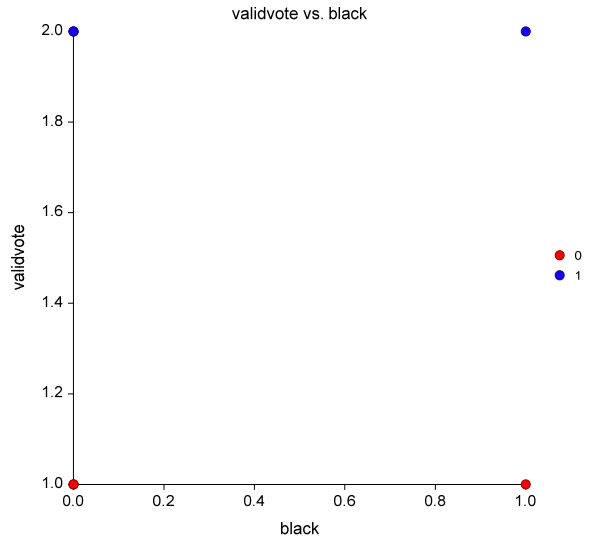
Row	Actual validvote	Hat Diagonal		Deviance Change (DFDev)		Chi-Square Change (DFChi2)	
433	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
434*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
435*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
436	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
437	0	0.57746	||||||||.....	115.62666	|||||||||.....	193.03618	||||||||||...
438	0	0.96226	||||||||||||||	56.75007	|||||.....	58.81234	|||.....
439*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||

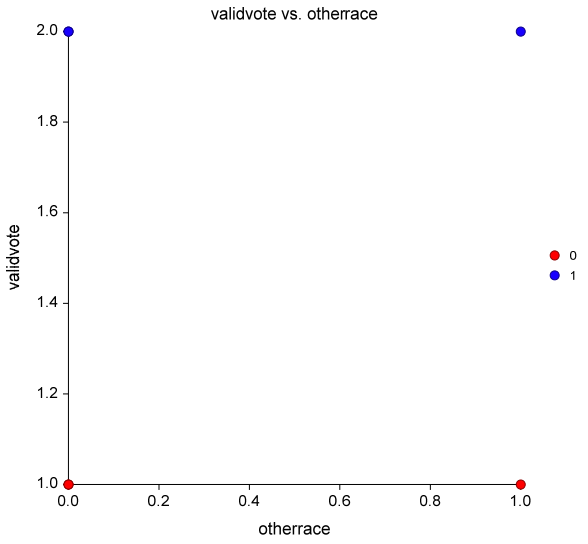
440*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
441	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
442*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
443	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
444*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
445	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
446*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
447*	1	0.57746	|||||||||.....	134.47151	|||||||||||...	225.49637	|||||||||||||.
448*	1	0.57746	|||||||||.....	134.47151	|||||||||||...	225.49637	|||||||||||||.
449*	1	0.57746	|||||||||.....	134.47151	|||||||||||...	225.49637	|||||||||||||.
450*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
451	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	|||||||||||...
452	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	|||||||||||...
453	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
454*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
455	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
456	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
457	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...
458*	0	0.44911	|||||||.....	108.14792	|||||||||.....	228.62377	||||||||||||||
459	1	0.44911	|||||||.....	93.71207	|||||||.....	196.18596	|||||||||||...
460	0	0.57746	|||||||||.....	115.62666	|||||||||.....	193.03618	|||||||||||...

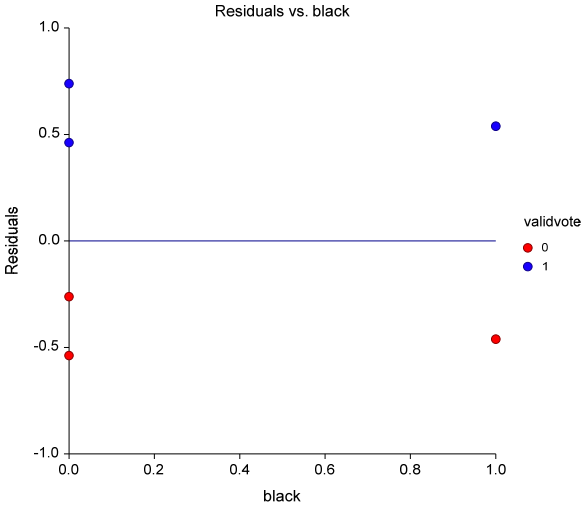
Logistic Regression Report

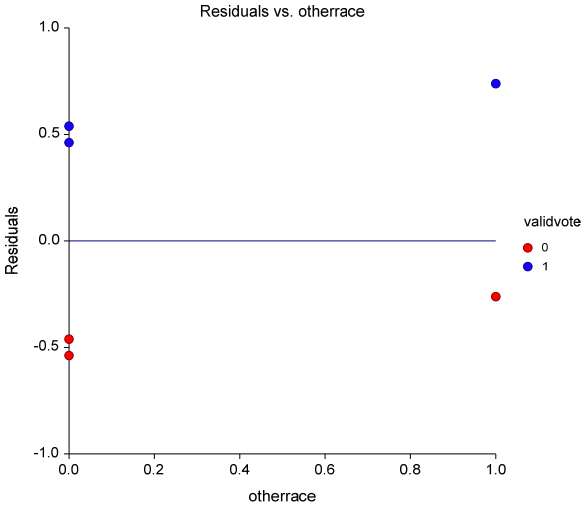
Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Diagnostic Plots



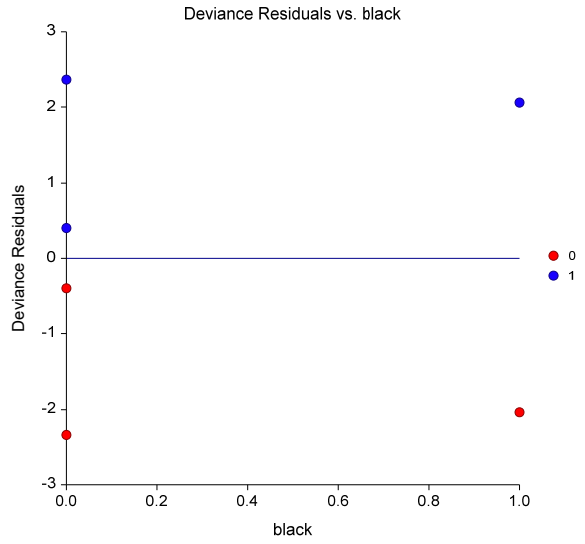

validvote vs. otherrace
validvote
otherrace
2.0
1.8
1.6
1.4
1.2
1.0
0.0
0.2
0.4
0.6
0.8
1.0
0
1

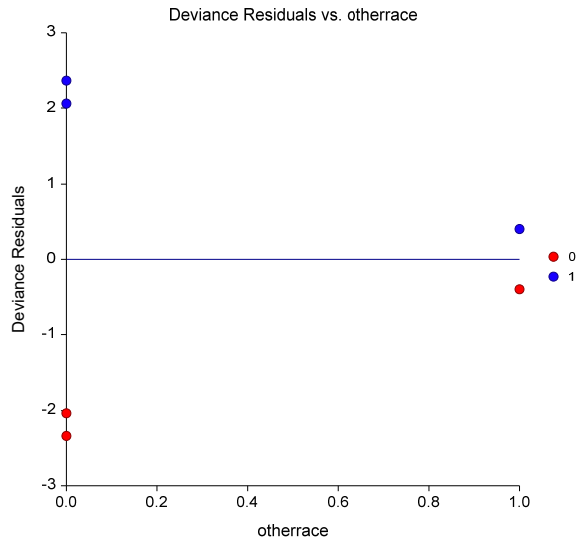

Residuals vs. black
Residuals
black
validvote
0
1
1.0
0.5
0.0
-0.5
-1.0
0.0
0.2
0.4
0.6
0.8
1.0

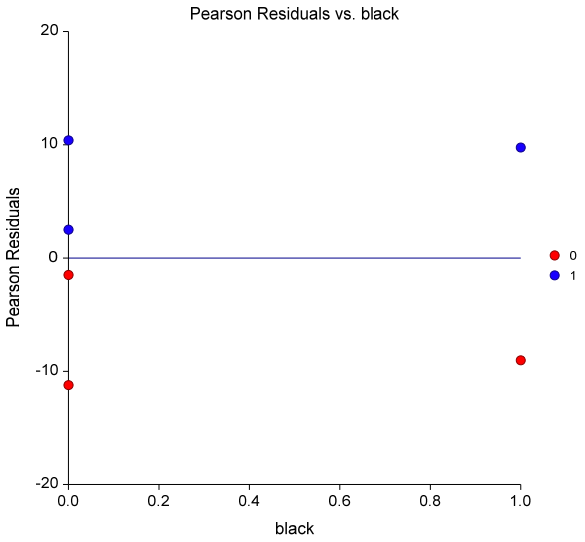

Residuals vs. otherrace
Residuals
otherrace
validvote
0
1
1.0
0.5
0.0
-0.5
-1.0
0.0
0.2
0.4
0.6
0.8
1.0

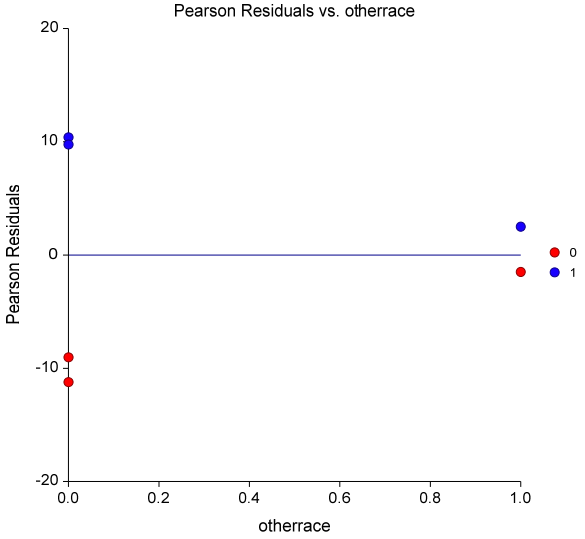
Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight



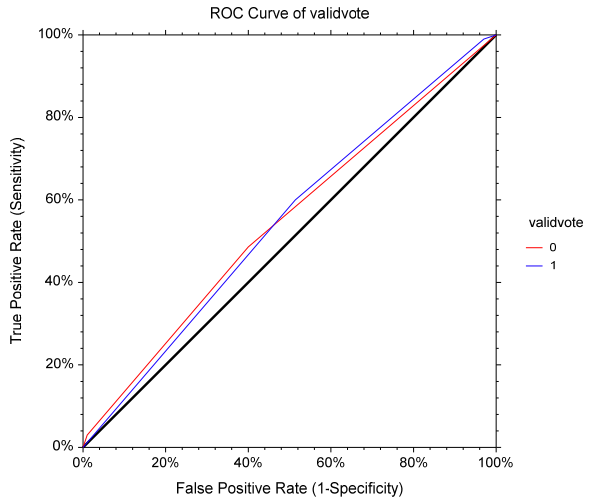


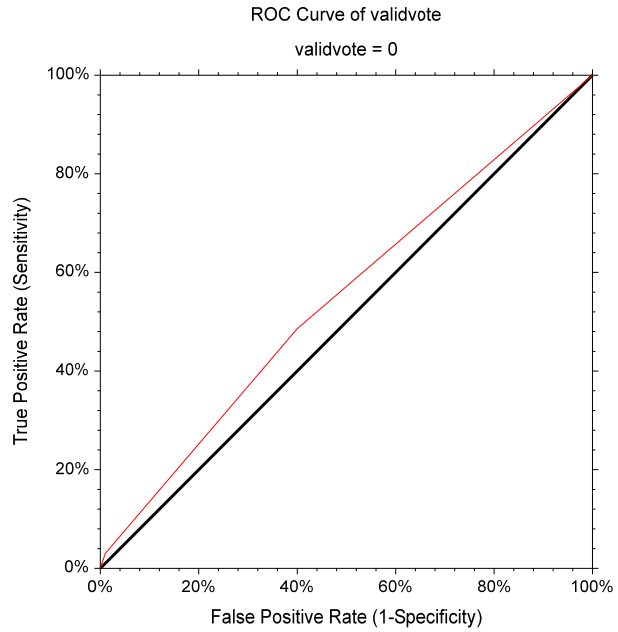

Pearson Residuals vs. black
Pearson Residuals
20
10
0
-10
-20
0.0
0.2
0.4
0.6
0.8
1.0
black
0
1

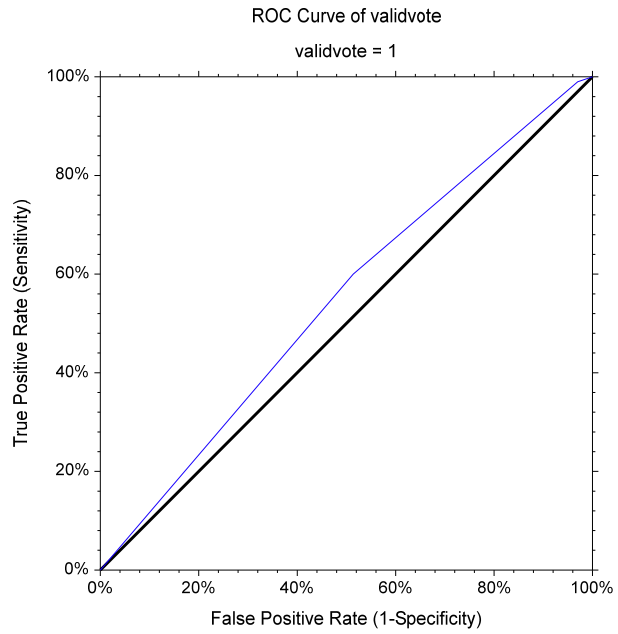

Pearson Residuals vs. otherrace
Pearson Residuals
20
10
0
-10
-20
0.0
0.2
0.4
0.6
0.8
1.0
otherrace
0
1

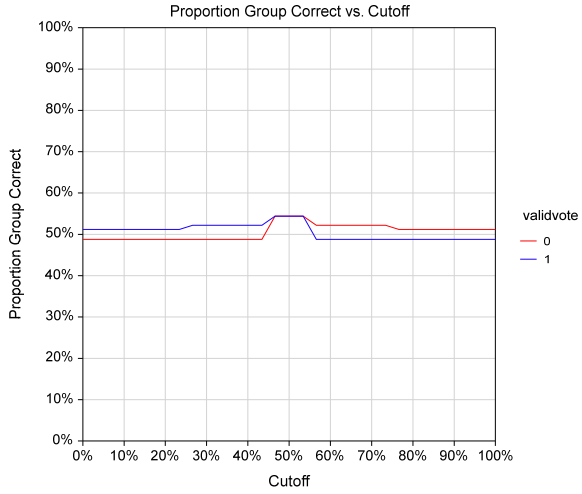
Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight









Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Procedure Input Settings

Autosave Inactive

Variables, Model Tab

-- Variables ----------

Y:	validvote
Reference Value:	0
Numeric X's:	black, otherrace
Categorical X's:	<Empty>
Frequencies:	commonpostweight
Validation Filter:	<Empty>

-- Regression Model ----------

Terms:	1-Way
Remove Intercept	Unchecked

·· Prior Y-Value Probabilities (Changes Intercept and Predicted Values)

Priors:	Equal across Y Values

Subset Selection Tab

-- Select the Best Subset from the X's ----------

Search for the Best Subset from the X's	Unchecked

Iteration Tab

-- Iteration Options ----------

Maximum Iterations:	20
Iteration Termination:	0.000001

Reports Tab

-- Select Reports ----------

·· Summaries

Run Summary	Checked
Y Variable Summary	Checked

·· Subset Selection

Subset Summary	Checked
Subset Detail	Checked

·· Estimation

Coefficient Significance Tests	Checked
Coefficient Confidence Limits	Checked
Odds Ratios	Checked
Estimated Model (Reading Form)	Checked
Estimated Model (Transformation Form)	Checked

·· Goodness-of-Fit

Analysis of Deviance	Checked
Log-Likelihood and R^2	Checked

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Procedure Input Settings (Continued)

Reports Tab (Continued)

·· Classification

Classification Matrix	Checked
Validation Matrix	Checked
ROC Report	Checked

·· Row-by-Row Lists

Row Classification Report:	None
Row Classification Probs Report:	None
Simple Residuals Report:	None
Residuals	Checked
DfBetas	Checked
Influence Diagnostics	Checked
Residual Diagnostics	Checked

Report Options Tab

-- Confidence Levels ----------

Confidence Level:	95

-- Variable and Value Labels ----------

Variable Names:	Names
Value Labels:	Data Values
Stagger label and output if label length is ≥	15

-- Decimal Places ----------

Precision:	Single
Probability:	5
Beta (Coefficients):	5
SE(Beta):	5
Z:	3
Log Likelihood:	5
Odds Ratio:	5
DFBeta:	5
Coefficients in Reading Form Model:	2

Plots Tab

-- Select Plots ----------

Y vs X	Checked
ROC Curves (Combined)	Checked
ROC Curve (Separate)	Checked

Residuals vs X	Checked
Skip Reference Value	Checked
Deviance Residuals vs X	Checked
Pearson Residuals vs X	Checked
Pr(Correct) vs Cutoff	Checked

-- ROC Curves and Prob(Correct) vs Cutoff Plot Options ----------

Number Cutoffs:	29

Logistic Regression Report

Dataset	...\NCSSmsexport.NCSS
Y (Ref Value)	validvote(0)
Frequency	commonpostweight

Procedure Input Settings (Continued)

Storage Tab

-- Data Storage Options ----------

Storage Option:	Do not store data

Appendix B

There are three possible ways to measure turnout in the 2020 CES using the validation variables. Two use only the “CL_2020gvm" vote validation variable while the third uses this variable in conjunction with self-reported registration (votereg_post) and self-reported turnout (CC20_401).

1. Un-matched as non-voters. The first specification defines voters as respondents with a validated voting record no matter their mode of participation, and defines nonvoters as both matched non-voters and non-matched respondents. This specification retains the integrity of the full CES sample, no missing values are created. The justification for this approach is the fact that the most common reason that Catalist will not have a record for an individual is because that individual is not registered to vote. Indeed, rates of self-reported non-registration and non-voting are much higher among un-matched respondents than among those for whom there is a match.
2. Only matched non-voters as non-voters. The second specification defines nonvoters as only matched non-voters. This specification reduces the CES sample and results in validated turnout estimates that are larger than those in the first specification. However, this specification increases the level of certainty in the identification of non-voters in the CES, because there could possibly be actual voters among nonmatched respondents.
3. Matched non-voters and self-reported non-voters as non-voters. The third specification defines non-voters as (1) matched non-voters, (2) non-matched respondents who reported not being registered to vote in the “votereg_post" question, and (3) non-matched respondents who are self-reported non-voters in the “CC20_401" question. This definition excludes non-matched respondents who are self-reported voters (these individuals would be coded as missing). This definition assumes that self-reported non-voters are honest about their non-participation because there is no incentive to go against the democratic norm of participation.

Appendix C

NCSS 12.0.18

Two-Sample Comparison Report

Dataset ...\VALIDATE VOTED BLACK & WHITE T TEST.NCSS

Confidence Intervals of Means

					95.0% C. I. of μ	
Group	**N**	**Mean**	**Standard Deviation**	**Standard Error**	**Lower Limit**	**Upper Limit**
1	121	0.049	0.218	0.01981818	0.009761379	0.08823862
2	61	0.1475	0.357	0.04570917	0.05606806	0.2389319

Two-Sided Confidence Interval for μ1 - μ2

						95.0% C. I. of μ1 - μ2	
Variance Assumption	**DF**	**Mean Difference**	**Standard Deviation**	**Standard Error**	**T***	**Lower Limit**	**Upper Limit**
Equal	180	-0.0985	0.2723337	0.04276412	1.9732	-0.1828835	-0.01411652
Unequal	83.21	-0.0985	0.4182977	0.04982056	1.9889	-0.1975874	0.0005874241

Equal-Variance T-Test

Alternative Hypothesis	**Mean Difference**	**Standard Error of Difference**	**T-Statistic**	**d.f.**	**Prob Level**	**Reject H0 at α = 0.050**
μ1 - μ2 > 0	-0.0985	0.04276412	-2.3033	180	0.98880	No

Aspin-Welch Unequal-Variance T-Test

Alternative Hypothesis	**Mean Difference**	**Standard Error of Difference**	**T-Statistic**	**d.f.**	**Prob Level**	**Reject H0 at α = 0.050**
μ1 - μ2 > 0	-0.0985	0.04982056	-1.9771	83.21	0.97433	No

Procedure Input Settings

Autosave Inactive

Data Tab

-- Group Summary Values ----------

Group 1 Sample Size: 121

Group 1 Mean:	.049
Group 1 Standard Deviation:	.218
Group 2 Sample Size:	61
Group 2 Mean:	.1475
Group 2 Standard Deviation:	.357

Reports Tab

-- Confidence Intervals ----------

Confidence Level:	95
Confidence Intervals of Each Group Mean	Checked
Confidence Interval of μ1 - μ2	Checked
Limits:	Two-Sided
Confidence Intervals of Each Group Standard Deviation	Unchecked
Confidence Interval of σ1/σ2	Unchecked

Two-Sample Comparison Report

Dataset ...\VALIDATE VOTED BLACK & WHITE T TEST.NCSS

Procedure Input Settings (Continued)

Reports Tab (Continued)

-- Tests ----------

Alpha:	0.05
H0: μ1 - μ2 =	0.0
Ha:	μ1 - μ2 > H0 Value (one-sided)

·· Parametric

Equal-Variance T-Test	Checked
Unequal-Variance T-Test	Checked
Z-Test	Unchecked
Equivalence Test	Unchecked
Power Report for Equal-Variance T-Test	Unchecked
Power Report for Unequal-Variance T-Test	Unchecked

·· Assumptions

Variance-Ratio Test	Unchecked

-- Decimal Places ----------

Means, Differences, and C.I. Limits:	Auto (Up to 7)
Standard Deviations and Standard Errors:	Auto (Up to 7)
P-Values and Powers:	5
Test Statistics:	4

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., Plaintiffs, vs. STATE BOARD OF ELECTION COMMISSIONERS, et al., Defendants.	No. 4:22cv62-MPM-JMV

DECLARATION OF WILLIAM S. COOPER

WILLIAM S. COOPER, acting in accordance with 28 U.S.C. § 1746, Federal Rule of Civil Procedure 26(a) (2) (B), and Federal Rules of Evidence 702 and 703, does hereby declare and say:

I. INTRODUCTION

A. Redistricting Experience

1. My name is William S. Cooper. I have a B.A. in Economics from Davidson College. As a private consultant, I was retained as a demographic and redistricting expert for the Plaintiffs. I am compensated at a rate of $150 per hour, and my compensation is not contingent on the outcome of this litigation. I reserve the right to continue to amend or supplement my reports, including in light of

additional facts, testimony, and/or materials that may come to light over the course of the discovery period in this case.

2. I have been accepted as an expert trial witness on redistricting and demographics in about 50 federal-court voting rights cases across 18 states, including Mississippi. Five of those cases resulted in changes to statewide legislative boundaries.[1] Approximately 25 of those cases led to changes in local election district plans.[2] My testimony in such cases almost always includes a review of the demographics and socioeconomic characteristics of the jurisdiction or jurisdictions at issue. In Voting Rights Act cases, I also typically produce one or more illustrative districting plans for the jurisdiction.

3. In 2022, I have testified as an expert in redistricting and demographics in six cases challenging district boundaries under Section 2 of the Voting Rights Act: *Caster v. Merrill*, No. 21-1356-AMM (N.D. Ala.), *Pendergrass v. Raffensperger*, No. 21-05337-SCJ (N.D. Ga.), *Alpha Phi Alpha Fraternity v. Raffensperger*, No. 21-05339-SCJ (N.D. Ga.), *NAACP v Baltimore County,* No.21-cv-03232-LKG

[1] The five are *Rural West Tennessee African-American Affairs Council, Inc. v. McWherter*, No. 92-cv-2407 (W.D. Tenn.); *Old Person v. Brown*, No. 96-cv-0004 (D. Mont.); *Bone Shirt v. Hazeltine*, No. 01-cv-3032 (D.S.D.); *Alabama Legislative Black Caucus v. Alabama*, No. 12-cv-691 (M.D. Ala.); and *Thomas v. Reeves*, No. 18-cv-441 (S.D. Miss.). In *Bone Shirt*, the court also adopted the remedial plan I developed.

[2] I have also served as an expert witness on demographics in trials relating to issues other than voting and redistricting. For example, I served as an expert in *Stout v. Jefferson County Board of Education*, No. 2:65-cv-00396-MHH (N.D. Ala.), a school desegregation case involving the City of Gardendale, Alabama.

(Md.), *Christian Ministerial Alliance v. Hutchinson* No. 4:19-cv-402-JM (E.D. Ar.), and *Robinson v. Ardoin*, No. 3:22-cv-00211-SDD-SDJ (M.D. La.). I also testified at trial this year as an expert on demographics in *NAACP v. Lee*, No. 4:21cv187-MW/MAF (N.D. Fla.), a case involving recent changes to Florida election law.

4. With respect to my work in Mississippi, I served as an expert witness in redistricting and demographics in *Thomas v. Reeves*, No. 18-cv-441 (S.D. Miss.), a Voting Rights Act case which resulted in the revision of Mississippi State Senate District lines in the Mississippi Delta. In addition to the *Thomas* case, I have testified at trial in two other state-level voting lawsuits in Mississippi: *NAACP v. Fordice* in 1999, which involved the districts used for the Public Service Commission and Transportation Commission, and *Smith v. Clark* in 2002, which involved congressional redistricting in Mississippi.

5. I have also testified at trial over the past three decades as a redistricting and demographics expert in several local-level voting cases in Mississippi—in the 1990s[3], 2000s[4], and 2010s[5].

[3] *See, e.g.*, *Addy v. Newton County*, No. 4:95cv39 (S.D. Miss.); *Gunn v. Chickasaw County*, No.87cv165 (N.D. Miss).

[4] *See, e.g.*, *Fairley v. Hattiesburg*, No. 2:06cv167-KS-MTP (S.D. Miss.); *Boddie v. Cleveland School District*, No. 4:07cv63-M-B (N.D. Miss.).

[5] *Fairley v. City of Hattiesburg*, No. 2:13cv18–KS–MTP (S.D. Miss.).

6. I have also developed election plans that were adopted by the following local governing bodies in Mississippi: in the 1990s—Webster County; in the 2000s—Bolivar County and Webster County; and in the 2010s—Bolivar County, Claiborne County, and the City of Grenada. I currently serve as a post-2020 redistricting consultant to the Bolivar County Board of Supervisors, Washington County Board of Supervisors, and the City of Grenada Council.

7. For additional historical information on my testimony as an expert witness and experience preparing and assessing proposed redistricting maps for Section 2 litigation, see a summary of my redistricting work attached as **Exhibit A.** A listing of Mississippi voting cases where I have filed declarations but did not testify at trial is also available in **Exhibit A**. Six of the lawsuits where I filed declarations resulted in changes to local redistricting plans.

B. Purpose of Report

8. The attorneys for the Plaintiffs in this case have asked me to determine whether the Black population in Mississippi is "sufficiently large and geographically compact"[6] to allow for one of the three at-large districts for the

[6] *Thornburg v. Gingles*, 478 U.S. 30, 50 (1986).

Mississippi Supreme Court to be drawn with a majority Black voting age population ("BVAP"), consistent with traditional districting principles.

9. The attorneys also asked me to review historical and current demographics (reported in the decennial Census published by the U.S. Census Bureau), as well as socioeconomic characteristics reported in the annual releases of the *American Community Survey* ("ACS") for African Americans and non-Hispanic Whites.[7]

10. **Exhibit B** describes the sources and methodology I have employed in the preparation of this report and the illustrative plans described below.

C. Summary of Expert Conclusions

11. I have reached the following conclusions:

- Based on the 2020 Census, Black Mississippians are sufficiently numerous and geographically compact to allow for one majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court. A number of illustrative plans can be drawn that are consistent with traditional districting principles and that do not split a single county.

[7] In this report, "Black" and "African American" are synonymous, as are "Latino" and "Hispanic," and "White" and "non-Hispanic White." Unless otherwise noted, beginning with the 2000 Census, "Black" refers to persons of all ages who are any part Black ("AP Black"), i.e., single-race Black or more than one race and some part Black. Prior to the 2000 Census, the AP Black count cannot be derived from the PL-94-171 file used for redistricting. The "AP Black" classification includes all persons who self-identified in the Census as single-race Black or some part Black, including Hispanic Black. It is my understanding that following the U.S. Supreme Court decision in *Georgia v. Ashcroft*, 539 U.S. 461 (2003), the "Any Part" definition is the appropriate Census classification to use in most Section 2 cases.

- In addition, Black Mississippians have been sufficiently numerous and geographically compact to allow for one majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court based on the prior decennial Census numbers from 1990, 2000, and 2010.

- As reported in the 1-Year *2021 ACS*, a demographic survey published by the U.S. Census Bureau, in Mississippi non-Hispanic Whites significantly outpace Black Mississippians across most key indicators of socioeconomic well-being, including employment rates, household income, and homeownership.

D. Organization of Report

12. The remainder of this declaration is organized as follows:

13. **Section II** reviews current and historical demographics at the statewide, regional, and county-level.

14. **Section III** examines the three-district Supreme Court plan in effect for elections from 1987 to the present, as well as its immediate predecessor, the three-district 1942 Plan.

15. **Section IV** presents a hypothetical plan demonstrating that a three-member majority-Black VAP Supreme Court district could have been drawn under the 1990 Census and would have remained majority-Black VAP through the 2020 Census.

16. **Section V** presents two illustrative plans based on the 2020 Census. Like the 1987 Plan, both plans contain three three-member districts. Unlike the 1987 Plan, both plans contain one district with a majority-Black VAP.

17. **Section VI** presents two additional "least change" demonstrative plans, which provide for one three-member majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court while limiting the number of voters and counties that would be shifted from the 1987 Plan.

18. **Section VII** summarizes data from the U.S. Census Bureau documenting socioeconomic disparities experienced by Black Mississippians when compared with their White counterparts, as reported in the *American Community Survey*.

II. DEMOGRAPHIC PROFILE OF MISSISSIPPI

A. Statewide Population – 2010 to 2020

19. The table in **Figure 1** presents the population of Mississippi by race and ethnicity for the 2010 and 2020 decennial censuses.

Figure 1: Mississippi – 2010 to 2020 Census Population by Race and Ethnicity

All Ages	2010	Percent of Total Population	2020	Percent of Total Population	2010-2020 Change	Percent 2010-2020 Change
Total Population	2,967,297	100.00%	2,961,279	100.00%	-6,018	-0.20%
NH White*	1,722,287	58.04%	1,639,077	55.35%	-83,210	-4.83%
Total Minority Pop.	1,245,010	41.96%	1,322,202	44.65%	77,192	6.20%
Latino	81,481	2.75%	105,220	3.55%	23,739	29.13%
NH Black*	1,093,512	36.85%	1,079,001	36.44%	-14,511	-1.33%
NH Asian*	25,477	0.86%	32,305	1.09%	6,828	26.80%
NH Hawaiian and PI*	948	0.03%	1,037	0.04%	89	9.39%
NH American Indian and Alaska Native	13,845	0.47%	14,019	0.47%	174	1.26%
NH Other*	1,828	0.06%	7,174	0.24%	5,346	292.45%
NH Two or More Races	27,919	0.94%	83,446	2.82%	55,527	198.89%
SR Black (Single-race Black)	1,098,385	37.02%	1,084,481	36.62%	-13,904	-1.27%
AP Black (Any Part Black)	1,115,801	37.60%	1,123,613	37.94%	7,812	0.70%

* Single-race, non-Hispanic.

20. According to the 2020 Census, non-Hispanic Whites comprise 55.35% of the population in Mississippi—down from 58.04% in 2010. African Americans are the next largest racial/ethnic category, representing 37.94% of the population in 2020—the highest proportion of any state in the nation and up slightly from 37.60% in 2010. Latinos registered sharp gains between 2010 and 2020, representing 3.55% of the statewide population in 2020—up from 2.75% in 2010.

B. Statewide Voting Age Population (1990 to 2020)

21. As shown in **Figure 2**, in percentage terms, the statewide BVAP has steadily increased over the past 30 years—from 31.63% in 1990 to 36.14% in 2020. During that same time period, the NH White VAP has dropped by nearly ten percentage points, from 67.49% in 1990 to 57.76% in 2020.

Figure 2: Mississippi – 1990 to 2020 Census
Percent Voting Age Population by Race and Ethnicity

	1990	% 1990	2000	% 2000	2010	% 2010	2020	% 2020
Total	1,826,455	100.00%	2,069,471	100.00%	2,211,742	100.0%	2,277,599.	100.0%
Black	577,669	31.63%	688,994	33.29%	773,869	34.99%	823,080	36.14%
NH White	1,232,687	67.49%	1,327,768	64.16%	1,348,246	60.96%	1,315,451.	57.76%

C. Distribution of Mississippi's Black Population

22. In the 19th Century, enslaved African Americans began populating the Mississippi Delta via the Mississippi River.[8] Today, much of the Black population in Mississippi lives in the Delta and adjacent counties—spanning the length of the Mississippi River from DeSoto County in the north to Wilkinson County in the south.

[8] *See* "Delta," *Mississippi Encyclopedia*, https://mississippiencyclopedia.org /entries/delta/. According to the Mississippi Encyclopedia: "The core counties of the Delta are Bolivar, Coahoma, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tunica, and Washington. The counties of Carroll, DeSoto, Grenada, Holmes, Panola, Tallahatchie, Tate, Warren, and Yazoo contain alluvial deposits as well and have been part of the Delta's human history."

23. The map in **Figure 3** depicts 2020 Black population percentage by county, with transparent overlays. Blue lines identify the state's ten Planning and Development Districts ("planning districts" or PDDs)), which are Mississippi's official sub-state regions and are used to define regional boundaries for various administrative, planning, and development purposes.[9] Red lines depict areas where the boundaries of current majority-Black Congressional District 2 ("CD 2") diverge from planning district boundaries.[10]

24. In addition to existing district lines such as CD 2, Mississippi's planning districts are a useful reference point for constructing electoral districts in the state. In the 1960s, local Mississippi officials created the PDDs as an administrative and governance structure to "allow communities to collectively address problems."[11] Since then, "each PDD [has] represent[ed] a distinctly different region of the state," and each district's responsibilities span "community and economic development," "health and social services," "small business assistance," "workforce development," "loan assistance," and Medicaid case management, among other "local needs and

[9] *See, e.g.*, Miss. Assoc. of Planning and Dev. Districts, "2022 Directory," http://mspdds.org/directory/.

[10] Specifically, CD 2 excludes DeSoto and Tate Counties in the North Delta PD and excludes Lincoln, Pike, Lawrence, and Walthall Counties in the Southwest PD. On the other hand, CD 2 extends east of the Delta to include Leake County in the East Central PD.

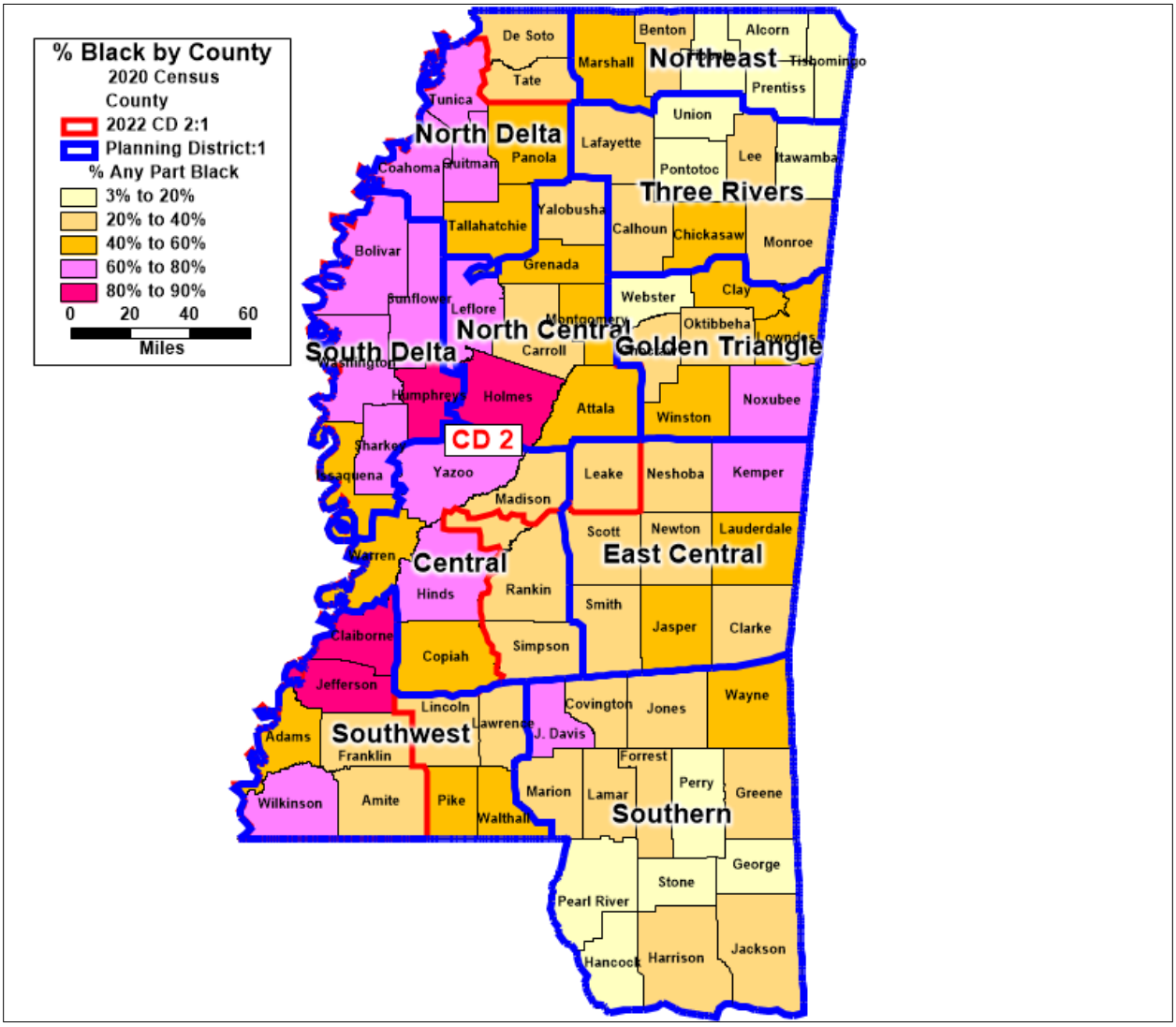
[11] Miss. Assoc. of Planning and Dev. Districts, "What is a PDD," http://mspdds.org/what-is-a-pdd/.

priorities."[12] As such, PDD boundaries, by definition, delineate parts of Mississippi that share policy interests.

25. **Exhibit C-1** is a higher resolution version of the **Figure 3** map. **Exhibit C-2** reports total population and Black population percentage by county for the 1990 through 2020 decennial censuses.

[12] *Id.*

Figure 3: 2020 Percent Black by County
Planning Districts (blue lines) and 2022 CD 2 (red)



26. **Figure 4** reveals that about 58% (651,798 of 1.12 million) of Black Mississippians live in the five planning districts running north-south along the Mississippi and Yazoo Rivers—North Delta, South Delta, North Central, Central, and Southwest (bolded in Figure 4).

Figure 4: Mississippi Planning Districts – 2020 Census Population by Race and Ethnicity

Planning District	Population	AP Black	% AP Black	Latino	% Latino	NH White	% NH White
Central	**619,700**	**297,220**	**48.0%**	**17,197**	**2.8%**	**288,467**	**46.5%**
East Central	227,806	88,263	38.7%	8,496	3.7%	119,855	52.6%
Golden Triangle	175,474	76,701	43.7%	3,447	2.0%	90,528	51.6%
North Central	**117,158**	**65,758**	**56.1%**	**2,016**	**1.7%**	**47,944**	**40.9%**
North Delta	**296,649**	**120,419**	**40.6%**	**12,631**	**4.3%**	**154,476**	**52.1%**
Northeast	141,811	31,216	22.0%	4,993	3.5%	102,531	72.3%
South Delta	**114,801**	**80,599**	**70.2%**	**2,319**	**2.0%**	**30,680**	**26.7%**
Southern	805,302	205,707	25.5%	40,696	5.1%	523,916	65.1%
Southwest	**176,046**	**87,802**	**49.9%**	**2,860**	**1.6%**	**82,779**	**47.0%**
Three Rivers	286,532	69,928	24.4%	10,565	3.7%	197,901	69.1%

27. African Americans comprise about half (49.2%) of the 2020 population (1.32 million) in those five planning districts. The ideal population size for a 2020 Supreme Court district is 987,093—so these five planning districts encompass about 350,000 persons more than necessary to constitute a single Supreme Court district.

28. Under the 2020 Census, CD 2 (62.15% BVAP), which largely overlaps with those five planning districts, contains a population of 740,319 persons—about 250,000 persons short of the ideal district size for the three-district Supreme Court.

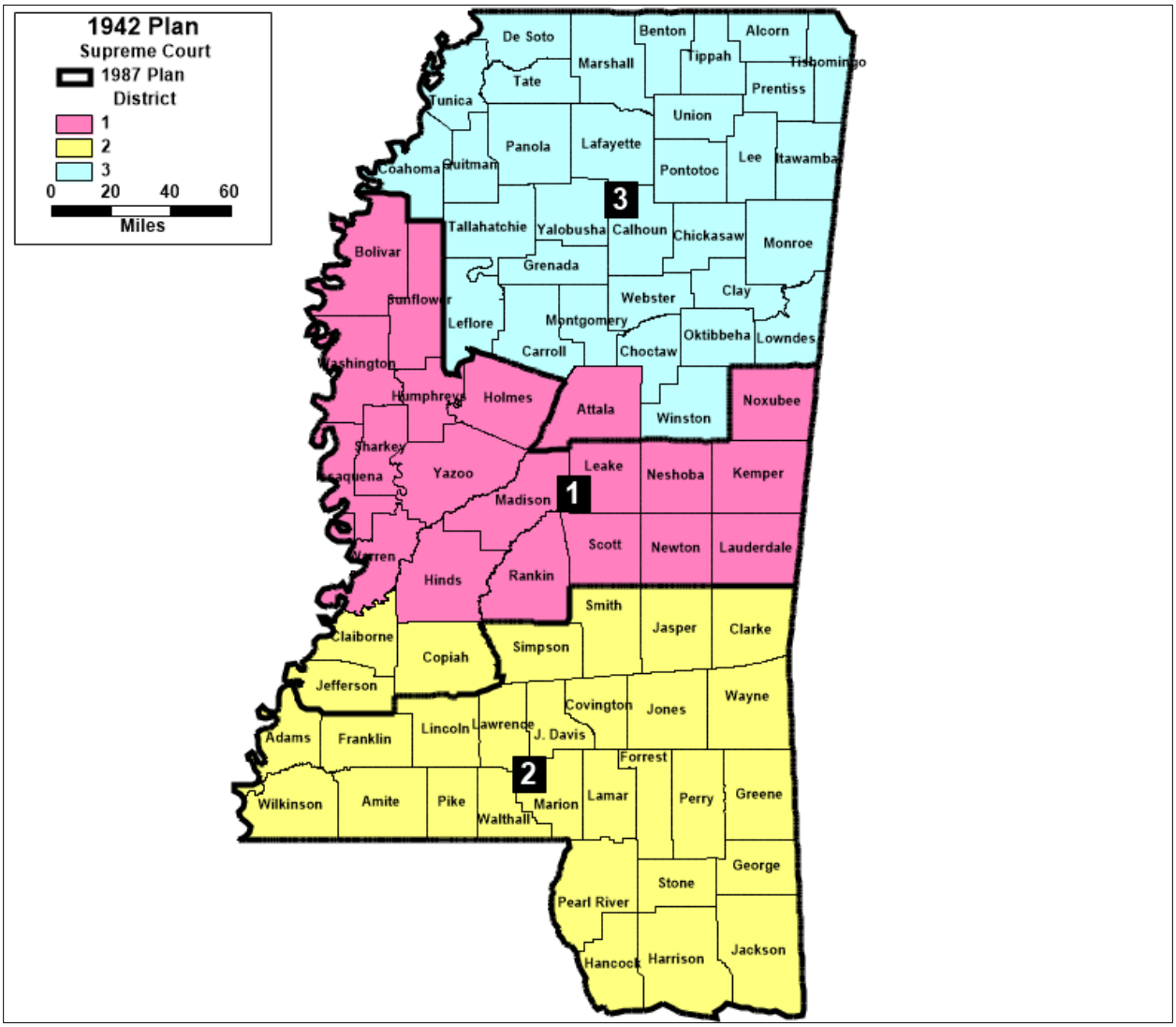
29. Taking paragraphs 23 through 28 into account, one can immediately ascertain that a majority-Black Supreme Court district anchored in the Delta region can be drawn in and around CD 2 and the five planning districts that border the Mississippi and Yazoo Rivers.

III. ENACTED SUPREME COURT PLANS (1942 AND 1987)

A. Historical 1942 Plan

30. The map in **Figure 5** depicts the 1942 Supreme Court Plan, with an overlay (black lines) showing the 1987 Plan. To create the 1987 Plan, Attala County was shifted into Supreme Court District 3 from 1942 Supreme Court District 1. In turn, Claiborne, Copiah, and Jefferson Counties were shifted from 1942 Supreme Court District 2 into Supreme Court District 1.

Figure 5: 1942 Supreme Court Plan



B. Enacted 1987 Plan

31. A map of the 1987 Plan is depicted in **Figure 6,** overlaid on the ten planning districts discussed above. Corresponding decade-by-decade population statistics are included in the table in **Figure 7.**

Figure 6: Current 1987 Supreme Court Plan

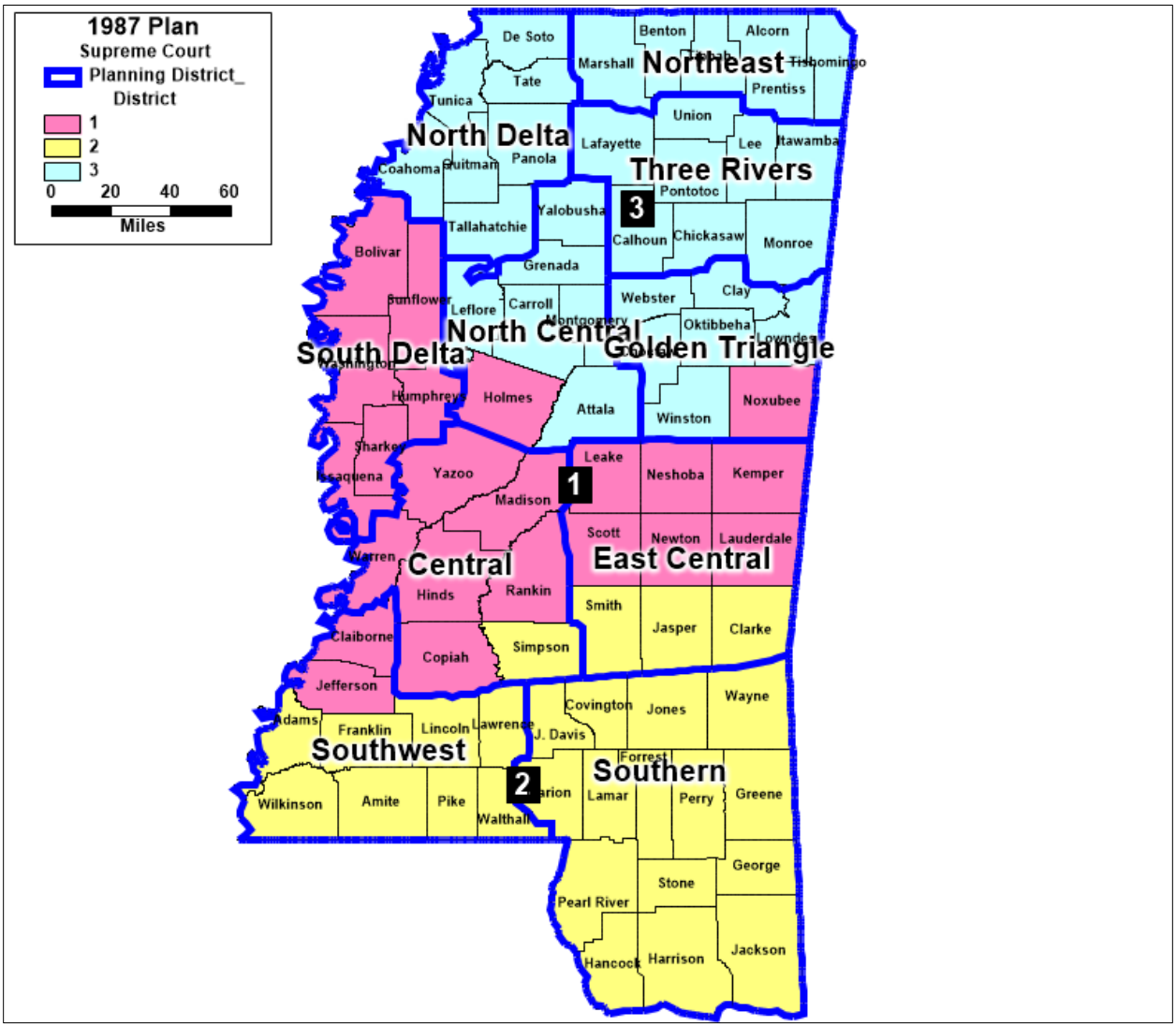


Figure 7: Enacted 1987 Supreme Court Plan
Percent Black Voting Age by Decade

District	1990*	2000	2010	2020
1	42.24%	45.77%	48.6%	49.29%
2	23.91%	24.99%	26.3%	27.66%
3	28.49%	29.44%	30.9%	32.65%

* SR BVAP

32. The Enacted 1987 Plan dilutes Black voting strength. In particular, 1987 Supreme Court District 1 "cracks"[13] Mississippi's Black population because it does not encompass a number of majority-Black counties in the north Delta as well as the southwest corner of the state. Instead, Supreme Court District 1 extends east from the Delta into a predominantly White area within the confines of the Appalachian Regional Commission ("ARC")—a distinct regional, cultural, and economic community of interest separate from the Delta.[14]

33. As shown in the map in **Exhibit D**, the ARC area extends south and west from the foothills of Tishomingo County to a band of counties[15] in the mid-section of the state—following the trajectory of the historical Natchez Trace (the land route into Mississippi for many 19th Century White settlers) and the modern-day Tennessee-Tombigbee Waterway.

34. To be sure, two more sparsely-populated Black-majority ARC counties—Noxubee and Kemper, with a combined 2020 total population of

[13] "Cracking" is a term used by redistricting practitioners to identify election districts that unnecessarily fragment or divide the minority population, resulting in an overall dilution of minority voting strength in the voting plan

[14] Appalachian Regional Commission, "About the Appalachian Region," https://www.arc.gov/about-the-appalachian-region/.

[15] The counties in Mississippi that are part of the ARC include Alcorn, Benton, Calhoun, Chickasaw, Choctaw, Clay, Itawamba, Kemper, Lee, Lowndes, Marshall, Monroe, Montgomery, Noxubee, Oktibbeha, Panola, Pontotoc, Prentiss, Tippah, Tishomingo, Union, Webster, Winston, and Yalobusha. *See* Appalachian Regional Commission, "Mississippi," https://www.arc.gov/mississippi/.

19,273—are in 1987 Supreme Court District 1, but the other counties east of the Delta in District 1 are all majority-White.

35. As shown in the **Figure 6** map, the 1987 Plan splits five of the ten regional planning districts—North Central, Central, East Central, Golden Triangle and Southwest. Supreme Court District 1 contributes to each one of those splits. South Delta is the only planning district entirely in Supreme Court District 1.

36. A higher resolution version of the 1987 Plan as depicted in **Figure 6** is in **Exhibit E-1**. Summary population statistics, applying the 2020 Census data to the boundaries from the 1987 Plan, are in **Figure 8** below, with additional population details in **Exhibit E-2. Exhibit E-3** identifies county assignments by district.

37. At the time of enactment, in terms of Black voting strength, there was almost no difference between the 1987 Plan and the 1942 Plan. Under the 1990 Census, 1942 Plan Supreme Court District 1 contained a 41.08% BVAP—a mere 1.2% lower than the BVAP of District 1 under the 1987 Plan.[16]

38. Today, 35 years later and after more than three decades of statewide Black population growth and White population decline, 1987 Supreme Court

[16] Voting age by race and ethnicity was not reported in the 1980 PL-94 171 file.

District 1 is only a 4 percentage-point plurality BVAP district (49.29% BVAP, 45.35% NH White VAP), as shown in the table in **Figure 8**.

39. Moreover, and perhaps unsurprisingly given that there has been no redistricting in over 30 years, the population deviation among the districts is greater than 10%, which in the state legislative context would be considered a presumptive violation of "one person, one vote" principles.

Figure 8: Current 1987 Plan – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	933847	-5.39%	716402	49.29%	2.54%	45.35%
2	1037093	5.07%	796767	27.66%	3.65%	64.94%
3	990339	0.33%	764430	32.65%	2.79%	61.90%

40. Furthermore, even that slight plurality may disappear when the effects of felony disenfranchisement in Mississippi are taken into account. Black people of voting age are disproportionately disenfranchised in Mississippi due to a felony conviction. An analysis by *Mississippi Today* found that, from 1994 through 2017, 61% of Mississippians who lost their right to vote due to a felony conviction were Black, even though Black people represent only 36% of the state's voting age population.[17] A Fifth Circuit judge recognized this in a recent concurring opinion. *See Harness v. Watson*, 47 F.4th 296, 316 (5th Cir. 2022) (Ho, J., concurring in part

[17] Alex Rozier, *Racial disparity conspicuous among Mississippians banned from voting*, Mississippi Today (Feb. 22, 2018), https://mississippitoday.org/2018/02/22/racial-disparity-conspicuous-among-mississippians-banned-voting/.

and concurring in the judgment) (noting that Mississippi's felon disenfranchisement scheme "operates today to disproportionately disenfranchise African-Americans"); *id.* at 314–15 n.3 ("No one denies that there's a meaningful disparity between the disenfranchised population and the entire population of Mississippi.").[18] And there is no reason to conclude that this impact will diminish in the future – the population incarcerated in state facilities has climbed from 16,499 in 2017 to 18,000 in 2022.[19]

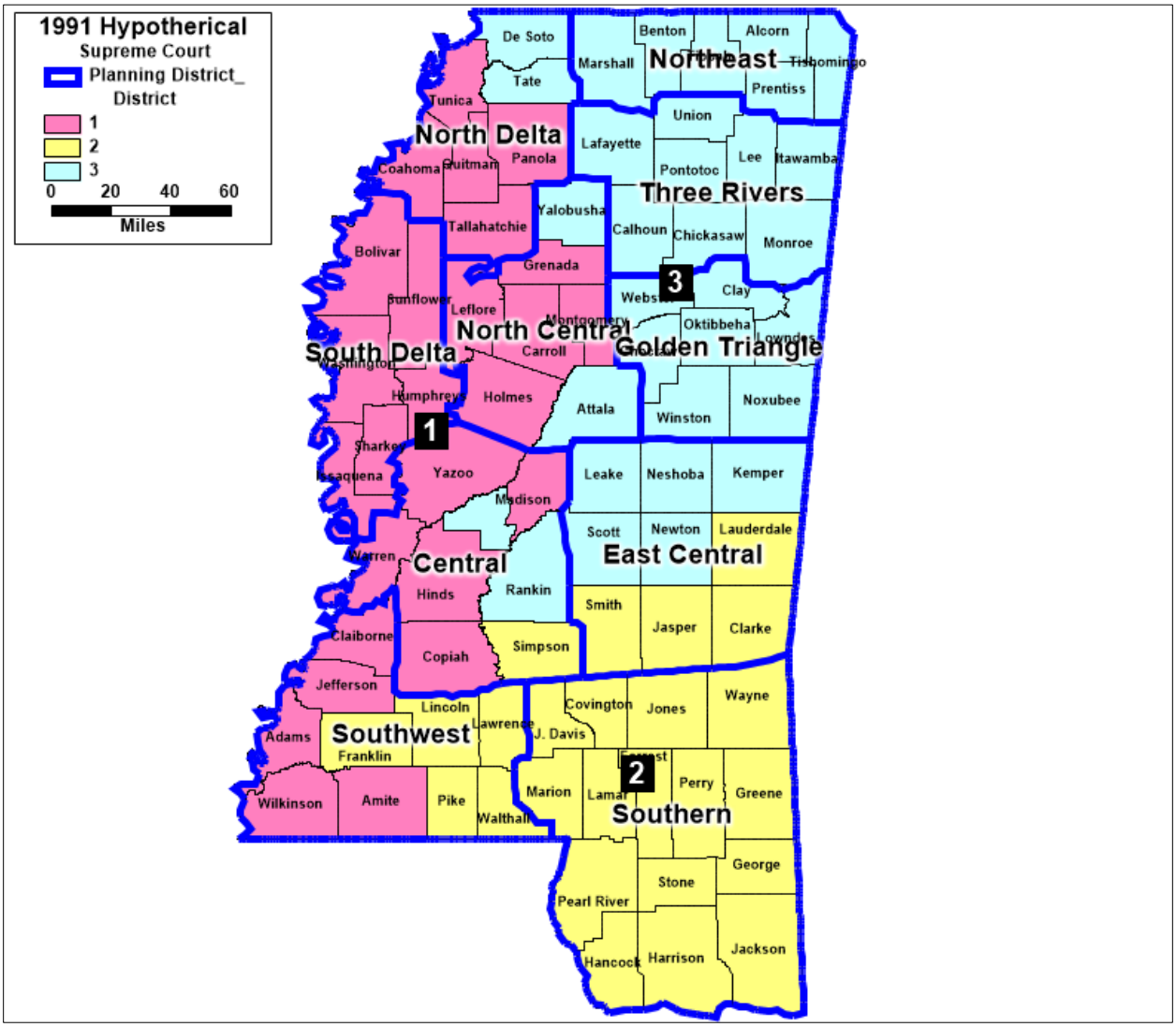
[18] The expert reports submitted in the underlying litigation reached the same conclusion. *See* Report of Dov Rothman at 3, *Harness v. Hosemann*, No. 3:17-cv-00791-DPJ-FKB, Dkt. 65-1 (S.D. Miss. Oct. 4, 2018) ("A greater percentage of the Disenfranchised Individuals (59 percent) . . . are black compared to the percentage of the citizen voting-age population of Mississippi that are black (36 percent), as reported by the U.S. Census Bureau for 2017."); Declaration of Matthew A. Williams at 2, *v. Hosemann*, No. 3:17-cv-00791-DPJ-FKB, Dkt. 75-12 (S.D. Miss. Oct. 4, 2018) ("[B]lack adults are 2.7 times more likely to have been convicted of a disfranchising crime than white adults.").

[19] Jerry Mitchell, *'Foolishly sticking with failed system': Mississippi leads the world in mass incarceration*, Jackson Clarion-Ledger (Aug. 13, 2022), https://www.clarionledger.com/story/news/2022/08/13/mississippi-has-more-inmates-per-capita-than-any-state-nation/10317601002/.

IV. HYPOTHETICAL 1990, 2000, AND 2010 SUPREME COURT PLANS

41. The map in **Figure 9** demonstrates that a majority-BVAP Supreme Court district in a three-district plan could have been drawn based on the 1990 Census.

Figure 9: Hypothetical 1991 Plan (1990 Census)



42. As shown in the map in **Figure 9**, the 1991 Hypothetical Plan is comprised of whole counties, except for a split along 1990 precinct lines in Madison County.[20]

43. The table in **Figure 10** presents decennial Census population statistics for the 1991 Hypothetical Plan. According to the 1990 Census, 1991 Hypothetical Supreme Court District 1 had an SR BVAP of 50.35%, with a deviation[21] of -4.63% (-39,732 persons) from the ideal district size of 857,739.[22] 1991 Hypothetical Supreme Court District 1 would have remained majority-Black over the course of the past 35 years.

Figure 10: 1991 Hypothetical Plan
Percent Black Voting Age by Decade

[20] *See* Mississippi Automated Resource Information System, *1990 Voting Precincts*, https://www.maris.state.ms.us/HTML/DATA/data_Political/1990VotingPrecincts.html#gsc. The 1990 precinct boundaries were established by the Mississippi Standing Joint Legislative Committee on Reapportionment for use in 1991 legislative redistricting.

[21] In the redistricting context, "deviation" refers to the difference between the populations of electoral districts. A deviation metric is calculated by summing the absolute value of the most underpopulated district deviation (a negative value representing the percentage by which a district population falls below the ideal size) plus the value of the most overpopulated district deviation (a positive value representing the percentage by which a district population is above the ideal size). The resulting summation is usually referred to as "total deviation."

[22] The Census Bureau estimates that there was a 2.6% undercount of Black persons in the 1990 Census. Put differently, 33,990 Black persons in Mississippi were missed in the 1990 enumeration. *See* U.S. Census Bureau, *Mississippi - Net Undercount and Undercount Rate for Counties (1990)*, https://www2.census.gov/programs-surveys/decennial/1990/data/undercounts/mississippi.pdf.

District	1990*	2000	2010	2020
1	50.35%	56.3%	61.0%	62.9%
2	22.98%	24.1%	26.0%	27.4%
3	23.48%	24.3%	25.9%	27.9%

* SR BVAP

44. According to the 2000 Census, by 2000 the 1991 Hypothetical Plan Supreme Court District 1 would have become underpopulated (-13.31%). However, based on the 2000 Census, a Hypothetical 2001 Supreme Court District 1 could have been drawn as a majority-Black district (53.1% AP BVAP, -0.67% deviation, **Exhibit F-1**) without splitting any counties. And a similar majority-Black Hypothetical 2011 Supreme Court District 1 could have been drawn under the 2010 Census (55.31% AP BVAP, -1.79% deviation, **Exhibit F-2**), also without splitting counties.

45. As the 1991, 2001, and 2011 Hypothetical Plans demonstrate, it has been possible to draw a Black-majority District 1 for decades, and it has been possible to do so with whole counties since at least 2001, all while maintaining acceptable population deviations. And, just as easily, the 1987 Plan can be modified to meet Section 2 requirements of the Voting Rights Act, as described in S**ection V**.

V. *GINGLES* 1 ILLUSTRATIVE PLANS

A. Illustrative Plans and Traditional Redistricting Principles

46. The two illustrative plans that I have developed contain three districts—each with one majority-Black district. Both illustrative plans comply with traditional redistricting principles, including compactness, contiguity, respect for communities of interest, and the non-dilution of minority voting strength, as well as ensuring that districts are not malapportioned.

47. The illustrative plans meet the first *Gingles* precondition, i.e., they demonstrate that the Black population in Mississippi is sufficiently numerous and geographically compact to allow for the creation of at least one 3-member majority-Black district.

48. There is no question that Mississippi's Black population is "geographically compact." For example, and by way of reference, the nine-single member district plan shown in **Exhibit G** contains three contiguous majority-Black VAP districts (Districts 4, 5, and 6)—demonstrating beyond a shadow of doubt that the Black population is compactly distributed north-to-south in and around the Delta.

B. Illustrative District Plans – Key Features

49. Key features of the two illustrative plans are summarized below:

- Consistent with the 1987 Plan, the illustrative plans follow county boundaries. There are no county splits.
- The illustrative plans generally follow state-defined regional Planning and Development district boundaries.
- The illustrative plans unite Black voters in the Delta in a majority-Black Supreme Court District 1—rather than dividing them between Districts 1 and 3, as under the 1987 Plan—thereby respecting the Delta as a significant cultural and historical community of interest in Mississippi.
- The illustrative plans also unite voters who live along the Mississippi River, as opposed to the three-way split created by the 1987 Plan. Delta voters concerned about water-related issues are, therefore, placed on an equal footing with voters in the Tennessee-Tombigbee region and the Gulf Coast, which are placed entirely within a single-judicial district under both the 1987 Plan and the illustrative plans.[23]
- Under the illustrative plans, Supreme Court District 1 aligns closely with the boundaries established for CD 2, Mississippi's Second Congressional District, under the 2022 Congressional Plan enacted by the State—boundaries that recognize a Delta-based, predominantly Black community of interest rather than fracturing that community as in the 1987 Plan.

- Under the illustrative plans, Illustrative Supreme Court District 3 encompasses most of the counties in the federally defined Appalachian Regional Commission, respecting that community of interest.
- Under the illustrative plans, approximately 50% of Mississippi's Black voting age population would live in a majority-Black district—up from 0% under the 1987 Plan.

[23] The flood-prone Pearl River cuts through the center of the state from Leake County to the Gulf. Its drainage area encompasses all three Supreme Court districts under the illustrative plans, as is the case with the 1987 Plan.

C. Illustrative Plan 1

50. The map in **Figure 10** depicts Illustrative Plan 1. A higher resolution version of Illustrative Plan 1 is in **Exhibit H-1**. Summary population statistics are in **Figure 11** below, with additional population details in **Exhibit H-2. Exhibit H-3** identifies county assignments by district.

51. Illustrative Plan 1 splits two planning districts—North Delta (placing DeSoto County in Supreme Court District 3) and Central (placing Rankin and Simpson Counties in Supreme Court District 2)—rather than five as in the 1987 Plan.

Figure 10: Illustrative Plan 1

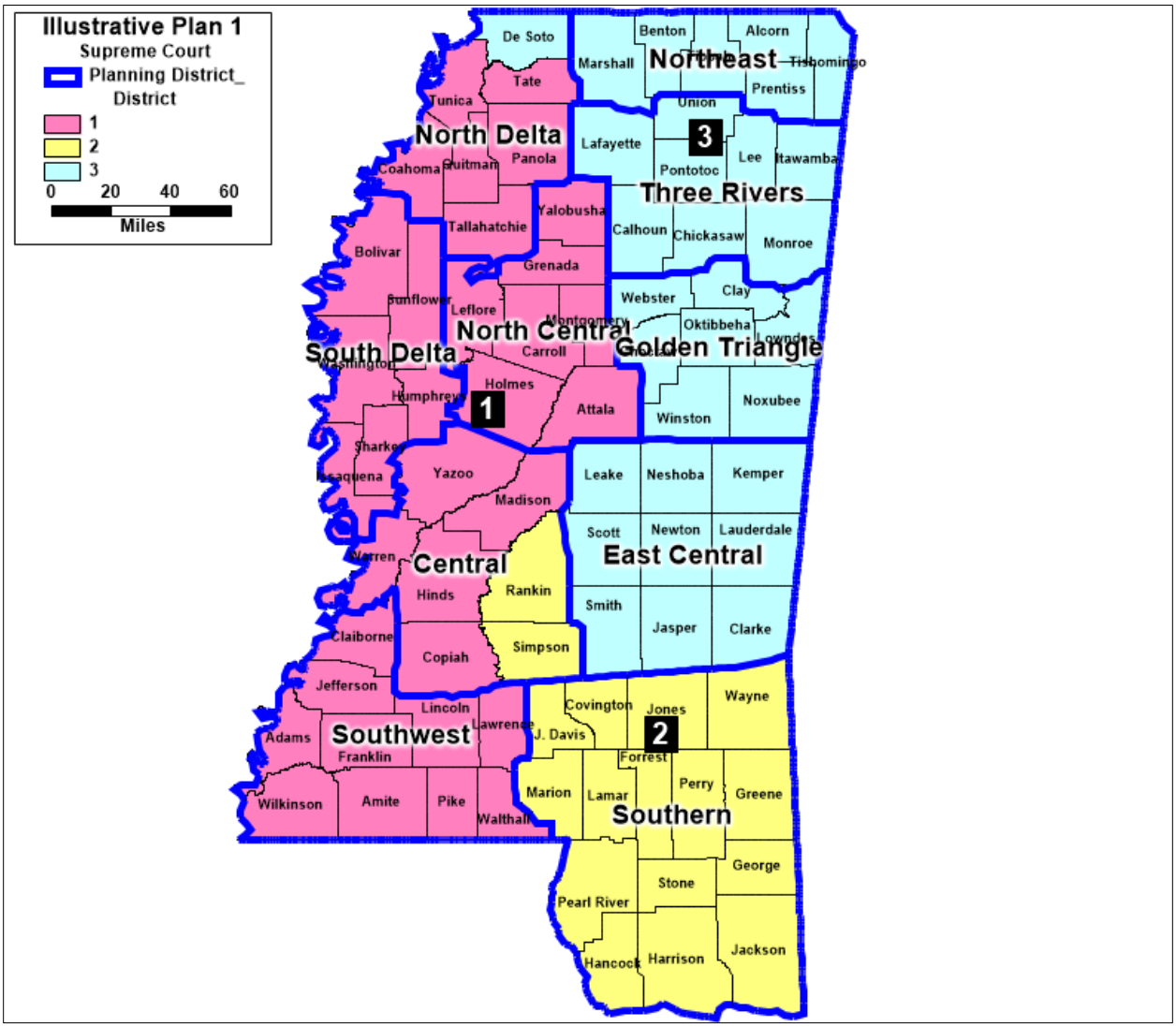


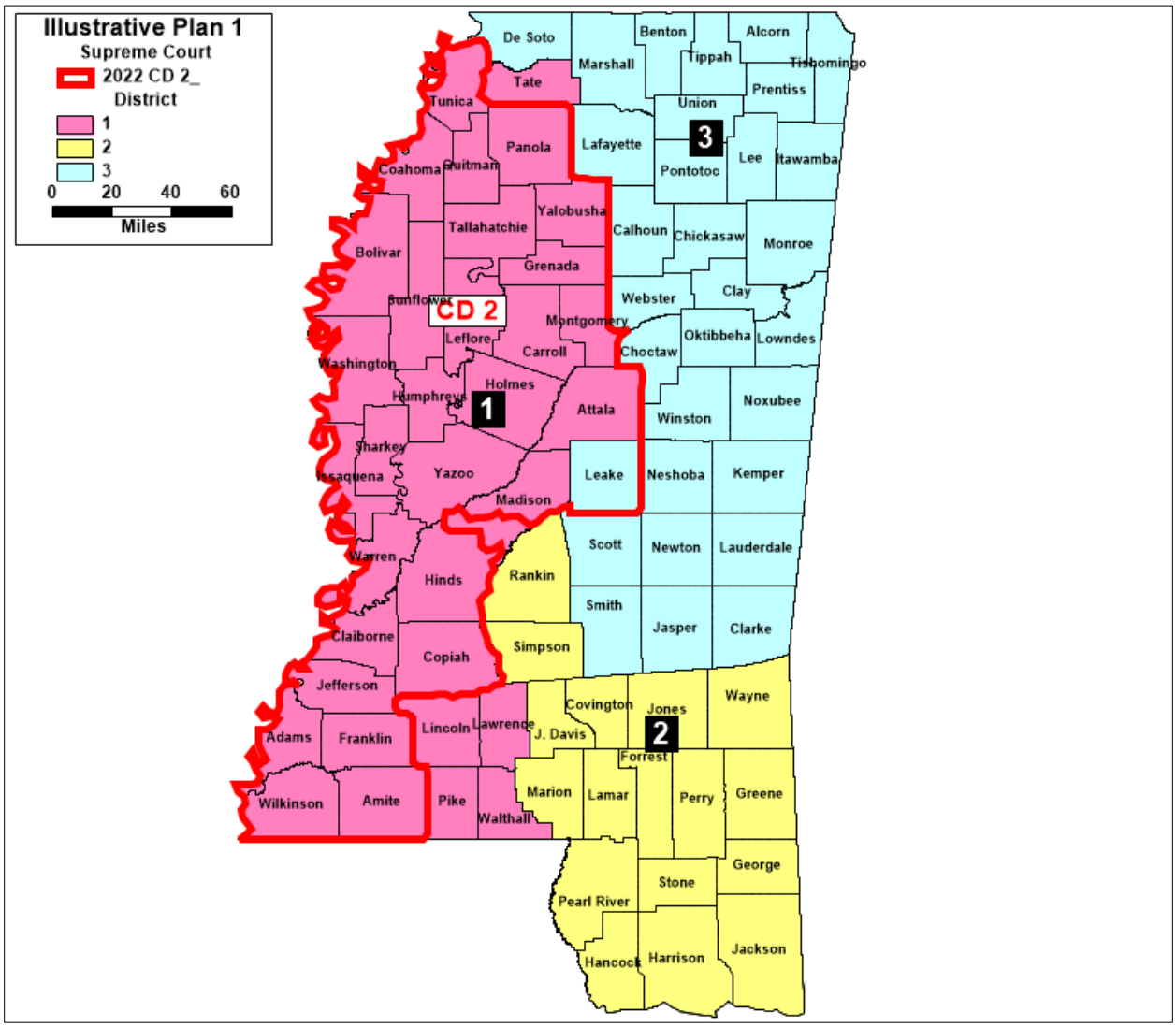
Figure 11: Illustrative Plan 1—2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	956060	-3.14%	737689	55.31%	2.04%	40.9%
2	988282	0.12%	757569	23.51%	3.96%	68.4%
3	1016937	3.02%	782341	30.29%	3.02%	63.4%

52. As shown **in Figure 12**, District 1 significantly resembles CD 2 in the 2022 Congressional Plan (red lines depict CD 2). Three quarters of the total

population in CD 2 (75.21%) is assigned to Supreme Court District 1 and 85.36% of the Black Population in CD 2 is in District 1.

Figure 12: Illustrative Plan 1 (and CD 2 overlay)



53. Under Illustrative Plan 1, District 1 (55.31% BVAP) generally follows CD 2 district lines north to south. In the north, Supreme Court District 1 extends beyond CD 2 to include Tate County (part of the historical Delta). Madison County is entirely in Supreme Court District 1 rather than split as with CD 2. South of

Copiah County, in order to minimize population deviation, Illustrative Supreme Court District 1 extends east beyond the CD 2 boundary to encompass all of the Southwest Planning District counties.

D. Illustrative Plan 2

54. The map in **Figure 13** depicts Illustrative Plan 2. A higher resolution version of Illustrative Plan 2 is in **Exhibit I-1**. Summary population statistics are in **Figure 14** below, with additional population details in **Exhibit I-2**. **Exhibit I-3** identifies county assignments by district.

Figure 13: Illustrative Plan 2

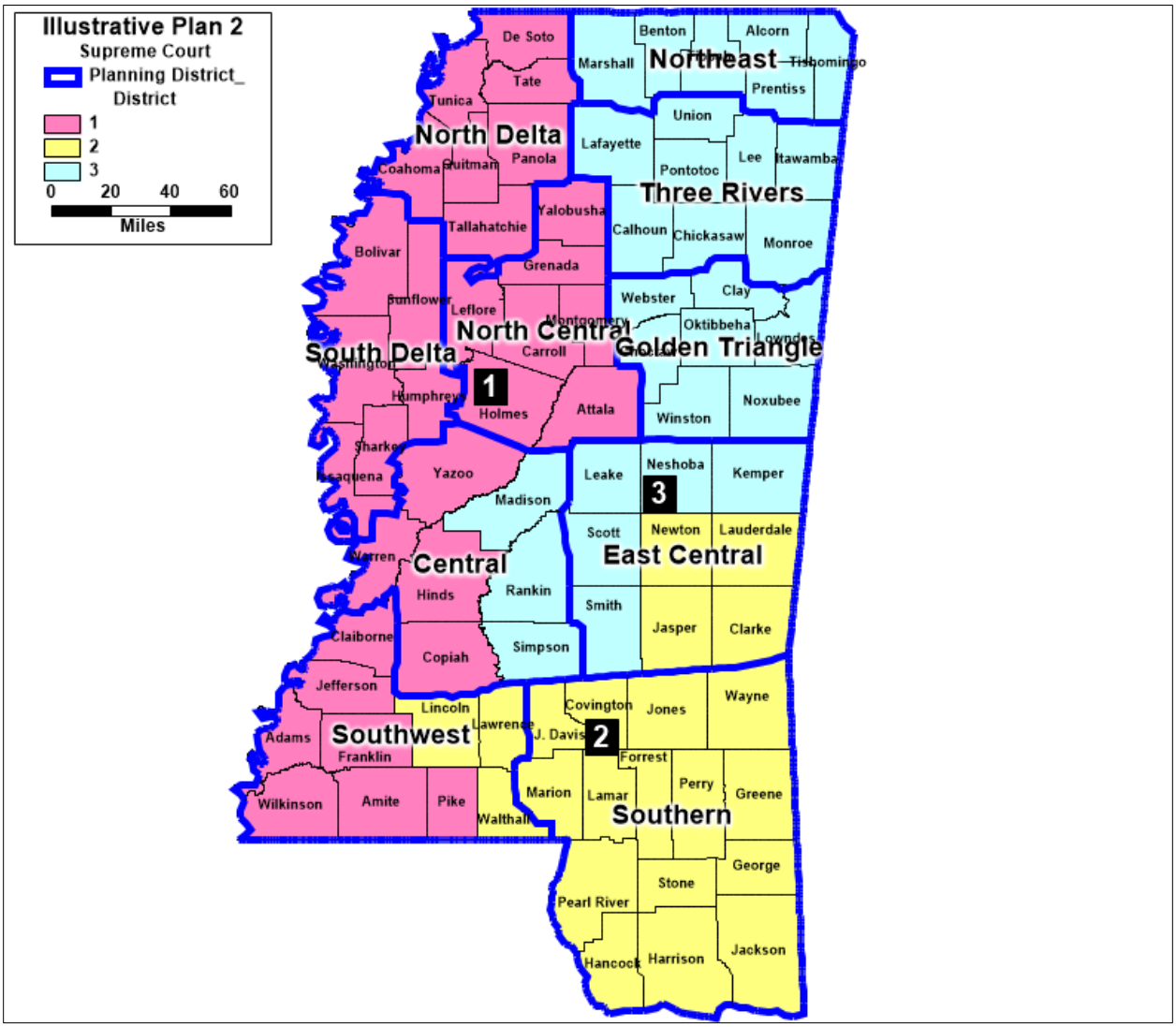


Figure 14: Illustrative Plan 2 – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	971422	-1.59%	746385	54.19%	2.45%	41.4%
2	997491	1.05%	770854	28.27%	2.84%	65.6%
3	992366	0.53%	760360	26.40%	3.75%	65.9%

55. Under Illustrative Plan 2, Supreme Court District 1 (54.2% BVAP) encompasses the entire historical Delta (including DeSoto County), as well as most of the counties in the Southwest Planning District.

56. Illustrative Plan 2 splits three planning districts. Two splits involve Supreme Court District 1– Central (placing the counties of Madison, Rankin, and Simpson in District 3) and Southwest (placing Lincoln, Lawrence, and Walthall in District 2).

VI. LEAST CHANGE PLANS

57. The illustrative plans demonstrate that there are viable remedies in this Section 2 lawsuit which are sufficient to satisfy *Gingles* 1. However, alternative plan configurations beyond those presented in the two main illustrative plans are also possible.

58. For example, compared to the illustrative plans, the two "least change plans" described below are sub-optimal in terms of Black voting strength in Supreme Court District 1 and preservation of regional communities of interest across all three districts. However, the least change plans still fare better than the 1987 Plan on those scores. And under the least change plans, fewer voters would be shifted from their current 1987 districts in the process of creating a Delta-anchored majority-Black Supreme Court 1 as compared to the illustrative plans.

A. Least Change Plan 1

59. The map in **Figure 15** depicts Least Change Plan 1. A higher resolution version of Least Change Plan 1 is in **Exhibit J-1**. Summary population statistics are in **Figure 16**, with additional population details in **Exhibit J-2**. **Exhibit J-3** identifies county assignments by district.

60. Least Change Plan 1 shifts Madison County from Supreme Court District 1 into District 3. In turn, five majority-Black counties in the northern Delta are moved into District 1—Coahoma, Leflore, Quitman, Tallahatchie, and Tunica. Two

majority-Black counties bordering the Mississippi River are moved into Supreme Court District 1 from District 2—Adams and Wilkinson. Least Change Plan 1 thus maintains the overall east-west configuration of the 1987 Plan, while also better uniting the Mississippi Delta and creating a majority Black District 1.

Figure 15: Least Change Plan 1

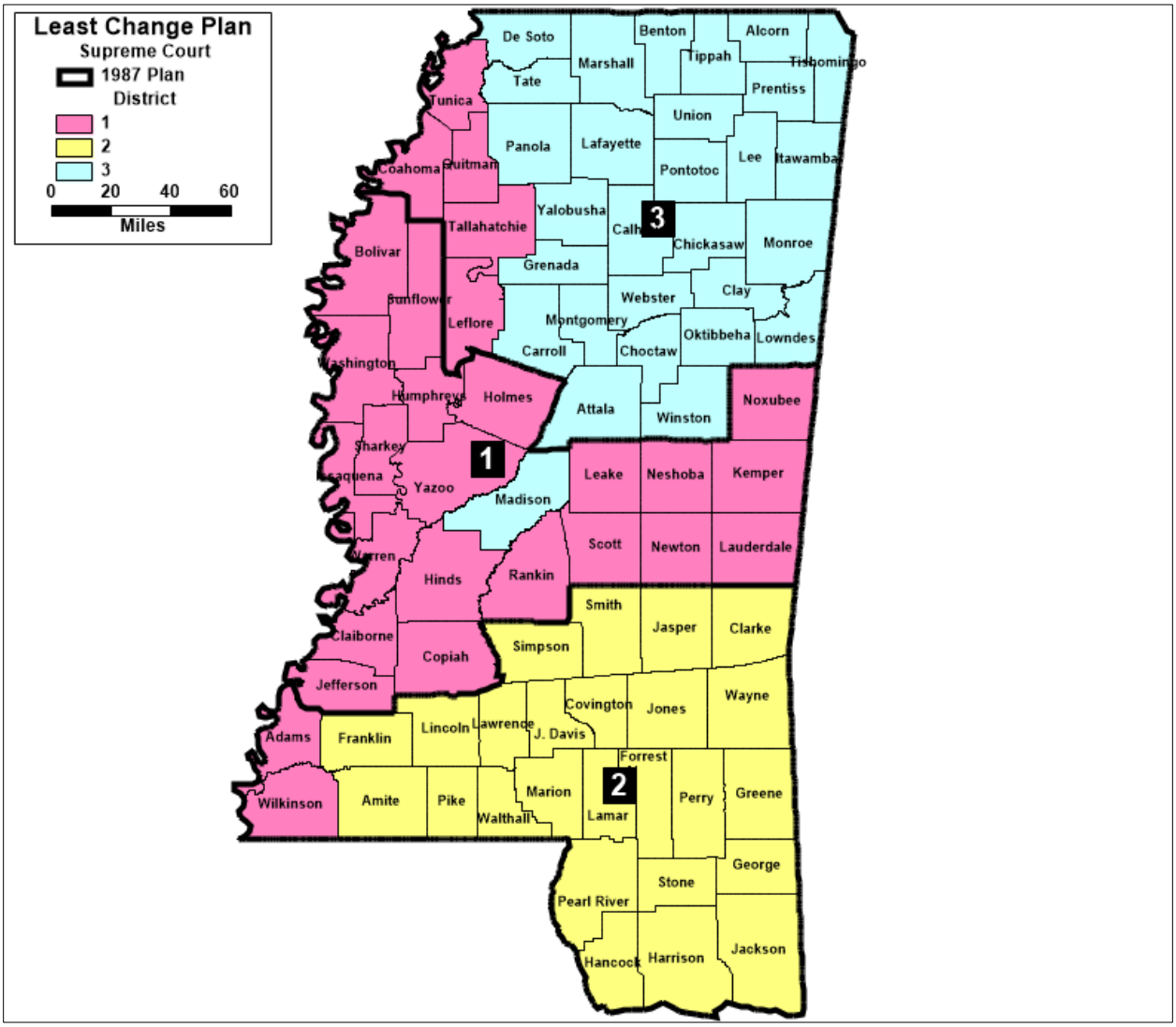


Figure 16: Least Change Plan 1 – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	941229	-4.65%	722892	53.00%	2.48%	42.1%
2	998968	1.20%	766360	26.46%	3.67%	66.0%
3	1021082	3.44%	788347	30.09%	2.87%	64.1%

B. Least Change Plan 2

61. The map in **Figure 17** depicts Least Change Plan 2. Summary population statistics are **Figure 18**. A higher resolution version of Least Change Plan 2 is in **Exhibit K-1**. Summary population statistics are **Figure 15**, with additional population details in **Exhibit K-2**. **Exhibit K-3** identifies county assignments by district.

62. Least Change Plan 2 also maintains the overall east-west configuration of the 1987 Plan. Under Least Change Plan 2, Madison County remains in Supreme Court District 1. Like Least Change Plan 1, five majority-Black counties in the northern Delta are moved into District 1 from District 3– Coahoma, Leflore, Quitman, Tallahatchie, and Tunica. Leake and Neshoba Counties are moved into District 3 from District 1. District 2 is completely unchanged from the 1987 Plan.

Figure 17: Least Change Plan 2

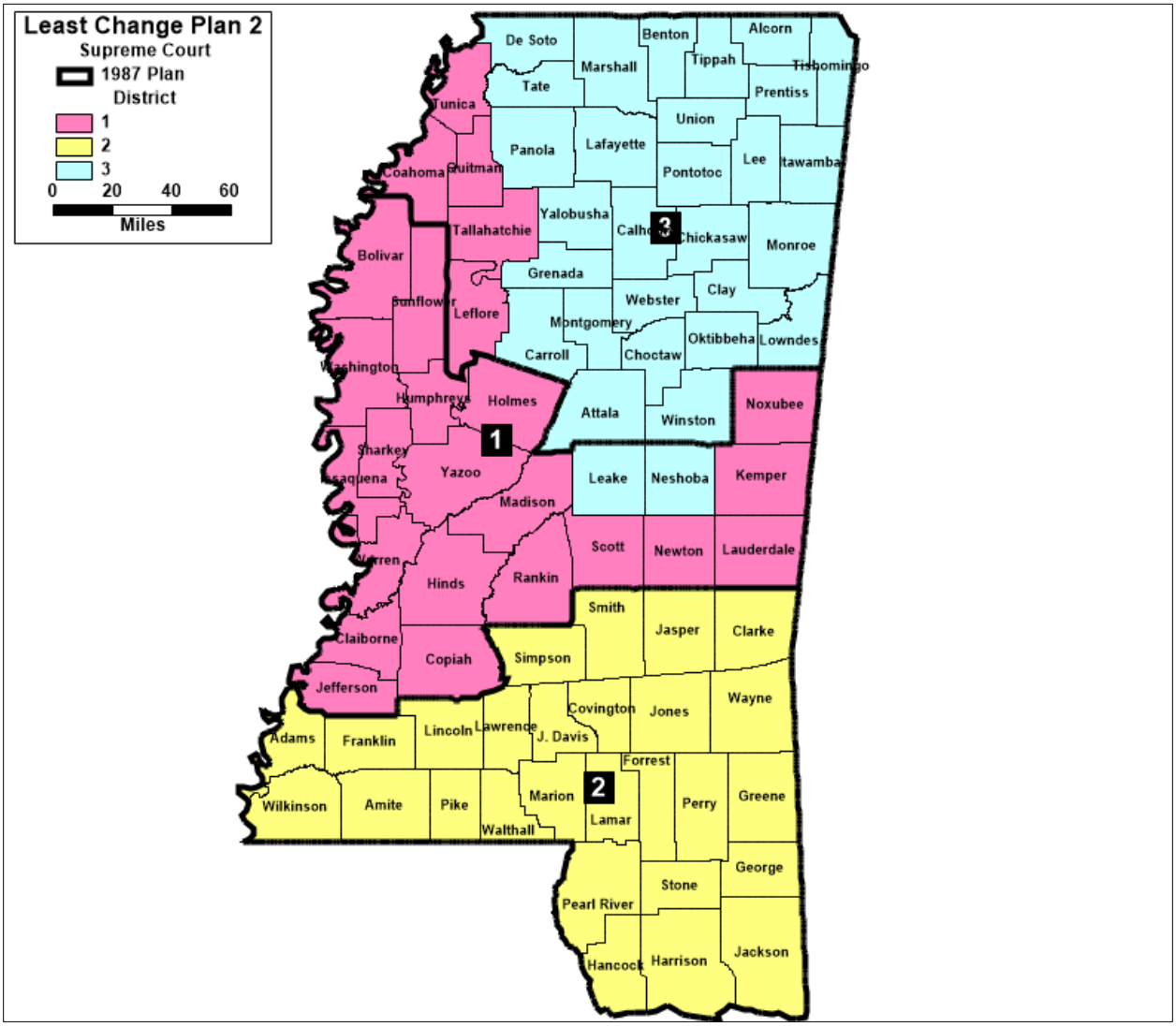


Figure 18: Least Change Plan 2 – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	961887	-2.55%	738384	52.01%	2.52%	43.3%
2	1037093	5.07%	796767	27.66%	3.65%	64.9%
3	962299	-2.51%	742448	29.45%	2.82%	64.5%

VII. SOCIOECONOMIC PROFILE OF MISSISSIPPI

63. As in most other Section 2 cases where I have served as an expert, I also reviewed the socioeconomic statistics for Mississippi published by the Census Bureau in the *American Community Survey* ("ACS").

64. In Mississippi, African Americans trail NH whites across most key indicators of socioeconomic well-being. This disparity is summarized below and depicted with further detail in the charts in **Exhibit L-1** and the table **in Exhibit L-2**, as reported in *Table S0201* from the *2021 1-year ACS*.[24]

(a) Income

- 30.9% of African Americans in Mississippi live in poverty, compared to 11.5% of Whites. (**Exhibit L-1 at p. 2** and **Exhibit L-2 at p. 11**)

- 44.5% of African-American children live in poverty, compared to 12.9% of White children. (**Exhibit L-1 at p. 2** and **Exhibit L-2 at p.11**)

- African-American median household income is $33,541, compared to the $61,318 median income for White households. (**Exhibit L-1 at p. 5** and **Exhibit L-2 at p.9**)

- Per capita income disparities in Mississippi track the disparities seen in median household income. African-American per capita income is $18,368, compared to White per capita income of $33,374. (**Exhibit L-1 at p. 7** and **Exhibit L-2 at p. 10**)

[24] U.S. Census Bureau, "Selected Population Profile in the United States," https://data.census.gov/cedsci/table?text=s0201&t=001%3A005%3A451&g=0400000US28&y=2021&tid=ACSSPP1Y2021.S0201&moe=false&tp=false. For statistics from the 1-year ACS, as elsewhere in this declaration, "White" refers to NH White. "Black" or "African American" refers to Any Part Black.

- 24.6% of African-American households rely on food stamps (SNAP), more than triple the 7.0% SNAP participation rate of White households. (**Exhibit L-1 at p. 8** and **Exhibit L-2 at p. 10**)

(b) Education

- Of persons 25 years of age and over, 17.9% of African Americans have not finished high school, compared to 10.1% of their White counterparts. (**Exhibit L-1 at p. 10** and **Exhibit L-2 at p. 3**)

- At the other end of the educational scale, for ages 25 and over, 18.2% of African Americans have a bachelor's degree or higher, compared to 28.6% of Whites. (**Exhibit L-1 at p. 10** and **Exhibit L-2 at p. 4**)

(c) Employment

- The Black unemployment rate (for the population over 16, expressed as a percent of the civilian labor force) is 10.5%, compared to a 3.9% White unemployment rate. (**Exhibit L-1 at p. 12** and **Exhibit L-2 at p. 6**)

- Of employed African Americans, 26.2% are in management or professional occupations, compared to 41.1% rate of Whites. (**Exhibit L-1 at p. 13** and **Exhibit L-2 at p. 7**)

(d) Housing

- In Mississippi, a little over half of African-American householders (53.8%) are homeowners, while more than three quarters of White households (80.1%) are owner-occupied. (**Exhibit L-1 at p. 14** and **Exhibit L-2 at p. 12**)

- Median home value for African-American homeowners is $95,800, compared to the $162,200 median home value for Whites. (**Exhibit L-1 at p. 15** and **Exhibit L-2 at p. 13**)

(e) Transportation/Communication

- One in ten African-American households (10.0%) lacks access to a vehicle, while 4.3% of White households are without a vehicle. (**Exhibit L-1 at p. 17** and

Exhibit L-2 at p. 12)

- There is about a four-point Black-White gap in households with a computer, smartphone or tablet—88.7% versus 93.0%. (**Exhibit L-1 at p. 18** and **Exhibit L-2 at p. 13**)

- With respect to broadband internet connections, African-American households trail White households—77.1% versus 84.4%. (**Exhibit L-1 at p. 18** and **Exhibit L-2 at p. 13**)

65. Based on the 2020 Census, 39.5% of the Black population in Mississippi lives in the area encompassed by CD 2 under the 2011 Plan. **Exhibit M-1** and **M-2** report socioeconomic disparities specific to 2011 CD 2, according to the 2021 ACS. [25]

66. In addition, I have prepared socioeconomic contrast charts by race and ethnicity for all counties, municipalities, and unincorporated places with populations greater than 2,500 (and 10% or more SR Black), available via the link: http://www.fairdata2000.com/ACS_2015_19/Mississippi/.[26]

67. The 5-year 2015-2019 ACS charts make clear that the statewide and CD 2-level socioeconomic disparities by race also exist at the county and municipal levels throughout Mississippi.

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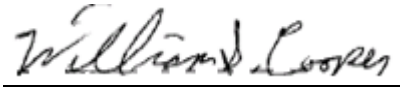
[25] Socioeconomic statistics for the 2022 Congressional Plan will not be available until the 1-year 2022 ACS is published in September 2023.

[26] These charts are from the 5-year 2015-2019 ACS. The 5-year ACS estimates are based on single-race Black (including Hispanic Black). Any Part Black estimates are not available in the 5-year ACS. The charts and data tables I have prepared also report corresponding estimates for the Latino and NH White population.

+++

I reserve the right to amend or supplement my report in light of additional facts, testimony and/or materials that may come to light. Pursuant to 28 U.S.C. 1746, I declare under penalty of perjury of the laws of the United States that the foregoing is true and correct according to the best of my knowledge, information, and belief.

Executed on October 3, 2022.



WILLIAM S. COOPER

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., Plaintiffs, vs. STATE BOARD OF ELECTION COMMISSIONERS, et al., Defendants.	No. 4:22cv62-MPM-JMV

DECLARATION OF WILLIAM S. COOPER

WILLIAM S. COOPER, acting in accordance with 28 U.S.C. § 1746, Federal Rule of Civil Procedure 26(a) (2) (B), and Federal Rules of Evidence 702 and 703, does hereby declare and say:

I. INTRODUCTION

A. Redistricting Experience

1. My name is William S. Cooper. I have a B.A. in Economics from Davidson College. As a private consultant, I was retained as a demographic and redistricting expert for the Plaintiffs. I am compensated at a rate of $150 per hour, and my compensation is not contingent on the outcome of this litigation. I reserve the right to continue to amend or supplement my reports, including in light of

additional facts, testimony, and/or materials that may come to light over the course of the discovery period in this case.

2. I have been accepted as an expert trial witness on redistricting and demographics in about 50 federal-court voting rights cases across 18 states, including Mississippi. Five of those cases resulted in changes to statewide legislative boundaries.[1] Approximately 25 of those cases led to changes in local election district plans.[2] My testimony in such cases almost always includes a review of the demographics and socioeconomic characteristics of the jurisdiction or jurisdictions at issue. In Voting Rights Act cases, I also typically produce one or more illustrative districting plans for the jurisdiction.

3. In 2022, I have testified as an expert in redistricting and demographics in six cases challenging district boundaries under Section 2 of the Voting Rights Act: *Caster v. Merrill*, No. 21-1356-AMM (N.D. Ala.), *Pendergrass v. Raffensperger*, No. 21-05337-SCJ (N.D. Ga.), *Alpha Phi Alpha Fraternity v. Raffensperger*, No. 21-05339-SCJ (N.D. Ga.), *NAACP v Baltimore County,* No.21-cv-03232-LKG

[1] The five are *Rural West Tennessee African-American Affairs Council, Inc. v. McWherter*, No. 92-cv-2407 (W.D. Tenn.); *Old Person v. Brown*, No. 96-cv-0004 (D. Mont.); *Bone Shirt v. Hazeltine*, No. 01-cv-3032 (D.S.D.); *Alabama Legislative Black Caucus v. Alabama*, No. 12-cv-691 (M.D. Ala.); and *Thomas v. Reeves*, No. 18-cv-441 (S.D. Miss.). In *Bone Shirt*, the court also adopted the remedial plan I developed.

[2] I have also served as an expert witness on demographics in trials relating to issues other than voting and redistricting. For example, I served as an expert in *Stout v. Jefferson County Board of Education*, No. 2:65-cv-00396-MHH (N.D. Ala.), a school desegregation case involving the City of Gardendale, Alabama.

(Md.), *Christian Ministerial Alliance v. Hutchinson* No. 4:19-cv-402-JM (E.D. Ar.), and *Robinson v. Ardoin*, No. 3:22-cv-00211-SDD-SDJ (M.D. La.). I also testified at trial this year as an expert on demographics in *NAACP v. Lee*, No. 4:21cv187-MW/MAF (N.D. Fla.), a case involving recent changes to Florida election law.

4. With respect to my work in Mississippi, I served as an expert witness in redistricting and demographics in *Thomas v. Reeves*, No. 18-cv-441 (S.D. Miss.), a Voting Rights Act case which resulted in the revision of Mississippi State Senate District lines in the Mississippi Delta. In addition to the *Thomas* case, I have testified at trial in two other state-level voting lawsuits in Mississippi: *NAACP v. Fordice* in 1999, which involved the districts used for the Public Service Commission and Transportation Commission, and *Smith v. Clark* in 2002, which involved congressional redistricting in Mississippi.

5. I have also testified at trial over the past three decades as a redistricting and demographics expert in several local-level voting cases in Mississippi—in the 1990s[3], 2000s[4], and 2010s[5].

[3] *See, e.g.*, *Addy v. Newton County*, No. 4:95cv39 (S.D. Miss.); *Gunn v. Chickasaw County*, No.87cv165 (N.D. Miss).

[4] *See, e.g.*, *Fairley v. Hattiesburg*, No. 2:06cv167-KS-MTP (S.D. Miss.); *Boddie v. Cleveland School District*, No. 4:07cv63-M-B (N.D. Miss.).

[5] *Fairley v. City of Hattiesburg*, No. 2:13cv18–KS–MTP (S.D. Miss.).

6. I have also developed election plans that were adopted by the following local governing bodies in Mississippi: in the 1990s—Webster County; in the 2000s—Bolivar County and Webster County; and in the 2010s—Bolivar County, Claiborne County, and the City of Grenada. I currently serve as a post-2020 redistricting consultant to the Bolivar County Board of Supervisors, Washington County Board of Supervisors, and the City of Grenada Council.

7. For additional historical information on my testimony as an expert witness and experience preparing and assessing proposed redistricting maps for Section 2 litigation, see a summary of my redistricting work attached as **Exhibit A.** A listing of Mississippi voting cases where I have filed declarations but did not testify at trial is also available in **Exhibit A**. Six of the lawsuits where I filed declarations resulted in changes to local redistricting plans.

B. Purpose of Report

8. The attorneys for the Plaintiffs in this case have asked me to determine whether the Black population in Mississippi is "sufficiently large and geographically compact"[6] to allow for one of the three at-large districts for the

[6] *Thornburg v. Gingles*, 478 U.S. 30, 50 (1986).

Mississippi Supreme Court to be drawn with a majority Black voting age population ("BVAP"), consistent with traditional districting principles.

9. The attorneys also asked me to review historical and current demographics (reported in the decennial Census published by the U.S. Census Bureau), as well as socioeconomic characteristics reported in the annual releases of the *American Community Survey* ("ACS") for African Americans and non-Hispanic Whites.[7]

10. **Exhibit B** describes the sources and methodology I have employed in the preparation of this report and the illustrative plans described below.

C. Summary of Expert Conclusions

11. I have reached the following conclusions:

- Based on the 2020 Census, Black Mississippians are sufficiently numerous and geographically compact to allow for one majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court. A number of illustrative plans can be drawn that are consistent with traditional districting principles and that do not split a single county.

[7] In this report, "Black" and "African American" are synonymous, as are "Latino" and "Hispanic," and "White" and "non-Hispanic White." Unless otherwise noted, beginning with the 2000 Census, "Black" refers to persons of all ages who are any part Black ("AP Black"), i.e., single-race Black or more than one race and some part Black. Prior to the 2000 Census, the AP Black count cannot be derived from the PL-94-171 file used for redistricting. The "AP Black" classification includes all persons who self-identified in the Census as single-race Black or some part Black, including Hispanic Black. It is my understanding that following the U.S. Supreme Court decision in *Georgia v. Ashcroft*, 539 U.S. 461 (2003), the "Any Part" definition is the appropriate Census classification to use in most Section 2 cases.

- In addition, Black Mississippians have been sufficiently numerous and geographically compact to allow for one majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court based on the prior decennial Census numbers from 1990, 2000, and 2010.

- As reported in the 1-Year *2021 ACS*, a demographic survey published by the U.S. Census Bureau, in Mississippi non-Hispanic Whites significantly outpace Black Mississippians across most key indicators of socioeconomic well-being, including employment rates, household income, and homeownership.

D. Organization of Report

12. The remainder of this declaration is organized as follows:

13. **Section II** reviews current and historical demographics at the statewide, regional, and county-level.

14. **Section III** examines the three-district Supreme Court plan in effect for elections from 1987 to the present, as well as its immediate predecessor, the three-district 1942 Plan.

15. **Section IV** presents a hypothetical plan demonstrating that a three-member majority-Black VAP Supreme Court district could have been drawn under the 1990 Census and would have remained majority-Black VAP through the 2020 Census.

16. **Section V** presents two illustrative plans based on the 2020 Census. Like the 1987 Plan, both plans contain three three-member districts. Unlike the 1987 Plan, both plans contain one district with a majority-Black VAP.

17. **Section VI** presents two additional "least change" demonstrative plans, which provide for one three-member majority-Black VAP district as part of a three-district plan for the Mississippi Supreme Court while limiting the number of voters and counties that would be shifted from the 1987 Plan.

18. **Section VII** summarizes data from the U.S. Census Bureau documenting socioeconomic disparities experienced by Black Mississippians when compared with their White counterparts, as reported in the *American Community Survey*.

II. DEMOGRAPHIC PROFILE OF MISSISSIPPI

A. Statewide Population – 2010 to 2020

19. The table in **Figure 1** presents the population of Mississippi by race and ethnicity for the 2010 and 2020 decennial censuses.

Figure 1: Mississippi – 2010 to 2020 Census Population by Race and Ethnicity

All Ages	2010	Percent of Total Population	2020	Percent of Total Population	2010-2020 Change	Percent 2010-2020 Change
Total Population	2,967,297	100.00%	2,961,279	100.00%	-6,018	-0.20%
NH White*	1,722,287	58.04%	1,639,077	55.35%	-83,210	-4.83%
Total Minority Pop.	1,245,010	41.96%	1,322,202	44.65%	77,192	6.20%
Latino	81,481	2.75%	105,220	3.55%	23,739	29.13%
NH Black*	1,093,512	36.85%	1,079,001	36.44%	-14,511	-1.33%
NH Asian*	25,477	0.86%	32,305	1.09%	6,828	26.80%
NH Hawaiian and PI*	948	0.03%	1,037	0.04%	89	9.39%
NH American Indian and Alaska Native	13,845	0.47%	14,019	0.47%	174	1.26%
NH Other*	1,828	0.06%	7,174	0.24%	5,346	292.45%
NH Two or More Races	27,919	0.94%	83,446	2.82%	55,527	198.89%
SR Black (Single-race Black)	1,098,385	37.02%	1,084,481	36.62%	-13,904	-1.27%
AP Black (Any Part Black)	1,115,801	37.60%	1,123,613	37.94%	7,812	0.70%

* Single-race, non-Hispanic.

20. According to the 2020 Census, non-Hispanic Whites comprise 55.35% of the population in Mississippi—down from 58.04% in 2010. African Americans are the next largest racial/ethnic category, representing 37.94% of the population in 2020—the highest proportion of any state in the nation and up slightly from 37.60% in 2010. Latinos registered sharp gains between 2010 and 2020, representing 3.55% of the statewide population in 2020—up from 2.75% in 2010.

B. Statewide Voting Age Population (1990 to 2020)

21. As shown in **Figure 2**, in percentage terms, the statewide BVAP has steadily increased over the past 30 years—from 31.63% in 1990 to 36.14% in 2020. During that same time period, the NH White VAP has dropped by nearly ten percentage points, from 67.49% in 1990 to 57.76% in 2020.

Figure 2: Mississippi – 1990 to 2020 Census
Percent Voting Age Population by Race and Ethnicity

	1990	% 1990	2000	% 2000	2010	% 2010	2020	% 2020
Total	1,826,455	100.00%	2,069,471	100.00%	2,211,742	100.0%	2,277,599.	100.0%
Black	577,669	31.63%	688,994	33.29%	773,869	34.99%	823,080	36.14%
NH White	1,232,687	67.49%	1,327,768	64.16%	1,348,246	60.96%	1,315,451.	57.76%

C. Distribution of Mississippi's Black Population

22. In the 19th Century, enslaved African Americans began populating the Mississippi Delta via the Mississippi River.[8] Today, much of the Black population in Mississippi lives in the Delta and adjacent counties—spanning the length of the Mississippi River from DeSoto County in the north to Wilkinson County in the south.

[8] *See* "Delta," *Mississippi Encyclopedia*, https://mississippiencyclopedia.org /entries/delta/. According to the Mississippi Encyclopedia: "The core counties of the Delta are Bolivar, Coahoma, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tunica, and Washington. The counties of Carroll, DeSoto, Grenada, Holmes, Panola, Tallahatchie, Tate, Warren, and Yazoo contain alluvial deposits as well and have been part of the Delta's human history."

23. The map in **Figure 3** depicts 2020 Black population percentage by county, with transparent overlays. Blue lines identify the state's ten Planning and Development Districts ("planning districts" or PDDs)), which are Mississippi's official sub-state regions and are used to define regional boundaries for various administrative, planning, and development purposes.[9] Red lines depict areas where the boundaries of current majority-Black Congressional District 2 ("CD 2") diverge from planning district boundaries.[10]

24. In addition to existing district lines such as CD 2, Mississippi's planning districts are a useful reference point for constructing electoral districts in the state. In the 1960s, local Mississippi officials created the PDDs as an administrative and governance structure to "allow communities to collectively address problems."[11] Since then, "each PDD [has] represent[ed] a distinctly different region of the state," and each district's responsibilities span "community and economic development," "health and social services," "small business assistance," "workforce development," "loan assistance," and Medicaid case management, among other "local needs and

[9] *See, e.g.*, Miss. Assoc. of Planning and Dev. Districts, "2022 Directory," http://mspdds.org/directory/.

[10] Specifically, CD 2 excludes DeSoto and Tate Counties in the North Delta PD and excludes Lincoln, Pike, Lawrence, and Walthall Counties in the Southwest PD. On the other hand, CD 2 extends east of the Delta to include Leake County in the East Central PD.

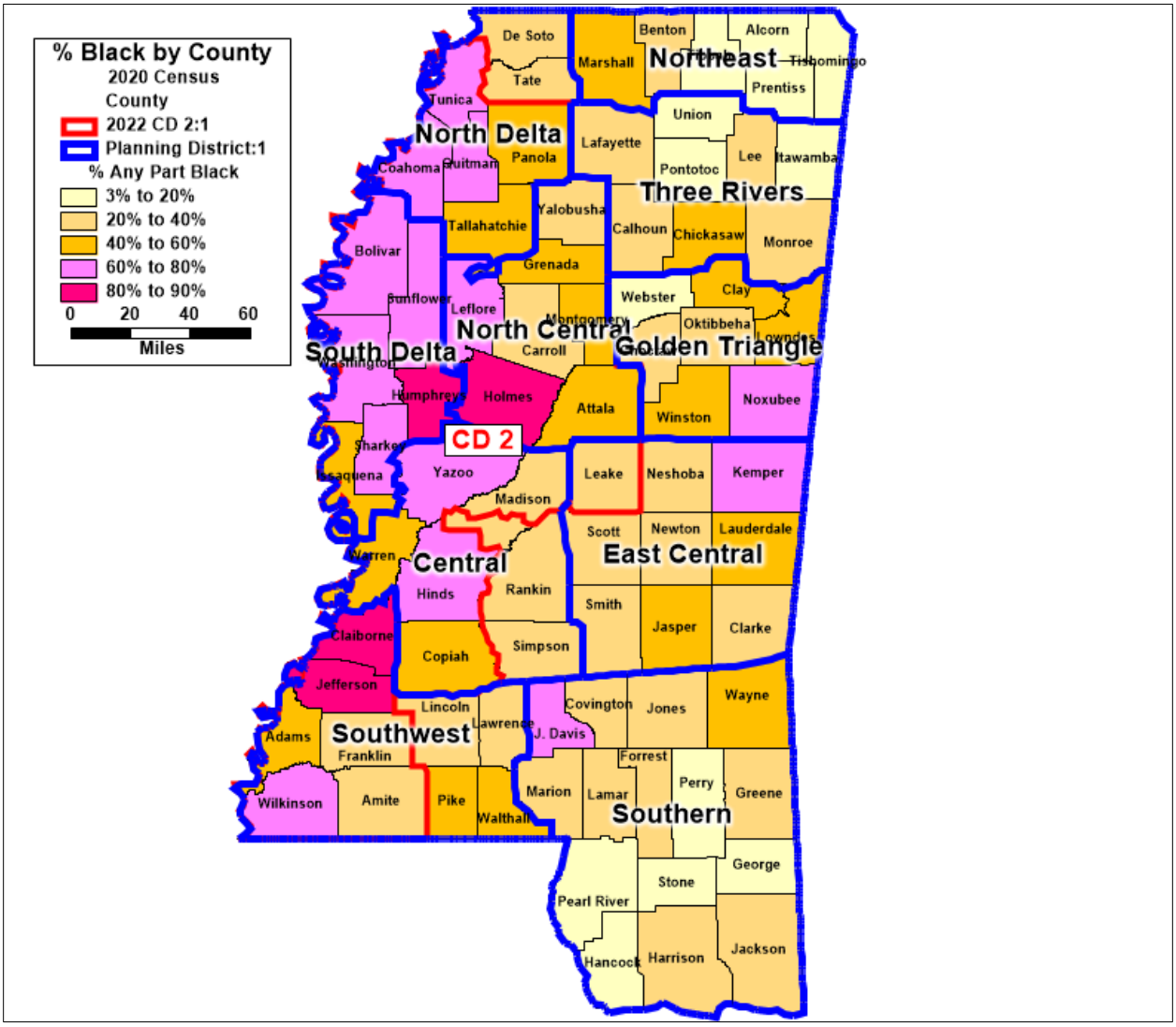
[11] Miss. Assoc. of Planning and Dev. Districts, "What is a PDD," http://mspdds.org/what-is-a-pdd/.

priorities."[12] As such, PDD boundaries, by definition, delineate parts of Mississippi that share policy interests.

25. **Exhibit C-1** is a higher resolution version of the **Figure 3** map. **Exhibit C-2** reports total population and Black population percentage by county for the 1990 through 2020 decennial censuses.

[12] *Id.*

Figure 3: 2020 Percent Black by County
Planning Districts (blue lines) and 2022 CD 2 (red)



26. **Figure 4** reveals that about 58% (651,798 of 1.12 million) of Black Mississippians live in the five planning districts running north-south along the Mississippi and Yazoo Rivers—North Delta, South Delta, North Central, Central, and Southwest (bolded in Figure 4).

Figure 4: Mississippi Planning Districts – 2020 Census Population by Race and Ethnicity

Planning District	Population	AP Black	% AP Black	Latino	% Latino	NH White	% NH White
Central	**619,700**	**297,220**	**48.0%**	**17,197**	**2.8%**	**288,467**	**46.5%**
East Central	227,806	88,263	38.7%	8,496	3.7%	119,855	52.6%
Golden Triangle	175,474	76,701	43.7%	3,447	2.0%	90,528	51.6%
North Central	**117,158**	**65,758**	**56.1%**	**2,016**	**1.7%**	**47,944**	**40.9%**
North Delta	**296,649**	**120,419**	**40.6%**	**12,631**	**4.3%**	**154,476**	**52.1%**
Northeast	141,811	31,216	22.0%	4,993	3.5%	102,531	72.3%
South Delta	**114,801**	**80,599**	**70.2%**	**2,319**	**2.0%**	**30,680**	**26.7%**
Southern	805,302	205,707	25.5%	40,696	5.1%	523,916	65.1%
Southwest	**176,046**	**87,802**	**49.9%**	**2,860**	**1.6%**	**82,779**	**47.0%**
Three Rivers	286,532	69,928	24.4%	10,565	3.7%	197,901	69.1%

27. African Americans comprise about half (49.2%) of the 2020 population (1.32 million) in those five planning districts. The ideal population size for a 2020 Supreme Court district is 987,093—so these five planning districts encompass about 350,000 persons more than necessary to constitute a single Supreme Court district.

28. Under the 2020 Census, CD 2 (62.15% BVAP), which largely overlaps with those five planning districts, contains a population of 740,319 persons—about 250,000 persons short of the ideal district size for the three-district Supreme Court.

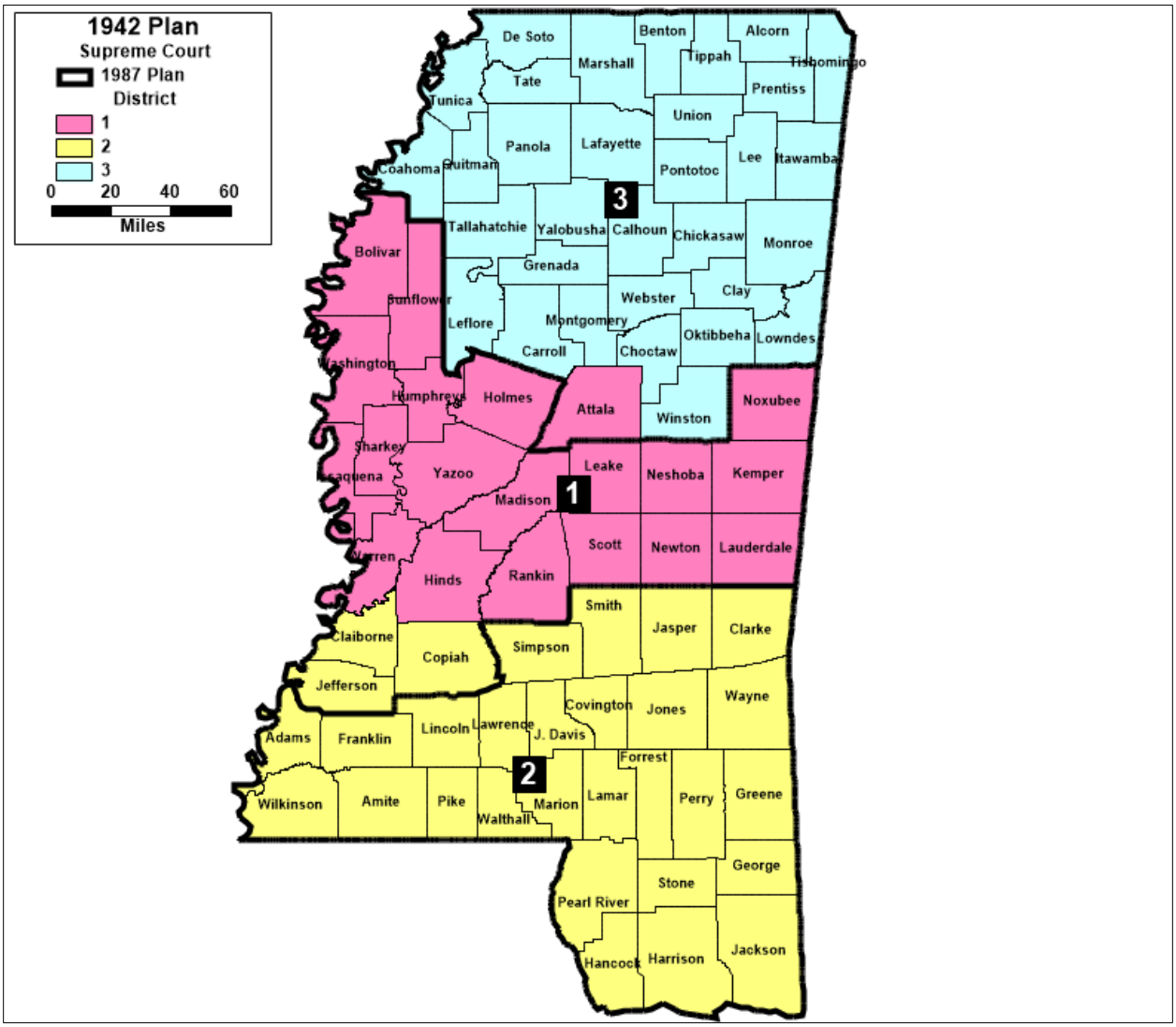
29. Taking paragraphs 23 through 28 into account, one can immediately ascertain that a majority-Black Supreme Court district anchored in the Delta region can be drawn in and around CD 2 and the five planning districts that border the Mississippi and Yazoo Rivers.

III. ENACTED SUPREME COURT PLANS (1942 AND 1987)

A. Historical 1942 Plan

30. The map in **Figure 5** depicts the 1942 Supreme Court Plan, with an overlay (black lines) showing the 1987 Plan. To create the 1987 Plan, Attala County was shifted into Supreme Court District 3 from 1942 Supreme Court District 1. In turn, Claiborne, Copiah, and Jefferson Counties were shifted from 1942 Supreme Court District 2 into Supreme Court District 1.

Figure 5: 1942 Supreme Court Plan



B. Enacted 1987 Plan

31. A map of the 1987 Plan is depicted in **Figure 6,** overlaid on the ten planning districts discussed above. Corresponding decade-by-decade population statistics are included in the table in **Figure 7.**

Figure 6: Current 1987 Supreme Court Plan

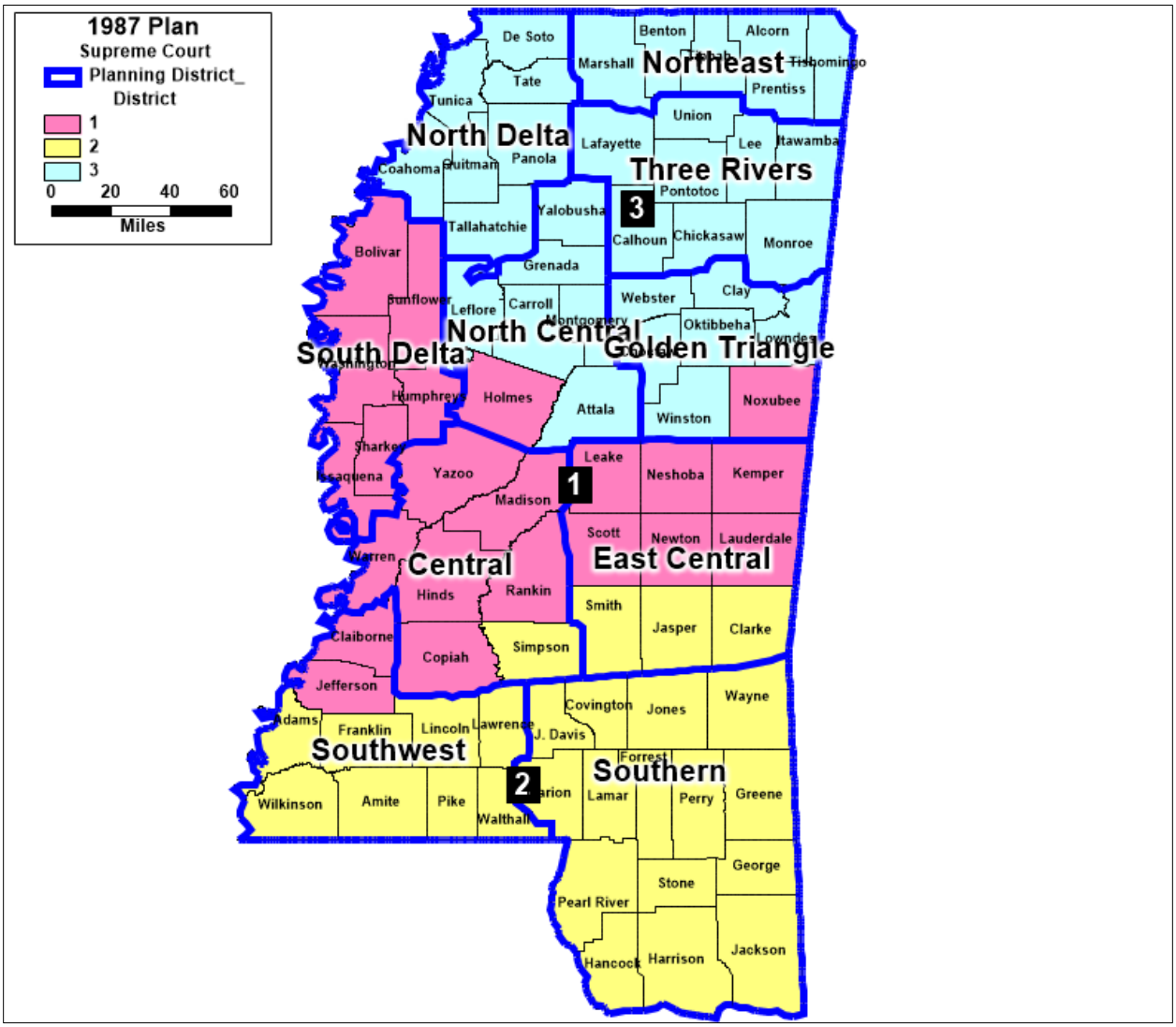


Figure 7: Enacted 1987 Supreme Court Plan
Percent Black Voting Age by Decade

District	1990*	2000	2010	2020
1	42.24%	45.77%	48.6%	49.29%
2	23.91%	24.99%	26.3%	27.66%
3	28.49%	29.44%	30.9%	32.65%

* SR BVAP

32. The Enacted 1987 Plan dilutes Black voting strength. In particular, 1987 Supreme Court District 1 "cracks"[13] Mississippi's Black population because it does not encompass a number of majority-Black counties in the north Delta as well as the southwest corner of the state. Instead, Supreme Court District 1 extends east from the Delta into a predominantly White area within the confines of the Appalachian Regional Commission ("ARC")—a distinct regional, cultural, and economic community of interest separate from the Delta.[14]

33. As shown in the map in **Exhibit D**, the ARC area extends south and west from the foothills of Tishomingo County to a band of counties[15] in the mid-section of the state—following the trajectory of the historical Natchez Trace (the land route into Mississippi for many 19th Century White settlers) and the modern-day Tennessee-Tombigbee Waterway.

34. To be sure, two more sparsely-populated Black-majority ARC counties—Noxubee and Kemper, with a combined 2020 total population of

[13] "Cracking" is a term used by redistricting practitioners to identify election districts that unnecessarily fragment or divide the minority population, resulting in an overall dilution of minority voting strength in the voting plan

[14] Appalachian Regional Commission, "About the Appalachian Region," https://www.arc.gov/about-the-appalachian-region/.

[15] The counties in Mississippi that are part of the ARC include Alcorn, Benton, Calhoun, Chickasaw, Choctaw, Clay, Itawamba, Kemper, Lee, Lowndes, Marshall, Monroe, Montgomery, Noxubee, Oktibbeha, Panola, Pontotoc, Prentiss, Tippah, Tishomingo, Union, Webster, Winston, and Yalobusha. *See* Appalachian Regional Commission, "Mississippi," https://www.arc.gov/mississippi/.

19,273—are in 1987 Supreme Court District 1, but the other counties east of the Delta in District 1 are all majority-White.

35. As shown in the **Figure 6** map, the 1987 Plan splits five of the ten regional planning districts—North Central, Central, East Central, Golden Triangle and Southwest. Supreme Court District 1 contributes to each one of those splits. South Delta is the only planning district entirely in Supreme Court District 1.

36. A higher resolution version of the 1987 Plan as depicted in **Figure 6** is in **Exhibit E-1**. Summary population statistics, applying the 2020 Census data to the boundaries from the 1987 Plan, are in **Figure 8** below, with additional population details in **Exhibit E-2. Exhibit E-3** identifies county assignments by district.

37. At the time of enactment, in terms of Black voting strength, there was almost no difference between the 1987 Plan and the 1942 Plan. Under the 1990 Census, 1942 Plan Supreme Court District 1 contained a 41.08% BVAP—a mere 1.2% lower than the BVAP of District 1 under the 1987 Plan.[16]

38. Today, 35 years later and after more than three decades of statewide Black population growth and White population decline, 1987 Supreme Court

[16] Voting age by race and ethnicity was not reported in the 1980 PL-94 171 file.

District 1 is only a 4 percentage-point plurality BVAP district (49.29% BVAP, 45.35% NH White VAP), as shown in the table in **Figure 8**.

39. Moreover, and perhaps unsurprisingly given that there has been no redistricting in over 30 years, the population deviation among the districts is greater than 10%, which in the state legislative context would be considered a presumptive violation of "one person, one vote" principles.

Figure 8: Current 1987 Plan – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	933847	-5.39%	716402	49.29%	2.54%	45.35%
2	1037093	5.07%	796767	27.66%	3.65%	64.94%
3	990339	0.33%	764430	32.65%	2.79%	61.90%

40. Furthermore, even that slight plurality may disappear when the effects of felony disenfranchisement in Mississippi are taken into account. Black people of voting age are disproportionately disenfranchised in Mississippi due to a felony conviction. An analysis by *Mississippi Today* found that, from 1994 through 2017, 61% of Mississippians who lost their right to vote due to a felony conviction were Black, even though Black people represent only 36% of the state's voting age population.[17] A Fifth Circuit judge recognized this in a recent concurring opinion. *See Harness v. Watson*, 47 F.4th 296, 316 (5th Cir. 2022) (Ho, J., concurring in part

[17] Alex Rozier, *Racial disparity conspicuous among Mississippians banned from voting*, Mississippi Today (Feb. 22, 2018), https://mississippitoday.org/2018/02/22/racial-disparity-conspicuous-among-mississippians-banned-voting/.

and concurring in the judgment) (noting that Mississippi's felon disenfranchisement scheme "operates today to disproportionately disenfranchise African-Americans"); *id.* at 314–15 n.3 ("No one denies that there's a meaningful disparity between the disenfranchised population and the entire population of Mississippi.").[18] And there is no reason to conclude that this impact will diminish in the future – the population incarcerated in state facilities has climbed from 16,499 in 2017 to 18,000 in 2022.[19]

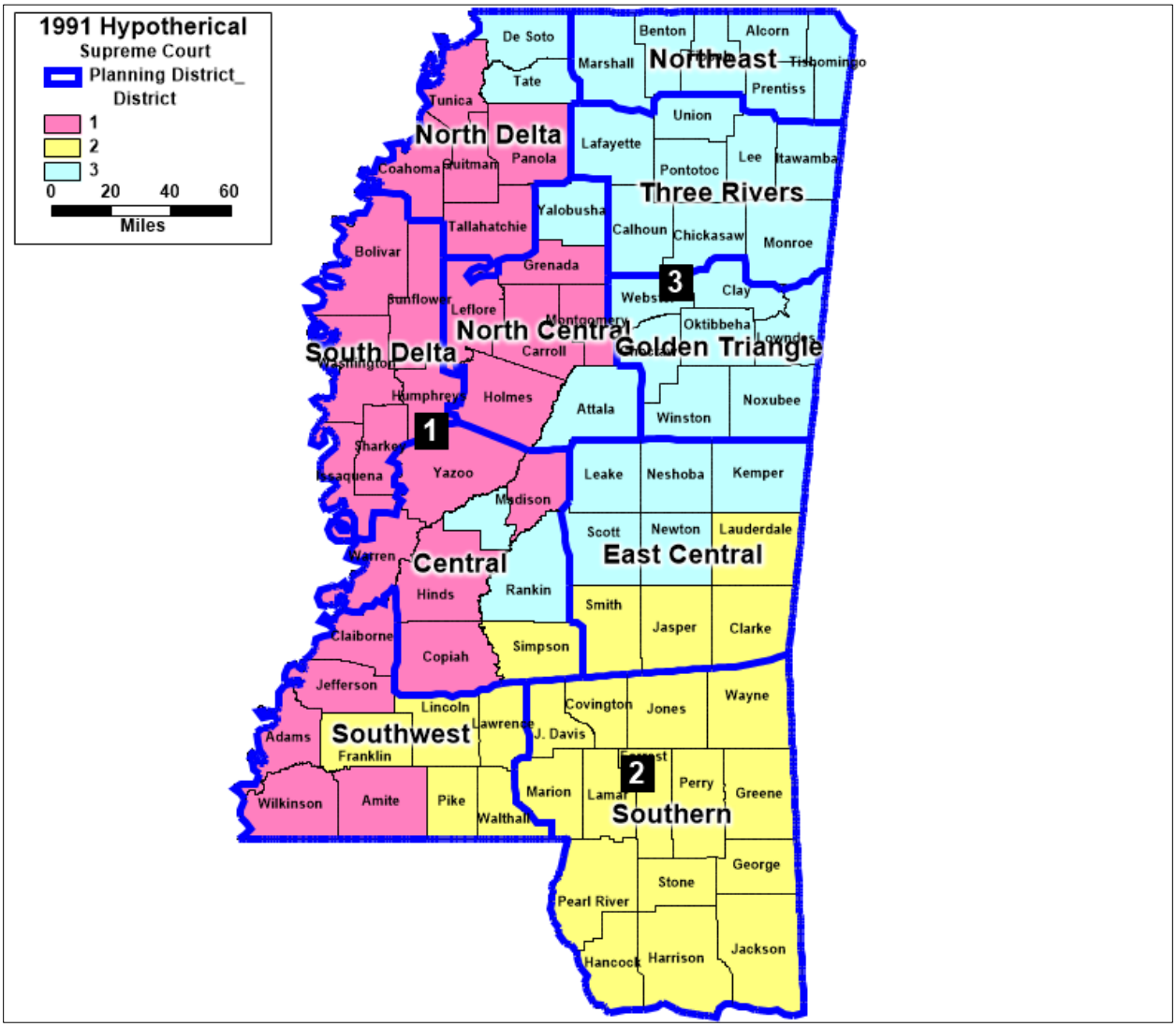
[18] The expert reports submitted in the underlying litigation reached the same conclusion. *See* Report of Dov Rothman at 3, *Harness v. Hosemann*, No. 3:17-cv-00791-DPJ-FKB, Dkt. 65-1 (S.D. Miss. Oct. 4, 2018) ("A greater percentage of the Disenfranchised Individuals (59 percent) . . . are black compared to the percentage of the citizen voting-age population of Mississippi that are black (36 percent), as reported by the U.S. Census Bureau for 2017."); Declaration of Matthew A. Williams at 2, *v. Hosemann*, No. 3:17-cv-00791-DPJ-FKB, Dkt. 75-12 (S.D. Miss. Oct. 4, 2018) ("[B]lack adults are 2.7 times more likely to have been convicted of a disfranchising crime than white adults.").

[19] Jerry Mitchell, *'Foolishly sticking with failed system': Mississippi leads the world in mass incarceration*, Jackson Clarion-Ledger (Aug. 13, 2022), https://www.clarionledger.com/story/news/2022/08/13/mississippi-has-more-inmates-per-capita-than-any-state-nation/10317601002/.

IV. HYPOTHETICAL 1990, 2000, AND 2010 SUPREME COURT PLANS

41. The map in **Figure 9** demonstrates that a majority-BVAP Supreme Court district in a three-district plan could have been drawn based on the 1990 Census.

Figure 9: Hypothetical 1991 Plan (1990 Census)



42. As shown in the map in **Figure 9**, the 1991 Hypothetical Plan is comprised of whole counties, except for a split along 1990 precinct lines in Madison County.[20]

43. The table in **Figure 10** presents decennial Census population statistics for the 1991 Hypothetical Plan. According to the 1990 Census, 1991 Hypothetical Supreme Court District 1 had an SR BVAP of 50.35%, with a deviation[21] of -4.63% (-39,732 persons) from the ideal district size of 857,739.[22] 1991 Hypothetical Supreme Court District 1 would have remained majority-Black over the course of the past 35 years.

Figure 10: 1991 Hypothetical Plan
Percent Black Voting Age by Decade

[20] *See* Mississippi Automated Resource Information System, *1990 Voting Precincts*, https://www.maris.state.ms.us/HTML/DATA/data_Political/1990VotingPrecincts.html#gsc. The 1990 precinct boundaries were established by the Mississippi Standing Joint Legislative Committee on Reapportionment for use in 1991 legislative redistricting.

[21] In the redistricting context, "deviation" refers to the difference between the populations of electoral districts. A deviation metric is calculated by summing the absolute value of the most underpopulated district deviation (a negative value representing the percentage by which a district population falls below the ideal size) plus the value of the most overpopulated district deviation (a positive value representing the percentage by which a district population is above the ideal size). The resulting summation is usually referred to as "total deviation."

[22] The Census Bureau estimates that there was a 2.6% undercount of Black persons in the 1990 Census. Put differently, 33,990 Black persons in Mississippi were missed in the 1990 enumeration. *See* U.S. Census Bureau, *Mississippi - Net Undercount and Undercount Rate for Counties (1990)*, https://www2.census.gov/programs-surveys/decennial/1990/data/undercounts/mississippi.pdf.

District	1990*	2000	2010	2020
1	50.35%	56.3%	61.0%	62.9%
2	22.98%	24.1%	26.0%	27.4%
3	23.48%	24.3%	25.9%	27.9%

* SR BVAP

44. According to the 2000 Census, by 2000 the 1991 Hypothetical Plan Supreme Court District 1 would have become underpopulated (-13.31%). However, based on the 2000 Census, a Hypothetical 2001 Supreme Court District 1 could have been drawn as a majority-Black district (53.1% AP BVAP, -0.67% deviation, **Exhibit F-1**) without splitting any counties. And a similar majority-Black Hypothetical 2011 Supreme Court District 1 could have been drawn under the 2010 Census (55.31% AP BVAP, -1.79% deviation, **Exhibit F-2**), also without splitting counties.

45. As the 1991, 2001, and 2011 Hypothetical Plans demonstrate, it has been possible to draw a Black-majority District 1 for decades, and it has been possible to do so with whole counties since at least 2001, all while maintaining acceptable population deviations. And, just as easily, the 1987 Plan can be modified to meet Section 2 requirements of the Voting Rights Act, as described in S**ection V**.

V. *GINGLES* 1 ILLUSTRATIVE PLANS

A. Illustrative Plans and Traditional Redistricting Principles

46. The two illustrative plans that I have developed contain three districts—each with one majority-Black district. Both illustrative plans comply with traditional redistricting principles, including compactness, contiguity, respect for communities of interest, and the non-dilution of minority voting strength, as well as ensuring that districts are not malapportioned.

47. The illustrative plans meet the first *Gingles* precondition, i.e., they demonstrate that the Black population in Mississippi is sufficiently numerous and geographically compact to allow for the creation of at least one 3-member majority-Black district.

48. There is no question that Mississippi's Black population is "geographically compact." For example, and by way of reference, the nine-single member district plan shown in **Exhibit G** contains three contiguous majority-Black VAP districts (Districts 4, 5, and 6)—demonstrating beyond a shadow of doubt that the Black population is compactly distributed north-to-south in and around the Delta.

B. Illustrative District Plans – Key Features

49. Key features of the two illustrative plans are summarized below:

- Consistent with the 1987 Plan, the illustrative plans follow county boundaries. There are no county splits.
- The illustrative plans generally follow state-defined regional Planning and Development district boundaries.
- The illustrative plans unite Black voters in the Delta in a majority-Black Supreme Court District 1—rather than dividing them between Districts 1 and 3, as under the 1987 Plan—thereby respecting the Delta as a significant cultural and historical community of interest in Mississippi.
- The illustrative plans also unite voters who live along the Mississippi River, as opposed to the three-way split created by the 1987 Plan. Delta voters concerned about water-related issues are, therefore, placed on an equal footing with voters in the Tennessee-Tombigbee region and the Gulf Coast, which are placed entirely within a single-judicial district under both the 1987 Plan and the illustrative plans.[23]
- Under the illustrative plans, Supreme Court District 1 aligns closely with the boundaries established for CD 2, Mississippi's Second Congressional District, under the 2022 Congressional Plan enacted by the State—boundaries that recognize a Delta-based, predominantly Black community of interest rather than fracturing that community as in the 1987 Plan.

- Under the illustrative plans, Illustrative Supreme Court District 3 encompasses most of the counties in the federally defined Appalachian Regional Commission, respecting that community of interest.
- Under the illustrative plans, approximately 50% of Mississippi's Black voting age population would live in a majority-Black district—up from 0% under the 1987 Plan.

[23] The flood-prone Pearl River cuts through the center of the state from Leake County to the Gulf. Its drainage area encompasses all three Supreme Court districts under the illustrative plans, as is the case with the 1987 Plan.

C. Illustrative Plan 1

50. The map in **Figure 10** depicts Illustrative Plan 1. A higher resolution version of Illustrative Plan 1 is in **Exhibit H-1**. Summary population statistics are in **Figure 11** below, with additional population details in **Exhibit H-2. Exhibit H-3** identifies county assignments by district.

51. Illustrative Plan 1 splits two planning districts—North Delta (placing DeSoto County in Supreme Court District 3) and Central (placing Rankin and Simpson Counties in Supreme Court District 2)—rather than five as in the 1987 Plan.

Figure 10: Illustrative Plan 1

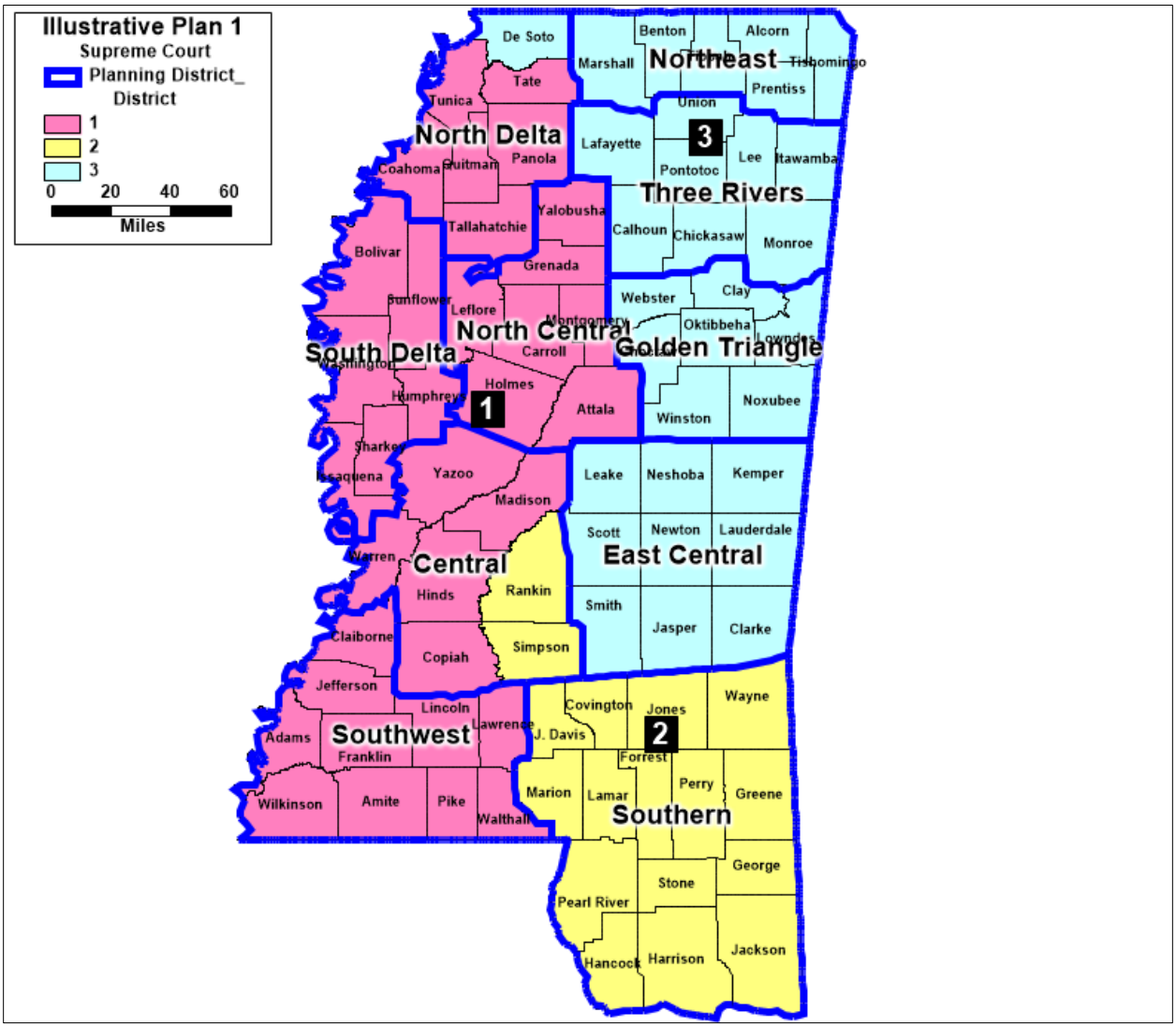


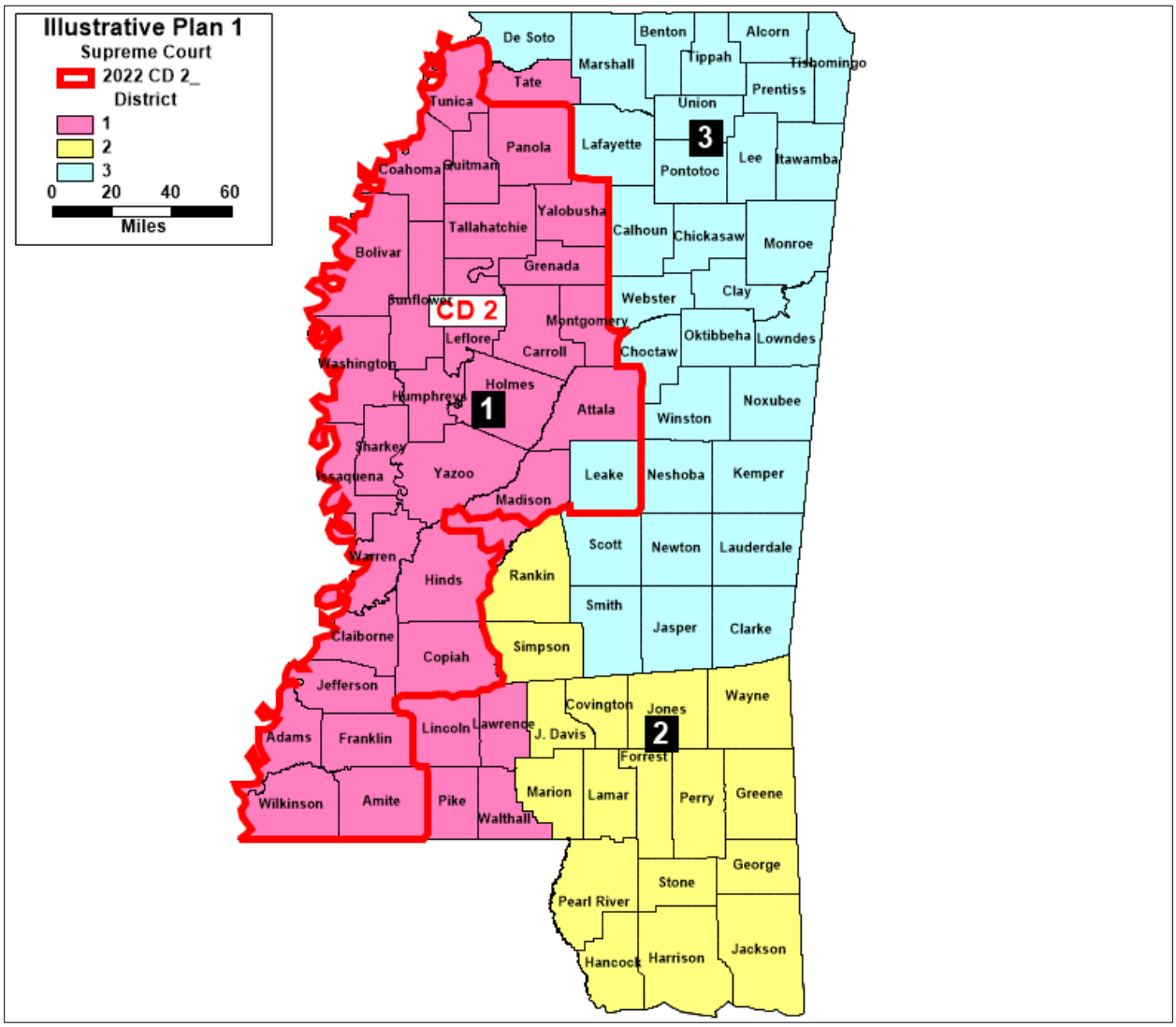
Figure 11: Illustrative Plan 1—2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	956060	-3.14%	737689	55.31%	2.04%	40.9%
2	988282	0.12%	757569	23.51%	3.96%	68.4%
3	1016937	3.02%	782341	30.29%	3.02%	63.4%

52. As shown **in Figure 12**, District 1 significantly resembles CD 2 in the 2022 Congressional Plan (red lines depict CD 2). Three quarters of the total

population in CD 2 (75.21%) is assigned to Supreme Court District 1 and 85.36% of the Black Population in CD 2 is in District 1.

Figure 12: Illustrative Plan 1 (and CD 2 overlay)



53. Under Illustrative Plan 1, District 1 (55.31% BVAP) generally follows CD 2 district lines north to south. In the north, Supreme Court District 1 extends beyond CD 2 to include Tate County (part of the historical Delta). Madison County is entirely in Supreme Court District 1 rather than split as with CD 2. South of

Copiah County, in order to minimize population deviation, Illustrative Supreme Court District 1 extends east beyond the CD 2 boundary to encompass all of the Southwest Planning District counties.

D. Illustrative Plan 2

54. The map in **Figure 13** depicts Illustrative Plan 2. A higher resolution version of Illustrative Plan 2 is in **Exhibit I-1**. Summary population statistics are in **Figure 14** below, with additional population details in **Exhibit I-2**. **Exhibit I-3** identifies county assignments by district.

Figure 13: Illustrative Plan 2

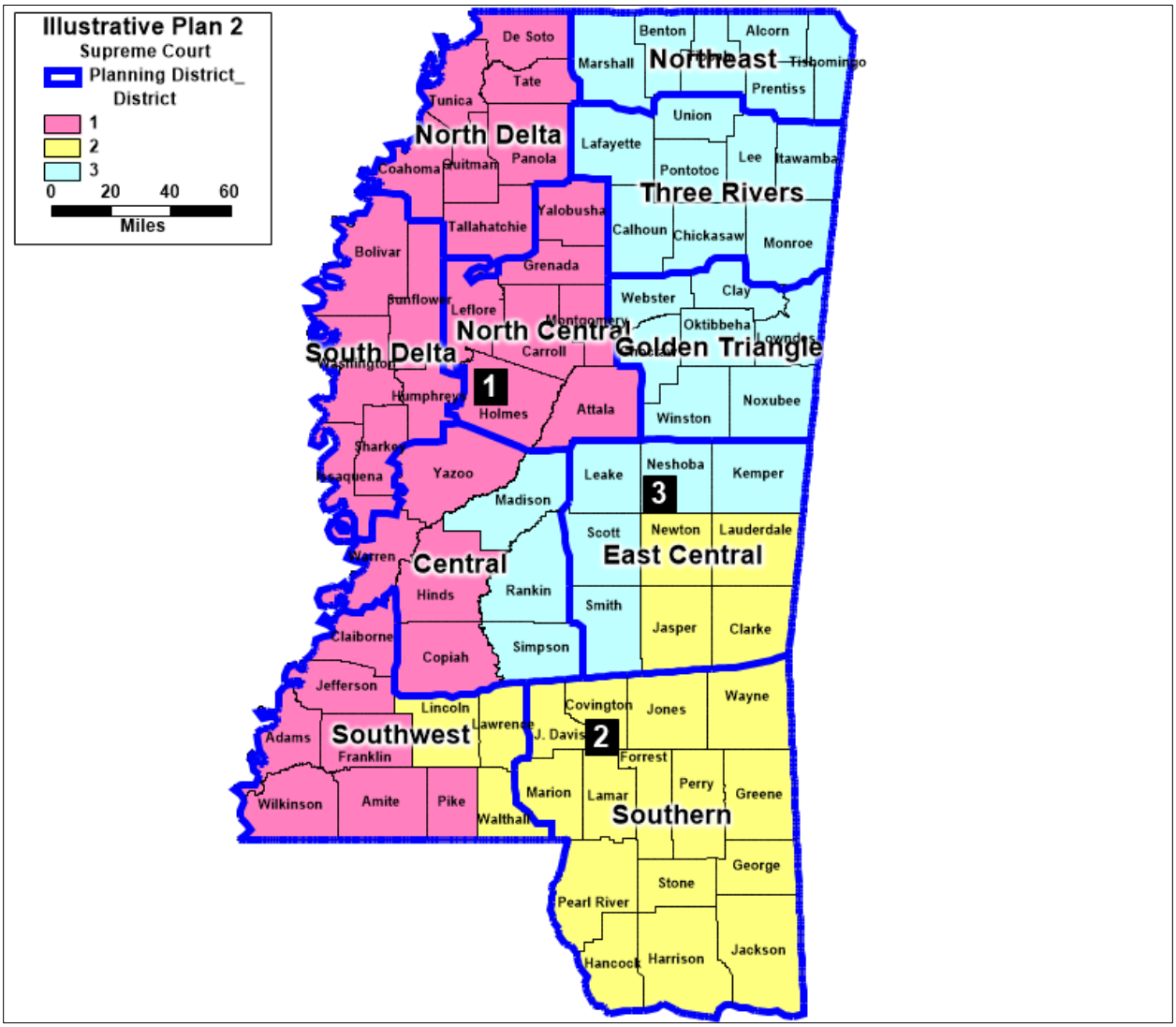


Figure 14: Illustrative Plan 2 – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	971422	-1.59%	746385	54.19%	2.45%	41.4%
2	997491	1.05%	770854	28.27%	2.84%	65.6%
3	992366	0.53%	760360	26.40%	3.75%	65.9%

55. Under Illustrative Plan 2, Supreme Court District 1 (54.2% BVAP) encompasses the entire historical Delta (including DeSoto County), as well as most of the counties in the Southwest Planning District.

56. Illustrative Plan 2 splits three planning districts. Two splits involve Supreme Court District 1– Central (placing the counties of Madison, Rankin, and Simpson in District 3) and Southwest (placing Lincoln, Lawrence, and Walthall in District 2).

VI. LEAST CHANGE PLANS

57. The illustrative plans demonstrate that there are viable remedies in this Section 2 lawsuit which are sufficient to satisfy *Gingles* 1. However, alternative plan configurations beyond those presented in the two main illustrative plans are also possible.

58. For example, compared to the illustrative plans, the two "least change plans" described below are sub-optimal in terms of Black voting strength in Supreme Court District 1 and preservation of regional communities of interest across all three districts. However, the least change plans still fare better than the 1987 Plan on those scores. And under the least change plans, fewer voters would be shifted from their current 1987 districts in the process of creating a Delta-anchored majority-Black Supreme Court 1 as compared to the illustrative plans.

A. Least Change Plan 1

59. The map in **Figure 15** depicts Least Change Plan 1. A higher resolution version of Least Change Plan 1 is in **Exhibit J-1**. Summary population statistics are in **Figure 16**, with additional population details in **Exhibit J-2**. **Exhibit J-3** identifies county assignments by district.

60. Least Change Plan 1 shifts Madison County from Supreme Court District 1 into District 3. In turn, five majority-Black counties in the northern Delta are moved into District 1—Coahoma, Leflore, Quitman, Tallahatchie, and Tunica. Two

majority-Black counties bordering the Mississippi River are moved into Supreme Court District 1 from District 2—Adams and Wilkinson. Least Change Plan 1 thus maintains the overall east-west configuration of the 1987 Plan, while also better uniting the Mississippi Delta and creating a majority Black District 1.

Figure 15: Least Change Plan 1

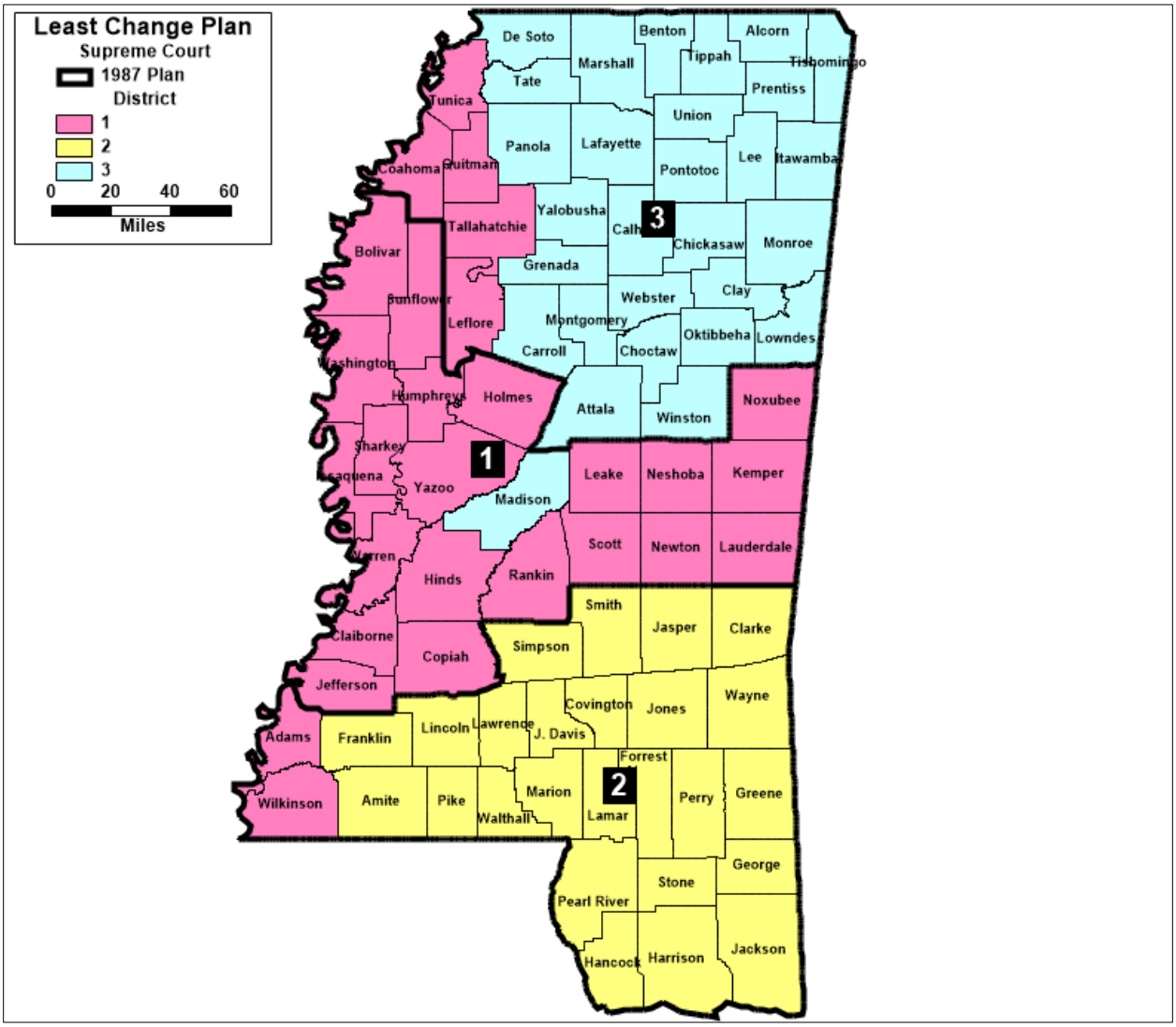


Figure 16: Least Change Plan 1 – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	941229	-4.65%	722892	53.00%	2.48%	42.1%
2	998968	1.20%	766360	26.46%	3.67%	66.0%
3	1021082	3.44%	788347	30.09%	2.87%	64.1%

B. Least Change Plan 2

61. The map in **Figure 17** depicts Least Change Plan 2. Summary population statistics are **Figure 18**. A higher resolution version of Least Change Plan 2 is in **Exhibit K-1**. Summary population statistics are **Figure 15**, with additional population details in **Exhibit K-2**. **Exhibit K-3** identifies county assignments by district.

62. Least Change Plan 2 also maintains the overall east-west configuration of the 1987 Plan. Under Least Change Plan 2, Madison County remains in Supreme Court District 1. Like Least Change Plan 1, five majority-Black counties in the northern Delta are moved into District 1 from District 3– Coahoma, Leflore, Quitman, Tallahatchie, and Tunica. Leake and Neshoba Counties are moved into District 3 from District 1. District 2 is completely unchanged from the 1987 Plan.

Figure 17: Least Change Plan 2

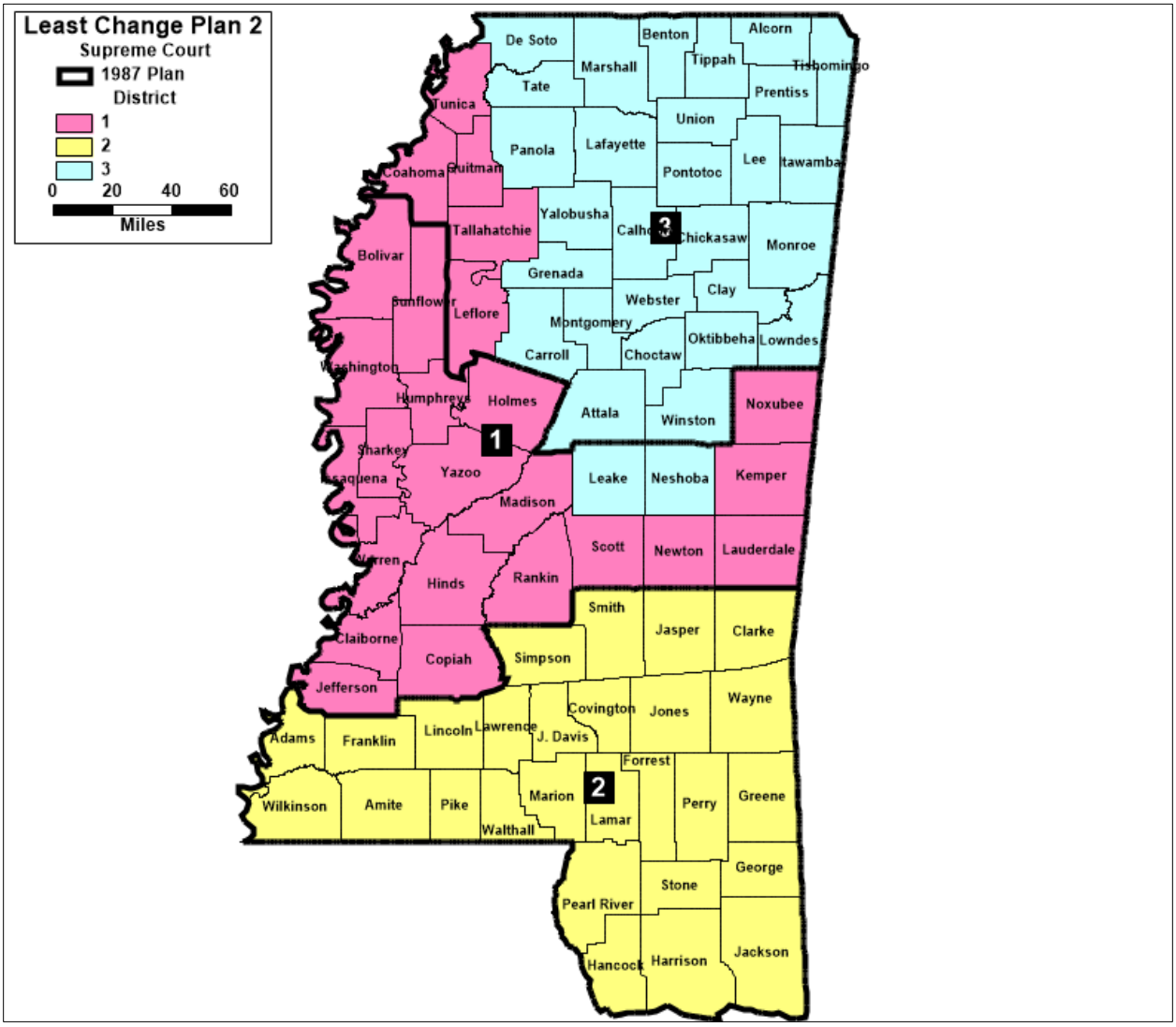


Figure 18: Least Change Plan 2 – 2020 Census

District	Population	% Dev.	18+ Pop	% 18+ Black	% 18+ Latino	% 18+ NH White
1	961887	-2.55%	738384	52.01%	2.52%	43.3%
2	1037093	5.07%	796767	27.66%	3.65%	64.9%
3	962299	-2.51%	742448	29.45%	2.82%	64.5%

VII. SOCIOECONOMIC PROFILE OF MISSISSIPPI

63. As in most other Section 2 cases where I have served as an expert, I also reviewed the socioeconomic statistics for Mississippi published by the Census Bureau in the *American Community Survey* ("ACS").

64. In Mississippi, African Americans trail NH whites across most key indicators of socioeconomic well-being. This disparity is summarized below and depicted with further detail in the charts in **Exhibit L-1** and the table **in Exhibit L-2**, as reported in *Table S0201* from the *2021 1-year ACS*.[24]

(a) Income

- 30.9% of African Americans in Mississippi live in poverty, compared to 11.5% of Whites. (**Exhibit L-1 at p. 2** and **Exhibit L-2 at p. 11**)

- 44.5% of African-American children live in poverty, compared to 12.9% of White children. (**Exhibit L-1 at p. 2** and **Exhibit L-2 at p.11**)

- African-American median household income is $33,541, compared to the $61,318 median income for White households. (**Exhibit L-1 at p. 5** and **Exhibit L-2 at p.9**)

- Per capita income disparities in Mississippi track the disparities seen in median household income. African-American per capita income is $18,368, compared to White per capita income of $33,374. (**Exhibit L-1 at p. 7** and **Exhibit L-2 at p. 10**)

[24] U.S. Census Bureau, "Selected Population Profile in the United States," https://data.census.gov/cedsci/table?text=s0201&t=001%3A005%3A451&g=0400000US28&y=2021&tid=ACSSPP1Y2021.S0201&moe=false&tp=false. For statistics from the 1-year ACS, as elsewhere in this declaration, "White" refers to NH White. "Black" or "African American" refers to Any Part Black.

- 24.6% of African-American households rely on food stamps (SNAP), more than triple the 7.0% SNAP participation rate of White households. (**Exhibit L-1 at p. 8** and **Exhibit L-2 at p. 10**)

(b) Education

- Of persons 25 years of age and over, 17.9% of African Americans have not finished high school, compared to 10.1% of their White counterparts. (**Exhibit L-1 at p. 10** and **Exhibit L-2 at p. 3**)

- At the other end of the educational scale, for ages 25 and over, 18.2% of African Americans have a bachelor's degree or higher, compared to 28.6% of Whites. (**Exhibit L-1 at p. 10** and **Exhibit L-2 at p. 4**)

(c) Employment

- The Black unemployment rate (for the population over 16, expressed as a percent of the civilian labor force) is 10.5%, compared to a 3.9% White unemployment rate. (**Exhibit L-1 at p. 12** and **Exhibit L-2 at p. 6**)

- Of employed African Americans, 26.2% are in management or professional occupations, compared to 41.1% rate of Whites. (**Exhibit L-1 at p. 13** and **Exhibit L-2 at p. 7**)

(d) Housing

- In Mississippi, a little over half of African-American householders (53.8%) are homeowners, while more than three quarters of White households (80.1%) are owner-occupied. (**Exhibit L-1 at p. 14** and **Exhibit L-2 at p. 12**)

- Median home value for African-American homeowners is $95,800, compared to the $162,200 median home value for Whites. (**Exhibit L-1 at p. 15** and **Exhibit L-2 at p. 13**)

(e) Transportation/Communication

- One in ten African-American households (10.0%) lacks access to a vehicle, while 4.3% of White households are without a vehicle. (**Exhibit L-1 at p. 17** and

Exhibit L-2 at p. 12)

- There is about a four-point Black-White gap in households with a computer, smartphone or tablet—88.7% versus 93.0%. (**Exhibit L-1 at p. 18** and **Exhibit L-2 at p. 13**)

- With respect to broadband internet connections, African-American households trail White households—77.1% versus 84.4%. (**Exhibit L-1 at p. 18** and **Exhibit L-2 at p. 13**)

65. Based on the 2020 Census, 39.5% of the Black population in Mississippi lives in the area encompassed by CD 2 under the 2011 Plan. **Exhibit M-1** and **M-2** report socioeconomic disparities specific to 2011 CD 2, according to the 2021 ACS. [25]

66. In addition, I have prepared socioeconomic contrast charts by race and ethnicity for all counties, municipalities, and unincorporated places with populations greater than 2,500 (and 10% or more SR Black), available via the link: http://www.fairdata2000.com/ACS_2015_19/Mississippi/.[26]

67. The 5-year 2015-2019 ACS charts make clear that the statewide and CD 2-level socioeconomic disparities by race also exist at the county and municipal levels throughout Mississippi.

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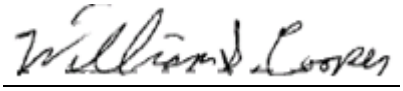
[25] Socioeconomic statistics for the 2022 Congressional Plan will not be available until the 1-year 2022 ACS is published in September 2023.

[26] These charts are from the 5-year 2015-2019 ACS. The 5-year ACS estimates are based on single-race Black (including Hispanic Black). Any Part Black estimates are not available in the 5-year ACS. The charts and data tables I have prepared also report corresponding estimates for the Latino and NH White population.

+++

I reserve the right to amend or supplement my report in light of additional facts, testimony and/or materials that may come to light. Pursuant to 28 U.S.C. 1746, I declare under penalty of perjury of the laws of the United States that the foregoing is true and correct according to the best of my knowledge, information, and belief.

Executed on October 3, 2022.



WILLIAM S. COOPER

Qualifications and Background

My name is Traci Burch. I am an Associate Professor of Political Science at Northwestern University and Research Professor at the American Bar Foundation. I received my Ph.D. in Government and Social Policy from Harvard University in 2007.

Over the past 15 years, I have led several large, long-term quantitative and qualitative research projects on political participation in the United States. I have participated in and coauthored several book chapters and articles that examine race, political participation, and inequality. For instance, I have worked with Professors Kay Schlozman, Sidney Verba, and Henry Brady on book chapters and articles related to the causes and consequences of inequality in political participation. I also collected data on congressional hearings and interest group activities for that book. For my coauthored article with Jennifer Hochschild and our book with Vesla Weaver, I analyzed the legislative history of several racial policies, including the 1965 Hart-Cellar Act. We also explore political participation and attitudes in our book as well.

I am widely regarded as an expert on political behavior, barriers to voting, and political participation. My work has been widely cited and replicated and has won several awards. In particular, my dissertation on the effects of felony disenfranchisement on voting in North Carolina, Georgia, and other states, "Punishment and Participation: How Criminal Convictions Threaten American Democracy" won the Robert Noxon Toppan Prize for the Best Dissertation on a Subject of Political Science at Harvard in 2007. I also achieved national recognition for this work; the dissertation was also awarded the E.E. Schattschneider Award from the American Political Science Association for the best dissertation in American Government, and the William Anderson Award for the best dissertation in federalism, intergovernmental relations, and state and local politics. Several articles from this dissertation, including work evaluating voting patterns among people with felony convictions in North Carolina, Georgia, Florida, Missouri, and Michigan, have been published in leading peer-reviewed journals.

In particular, my articles "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout and Party Registration of Florida's Ex-Felons" and "Turnout and Party Registration among Criminal Offenders in the 2008 General Election," which appeared in the peer-reviewed journals Law and Society Review and Political Behavior, respectively, included my calculations of felony disenfranchisement. My academic book on the community-level effects of criminal convictions on political participation, Trading Democracy for Justice, was published by the University of Chicago Press and also won multiple national awards from the American Political Science Association and its sections, including the Ralph J. Bunche Award for the best scholarly work that explores the phenomenon of ethnic and cultural pluralism and best book awards from the law and politics and urban politics sections. Trading Democracy for Justice, as well as the articles "The Effects of Imprisonment and Community Supervision on Political Participation," "Did Disenfranchisement Laws Help Elect President Bush?" "Skin Color and the Criminal Justice System," and "Turnout and Party Registration among Criminal Offenders in the 2008 General Election" rely on the analysis of data from Georgia.

I have testified before the U.S. Commission on Civil Rights about the collateral consequences of felony convictions with respect to voting and other issues. I have received several grants for my work, including a grant from the Stanford University Center on Poverty

and Inequality. I also serve as co-Principal Investigator on a National Science Foundation grant that supports graduate and postdoctoral fellowships at the American Bar Foundation. I have served on Editorial Boards of leading journals including Political Behavior and Law and Social Inquiry. Currently, I am on the Board of Overseers for the General Social Survey, a longstanding national public opinion survey run by the National Opinion Research Center at the University of Chicago. I routinely review the work of my peers for tenure, scholarly journals, university presses, and grants and have served as a reviewer for the American Political Science Review, The American Journal of Political Science, The Journal of Politics, Political Behavior, the National Science Foundation, Cambridge University Press, Princeton University Press, the University of Chicago Press, Oxford University Press, and many other entities. I also am a member of the Executive Council of the Elections, Public Opinion, and Voting Behavior Section of the American Political Science Association.

My curriculum vitae is provided in the Appendix. I am being compensated $350 per hour for work in this case, plus expenses. This is my ninth engagement as an expert witness. I previously testified at trial and in a deposition in a case in federal district court in Florida, Kelvin Jones vs. Ron DeSantis, etc. et al. (Consolidated Case No. 4:19-cv-300), at trial and in a deposition in North Carolina (Community Success Initiative, et al., Plaintiffs v. Timothy K. Moore in Superior Court, Wake County, NC Case No. 19-cv-15941) and at trial and in a deposition in federal district court in Alabama (People First of Alabama, et al., v. John Merrill, in his official capacity as the Secretary of State of Alabama, et al.; Case No.: 2:20-cv-00619-AKK). I was deposed and testified at trial in a case in federal district court in Florida (Florida State Conference of the NAACP, Common Cause, and Disability Rights Florida v. Laurel M. Lee; Case no. 4:21-cv-00187-MW-MAF) and deposed in a case in federal district court in the western district of Wisconsin (One Wisconsin Institute Inc. v. Jacobs Case No. 15-CV-324-JDP; Luft v. Evers Case No. 20-CV-768-JDP. I also testified in a preliminary injunction hearing in Robinson et al. v. Ardoin (Case No. 22 CV-00211, Middle District of Louisiana). In all cases where an opinion was issued, the courts accepted and relied on my expert testimony.

Scope of the Report

I was asked by the attorneys for the plaintiffs in this case to provide information relevant for evaluating Senate Factor 5, or "the extent to which minority group members bear the effects of discrimination in areas such as education, employment, and health, which hinder their ability to participate effectively in the political process." I have also been asked to provide information relevant for evaluating Senate Factor 8, "whether there is a lack of responsiveness on the part of elected officials to the particularized needs of minority group members." In formulating my opinions, I relied on my analysis of standard sources for political scientists such as the reviews of scholarly literature and the analysis of demographic data, government reports, and public opinion surveys where noted. My work in this matter is ongoing, and I reserve the right to amend, modify, or supplement my analysis and opinions.

Summary of Conclusions

Based on my analyses and review of the scholarly literature, I offer the following opinions:

- Senate Factor 5: The state of Mississippi has consistently failed to provide equal educational opportunities to Black children in the state, and as a result, there are significant gaps in educational attainment and academic achievement between Black and white Mississippians.
- Senate Factor 5: Voter turnout in Mississippi varies by educational attainment, and much of the gap in turnout between Black and white Mississippi residents can be accounted for by the denial of educational opportunities to Black Mississippians.
- Senate Factor 5: Black people in Mississippi also face discrimination in employment and access to capital; financial resources have been shown to affect voter turnout generally and in studies of Mississippi in particular.
- Senate Factor 5: Housing discrimination also plagues Black Mississippians; factors such as homeownership and racial residential segregation have been shown to affect voter turnout.
- Senate Factor 5: Health outcomes such as cancer mortality, infant mortality, and life expectancy vary by race in Mississippi. Discrimination is a factor in these racial gaps: studies of Mississippi residents have shown that exposure to racial discrimination affects heart health, and that Black Mississippi residents have greater difficulty accessing health care and healthy foods.
- Senate Factor 5: Research has shown that discrimination affects conviction and sentencing in Mississippi; such discrimination plays a role in the racial gaps in criminal justice supervision between Black and white Mississippi residents. These racial gaps also affect voting because of Mississippi's felony disenfranchisement law.
- Senate Factor 8: Mississippi ranks at the bottom of states in almost all measures of well being, including health, education, and poverty. However, despite the availability of federal resources and majority public support for policies that could alleviate racial disparities in education, socioeconomic status, health, and criminal justice, the state of Mississippi clearly and repeatedly refuses to enact such policies. In fact, in several instances, the state has misused or misspent federal money earmarked to help vulnerable groups.

I discuss each of these conclusions further in the sections below.

Senate Factor 5: Discrimination in Educational Attainment and Voting Participation

People with higher educational attainment are more likely to vote (Almond and Verba 1963, Brady, Verba, and Schlozman 1995b, Burden 2009, Campbell et al. 1980, Verba, Schlozman, and Brady 1995b). Verba, Schlozman, and Brady argue that the relationship between socioeconomic status and voting exists because people with greater education also tend to have more of the resources such as time, money, and civic skills that affect the calculus of participation (1995: 282). Education makes it easier for individuals to navigate the costs of voting such as acquiring information about the candidates and issues or learning how to register and vote (Verba, Schlozman, and Brady 1995b).

Black people in Mississippi have faced educational discrimination throughout the state's history, hindering their ability to vote. Although the U. S. Supreme Court ruled segregation in public schools unconstitutional in *Brown v. Board of Education* in 1954, and Congress outlawed segregation in public accommodations in the Civil Rights Act of 1964, as I will discuss, the state failed to desegregate public schools for several years after those rulings. In fact, I will show

below that Mississippi's state and local governments have continued to enforce and support segregation in educational institutions even in recent years; for instance, by funding racially homogenous private schools, by assigning students to schools and classrooms by race and by maintaining racially separate proms, homecoming courts, and other activities.

Despite the court's ruling in *Brown*, the education provided by the state to Black and white students remained separate and unequal. Mississippi historically spent less money on educating Black children than white children; for instance, in 1950, this gap was $22.29 dollars to $71.00, respectively (Margo 1990). By May of 1961, the Southern Educational Reporting Service found that no Mississippi Black students attended school with white students in public elementary, secondary, or post-secondary institutions (Southern Educational Reporting Service 1961, 1961).

The lack of progress on desegregating public schools was due to the massive resistance of white parents and the policies of Mississippi state and local governments. The Mississippi legislature adopted several laws in special sessions that were designed to maintain segregated schools (1961, Douglas and Center 2005). Beginning in the mid-1960s, many districts in the state "desegregated" by adopting a "freedom of choice" scheme that encouraged the maintenance of separate public and private schools for white children (Fuquay 2002, Bolton 2009). Of course, no white children opted to go to Black schools, and Black students who tried to attend white schools faced intimidation and violence (Fuquay 2002: 172-175). Even as late as 1967, one-third of Mississippi school districts were still completely segregated, and fewer than three percent of Black children in the state attended school with white children (Bolton 2009).

Mississippi officially desegregated all school districts in 1970 in the aftermath of rulings in *Alexander v. Holmes County Board of Education,* 396 US 19 (1969) and *U.S. v. Hinds County Board of Education,* 417 F.2nd 852 (5th Cir. 1969). However, Mississippi schools continued to be segregated in practice. The number of private schools for white children increased dramatically after the desegregation order, as did the number of white children opting out of the public school system:

> The *Alexander* decision led to an explosion of private schools across Mississippi. One student of the movement estimated that 61 schools were founded in that year, a number that is certainly understated. By 1973 there were 125 segregation academies operating in Mississippi. In the 30 districts specifically named by the Alexander decision, the number of academies increased from 6 to 30. Incredibly, most of these schools were created between the time of the court order in December and its implementation date on January 7. Already existing schools were in a position to take full advantage of the advent of "mass integration'' and they saw their enrollments skyrocket. (Fuquay 2002: 176-177).

The State continued to support school segregation. Early on, state vouchers paid for students to attend these "segregation academies," and even after 1970 these schools received textbooks, supplies, and transportation paid for with public money (Fuquay 2002: 169, 178). The state also punished districts for desegregating: in 1971, the governor of Mississippi issued an executive order denying school districts state funds if children were bused to desegregate, an order that caused Jackson Public Schools to lose 40% of their budget that year (Dixon 2020:3).

White flight did not just occur via the transfer of white students into private schools. In many communities, parents also moved to avoid desegregation (Dixon 2020:3). For instance, the city of Jackson went from majority white in 1960 to majority Black today due to a decline in the white population spurred at first by the prospect of integration (Hennessy-Fiske 2022).

The state resisted desegregation in higher education as well. Well after the Supreme Court ruled in a series of cases that segregation in public education was unconstitutional, Mississippi still maintained a completely segregated system of public higher education (1961: 30). Although the number of Black and white children in the elementary and secondary education system was roughly equal in the state, there were 19 white public colleges but only 6 Black colleges in 1961 (Southern Educational Reporting Service 1961: 30). After violence, riots, and legal maneuvering, James Meredith was able to enroll in the University of Mississippi, escorted by federal agents in 1961 (Bridges and Walker 1995). However, after the admission of Meredith to the University of Mississippi, the U. S. Supreme Court found:

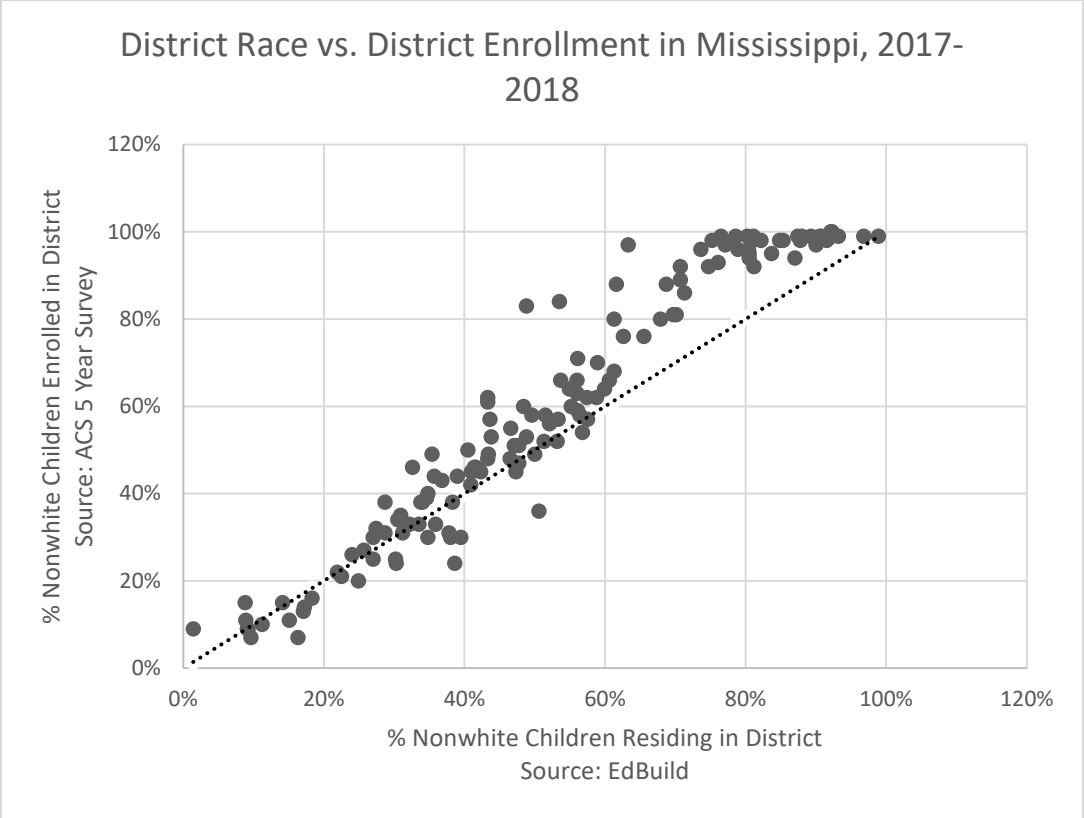
> For the next 12 years the segregated public university system in the State remained largely intact. Mississippi State University, Mississippi University for Women, University of Southern Mississippi, and Delta State University each admitted at least one Black student during these years, but the student composition of these institutions was still almost completely white. During this period, Jackson State and Mississippi Valley State were exclusively Black; Alcorn State had admitted five white students by 1968. *United States v. Fordice*, 505 U.S. 717, 722 (1992).

The Court ruled in 1992 that the "State has not met its affirmative obligation to dismantle its prior dual system" of separate but unequal higher education. *Id.* at 743. Research shows that integration of Mississippi's system of state universities is not complete; Mississippi's historically Black institutions still are stigmatized and held in low regard by white students (Paul, Steven Andrew, and King 2004).

Today, it is not difficult to see the ways in which Mississippi's history of racial discrimination against Black citizens in education still produces gaps in educational equality. There is ample evidence that Mississippi has and continues to promote separate and unequal education for Black and white students. Racial segregation and resource inequity still can be found in Mississippi public schools.

School segregation has been shown to detrimentally affect the academic performance of minority students: Black and Latino students who grew up under conditions of segregation were less academically prepared for college and had been exposed to more violence and social disorder than those coming from "majority-dominant settings." (Massey and Fischer 2006). School segregation continues in Mississippi today. Currently, there are 37 school districts that are more than 90% Black in Mississippi (2022). There is ample evidence of the resistance of white parents and local school boards to desegregation. Following the tradition started with the segregation academies in the 1960s, white parents continue to opt out of public schools, especially in majority Black districts. As shown in Figure 1, Black students are overrepresented relative to their share of the population in most school districts in Mississippi; in fact, in districts (many in the Delta region) where Black students are more than three-quarters of students, white students have abandoned the public schools altogether.

Figure 1: Racial composition of school districts vs. school district enrollment by race in Mississippi for the 2017-18 school year. Data from EdBuild.org and the American Community Survey.



Coincidentally, more than 35 of the schools that began as segregation academies were still operating in 2012 (Carr 2012). These schools still enroll few to no students of color, and have discriminatory rules such as banning Black hairstyles (Carr 2012, Klein 2018). The state allows vouchers paid by public money to be used at some of these academies (Klein 2018). Many Mississippi politicians attended these academies, including Senator Cindy Hyde Smith (Klein 2018).

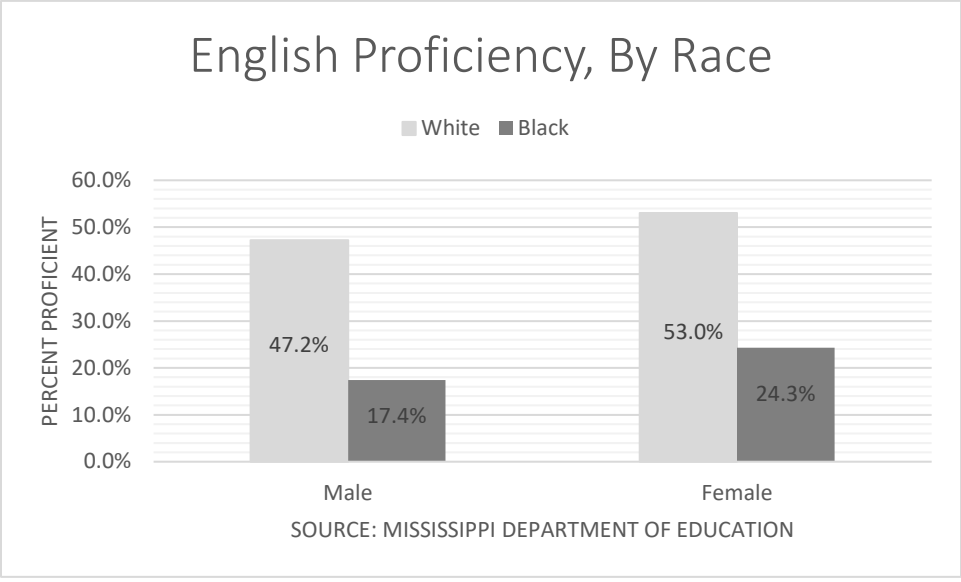
Several districts recently have engaged in practices that actively maintain racial segregation. More than 50 years after Brown, several Mississippi districts have been found to assign children to schools, classrooms, and even extracurricular activities by race. For instance, the Cleveland School District finally was ordered to desegregate in 2016 as it was still assigning students to Black and white schools (U. S. Department of Justice 2016). A Brookhaven, Mississippi policy that still assigned students to classrooms based on parent requests also has led to segregated classrooms (Northam 2019). Students still were being assigned to classrooms by race in Waynesboro Elementary School in 2012 (Consent Order, *United States v. Mississippi*, 2012 WL 13219550 (S.D. Miss. Jan. 3, 2012).[1] A judge found evidence that a racially

[1] https://www.justice.gov/sites/default/files/crt/legacy/2013/01/17/wayneco2012order.pdf

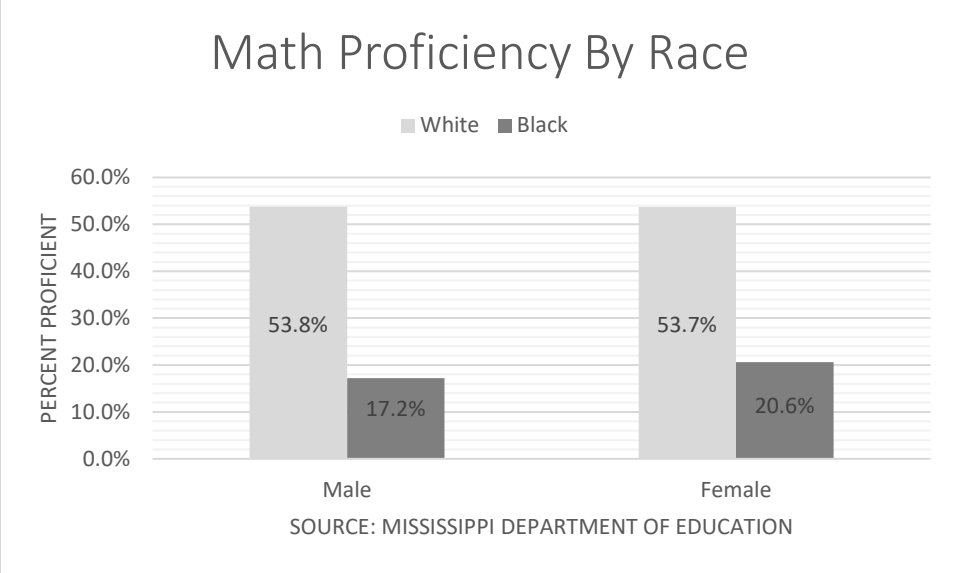
discriminatory policy of transferring white students to all-white schools led to resegregation in Walthall County (U. S. Department of Justice 2010). Recent evidence of separate proms for Black and white students (2008), separate elections for class officers by race, and even separate homecoming court selections has been found as well (*United States v. Nettleton Line Consolidated School District Civil Action,* 2020 WL 5237806 (N.D. Miss. Sept. 2, 2020); *United States v. Covington County School District* 2:66-Cv-02148 (S.D. Miss. Feb. 27, 1976); *United States v. Mississippi,* 2012 WL 13219551 (S.D. Miss. Jan. 3, 2012).

Mississippi also provides resources to schools unequally. Based on data from EdBuild.org, in Mississippi school districts in which 90% or more of the students were nonwhite, the state government provided an average of $5,280 per pupil, compared with $5,561 in districts where students were more than 90% white (2022).[2] When multiplied out based on the number of students in those districts, those nonwhite districts were shortchanged $27,993,501 in that school year alone. This funding disparity exists even though the Edbuild.org data show that poverty rates were much higher in the 90% nonwhite districts: in those districts, the median student poverty rate was 41% and no district had fewer than 25% of students in poverty (2022). For the white districts, the Edbuild.org data show that the median student poverty rate was 19% and none had a poverty rate above 23% (2022). Evidence of unequal facilities has been found in some districts as well. *Gray v. Lowndes County School District,* 900 F. Supp. 2d 703 (N.D. Miss. 2012). Several Black districts, particularly in the Delta region, have fewer resources, meaning that students have to make do with teacher and bus shortages, older textbooks, and crumbling or dilapidated buildings (Parks 2021). The state has fully funded public education only three times in the last 30 years, and rural districts such as Holmes and Durant have been shortchanged millions of dollars (Parks 2021).

Figure 2: English (a) and Math (b) Proficiency by Race in Mississippi. Source: Mississippi Department of Education.



[2] This analysis discards the Montgomery School District, which was closed in that year.



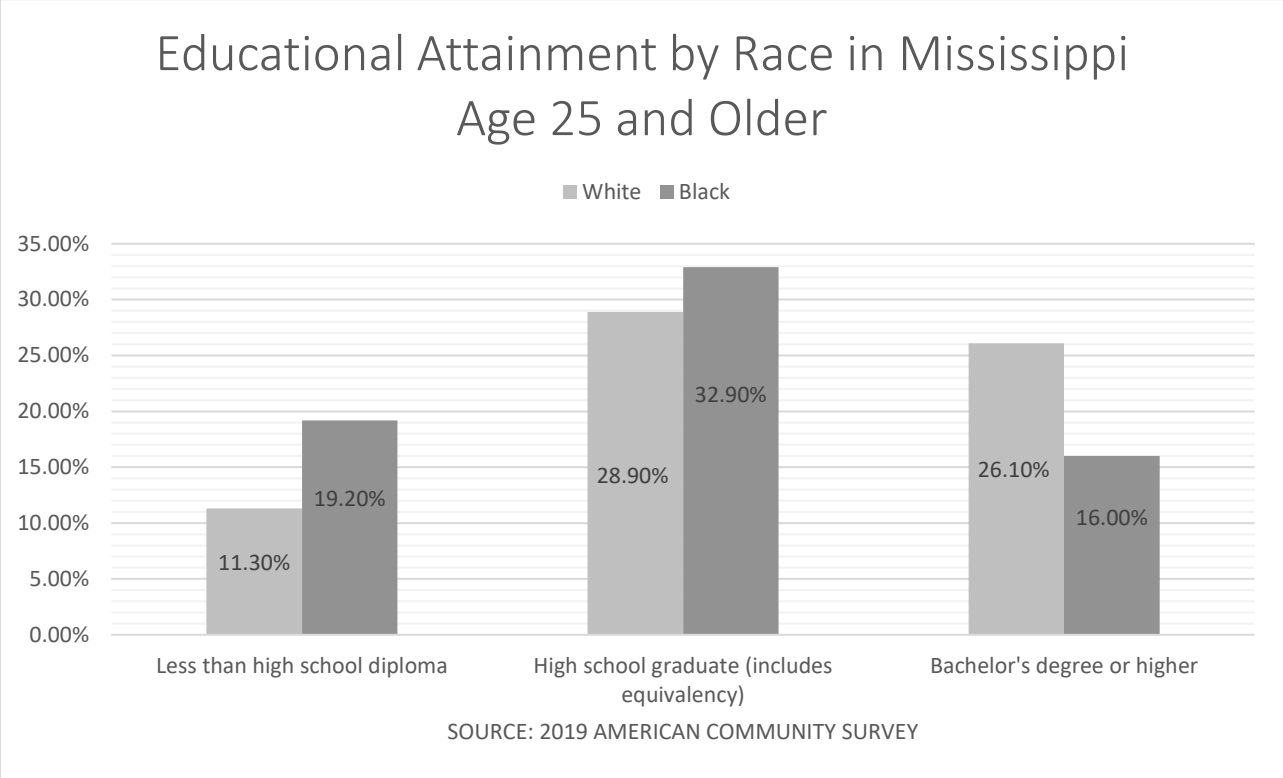
Given this historical and contemporary under-investment in public education for Black students, educational outcomes in Mississippi vary among currently enrolled students by race. As shown in Figure 2, among current students, there is a gap in scores on assessment tests in Mississippi; for example, only 24.3% of Black girls and 17.4% of Black boys are proficient in English, compared with 53.0% of white girls and 47.2% of white boys (Mississippi Department of Education 2022). Similar gaps exist in math proficiency: 20.6% of Black girls and 17.2% of Black boys were proficient in math, compared with 53.7% of white girls and 53.8% of white boys (Mississippi Department of Education 2022). In the 2017-2018 school year (the latest data available from the federal government), Black students were 49.0% and white students were 44.0% of Mississippi public school students (U. S. Department of Education 2018). However, that year, Black students were only 24.4% of students in gifted and talented programs and 31.7% of students taking Advanced Placement courses (U. S. Department of Education 2018).

The evidence suggests that racial disparities in school discipline exist in Mississippi. School suspensions have been shown to increase subsequent arrests and other anti-social behavior in youth (Mowen and Brent 2016, Hemphill et al. 2006). Sixty-five percent of students who received one or more out-of-school suspensions were Black (U. S. Department of Education 2018). Twice as many Black students as white students were referred to law enforcement in Mississippi (U. S. Department of Education 2018). In Meridian, MS, the U.S. Department of Justice found persistent racial disparities in school discipline (U. S. Department of Justice 2013). Corporal punishment is also more likely to be used against Black children in Mississippi (Gershoff and Font 2016).

This long history of persistent racial discrimination in education affects outcomes in educational attainment for Mississippians. Although there have been gains in educational attainment in Mississippi over time, racial gaps persist. Figure 3 shows data from the 2019 1-Year Estimates from the American Community Survey on the educational attainment of Mississippi residents over the age of 25, by race. The data show that white Mississippi adults are

far more likely than Black Mississippi adults to have earned a bachelor's or postgraduate degree, and that Black Mississippians have lower educational attainment overall.[3]

Figure 3: Educational Attainment by Race in Mississippi. Source: 2019 American Community Survey 1-Year Estimates

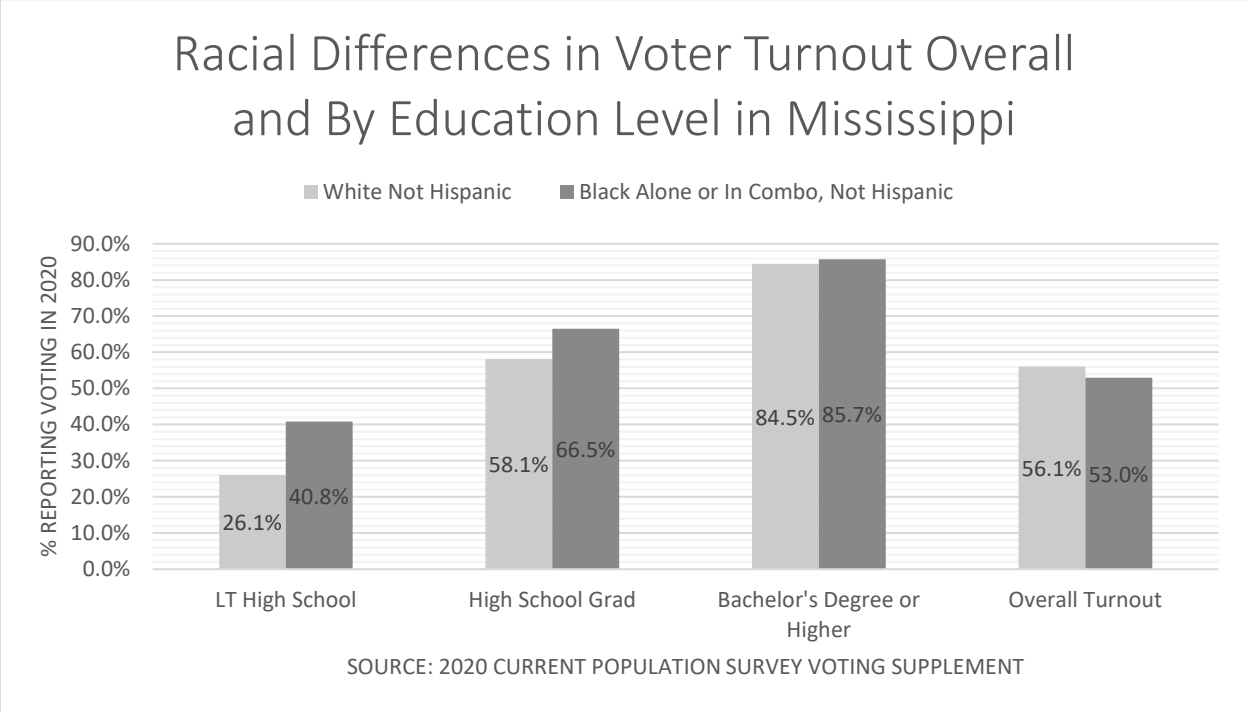


Even worse, literacy rates vary by race in Mississippi. An estimated 28% of Mississippi adults are classified as low literacy (National Center for Education Statistics 2022).[4] In Black counties, low literacy rates are even more prevalent. For instance, 50% of adults in Humphreys County, 48% of adults in Quitman and Noxubee Counties, and 47% of adults in Holmes, Claiborne, and Wilkinson Counties are estimated to be below level 1 in literacy. Low literacy is a barrier to voting (Brady, Verba, and Schlozman 1995a, Summers et al. 2014).

[3] The totals in the chart do not sum to 100% because people with associate degrees or some college are not depicted.

[4] "Adults at this level can be considered at risk for difficulties using or comprehending print material. Adults at the upper end of this level can read short texts, in print or online, and understand the meaning well enough to perform simple tasks, such as filling out a short form, but drawing inferences or combining multiple sources of text may be too difficult. Adults who are *below Level 1* may only be able to understand very basic vocabulary or find very specific information on a familiar topic. Some adults *below Level 1* may struggle even to do this and may be functionally illiterate." (National Center for Education Statistics 2022).

Figure 4: Racial Differences in Voter Turnout Overall and by Education Level in Mississippi. Source: 2020 Current Population Survey Voting and Registration Supplement



Examining voter turnout in Mississippi by race and educational level in Figure 4 shows the clear impact of Mississippi's history of educational inequality on voting. As shown in the last columns of the figure, overall, white Mississippians have higher voter turnout than Black Mississippians: 56.1% of white Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens. However, once we control for educational level, we see that for every level of educational attainment, Black Mississippians vote at higher rates than white Mississippians. These data suggest that the overall gap in turnout between Black and white Mississippians exists because of the gap in educational opportunities between Black and white Mississippians. Black people in Mississippi have had less access to quality education and therefore have lower educational attainment for the reasons discussed in this section; this lower educational attainment leads to lower voter turnout.

Income, Poverty, Wealth and Voting

Income and wealth affect voting to the extent that greater income can make it easier to overcome the costs of voting, such as having the ability to afford time off work to go to the polls (Verba, Schlozman, and Brady 1995a). On every economic measure, Mississippi ranks among the worst-off states in the country (Suneson 2018). Black Mississippi residents fare worse than white Mississippi residents. For instance, as shown in Figure 5, the median household income for white Mississippi households is almost twice as high as that for Black Mississippi households. In Figure 6, it is clear that gaps exist on other economic measures as well: Black unemployment is more than twice as high as white unemployment, Black poverty is almost three times higher than white poverty, and more than three times as many Black households as white households lack access to a vehicle. Studies have shown that polling place distance affects voter turnout, and those effects are related to transportation access (Brady and McNulty 2011, Bagwe,

Margitic, and Stashko 2020). In states with no excuse absentee voting, people tend to offset issues accessing physical polling places with voting by mail; however, in states with limited absentee ballot options, such as that in Mississippi, the "substitution to mail-in voting" is smaller (Bagwe, Margitic, and Stashko 2020: 4). Overall, poverty and related issues have been shown to decrease political participation in Mississippi and other states (Austin, Franklin, and Lewis 2013).

Figure 5: Median Household Income by Race in Mississippi. Source 2019 American Community Survey 1 year estimates.

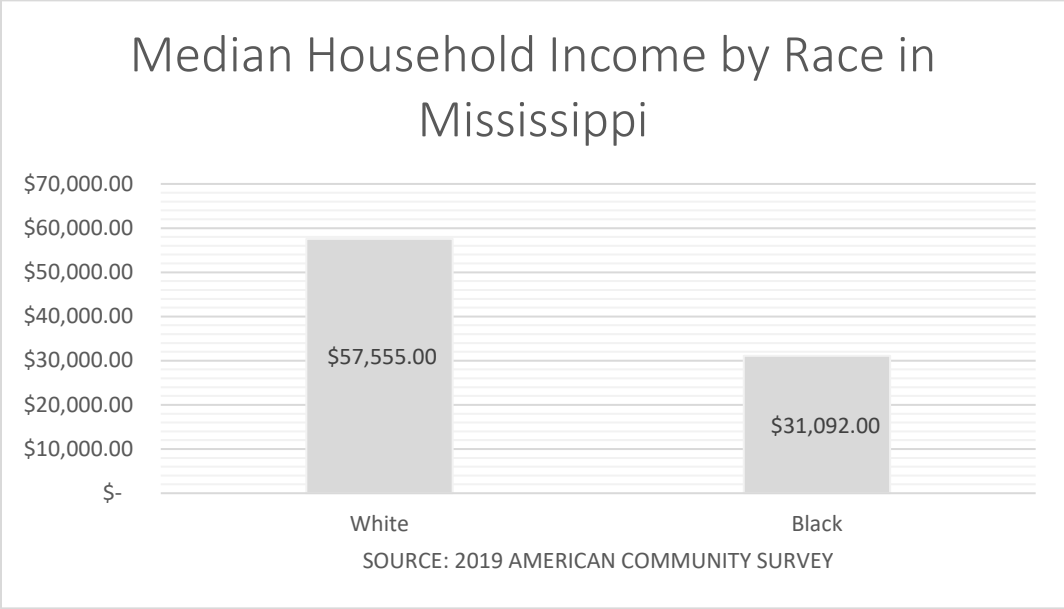
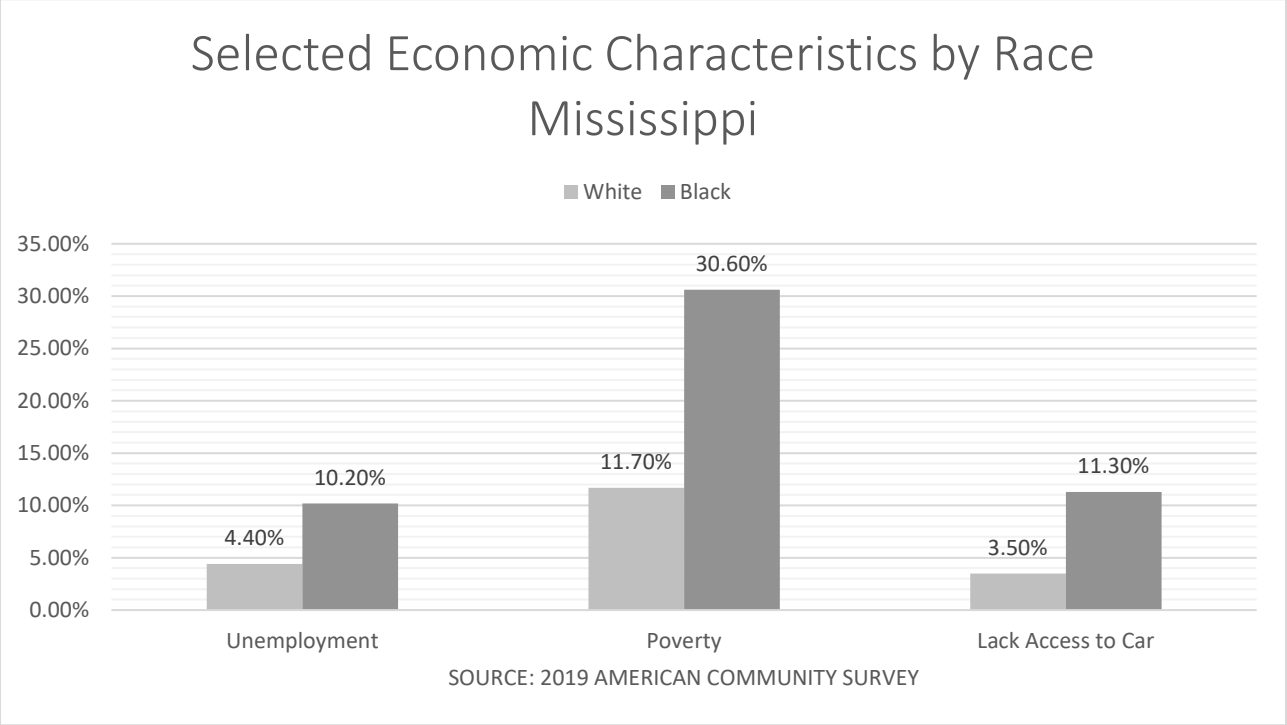


Figure 6: Selected Economic Characteristics by Race in Mississippi. Source: 2019 American Community Survey 1 year estimates.



The persistent educational discrimination faced by Black Mississippi residents can account for much of the disparity in socioeconomic wellbeing (Long 2010). However, decades of persistent discrimination in employment and access to capital over decades also have produced economic disparities.

Mississippi is predominantly rural, so agriculture has loomed large as a determinant of both income and wealth in the state. Of course, Mississippi's agricultural system was dominated first by plantation slavery and then through sharecropping. Eventually, Black farmers did gain a foothold, buying farmland in the Mississippi delta and other regions. However, land dispossession due to discriminatory or otherwise improper lending practices led Black farmers to lose their land at greater rates than white farmers in the state (Newkirk II 2019). For instance, white farmers had greater access to federal subsidies and farm aid than Black farmers due to discrimination in the federal and local administration of relief programs (United States Commission on Civil Rights 1965). Black farmers lost almost 800,000 acres in Mississippi between 1950 and 1964 (Newkirk II 2019). The federal government eventually compensated Black farmers for these discriminatory practices, *Pigford v. Glickman*, 185 F.R.D. 82 (D.D.C. 1999), but not enough to make Black farmers whole (Newkirk II 2019, Wright et al. 2020).

V.O. Key argues famously that southern politics are driven by race: in "those counties and sections of the southern states in which Negroes constitute a substantial proportion of the population . . . a real problem of politics, broadly considered, is the maintenance of control by a white minority" (Key and Heard 1949:5). Key later writes, "the beginning and the end of Mississippi politics is the Negro" because of the racial diversity of the state (Key and Heard

1949: 229). This political reality has important economic implications for the Delta region. According to Sharon Wright Austin, depopulation of the Delta region was a goal of economic policy in Mississippi by the 1960s, so that wages were kept artificially low and mechanization devastated sharecroppers (Austin 2012: 36). These policies led to a mass exodus of Black people to northern cities in search of opportunity (Austin 2012: 36-37). Afterward, economic development continued to lag in the region because local white elites opposed factories and other economic engines that would replace farming and provide opportunities for advancement (Austin 2012: 39). Plus, poor educational systems and depopulation made the Delta region unattractive to companies looking for places to locate factories and offices (Austin 2012: 37). In this way, the persistent poverty of the region was driven by systematic underdevelopment; although attempts have been made in recent years to spur growth through gaming and prisons, these have not been enough to ameliorate rural poverty in Mississippi (Austin 2012).

Discrimination still affects the ability of Black people to achieve economic parity with white people in Mississippi. For instance, an analysis of data from the Equal Employment Opportunity Commission by Paychex found that Mississippi ranks second highest in the nation for employment discrimination complaints based on color and/or race (Paychex 2019). Employment may affect voter turnout through several pathways. First, white collar occupations may provide employees with a greater opportunity to develop civic skills that can be useful in navigating electoral bureaucracies (Almond and Verba 1963, Verba, Schlozman, and Brady 1995b). Second, salaried workers may have greater freedom to take time off work without risking their pay. Finally, Rosenstone and Hansen argue that work is an important site for recruitment into politics, which also increases voter turnout (Rosenstone and Hansen 1993).

Racial disparities in access to capital also affect Mississippians. Black people in Mississippi are four times as likely to be unbanked as white people in Mississippi (24.1% vs. 6.6%, respectively (FDIC n.d.)). Several towns in Mississippi, such as Itta Bena, are banking deserts, meaning that there are no branches available for people to conduct their daily business (Ross 2019). Banks are more likely to lend in places where they have branches and longstanding relationships with clients (Morgan, Pinkovskiy, and Yang 2016).

Housing, Residence, and Voting

Neighborhood context matters for political mobilization and political outcomes (Burbank 1997, Burch 2013, Cohen and Dawson 1993, Huckfeldt, Plutzer, and Sprague 1993, Huckfeldt 1979, Tam Cho and Rudolph 2008). As discussed elsewhere in this report, many Black Mississippi residents have the misfortune of living in banking, healthcare, and food deserts, which contribute to racial disparities in health and wealth. However, where people live also matters because racial residential segregation has been shown to decrease Black voter turnout. Researchers argue that segregated Black areas have less access to public goods, such as polling places or transportation, that might matter for voting (Zingher and Moore 2019). In fact, Black Mississippi voters in the 2nd Congressional District face longer wait times than other voters in the district (Chen et al. 2019: 54). Racial residential segregation also affects politics indirectly because it is an important determinant of economic and health outcomes. Racial residential segregation increases Black poverty rates, lowers Black educational attainment, and increases income inequality between Black and white residents (Ananat 2011). Research attributes these effects to isolation from quality schools and jobs (Kruse 2013, Massey and Fischer 2006, Wilson 1996). Racial residential segregation also contributes to the test score gap between Black and

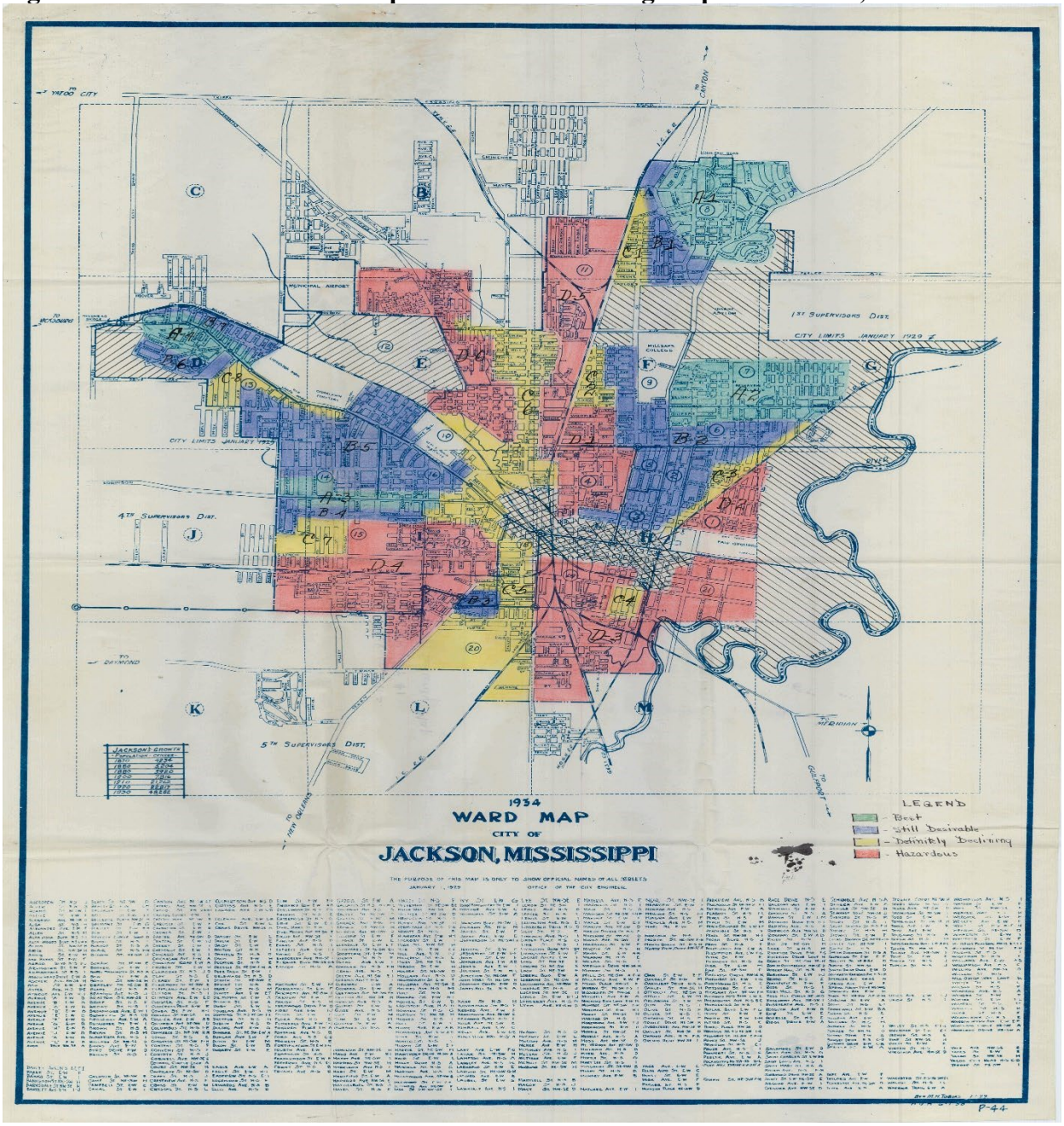
white students (Reardon, Kalogrides, and Shores 2019), to inequalities in the provision of public goods, to lower public goods expenditures (Trounstine 2016), and to worse health outcomes and greater exposure to environmental toxins (Ard 2016, Kramer and Hogue 2009).

For example, Jackson, Mississippi was segregated by race historically. Federal housing policy was a major driver of racial residential segregation. The Federal Housing Administration (FHA) was created in 1934 in order to "insure lenders against any loss on loans made for purchasing homes" (Kimble 2007: 402). The FHA, in this role, "could dictate the range of acceptable, insurable terms and conditions of home lending" (Kimble 2007: 403). In order to prevent lending to places where Black people lived, the FHA relied on Residential Security Maps that were produced by the Home Owners Loan Corporation ("HOLC") (2021a). These maps "color-coded neighborhoods using racial composition as a primary indicator of their acceptability as candidates for mortgage investment" (Kimble 2007: 405). The maps assigned grades to neighborhoods based on racial composition, "with 'A' being most desirable and a 'D' grade ensuring rejection" (Kimble 2007: 405). The HOLC map for Jackson is shown in Figure 7 and follows this traditional grading system for lending based on neighborhood race (2021a).

Research shows that the Jackson area still suffers from a high degree of racial residential segregation today (2021b, Athey et al. 2021).[5] As Trounstine (2016) finds, racially segregated cities spend less on public goods and allocate such goods unequally; a prominent example of this phenomenon is the water crisis currently devastating the city. The residents of Jackson were under a boil water advisory for months during the summer of 2022, and ultimately ended up losing running water altogether for weeks (Nawaz 2022). Jackson's water system has had problems for a long time due to decades of underinvestment (Breslow 2022). However, despite the obvious problems, the Mississippi state legislature refused to appropriate money to fix the system and the Mississippi governor vetoed bipartisan legislation designed to help residents pay their bills and infuse money into the system (Breslow 2022). Professor Robert Bullard, an expert on environmental racism, argued that this neglect of Jackson's water is because of race (Nawaz 2022).

[5] Studies also have shown high racial residential segregation in Pascagoula (Athey et al. 2021) and moderate racial residential segregation in the Gulfport/Biloxi area (2021b, Athey et al. 2021).

Figure 7: Homeowners Loan Corporation Underwriting Map for Jackson, MS

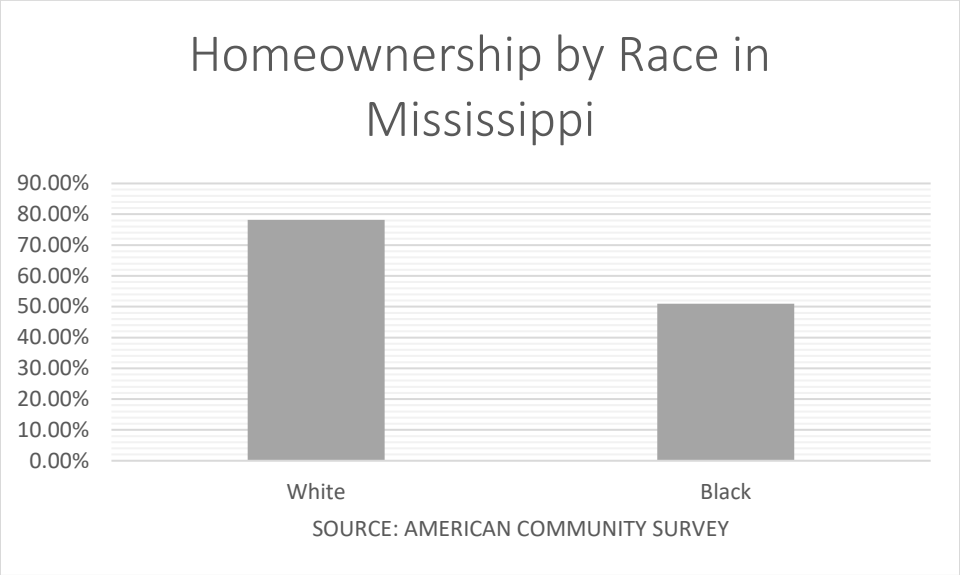


Homeownership affects voting through at least two pathways. First, residency requirements have been shown to reduce voter registration and turnout, largely because residential mobility increases the administrative burden of maintaining registration (Highton 2000). Renters are more mobile than owners. Second, linking back to the previous section, homeownership also has important effects on wealth accumulation (Grinstein-Weiss et al. 2013, Turner and Luea 2009).

Homeownership differs by race in Mississippi. As shown in Figure 8, Black people in Mississippi are less likely to own their homes. When they do, their homes are worth less than those owned by white Mississippians: according to the 2010 American Community Survey 5-

year estimates, the median home value for white Mississippi residents is $114,500, but only $68,300 for Black Mississippi residents. The 2010 American Community Survey data also show that Black Mississippians also are more likely than white Mississippians to live in homes that do not have access to a telephone (7.5% vs. 4.9%, respectively).

Figure 8: Homeownership by Race in Mississippi. Source: 2019 American Community Survey 1 year estimates.



Recent evidence suggests that racial gaps in homeownership as well as access to high quality overall results from discrimination. A 2019 report by the Mississippi Home Corporation, a state entity, found that Black people in Mississippi were denied mortgage loans more frequently and faced discrimination in rental markets (Mississippi Home Corporation 2019). Other studies also have shown that Black Mississippi applicants face discrimination in home lending (Ezeala-Harrison and Glover 2008) and that discriminatory practices affect the ability of Black renters to find rental housing in Mississippi (National Fair Housing Alliance 2017, U. S. Department of Justice 2020).

Health

Health status also may affect voting. Several studies have associated poor health with lower voter turnout (Blakely, Kennedy, and Kawachi 2001, Lyon 2021, Pacheco and Fletcher 2015). The effects of health on voting may take many pathways, such as reducing the availability of free time and money that could otherwise be devoted to politics (Pacheco and Fletcher 2015). Impaired cognitive functioning or physical disability also may make voting more difficult (Pacheco and Fletcher 2015). Poor health is likely the reason that voter turnout declines in old age (Pacheco and Fletcher 2015). People with disabilities also are less likely to vote; problems with polling place accessibility only partially explain this gap (Schur, Ameri, and

Adya 2017, Schur et al. 2002). Health and politics are particularly linked in Mississippi (Jones 2019).

Mississippi ranks among the least healthy of the American states. In many ways, Black Mississippians are worse off relative to white Mississippians. For instance, mortality rates for cancer are worse for Black Mississippi residents relative to whites (217.3 vs. 186.4 per 100,000 residents, age adjusted) (Centers for Disease Control 2022). However, this gap in mortality is not driven by a gap in the incidence of cancer, which is quite similar between Black and white Mississippians (518.2 vs. 513.5 per 100,000 residents, age adjusted) (Centers for Disease Control 2022). As Figure 9 shows, Black people in Mississippi also suffer from diabetes, high blood pressure, and obesity at higher rates than white people in the state (CDC). Overall, life expectancy for Black people in Mississippi is lower than that for white people; in 53 Mississippi counties, the average white person is expected to live more than two years longer than the average Black person (County Health Rankings and Roadmaps 2022). In three counties (Jefferson Davis, Coahoma, and Holmes), the life expectancy for white people is greater than seven years longer than that for Black people (County Health Rankings and Roadmaps 2022). Infant mortality is much higher for Black babies: 11.9 per 1000 live births vs. 6.2 per 1000 live births for white babies (Mississippi State Department of Public Health 2018).

Figure 9: Disease Incidence, by Race. Source, Centers for Disease Control.

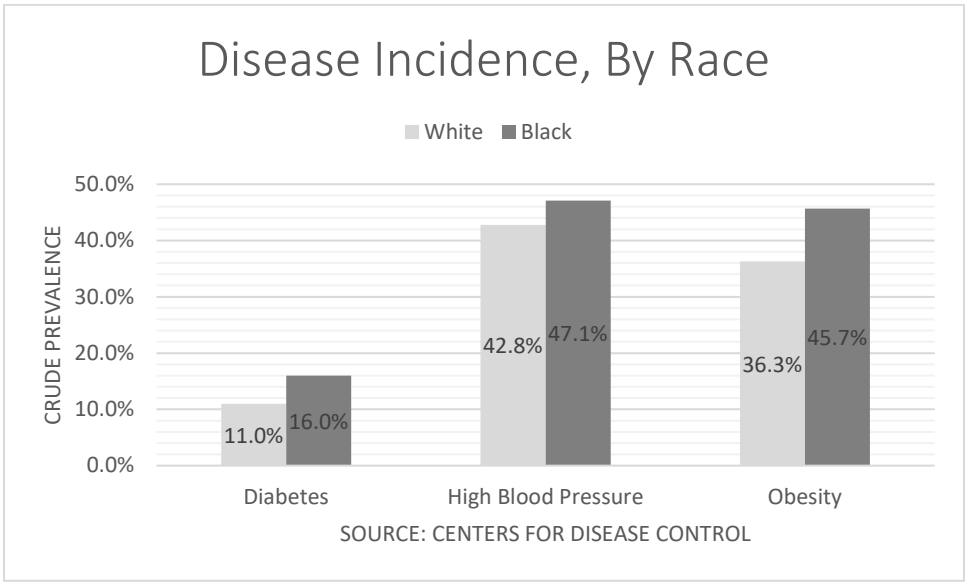
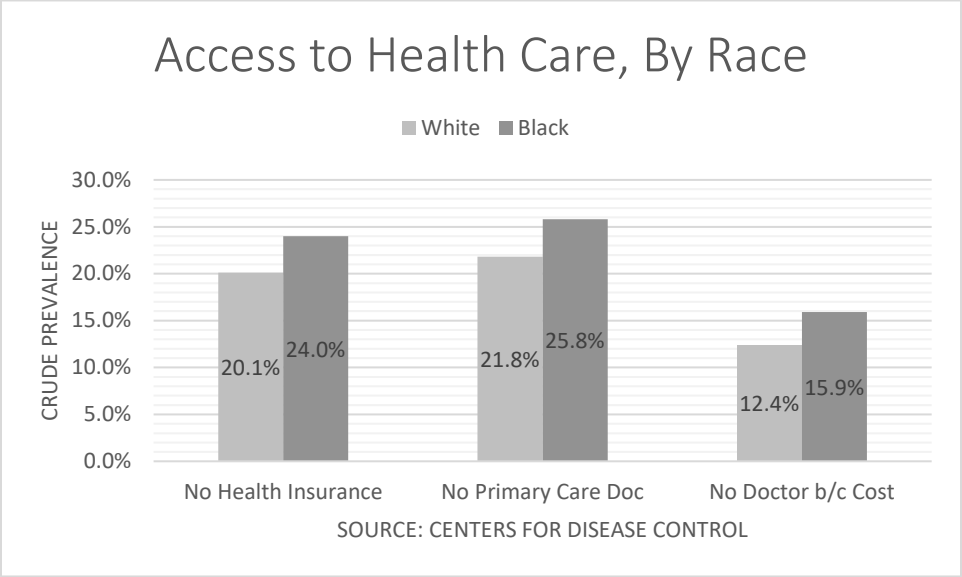


Figure 10: Access to Health Care, by Race. Source: Centers for Disease Control.



These health disparities are caused partially by disparities in access to resources. In Mississippi, as shown in Figure 10, Black people are less likely to have health insurance or a primary care physician than white people (CDC). Moreover, Black people are more likely to report that they did not go see a doctor when they needed to because of cost considerations (CDC). Racial residential segregation also may make it more difficult for Black Americans to access primary care physicians and other doctors (Gaskin et al. 2012, Anderson 2018). For instance, many areas of Mississippi, particularly the Delta region, are medically underserved, and some counties have few to no primary care physicians practicing (Williams and Sprinkle 2021). Many people in the Delta also lack access to stores that sell nutritious food; food deserts have been linked to poor health outcomes as well (Goodman, Thomson, and Landry 2020, Hossfeld and Rico Mendez 2018). Similar problems have been reported with respect to racial disparities in access to COVID-19 vaccination sites early in the vaccine rollout in Mississippi, partly due to failure to reach people in medically underserved areas (Doyle 2021, Gravlee et al. 2021). Even in Jackson, access to vaccines was limited; the city did not open its first drive-thru vaccination site until three weeks after sites opened in other areas (Associated Press 2021).

Discrimination also contributes to racial health disparities. Several long-term studies of Jackson, Mississippi residents have shown that racial discrimination affects cardiac health (Sims et al. 2012, Forde et al. 2020). Racial residential segregation has been shown to lead to worse health outcomes for Black Americans. Several studies have demonstrated that racial residential segregation contributes to racial gaps in cancer outcomes (Landrine et al. 2017, Blanco et al. 2021, Poulson et al. 2021). Such factors, by contributing to racial disparities in health, ultimately may affect voting because of the link between poor health and lower voter turnout.

Criminal Justice

A growing body of research shows that criminal justice interactions affect political behavior. Several studies have shown that, for individuals, contact with the criminal justice system, from police stops, to arrest, to incarceration, directly decreases voter turnout (Burch 2011, Lerman and Weaver 2014, Weaver and Lerman 2010). Primarily, criminal justice contact decreases turnout through "the combined forces of stigma, punishment and exclusion" which impose "barriers to most avenues of influence" and diminish "factors such as civic capacity, governmental trust, individual efficacy, and social connectedness that encourage activity" (Burch 2007: 12).

Black people are disproportionately represented among Mississippi's prisoners, probationers, and parolees as shown in Figure 11. As a reminder, 38.0% of Mississippi's population is Black, but according to the Mississippi Department of Corrections, 60.4% of prisoners, 52.0% of probationers, and 55.5% of parolees in Mississippi are Black. Black people were 54.1% of arrestees in Mississippi in 2020 (Federal Bureau of Investigation 2022).

Figure 11: Mississippi Correctional Populations, by Race. Source: Mississippi Department of Corrections

Racial discrimination accounts for some of this disparity. Studies have shown that racial disparities in arrest are caused by factors that make it more likely that police will stop or search Black people, such as spatially differentiated policing, racial residential segregation, and discrimination (Beckett, Nyrop, and Pfingst 2006, Gelman, Fagan, and Kiss 2007, Ousey and Lee 2008, Pierson et al. 2020). Racial disparities in bail decisions (Arnold, Dobbie, and Yang 2018) and in sentencing also may contribute to incarceration disparities (Bushway and Piehl 2001, Mitchell 2005, Steffensmeier and Demuth 2000, Steffensmeier, Ulmer, and Kramer 1998). Research shows evidence of racial discrimination in sentencing in Mississippi (Fender et al. 2006). The Mississippi legislature passed several reforms of the criminal justice system. However, the evidence suggests that racial discrimination still leads to disparate sentencing outcomes (Mississippi Office of State Public Defender 2018). Moreover, the Supreme Court

found evidence of racial discrimination in the use of peremptory challenges in *Flowers v. Mississippi* 139 S. Ct. 2228 (2019). In addition to the *Flowers* case, scholars have found that racial discrimination of the use of peremptory challenges is a widespread practice in Mississippi (DeCamp and DeCamp 2020).

Mississippi's felony disenfranchisement law was designed "to obstruct the exercise of the franchise by the Negro race," *Ratliff v. Beale,* 20 So. 865, 868 (1896), after the Civil War (Behrens, Uggen, and Manza 2003). Because of this law, involvement with the criminal justice system directly affects voting. In Mississippi, people with felony convictions for certain offenses are prevented from voting while they are serving their sentence in prison or in the community and even after they have finished serving their sentences. Because of the disproportionate involvement of Black Mississippians with the criminal justice system, Black people disproportionately are more likely to have lost their voting rights permanently. Based on an analysis of records from the Administrative Office of the Courts, an estimated 56,000 people are disenfranchised permanently in Mississippi (Rozier 2018). Black people are 61% of the disenfranchised population (Rozier 2018).,.

In Mississippi, Black people are disproportionately arrested, convicted, and punished for crimes. Research suggests that racial discrimination has played a role in these disparities historically and continues to do so because of discriminatory arrest, conviction, and sentencing practices. It is important to remember that, because of felony disenfranchisement laws, disparities in criminal justice involvement translate into disparities in voting participation because Black Mississippians are disproportionately barred from voting based on their criminal histories.

Section 5: Conclusion

To summarize the discussion, Black people in Mississippi are subjected to worse outcomes in education, socioeconomic status, housing, health, and criminal justice. Research cited in this report shows how these racial disparities partly are the result of historical and contemporary discrimination by state and local governments as well as private market actors. In particular, policies that continue to support segregation in education and fail to allocate resources equitably across domains such as health, housing, and education help maintain racial gaps in well-being. As I have demonstrated in this report, researchers have shown that such disparities in education, employment, poverty, income, housing, health, and criminal justice involvement all contribute to gaps in voter turnout.

Senate Factor 8: Lack of Responsiveness

Under Section 2 of the Voting Rights Act, courts may consider additional factors, such as whether there is a lack of responsiveness on the part of elected officials to the particularized needs of minority group members. The longstanding and persistent gaps in socioeconomic status, incarceration, and health discussed throughout this report demonstrate the lack of responsiveness of public officials to the needs of Mississippi's Black communities. Research has shown that public policies are important for creating and sustaining racial disparities. For instance, as described earlier in this report, persistent test score gaps and educational segregation continue to pose problems for Mississippi students; however, Mississippi continues to underfund public schools in the state (Parks 2021). Black Mississippians have worse health outcomes, are less likely to have health insurance, and are more likely to avoid care because of costs, and yet

Mississippi has not accepted the federal Medicaid expansion (Kaiser Family Foundation 2022). Mississippi is the poorest state in the nation, but Mississippi misused millions of dollars in funds from the Temporary Assistance to Needy Families Program, refusing to spend that money on the citizens with the most need (Wolfe 2020). Mississippi also faces allegations that money meant for rental assistance was misdirected toward millions of dollars in lawyer fees (O'Connell and Torbati 2021), and that money meant to alleviate racial disparities in COVID 19 also went mostly unused (Galewitz, Weber, and Whitehead 2022). In Jackson, a persistent water crisis has left residents without water for weeks, and yet the state refused to allocate money to help the city repeatedly (Breslow 2022). A majority of Mississippi voters favor policies such as Medicaid expansion, helping the city of Jackson with fixing the water crisis, and restoring voting rights to people with felony convictions (College 2019, 2021). Moreover, in each of these cases, federal money is there to help. The state just refuses to do so.

Prominent Black leaders in Mississippi attribute these policy decisions to racism. Representative Bennie Thompson, for instance, said of COVID 19 vaccine sites, "But that is a decision that has to go through the governor's office. And the majority of people don't have any confidence that the governor is interested in providing those kinds of services in the minority community" (Chatlani 2021). Zakiya Summers, a Mississippi State Legislator, said of her state,

> "Wealthier areas, she said, "tend to get more resources, more state support. West Jackson, we haven't seen that in a while. It's areas where poor Black people are concentrated where help is slow moving or it's none at all" (Hennessy-Fiske 2022).

Governor Reeves disagrees. He said, "There is not systemic racism in America" (Ganucheau 2021).

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U. S. Department of Justice. 2016. Federal Court Orders Justice Department Desegregation Plan for Cleveland, Mississippi Schools.

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Black Farmers and the Limits of a Politics of Recognition." In *Black Food Matters*, edited by Hanna Garth and AshantÉ M. Reese, 228-250. University of Minnesota Press.

Zingher, Joshua N, and Eric M Moore. 2019. "The Power of Place? Testing the Geographic Determinants of African-American and White Voter Turnout." *Social Science Quarterly* 100 (4):1056-1071.

Appendix

Traci Burch

Employment

- Associate Professor, Northwestern University Department of Political Science (2014-Present)

- Research Professor, American Bar Foundation (2007- Present)

- Assistant Professor, Northwestern University Department of Political Science (2007-2014)

Education

- *Harvard University*

Ph.D. in Government and Social Policy

Dissertation: *Punishment and Participation: How Criminal Convictions Threaten American Democracy*

Committee: Jennifer Hochschild (Chair), Sidney Verba, and Gary King

- *Princeton University*

A.B. in Politics, *magna cum laude*

Publications

- Burch, Traci. 2022. "Adding Insult to Injury: the Justification Frame in Official Narratives of Officer-Involved Killings." *Journal of Race, Ethnicity, and Politics.*

- Burch, Traci. 2022. "Officer-Involved Killings and the Repression of Protest." *Urban Affairs Review.*

- Burch, Traci. 2021. "Not All Black Lives Matter: Officer-Involved Deaths and the Role of Victim Characteristics in Shaping Political Interest and Voter Turnout." *Perspectives on Politics*.

- Kay Lehman Schlozman, Philip Edward Jones, Hye Young You, Traci Burch, Sidney Verba, Henry E. Brady. 2018. "Organizations and the Democratic Representation of Interests: What Happens When Those Organizations Have No Members?" *Perspectives on Politics*.

- Burch, Traci. 2016. "Political Equality and the Criminal Justice System." In Resources, Engagement, and Recruitment. Casey Klofstad, ed. Philadelphia: Temple University Press.

- Burch, Traci. 2016. "Review of The First Civil Right by Naomi Murakawa." *The Forum.*

- Kay Lehman Schlozman, Philip Edward Jones, Hye Young You, Traci Burch, Sidney Verba, Henry E. Brady. 2015. "Louder Chorus – Same Accent: The Representation of Interests in Pressure Politics, 1981-2011." In Darren Halpin, David Lowery, Virginia Gray, eds. The Organization Ecology of Interest Communities. New York: Palgrave Macmillan.

- Burch, Traci. 2015. "Skin Color and the Criminal Justice System: Beyond Black-White Disparities in Criminal Sentencing." *Journal of Empirical Legal Studies* 12(3): 395-420.

- Burch, Traci. 2014. "The Old Jim Crow: Racial Residential Segregation and Neighborhood Imprisonment." *Law & Policy* 36(3) 223-255.

- Burch, Traci. 2014. "The Effects of Imprisonment and Community Supervision on Political Participation." Detaining Democracy Special Issue. *The Annals of the American Academy of Political and Social Science* 651 (1) 184-201.

- Burch, Traci. 2013. Trading Democracy for Justice: Criminal Convictions and the Decline of Neighborhood Political Participation. Chicago: University of Chicago Press.

- Hochschild, Jennifer, Vesla Weaver, and Traci Burch. 2012. Transforming the American Racial Order. Princeton: Princeton University Press.

- Schlozman, Kay Lehman, Sidney Verba, Henry Brady, Traci Burch, and Phillip Jones. 2012. "Who Sings in the Heavenly Chorus? The Shape of the Organized Interest System." In Schlozman, Kay Lehman, Sidney Verba, and Henry Brady, The Unheavenly Chorus, Princeton: Princeton University Press.

- Schlozman, Kay Lehman, Sidney Verba, Henry Brady, Phillip Jones, and Traci Burch. 2012. "Political Voice through Organized Interest Activity." In Schlozman, Kay Lehman, Sidney Verba, and Henry Brady, The Unheavenly Chorus, Princeton: Princeton University Press.

- Burch, Traci. 2012. "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout and Party Registration of Florida's Ex-Felons." *Political Behavior* 34 (1); 1-26.

- Burch, Traci. 2011. "Turnout and Party Registration among Criminal Offenders in the 2008 General Election." *Law and Society Review* 45(3): 699-730.

- Burch, Traci. 2011. "Fixing the Broken System of Financial Sanctions." *Criminology and Public Policy* 10(3).

- Hochschild, Jennifer; Vesla Weaver, and Traci Burch. 2011. "Destabilizing the American Racial Order." *Daedalus* 140; 151-165.

- Burch, Traci. 2009. "Can the New Commander-In-Chief Sustain His All Volunteer Standing Army?" *The Dubois Review on Race* 6(1).

- Burch, Traci. 2009. "Review of *Imprisoning Communities,* by Todd Clear." *Law and Society Review* 43(3) 716-18.

- Burch, Traci. 2009. "American Politics and the Not-So-Benign Neglect of Criminal Justice," in The Future of American Politics, ed. Gary King, Kay Schlozman, and Norman Nie. (New York: Routledge).

- Schlozman, Kay Lehman and Traci Burch. 2009. "Political Voice in an Age of Inequality," in America at Risk: Threats to Liberal Self-Government in an Age of Uncertainty, ed. Robert Faulkner and Susan Shell (Ann Arbor: University of Michigan Press).

- Hochschild, Jennifer and Traci Burch. 2007. "Contingent Public Policies and the Stability of Racial Hierarchy: Lessons from Immigration and Census Policy," in Political Contingency: Studying the Unexpected, the Accidental, and the Unforseen, ed. Ian Shapiro and Sonu Bedi (New York: NYU Press).

Grants

- Co-Principal Investigator. "Fellowship and Mentoring Program on Law and Inequality." September 1, 2020 to August 31, 2023. $349, 313. National Science Foundation.

Honors and Fellowships

- American Political Science Association 2014 Ralph J. Bunche Award **(**for Trading Democracy for Justice).

- American Political Science Association Urban Section 2014 Best Book Award (for Trading Democracy for Justice).

- American Political Science Association Law and Courts Section 2014 C. Herman Pritchett Award (for Trading Democracy for Justice).

- Research grant, Stanford University Center for Poverty and Inequality (2012).

- American Political Science Association E. E. Schattschneider Award for the best doctoral dissertation in the field of American Government (2009)

- American Political Science Association William Anderson Award for the best doctoral dissertation in the field of state and local politics, federalism, or intergovernmental relations (2008)

- American Political Science Association Urban Section Best Dissertation in Urban Politics Award (2008)
- Harvard University Robert Noxon Toppan Prize for the best dissertation in political science (2007)
- Institute for Quantitative Social Sciences Research Fellowship (2006-07)
- *European Network on Inequality* Fellowship (2005)
- Research Fellowship, The Sentencing Project (2005)
- Doctoral Fellow, Malcolm Weiner Center for Inequality and Social Policy (2004-07)

Professional Service

- APSA Law and Courts Section Best Paper Award Committee (2020-2021)
- APSA Elections, Public Opinion, and Voting Behavior Executive Committee (2020-2023)
- General Social Survey Board of Overseers (2020-2025)
- APSA Kammerer Prize Committee (2017)
- Associate Editor, *Political Behavior* (2015-2019)
- APSA Law and Courts Section, Lifetime Achievement Award Prize Committee (2014-2015)
- Law and Society Association, Kalven Prize Committee (2013-2014)
- American Political Science Association, Urban Politics Section Dissertation Prize Committee (2012-13)
- American Political Science Association, Urban Politics Section Executive Committee (2012-13)
- Law and Society Association Diversity Committee, (2012-2013)
- American Political Science Association, Urban Politics Section Program Co-Chair (2011)
- Associate Editor, *Law and Social Inquiry*
- American Political Science Association, Urban Politics Section Book Prize Committee (2009)

- Reviewer for *The American Political Science Review, Public Opinion Quarterly, American Politics Research, and Time-Sharing Experiments in the Social Sciences.*

Presentations and Invited Talks

- University of Pennsylvania. Virtual. "Voice and Representation in American Politics." April 2021.
- University of Michigan. Virtual. "Which Lives Matter? Factors Affecting Mobilization in Response to Officer-Involved Killings." February 2021.
- University of Pittsburgh. Virtual. "Policing and Participation." November 2020.
- Hamilton College Constitution Day Seminar. Virtual. "Racial Protests and the Constitution." September 2020.
- New York Fellows of the American Bar Foundation. New York, NY. "Police Shootings and Political Participation." March 2020.
- Pennsylvania State University, State College, PA. "Effect of Officer Involved Killings on Protest. November 2019.
- Princeton University. Princeton NJ. "Effects of Police Shootings on Protest among Young Blacks." November 2019.
- Missouri Fellows of the American Bar Foundation. Branson, MO. Police Shootings and Political Participation in Chicago. September 2019.
- Northwestern University. "Police Shootings and Political Participation." November, 2018.
- Princeton University. Princeton, NJ. "Police Shootings and Political Participation." September, 2018.
- University of California at Los Angeles. Los Angeles, CA. "Police Shootings and Political Participation." August, 2018.
- American Bar Association Annual Meeting. Chicago, IL. "Police Shootings and Political Participation." August 2018.
- American Bar Endowment Annual Meeting. Lexington, KY. "Effects of Police Shooting in Chicago on Political Participation." June 2018.
- Vanderbilt University. "Effects of Police Shootings in Chicago on Political Participation." April 2018.

- Washington University in St. Louis. "Effects of Pedestrian and Auto Stops on Voter Turnout in St. Louis." February 2018.

- Fellows of the American Bar Foundation, Los Angeles. "Assaulting Democracy." January 2018.

- Northwestern University Reviving American Democracy Conference. Panel presentation. "Barriers to Voting." January 2018.

- University of Illinois at Chicago. "Effects of Police Shootings in Chicago on Political Participation." October, 2017.

- Chico State University. "Constitution Day Address: Policing and Political Participation." September, 2017.

- Fellows of the American Bar Foundation, Atlanta, Georgia. "Policing in Georgia." May 2017.

- United States Commission on Civil Rights. Testimony. "Collateral Consequences of Mass Incarceration." May 2017.

- Northwestern University Pritzker School of Law. "Effects of Police Stops of Cars and Pedestrians on Voter Turnout in St. Louis." April 2017.

- University of California at Los Angeles. Race and Ethnic Politics Workshop. "Effects of Police Stops of Cars and Pedestrians on Voter Turnout in St. Louis." March 2017.

- University of North Carolina at Chapel Hill. American Politics Workshop. "Effects of Police Stops of Cars and Pedestrians on Voter Turnout in St. Louis." February 2017.

- National Bar Association, St. Louis MO. "Political Effects of Mass Incarceration." July 2016.

- Harvard University, Edmond J. Safra Center for Ethics. Inequalities/Equalities in Cities Workshop. April 2016.

- American Political Science Association Annual Meeting. September 2015. "Responsibility for Racial Justice." Discussant.

- St. Olaf College. April 2015. "The Collateral Consequences of Mass Incarceration."

- Northwestern University. Institute for Policy Research. February 2015. "The Civic ~~Culture~~ Structure."

- Texas A&M University. Race, Ethnicity, and Politics Workshop. September 2014. "Trading Democracy for Justice."

- Columbia University Teachers College. The Suburban Promise of Brown Conference. May 2014. "Can We All Get Along, Revisited: Racial Attitudes, the Tolerance for Diversity, and the Prospects for Integration in the 21st Century."

- University of Kentucky. Reversing Trajectories: Incarceration, Violence, and Political Consequences Conference. April 2014. "Trading Democracy for Justice."

- University of Chicago. American Politics Workshop. March 2014. "How Geographic Differences in Neighborhood Civic Capacity Affect Voter Turnout."

- Kennedy School of Government, Harvard University. February 2014. "Trading Democracy for Justice.

- University of Michigan. American Politics Workshop. December 2013. "Trading Democracy for Justice."

- Yale University. American Politics and Public Policy Workshop. September 2013. "Trading Democracy for Justice."

- American Political Science Association Annual Meeting. August 2013. "The Heavenly Chorus Is Even Louder: The Growth and Changing Composition of the Washington Pressure System." With Kay Lehman Schlozman, Sidney Verba, Henry Brady, and Phillip Jones.

- National Bar Association, Miami Florida, July 2013. "The Collateral Consequences of Mass Imprisonment."

- Loyola University. American Politics Workshop. December 2012. "Mass Imprisonment and Neighborhood Voter Turnout."

- Marquette University School of Law. November 2012. "The Collateral Consequences of Mass Imprisonment."

- Yale University. Detaining Democracy Conference. November 2012. "The Effects of Imprisonment and Community Supervision on Political Participation."

- Brown University. American Politics Workshop. October 2012. "Mass Imprisonment and Neighborhood Voter Turnout."

- American Bar Association National Meeting, August 2012. "Mass Imprisonment: Consequences for Society and Politics."

- University of Madison-Wisconsin. American Politics Workshop. March 2012. "The Spatial Concentration of Imprisonment and Racial Political Inequality."

- American Political Science Association Annual Meeting. 2011. "Theme Panel: How Can Political Science Help Us Understand the Politics of Decarceration?"

- University of Pennsylvania. Democracy, Citizenship, and Constitutionalism Conference. April, 2011. "Vicarious Imprisonment and Neighborhood Political Inequality."

- University of Chicago School of Law. Public Laws Colloquium. Chicago, IL. November, 2010. ""The Effects of Neighborhood Incarceration Rates on Individual Political Efficacy and Perceptions of Discrimination."

- Pomona College. November, 2010. "Incarceration Nation."

- University of Washington. Surveying Social Marginality Workshop. October 2010. "Using Government Data to Study Current and Former Felons."

- American Bar Foundation, Chicago, IL, September 2010. "The Effects of Neighborhood Incarceration Rates on Individual Political Attitudes."

- Northwestern University. Chicago Area Behavior Conference. May 2010. "Trading Democracy for Justice: The Spillover Effects of Incarceration on Voter Turnout in Charlotte and Atlanta."

- Annual Meeting of the Law and Society Association, Chicago, IL, May 2010. "Neighborhood Criminal Justice Involvement and Voter Turnout in the 2008 General Election."

- Annual Meeting of the Southern Political Science Association, Atlanta, GA, January 2010. "The Art and Science of Voter Mobilization: Grassroots Perspectives on Registration and GOTV from Charlotte, Atlanta, and Chicago."

- University of Illinois at Chicago. Institute for Government and Public Affairs. November 2009. "Turnout and Party Registration among Convicted Offenders during the 2008 Presidential Election."

- Annual Meeting of the American Political Science Association, Toronto, Ontario, Canada, September 2009. "'I Wanted to Vote for History:' Turnout and Party Registration among Convicted Offenders during the 2008 Presidential Election."

- Harris School of Public Policy, University of Chicago. American Politics Workshop. December 2008. "Trading Democracy for Justice? The Spillover Effects of Imprisonment on Neighborhood Voter Participation."

- Northwestern University School of Law. Law and Political Economy Colloquium. November 2008. "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout Rates and Candidate Preferences of Florida's Ex-Felons."

- University of California, Berkeley. Center for the Study of Law and Society. October 2008. "Trading Democracy for Justice? The Spillover Effects of Imprisonment on Neighborhood Voter Participation."

- Law and Society Association Annual Meeting, Montreal, Canada, May 2008. "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout Rates and Candidate Preferences of Florida's Ex-Felons."

- Law and Society Association Annual Meeting, Montreal, Canada, May 2008. "Trading Democracy for Justice? The Spillover Effects of Imprisonment on Neighborhood Voter Participation."

- Midwest Political Science Association Conference, Chicago, IL, April 2007. Paper: "Concentrated Incarceration: How Neighborhood Incarceration Decreases Voter Registration."

Working Papers Under Review

- "Introduction" (with Jenn Jackson and Periloux Peay) in *Freedom Dreams: A Symposium on Abolition*. Eds. Jenn Jackson, Periloux Peay, and Traci Burch. Social Science Quarterly.

- "The Effects of Community Police Performance on Protest in Chicago" (For Symposium Honoring John Hagan)

- "How Police Departments Frame Low-Threat Victims of Officer-Involved Killings"

- Which Lives Matter?

Additional Activities

- Expert witness in *Kelvin Jones vs. Ron DeSantis, etc. et al.* (U.S. District Court for the Northern District of Florida Consolidated Case No. 4:19-cv-00).

- Expert witness in *Community Success Initiative, et al., Plaintiffs v. Timothy K. Moore* (Superior Court, Wake County, NC Case No. 19-cv-15941).

- Expert witness in *People First of Alabama v. Merrill* (U.S. District Court in Birmingham, Alabama, Case No. 2: 20-cv-00619-AKK)

- Expert witness in *Florida State Conference of the NAACP v. Lee* (U.S. District Court in the Northern District of Florida, Case No. 4:21-cv-00187-MW-MAF)

- Expert witness in *One Wisconsin Institute Inc. v. Jacobs* (U.S. District Court in the Western District of Wisconsin, Case No. 15-CV-324-JDP).

- Expert witness in *Alpha Phi Alpha Fraternity Inc., et al. v. Raffensperger* (U.S. District Court for the Northern District of Georgia, Case No. 1:21-cv-05337-SCJ)

- Expert witness in *Robinson, et al. v. Ardoin* (U.S. District Court for the Middle District of Louisiana, Civil Action No. 22-cv-00211).

- Expert witness in *Nairne, et al. v. Ardoin* (U.S. District Court for the Middle District of Louisiana, Civil Action No. 3:22-cv-00178 SDD-SDJ).

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al.,	)	
	)	No. 4:22-cv-00062-SA-JMV
Plaintiffs,	)	
v.	)	**Declaration of Traci Burch**
	)	
STATE BOARD OF ELECTION COMMISSIONERS, et al.,	)	
	)	
Defendant.	)	

DECLARATION OF TRACI BURCH

I, Traci Burch, make the following declaration based on personal knowledge:

I have been retained by the Plaintiffs in the above referenced matter as an expert. I submit that the foregoing report from me is a true and accurate copy of the report I provided to Plaintiffs in this matter. I declare that the information and opinions contained in the report are true and correct to the best of my knowledge.

I declare under penalty of perjury that the foregoing is true and correct. 28 U.S.C. § 1746.

Dated: 10/1/2022

Traci Burch

Qualifications and Background

My name is Traci Burch. I am an Associate Professor of Political Science at Northwestern University and Research Professor at the American Bar Foundation. I received my Ph.D. in Government and Social Policy from Harvard University in 2007.

Over the past 15 years, I have led several large, long-term quantitative and qualitative research projects on political participation in the United States. I have participated in and coauthored several book chapters and articles that examine race, political participation, and inequality. For instance, I have worked with Professors Kay Schlozman, Sidney Verba, and Henry Brady on book chapters and articles related to the causes and consequences of inequality in political participation. I also collected data on congressional hearings and interest group activities for that book. For my coauthored article with Jennifer Hochschild and our book with Vesla Weaver, I analyzed the legislative history of several racial policies, including the 1965 Hart-Cellar Act. We also explore political participation and attitudes in our book as well.

I am widely regarded as an expert on political behavior, barriers to voting, and political participation. My work has been widely cited and replicated and has won several awards. In particular, my dissertation on the effects of felony disenfranchisement on voting in North Carolina, Georgia, and other states, "Punishment and Participation: How Criminal Convictions Threaten American Democracy" won the Robert Noxon Toppan Prize for the Best Dissertation on a Subject of Political Science at Harvard in 2007. I also achieved national recognition for this work; the dissertation was also awarded the E.E. Schattschneider Award from the American Political Science Association for the best dissertation in American Government, and the William Anderson Award for the best dissertation in federalism, intergovernmental relations, and state and local politics. Several articles from this dissertation, including work evaluating voting patterns among people with felony convictions in North Carolina, Georgia, Florida, Missouri, and Michigan, have been published in leading peer-reviewed journals.

In particular, my articles "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout and Party Registration of Florida's Ex-Felons" and "Turnout and Party Registration among Criminal Offenders in the 2008 General Election," which appeared in the peer-reviewed journals Law and Society Review and Political Behavior, respectively, included my calculations of felony disenfranchisement. My academic book on the community-level effects of criminal convictions on political participation, Trading Democracy for Justice, was published by the University of Chicago Press and also won multiple national awards from the American Political Science Association and its sections, including the Ralph J. Bunche Award for the best scholarly work that explores the phenomenon of ethnic and cultural pluralism and best book awards from the law and politics and urban politics sections. Trading Democracy for Justice, as well as the articles "The Effects of Imprisonment and Community Supervision on Political Participation," "Did Disenfranchisement Laws Help Elect President Bush?" "Skin Color and the Criminal Justice System," and "Turnout and Party Registration among Criminal Offenders in the 2008 General Election" rely on the analysis of data from Georgia.

I have testified before the U.S. Commission on Civil Rights about the collateral consequences of felony convictions with respect to voting and other issues. I have received several grants for my work, including a grant from the Stanford University Center on Poverty

and Inequality. I also serve as co-Principal Investigator on a National Science Foundation grant that supports graduate and postdoctoral fellowships at the American Bar Foundation. I have served on Editorial Boards of leading journals including Political Behavior and Law and Social Inquiry. Currently, I am on the Board of Overseers for the General Social Survey, a longstanding national public opinion survey run by the National Opinion Research Center at the University of Chicago. I routinely review the work of my peers for tenure, scholarly journals, university presses, and grants and have served as a reviewer for the American Political Science Review, The American Journal of Political Science, The Journal of Politics, Political Behavior, the National Science Foundation, Cambridge University Press, Princeton University Press, the University of Chicago Press, Oxford University Press, and many other entities. I also am a member of the Executive Council of the Elections, Public Opinion, and Voting Behavior Section of the American Political Science Association.

My curriculum vitae is provided in the Appendix. I am being compensated $350 per hour for work in this case, plus expenses. This is my ninth engagement as an expert witness. I previously testified at trial and in a deposition in a case in federal district court in Florida, Kelvin Jones vs. Ron DeSantis, etc. et al. (Consolidated Case No. 4:19-cv-300), at trial and in a deposition in North Carolina (Community Success Initiative, et al., Plaintiffs v. Timothy K. Moore in Superior Court, Wake County, NC Case No. 19-cv-15941) and at trial and in a deposition in federal district court in Alabama (People First of Alabama, et al., v. John Merrill, in his official capacity as the Secretary of State of Alabama, et al.; Case No.: 2:20-cv-00619-AKK). I was deposed and testified at trial in a case in federal district court in Florida (Florida State Conference of the NAACP, Common Cause, and Disability Rights Florida v. Laurel M. Lee; Case no. 4:21-cv-00187-MW-MAF) and deposed in a case in federal district court in the western district of Wisconsin (One Wisconsin Institute Inc. v. Jacobs Case No. 15-CV-324-JDP; Luft v. Evers Case No. 20-CV-768-JDP. I also testified in a preliminary injunction hearing in Robinson et al. v. Ardoin (Case No. 22 CV-00211, Middle District of Louisiana). In all cases where an opinion was issued, the courts accepted and relied on my expert testimony.

Scope of the Report

I was asked by the attorneys for the plaintiffs in this case to provide information relevant for evaluating Senate Factor 5, or "the extent to which minority group members bear the effects of discrimination in areas such as education, employment, and health, which hinder their ability to participate effectively in the political process." I have also been asked to provide information relevant for evaluating Senate Factor 8, "whether there is a lack of responsiveness on the part of elected officials to the particularized needs of minority group members." In formulating my opinions, I relied on my analysis of standard sources for political scientists such as the reviews of scholarly literature and the analysis of demographic data, government reports, and public opinion surveys where noted. My work in this matter is ongoing, and I reserve the right to amend, modify, or supplement my analysis and opinions.

Summary of Conclusions

Based on my analyses and review of the scholarly literature, I offer the following opinions:

- Senate Factor 5: The state of Mississippi has consistently failed to provide equal educational opportunities to Black children in the state, and as a result, there are significant gaps in educational attainment and academic achievement between Black and white Mississippians.
- Senate Factor 5: Voter turnout in Mississippi varies by educational attainment, and much of the gap in turnout between Black and white Mississippi residents can be accounted for by the denial of educational opportunities to Black Mississippians.
- Senate Factor 5: Black people in Mississippi also face discrimination in employment and access to capital; financial resources have been shown to affect voter turnout generally and in studies of Mississippi in particular.
- Senate Factor 5: Housing discrimination also plagues Black Mississippians; factors such as homeownership and racial residential segregation have been shown to affect voter turnout.
- Senate Factor 5: Health outcomes such as cancer mortality, infant mortality, and life expectancy vary by race in Mississippi. Discrimination is a factor in these racial gaps: studies of Mississippi residents have shown that exposure to racial discrimination affects heart health, and that Black Mississippi residents have greater difficulty accessing health care and healthy foods.
- Senate Factor 5: Research has shown that discrimination affects conviction and sentencing in Mississippi; such discrimination plays a role in the racial gaps in criminal justice supervision between Black and white Mississippi residents. These racial gaps also affect voting because of Mississippi's felony disenfranchisement law.
- Senate Factor 8: Mississippi ranks at the bottom of states in almost all measures of well being, including health, education, and poverty. However, despite the availability of federal resources and majority public support for policies that could alleviate racial disparities in education, socioeconomic status, health, and criminal justice, the state of Mississippi clearly and repeatedly refuses to enact such policies. In fact, in several instances, the state has misused or misspent federal money earmarked to help vulnerable groups.

I discuss each of these conclusions further in the sections below.

Senate Factor 5: Discrimination in Educational Attainment and Voting Participation

People with higher educational attainment are more likely to vote (Almond and Verba 1963, Brady, Verba, and Schlozman 1995b, Burden 2009, Campbell et al. 1980, Verba, Schlozman, and Brady 1995b). Verba, Schlozman, and Brady argue that the relationship between socioeconomic status and voting exists because people with greater education also tend to have more of the resources such as time, money, and civic skills that affect the calculus of participation (1995: 282). Education makes it easier for individuals to navigate the costs of voting such as acquiring information about the candidates and issues or learning how to register and vote (Verba, Schlozman, and Brady 1995b).

Black people in Mississippi have faced educational discrimination throughout the state's history, hindering their ability to vote. Although the U. S. Supreme Court ruled segregation in public schools unconstitutional in *Brown v. Board of Education* in 1954, and Congress outlawed segregation in public accommodations in the Civil Rights Act of 1964, as I will discuss, the state failed to desegregate public schools for several years after those rulings. In fact, I will show

below that Mississippi's state and local governments have continued to enforce and support segregation in educational institutions even in recent years; for instance, by funding racially homogenous private schools, by assigning students to schools and classrooms by race and by maintaining racially separate proms, homecoming courts, and other activities.

Despite the court's ruling in *Brown*, the education provided by the state to Black and white students remained separate and unequal. Mississippi historically spent less money on educating Black children than white children; for instance, in 1950, this gap was $22.29 dollars to $71.00, respectively (Margo 1990). By May of 1961, the Southern Educational Reporting Service found that no Mississippi Black students attended school with white students in public elementary, secondary, or post-secondary institutions (Southern Educational Reporting Service 1961, 1961).

The lack of progress on desegregating public schools was due to the massive resistance of white parents and the policies of Mississippi state and local governments. The Mississippi legislature adopted several laws in special sessions that were designed to maintain segregated schools (1961, Douglas and Center 2005). Beginning in the mid-1960s, many districts in the state "desegregated" by adopting a "freedom of choice" scheme that encouraged the maintenance of separate public and private schools for white children (Fuquay 2002, Bolton 2009). Of course, no white children opted to go to Black schools, and Black students who tried to attend white schools faced intimidation and violence (Fuquay 2002: 172-175). Even as late as 1967, one-third of Mississippi school districts were still completely segregated, and fewer than three percent of Black children in the state attended school with white children (Bolton 2009).

Mississippi officially desegregated all school districts in 1970 in the aftermath of rulings in *Alexander v. Holmes County Board of Education,* 396 US 19 (1969) and *U.S. v. Hinds County Board of Education,* 417 F.2nd 852 (5th Cir. 1969). However, Mississippi schools continued to be segregated in practice. The number of private schools for white children increased dramatically after the desegregation order, as did the number of white children opting out of the public school system:

> The *Alexander* decision led to an explosion of private schools across Mississippi. One student of the movement estimated that 61 schools were founded in that year, a number that is certainly understated. By 1973 there were 125 segregation academies operating in Mississippi. In the 30 districts specifically named by the Alexander decision, the number of academies increased from 6 to 30. Incredibly, most of these schools were created between the time of the court order in December and its implementation date on January 7. Already existing schools were in a position to take full advantage of the advent of "mass integration'' and they saw their enrollments skyrocket. (Fuquay 2002: 176-177).

The State continued to support school segregation. Early on, state vouchers paid for students to attend these "segregation academies," and even after 1970 these schools received textbooks, supplies, and transportation paid for with public money (Fuquay 2002: 169, 178). The state also punished districts for desegregating: in 1971, the governor of Mississippi issued an executive order denying school districts state funds if children were bused to desegregate, an order that caused Jackson Public Schools to lose 40% of their budget that year (Dixon 2020:3).

White flight did not just occur via the transfer of white students into private schools. In many communities, parents also moved to avoid desegregation (Dixon 2020:3). For instance, the city of Jackson went from majority white in 1960 to majority Black today due to a decline in the white population spurred at first by the prospect of integration (Hennessy-Fiske 2022).

The state resisted desegregation in higher education as well. Well after the Supreme Court ruled in a series of cases that segregation in public education was unconstitutional, Mississippi still maintained a completely segregated system of public higher education (1961: 30). Although the number of Black and white children in the elementary and secondary education system was roughly equal in the state, there were 19 white public colleges but only 6 Black colleges in 1961 (Southern Educational Reporting Service 1961: 30). After violence, riots, and legal maneuvering, James Meredith was able to enroll in the University of Mississippi, escorted by federal agents in 1961 (Bridges and Walker 1995). However, after the admission of Meredith to the University of Mississippi, the U. S. Supreme Court found:

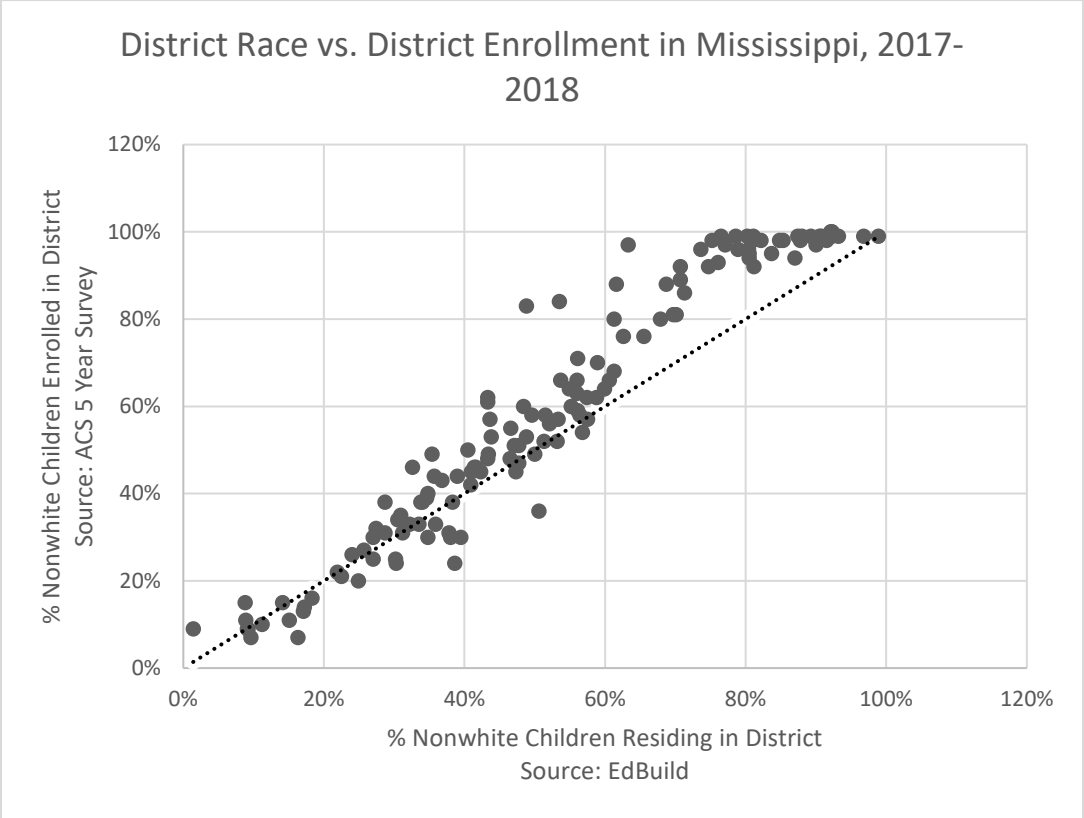
> For the next 12 years the segregated public university system in the State remained largely intact. Mississippi State University, Mississippi University for Women, University of Southern Mississippi, and Delta State University each admitted at least one Black student during these years, but the student composition of these institutions was still almost completely white. During this period, Jackson State and Mississippi Valley State were exclusively Black; Alcorn State had admitted five white students by 1968. *United States v. Fordice*, 505 U.S. 717, 722 (1992).

The Court ruled in 1992 that the "State has not met its affirmative obligation to dismantle its prior dual system" of separate but unequal higher education. *Id.* at 743. Research shows that integration of Mississippi's system of state universities is not complete; Mississippi's historically Black institutions still are stigmatized and held in low regard by white students (Paul, Steven Andrew, and King 2004).

Today, it is not difficult to see the ways in which Mississippi's history of racial discrimination against Black citizens in education still produces gaps in educational equality. There is ample evidence that Mississippi has and continues to promote separate and unequal education for Black and white students. Racial segregation and resource inequity still can be found in Mississippi public schools.

School segregation has been shown to detrimentally affect the academic performance of minority students: Black and Latino students who grew up under conditions of segregation were less academically prepared for college and had been exposed to more violence and social disorder than those coming from "majority-dominant settings." (Massey and Fischer 2006). School segregation continues in Mississippi today. Currently, there are 37 school districts that are more than 90% Black in Mississippi (2022). There is ample evidence of the resistance of white parents and local school boards to desegregation. Following the tradition started with the segregation academies in the 1960s, white parents continue to opt out of public schools, especially in majority Black districts. As shown in Figure 1, Black students are overrepresented relative to their share of the population in most school districts in Mississippi; in fact, in districts (many in the Delta region) where Black students are more than three-quarters of students, white students have abandoned the public schools altogether.

Figure 1: Racial composition of school districts vs. school district enrollment by race in Mississippi for the 2017-18 school year. Data from EdBuild.org and the American Community Survey.



Coincidentally, more than 35 of the schools that began as segregation academies were still operating in 2012 (Carr 2012). These schools still enroll few to no students of color, and have discriminatory rules such as banning Black hairstyles (Carr 2012, Klein 2018). The state allows vouchers paid by public money to be used at some of these academies (Klein 2018). Many Mississippi politicians attended these academies, including Senator Cindy Hyde Smith (Klein 2018).

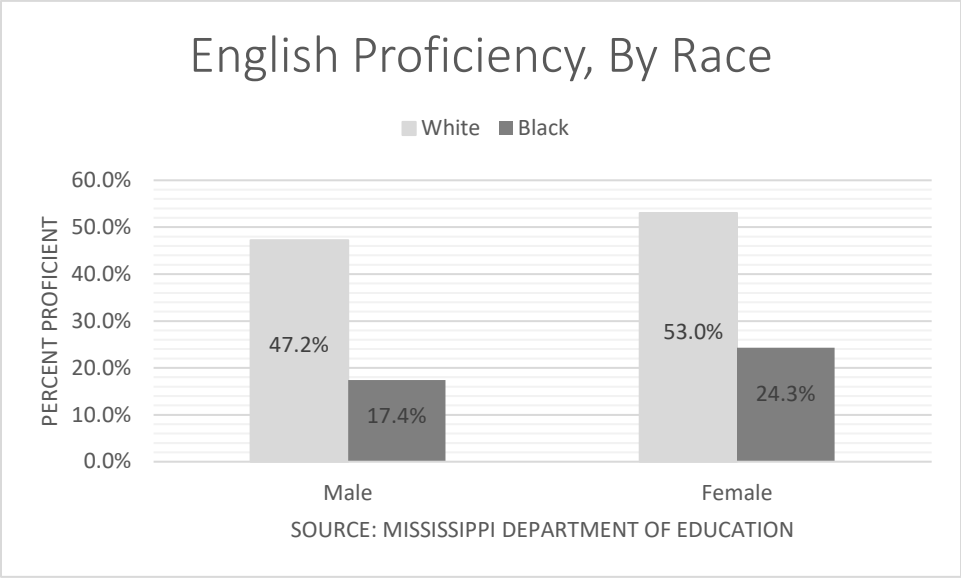
Several districts recently have engaged in practices that actively maintain racial segregation. More than 50 years after Brown, several Mississippi districts have been found to assign children to schools, classrooms, and even extracurricular activities by race. For instance, the Cleveland School District finally was ordered to desegregate in 2016 as it was still assigning students to Black and white schools (U. S. Department of Justice 2016). A Brookhaven, Mississippi policy that still assigned students to classrooms based on parent requests also has led to segregated classrooms (Northam 2019). Students still were being assigned to classrooms by race in Waynesboro Elementary School in 2012 (Consent Order, *United States v. Mississippi*, 2012 WL 13219550 (S.D. Miss. Jan. 3, 2012).[1] A judge found evidence that a racially

[1] https://www.justice.gov/sites/default/files/crt/legacy/2013/01/17/wayneco2012order.pdf

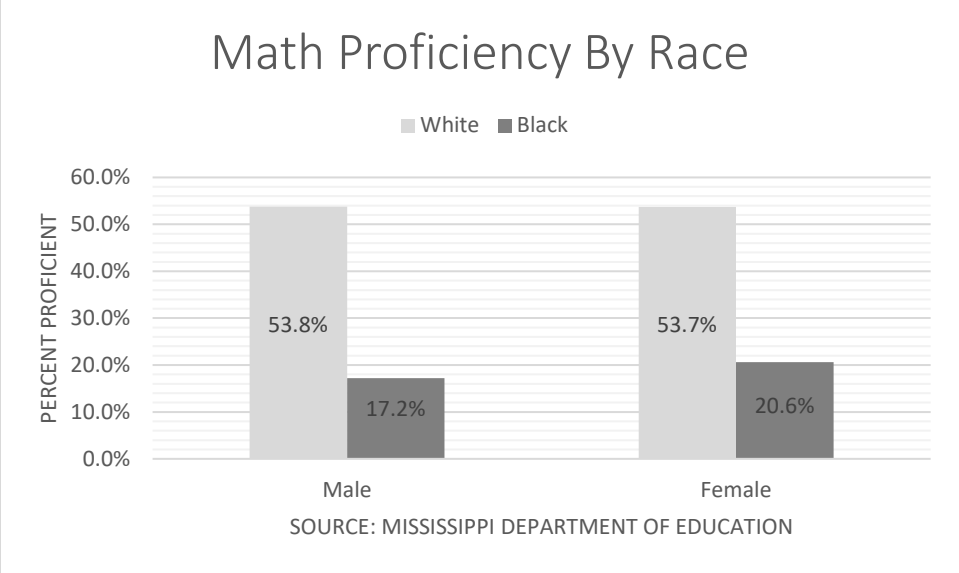
discriminatory policy of transferring white students to all-white schools led to resegregation in Walthall County (U. S. Department of Justice 2010). Recent evidence of separate proms for Black and white students (2008), separate elections for class officers by race, and even separate homecoming court selections has been found as well (*United States v. Nettleton Line Consolidated School District Civil Action,* 2020 WL 5237806 (N.D. Miss. Sept. 2, 2020); *United States v. Covington County School District* 2:66-Cv-02148 (S.D. Miss. Feb. 27, 1976); *United States v. Mississippi,* 2012 WL 13219551 (S.D. Miss. Jan. 3, 2012).

Mississippi also provides resources to schools unequally. Based on data from EdBuild.org, in Mississippi school districts in which 90% or more of the students were nonwhite, the state government provided an average of $5,280 per pupil, compared with $5,561 in districts where students were more than 90% white (2022).[2] When multiplied out based on the number of students in those districts, those nonwhite districts were shortchanged $27,993,501 in that school year alone. This funding disparity exists even though the Edbuild.org data show that poverty rates were much higher in the 90% nonwhite districts: in those districts, the median student poverty rate was 41% and no district had fewer than 25% of students in poverty (2022). For the white districts, the Edbuild.org data show that the median student poverty rate was 19% and none had a poverty rate above 23% (2022). Evidence of unequal facilities has been found in some districts as well. *Gray v. Lowndes County School District,* 900 F. Supp. 2d 703 (N.D. Miss. 2012). Several Black districts, particularly in the Delta region, have fewer resources, meaning that students have to make do with teacher and bus shortages, older textbooks, and crumbling or dilapidated buildings (Parks 2021). The state has fully funded public education only three times in the last 30 years, and rural districts such as Holmes and Durant have been shortchanged millions of dollars (Parks 2021).

Figure 2: English (a) and Math (b) Proficiency by Race in Mississippi. Source: Mississippi Department of Education.



[2] This analysis discards the Montgomery School District, which was closed in that year.



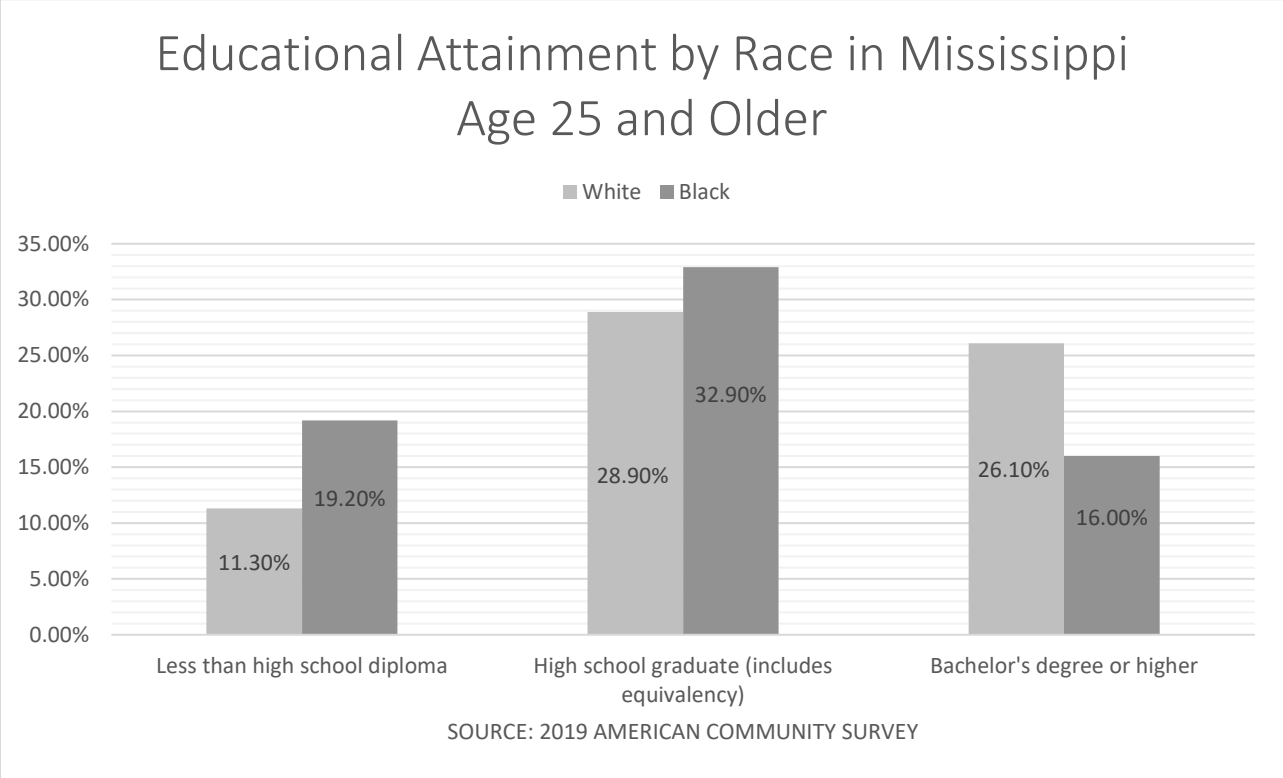
Given this historical and contemporary under-investment in public education for Black students, educational outcomes in Mississippi vary among currently enrolled students by race. As shown in Figure 2, among current students, there is a gap in scores on assessment tests in Mississippi; for example, only 24.3% of Black girls and 17.4% of Black boys are proficient in English, compared with 53.0% of white girls and 47.2% of white boys (Mississippi Department of Education 2022). Similar gaps exist in math proficiency: 20.6% of Black girls and 17.2% of Black boys were proficient in math, compared with 53.7% of white girls and 53.8% of white boys (Mississippi Department of Education 2022). In the 2017-2018 school year (the latest data available from the federal government), Black students were 49.0% and white students were 44.0% of Mississippi public school students (U. S. Department of Education 2018). However, that year, Black students were only 24.4% of students in gifted and talented programs and 31.7% of students taking Advanced Placement courses (U. S. Department of Education 2018).

The evidence suggests that racial disparities in school discipline exist in Mississippi. School suspensions have been shown to increase subsequent arrests and other anti-social behavior in youth (Mowen and Brent 2016, Hemphill et al. 2006). Sixty-five percent of students who received one or more out-of-school suspensions were Black (U. S. Department of Education 2018). Twice as many Black students as white students were referred to law enforcement in Mississippi (U. S. Department of Education 2018). In Meridian, MS, the U.S. Department of Justice found persistent racial disparities in school discipline (U. S. Department of Justice 2013). Corporal punishment is also more likely to be used against Black children in Mississippi (Gershoff and Font 2016).

This long history of persistent racial discrimination in education affects outcomes in educational attainment for Mississippians. Although there have been gains in educational attainment in Mississippi over time, racial gaps persist. Figure 3 shows data from the 2019 1-Year Estimates from the American Community Survey on the educational attainment of Mississippi residents over the age of 25, by race. The data show that white Mississippi adults are

far more likely than Black Mississippi adults to have earned a bachelor's or postgraduate degree, and that Black Mississippians have lower educational attainment overall.[3]

Figure 3: Educational Attainment by Race in Mississippi. Source: 2019 American Community Survey 1-Year Estimates

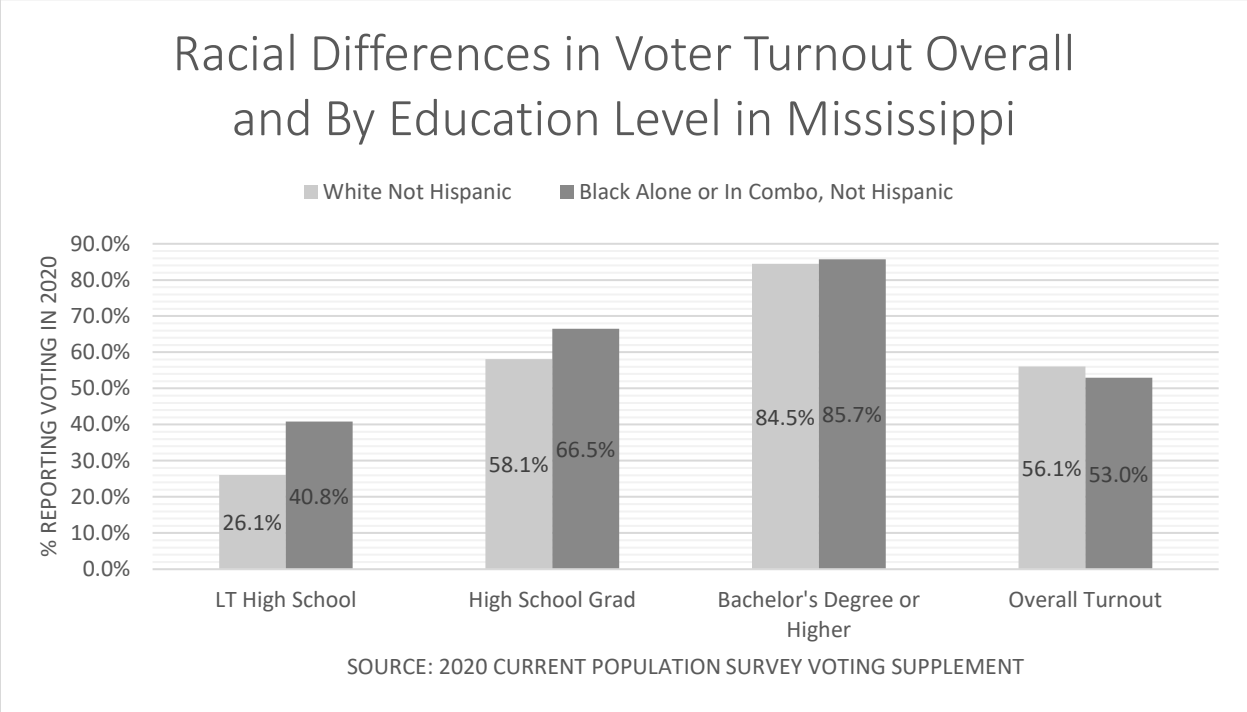


Even worse, literacy rates vary by race in Mississippi. An estimated 28% of Mississippi adults are classified as low literacy (National Center for Education Statistics 2022).[4] In Black counties, low literacy rates are even more prevalent. For instance, 50% of adults in Humphreys County, 48% of adults in Quitman and Noxubee Counties, and 47% of adults in Holmes, Claiborne, and Wilkinson Counties are estimated to be below level 1 in literacy. Low literacy is a barrier to voting (Brady, Verba, and Schlozman 1995a, Summers et al. 2014).

[3] The totals in the chart do not sum to 100% because people with associate degrees or some college are not depicted.

[4] "Adults at this level can be considered at risk for difficulties using or comprehending print material. Adults at the upper end of this level can read short texts, in print or online, and understand the meaning well enough to perform simple tasks, such as filling out a short form, but drawing inferences or combining multiple sources of text may be too difficult. Adults who are *below Level 1* may only be able to understand very basic vocabulary or find very specific information on a familiar topic. Some adults *below Level 1* may struggle even to do this and may be functionally illiterate." (National Center for Education Statistics 2022).

Figure 4: Racial Differences in Voter Turnout Overall and by Education Level in Mississippi. Source: 2020 Current Population Survey Voting and Registration Supplement



Examining voter turnout in Mississippi by race and educational level in Figure 4 shows the clear impact of Mississippi's history of educational inequality on voting. As shown in the last columns of the figure, overall, white Mississippians have higher voter turnout than Black Mississippians: 56.1% of white Mississippi citizens voted in the 2020 general election, compared with 53.0% of Black Mississippi citizens. However, once we control for educational level, we see that for every level of educational attainment, Black Mississippians vote at higher rates than white Mississippians. These data suggest that the overall gap in turnout between Black and white Mississippians exists because of the gap in educational opportunities between Black and white Mississippians. Black people in Mississippi have had less access to quality education and therefore have lower educational attainment for the reasons discussed in this section; this lower educational attainment leads to lower voter turnout.

Income, Poverty, Wealth and Voting

Income and wealth affect voting to the extent that greater income can make it easier to overcome the costs of voting, such as having the ability to afford time off work to go to the polls (Verba, Schlozman, and Brady 1995a). On every economic measure, Mississippi ranks among the worst-off states in the country (Suneson 2018). Black Mississippi residents fare worse than white Mississippi residents. For instance, as shown in Figure 5, the median household income for white Mississippi households is almost twice as high as that for Black Mississippi households. In Figure 6, it is clear that gaps exist on other economic measures as well: Black unemployment is more than twice as high as white unemployment, Black poverty is almost three times higher than white poverty, and more than three times as many Black households as white households lack access to a vehicle. Studies have shown that polling place distance affects voter turnout, and those effects are related to transportation access (Brady and McNulty 2011, Bagwe,

Margitic, and Stashko 2020). In states with no excuse absentee voting, people tend to offset issues accessing physical polling places with voting by mail; however, in states with limited absentee ballot options, such as that in Mississippi, the "substitution to mail-in voting" is smaller (Bagwe, Margitic, and Stashko 2020: 4). Overall, poverty and related issues have been shown to decrease political participation in Mississippi and other states (Austin, Franklin, and Lewis 2013).

Figure 5: Median Household Income by Race in Mississippi. Source 2019 American Community Survey 1 year estimates.

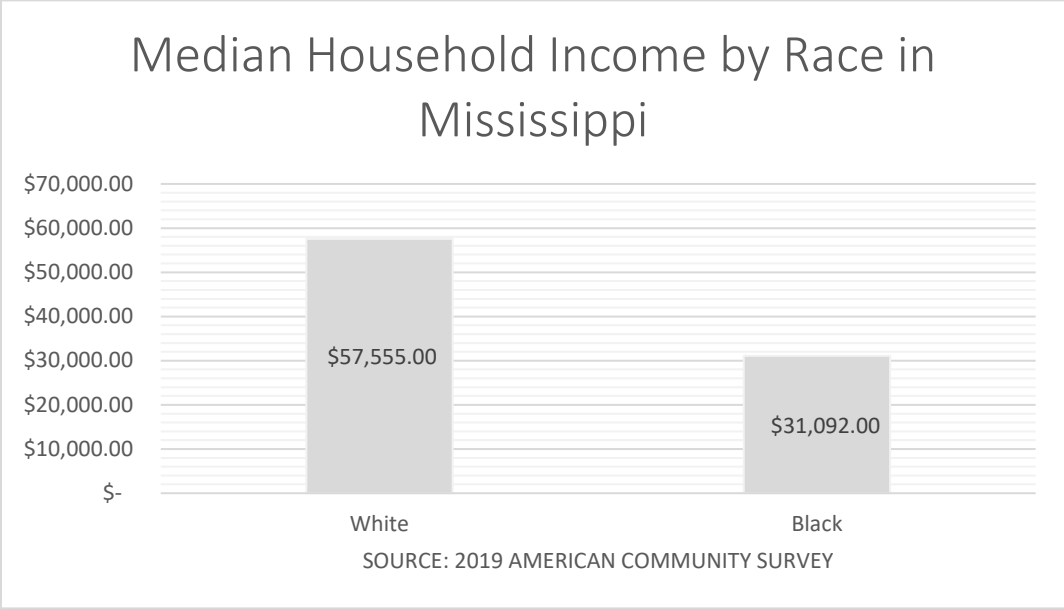
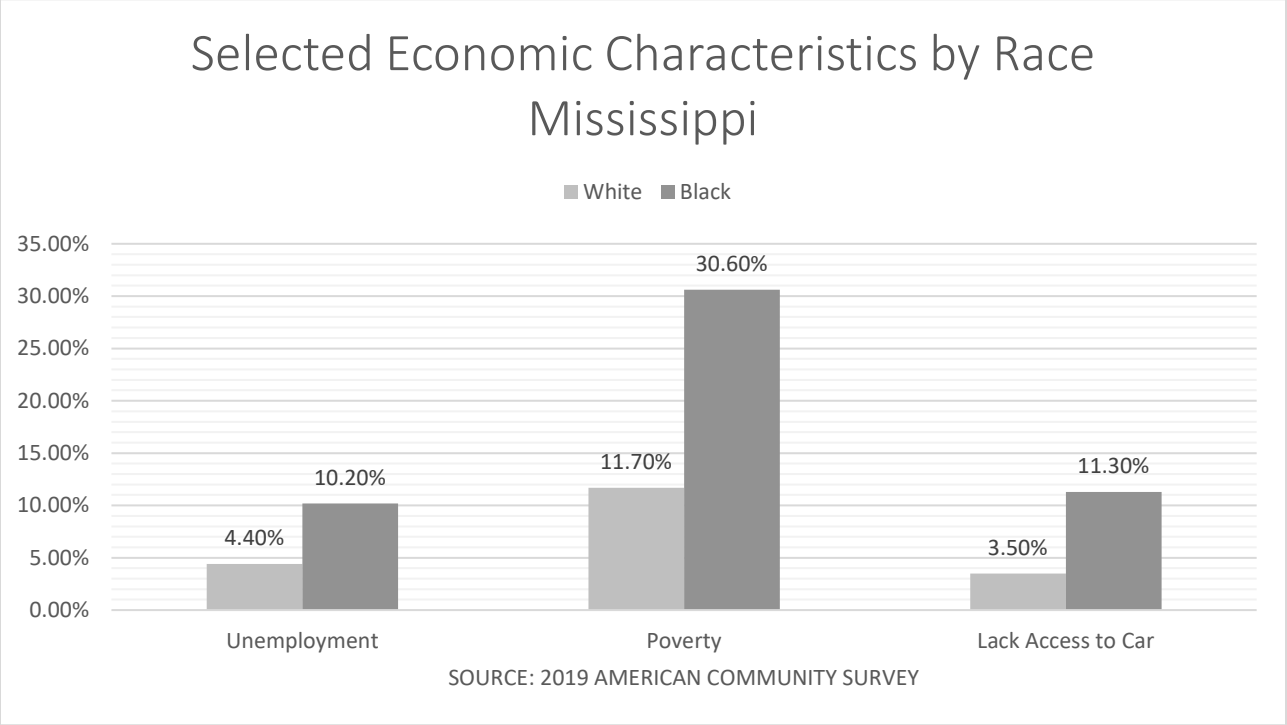


Figure 6: Selected Economic Characteristics by Race in Mississippi. Source: 2019 American Community Survey 1 year estimates.



The persistent educational discrimination faced by Black Mississippi residents can account for much of the disparity in socioeconomic wellbeing (Long 2010). However, decades of persistent discrimination in employment and access to capital over decades also have produced economic disparities.

Mississippi is predominantly rural, so agriculture has loomed large as a determinant of both income and wealth in the state. Of course, Mississippi's agricultural system was dominated first by plantation slavery and then through sharecropping. Eventually, Black farmers did gain a foothold, buying farmland in the Mississippi delta and other regions. However, land dispossession due to discriminatory or otherwise improper lending practices led Black farmers to lose their land at greater rates than white farmers in the state (Newkirk II 2019). For instance, white farmers had greater access to federal subsidies and farm aid than Black farmers due to discrimination in the federal and local administration of relief programs (United States Commission on Civil Rights 1965). Black farmers lost almost 800,000 acres in Mississippi between 1950 and 1964 (Newkirk II 2019). The federal government eventually compensated Black farmers for these discriminatory practices, *Pigford v. Glickman*, 185 F.R.D. 82 (D.D.C. 1999), but not enough to make Black farmers whole (Newkirk II 2019, Wright et al. 2020).

V.O. Key argues famously that southern politics are driven by race: in "those counties and sections of the southern states in which Negroes constitute a substantial proportion of the population . . . a real problem of politics, broadly considered, is the maintenance of control by a white minority" (Key and Heard 1949:5). Key later writes, "the beginning and the end of Mississippi politics is the Negro" because of the racial diversity of the state (Key and Heard

1949: 229). This political reality has important economic implications for the Delta region. According to Sharon Wright Austin, depopulation of the Delta region was a goal of economic policy in Mississippi by the 1960s, so that wages were kept artificially low and mechanization devastated sharecroppers (Austin 2012: 36). These policies led to a mass exodus of Black people to northern cities in search of opportunity (Austin 2012: 36-37). Afterward, economic development continued to lag in the region because local white elites opposed factories and other economic engines that would replace farming and provide opportunities for advancement (Austin 2012: 39). Plus, poor educational systems and depopulation made the Delta region unattractive to companies looking for places to locate factories and offices (Austin 2012: 37). In this way, the persistent poverty of the region was driven by systematic underdevelopment; although attempts have been made in recent years to spur growth through gaming and prisons, these have not been enough to ameliorate rural poverty in Mississippi (Austin 2012).

Discrimination still affects the ability of Black people to achieve economic parity with white people in Mississippi. For instance, an analysis of data from the Equal Employment Opportunity Commission by Paychex found that Mississippi ranks second highest in the nation for employment discrimination complaints based on color and/or race (Paychex 2019). Employment may affect voter turnout through several pathways. First, white collar occupations may provide employees with a greater opportunity to develop civic skills that can be useful in navigating electoral bureaucracies (Almond and Verba 1963, Verba, Schlozman, and Brady 1995b). Second, salaried workers may have greater freedom to take time off work without risking their pay. Finally, Rosenstone and Hansen argue that work is an important site for recruitment into politics, which also increases voter turnout (Rosenstone and Hansen 1993).

Racial disparities in access to capital also affect Mississippians. Black people in Mississippi are four times as likely to be unbanked as white people in Mississippi (24.1% vs. 6.6%, respectively (FDIC n.d.)). Several towns in Mississippi, such as Itta Bena, are banking deserts, meaning that there are no branches available for people to conduct their daily business (Ross 2019). Banks are more likely to lend in places where they have branches and longstanding relationships with clients (Morgan, Pinkovskiy, and Yang 2016).

Housing, Residence, and Voting

Neighborhood context matters for political mobilization and political outcomes (Burbank 1997, Burch 2013, Cohen and Dawson 1993, Huckfeldt, Plutzer, and Sprague 1993, Huckfeldt 1979, Tam Cho and Rudolph 2008). As discussed elsewhere in this report, many Black Mississippi residents have the misfortune of living in banking, healthcare, and food deserts, which contribute to racial disparities in health and wealth. However, where people live also matters because racial residential segregation has been shown to decrease Black voter turnout. Researchers argue that segregated Black areas have less access to public goods, such as polling places or transportation, that might matter for voting (Zingher and Moore 2019). In fact, Black Mississippi voters in the 2nd Congressional District face longer wait times than other voters in the district (Chen et al. 2019: 54). Racial residential segregation also affects politics indirectly because it is an important determinant of economic and health outcomes. Racial residential segregation increases Black poverty rates, lowers Black educational attainment, and increases income inequality between Black and white residents (Ananat 2011). Research attributes these effects to isolation from quality schools and jobs (Kruse 2013, Massey and Fischer 2006, Wilson 1996). Racial residential segregation also contributes to the test score gap between Black and

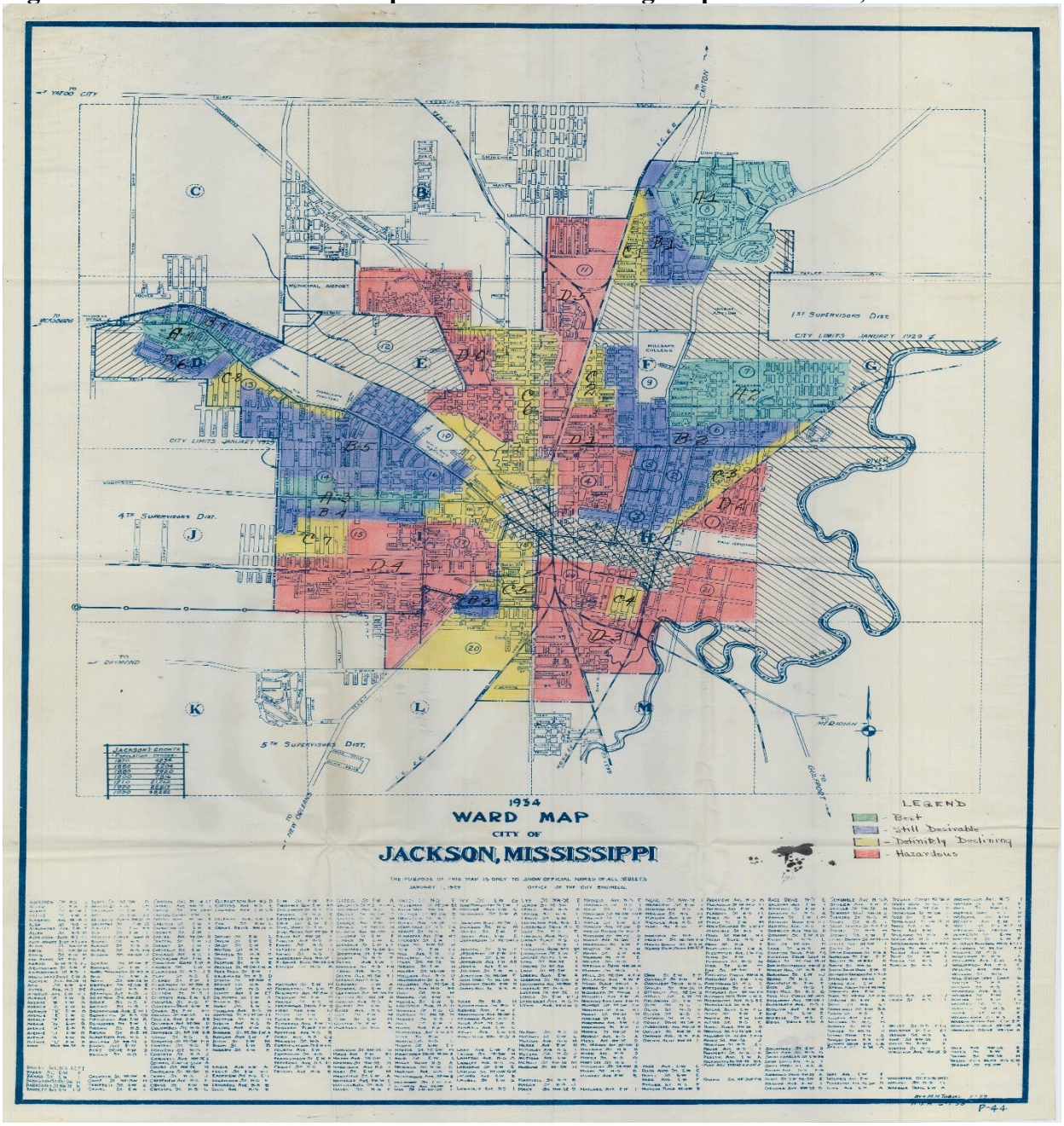
white students (Reardon, Kalogrides, and Shores 2019), to inequalities in the provision of public goods, to lower public goods expenditures (Trounstine 2016), and to worse health outcomes and greater exposure to environmental toxins (Ard 2016, Kramer and Hogue 2009).

For example, Jackson, Mississippi was segregated by race historically. Federal housing policy was a major driver of racial residential segregation. The Federal Housing Administration (FHA) was created in 1934 in order to "insure lenders against any loss on loans made for purchasing homes" (Kimble 2007: 402). The FHA, in this role, "could dictate the range of acceptable, insurable terms and conditions of home lending" (Kimble 2007: 403). In order to prevent lending to places where Black people lived, the FHA relied on Residential Security Maps that were produced by the Home Owners Loan Corporation ("HOLC") (2021a). These maps "color-coded neighborhoods using racial composition as a primary indicator of their acceptability as candidates for mortgage investment" (Kimble 2007: 405). The maps assigned grades to neighborhoods based on racial composition, "with 'A' being most desirable and a 'D' grade ensuring rejection" (Kimble 2007: 405). The HOLC map for Jackson is shown in Figure 7 and follows this traditional grading system for lending based on neighborhood race (2021a).

Research shows that the Jackson area still suffers from a high degree of racial residential segregation today (2021b, Athey et al. 2021).[5] As Trounstine (2016) finds, racially segregated cities spend less on public goods and allocate such goods unequally; a prominent example of this phenomenon is the water crisis currently devastating the city. The residents of Jackson were under a boil water advisory for months during the summer of 2022, and ultimately ended up losing running water altogether for weeks (Nawaz 2022). Jackson's water system has had problems for a long time due to decades of underinvestment (Breslow 2022). However, despite the obvious problems, the Mississippi state legislature refused to appropriate money to fix the system and the Mississippi governor vetoed bipartisan legislation designed to help residents pay their bills and infuse money into the system (Breslow 2022). Professor Robert Bullard, an expert on environmental racism, argued that this neglect of Jackson's water is because of race (Nawaz 2022).

[5] Studies also have shown high racial residential segregation in Pascagoula (Athey et al. 2021) and moderate racial residential segregation in the Gulfport/Biloxi area (2021b, Athey et al. 2021).

Figure 7: Homeowners Loan Corporation Underwriting Map for Jackson, MS

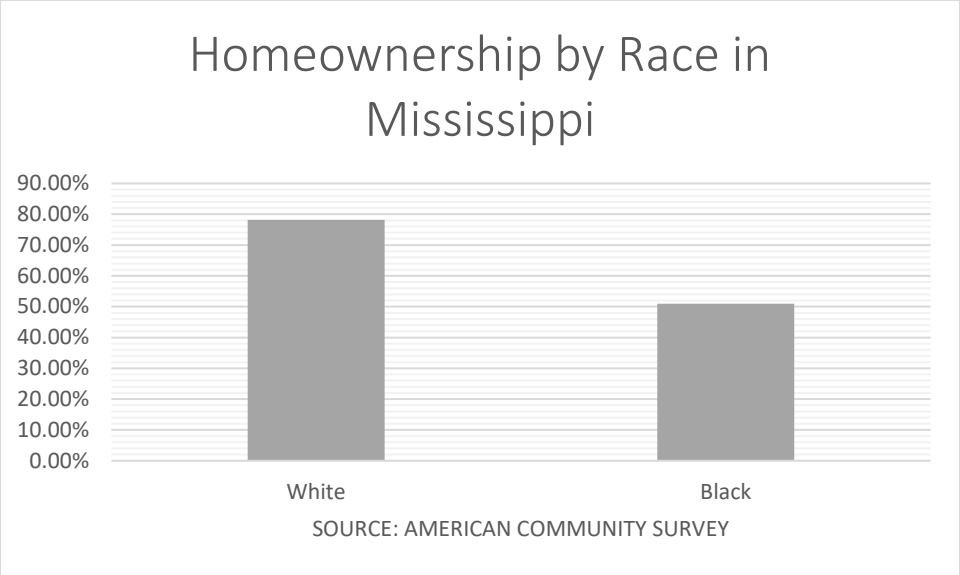


Homeownership affects voting through at least two pathways. First, residency requirements have been shown to reduce voter registration and turnout, largely because residential mobility increases the administrative burden of maintaining registration (Highton 2000). Renters are more mobile than owners. Second, linking back to the previous section, homeownership also has important effects on wealth accumulation (Grinstein-Weiss et al. 2013, Turner and Luea 2009).

Homeownership differs by race in Mississippi. As shown in Figure 8, Black people in Mississippi are less likely to own their homes. When they do, their homes are worth less than those owned by white Mississippians: according to the 2010 American Community Survey 5-

year estimates, the median home value for white Mississippi residents is $114,500, but only $68,300 for Black Mississippi residents. The 2010 American Community Survey data also show that Black Mississippians also are more likely than white Mississippians to live in homes that do not have access to a telephone (7.5% vs. 4.9%, respectively).

Figure 8: Homeownership by Race in Mississippi. Source: 2019 American Community Survey 1 year estimates.



Recent evidence suggests that racial gaps in homeownership as well as access to high quality overall results from discrimination. A 2019 report by the Mississippi Home Corporation, a state entity, found that Black people in Mississippi were denied mortgage loans more frequently and faced discrimination in rental markets (Mississippi Home Corporation 2019). Other studies also have shown that Black Mississippi applicants face discrimination in home lending (Ezeala-Harrison and Glover 2008) and that discriminatory practices affect the ability of Black renters to find rental housing in Mississippi (National Fair Housing Alliance 2017, U. S. Department of Justice 2020).

Health

Health status also may affect voting. Several studies have associated poor health with lower voter turnout (Blakely, Kennedy, and Kawachi 2001, Lyon 2021, Pacheco and Fletcher 2015). The effects of health on voting may take many pathways, such as reducing the availability of free time and money that could otherwise be devoted to politics (Pacheco and Fletcher 2015). Impaired cognitive functioning or physical disability also may make voting more difficult (Pacheco and Fletcher 2015). Poor health is likely the reason that voter turnout declines in old age (Pacheco and Fletcher 2015). People with disabilities also are less likely to vote; problems with polling place accessibility only partially explain this gap (Schur, Ameri, and

Adya 2017, Schur et al. 2002). Health and politics are particularly linked in Mississippi (Jones 2019).

Mississippi ranks among the least healthy of the American states. In many ways, Black Mississippians are worse off relative to white Mississippians. For instance, mortality rates for cancer are worse for Black Mississippi residents relative to whites (217.3 vs. 186.4 per 100,000 residents, age adjusted) (Centers for Disease Control 2022). However, this gap in mortality is not driven by a gap in the incidence of cancer, which is quite similar between Black and white Mississippians (518.2 vs. 513.5 per 100,000 residents, age adjusted) (Centers for Disease Control 2022). As Figure 9 shows, Black people in Mississippi also suffer from diabetes, high blood pressure, and obesity at higher rates than white people in the state (CDC). Overall, life expectancy for Black people in Mississippi is lower than that for white people; in 53 Mississippi counties, the average white person is expected to live more than two years longer than the average Black person (County Health Rankings and Roadmaps 2022). In three counties (Jefferson Davis, Coahoma, and Holmes), the life expectancy for white people is greater than seven years longer than that for Black people (County Health Rankings and Roadmaps 2022). Infant mortality is much higher for Black babies: 11.9 per 1000 live births vs. 6.2 per 1000 live births for white babies (Mississippi State Department of Public Health 2018).

Figure 9: Disease Incidence, by Race. Source, Centers for Disease Control.

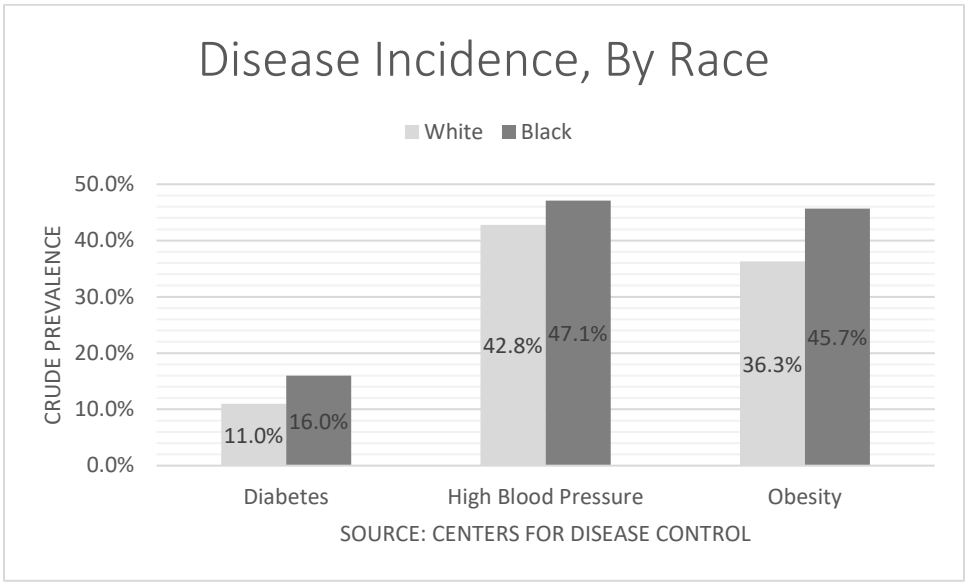
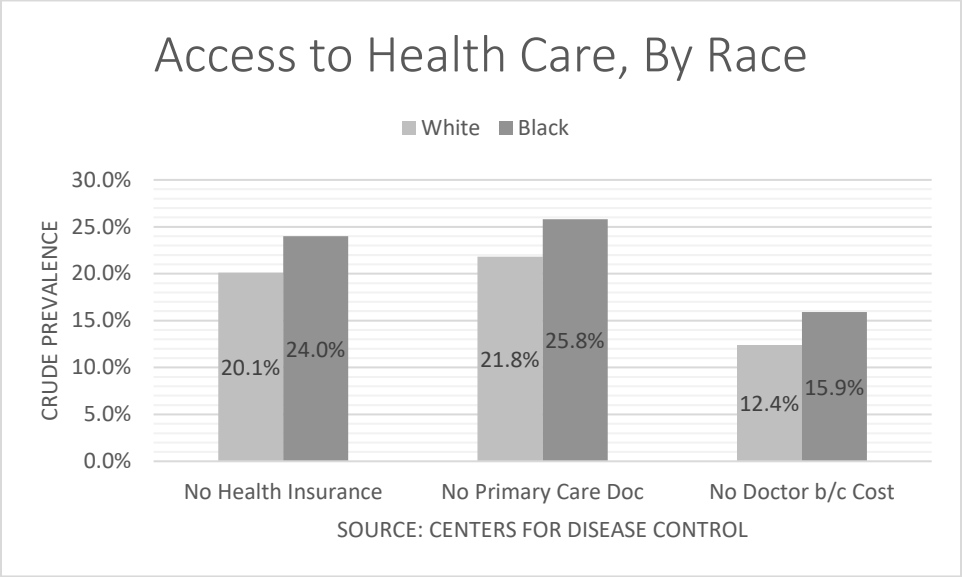


Figure 10: Access to Health Care, by Race. Source: Centers for Disease Control.



These health disparities are caused partially by disparities in access to resources. In Mississippi, as shown in Figure 10, Black people are less likely to have health insurance or a primary care physician than white people (CDC). Moreover, Black people are more likely to report that they did not go see a doctor when they needed to because of cost considerations (CDC). Racial residential segregation also may make it more difficult for Black Americans to access primary care physicians and other doctors (Gaskin et al. 2012, Anderson 2018). For instance, many areas of Mississippi, particularly the Delta region, are medically underserved, and some counties have few to no primary care physicians practicing (Williams and Sprinkle 2021). Many people in the Delta also lack access to stores that sell nutritious food; food deserts have been linked to poor health outcomes as well (Goodman, Thomson, and Landry 2020, Hossfeld and Rico Mendez 2018). Similar problems have been reported with respect to racial disparities in access to COVID-19 vaccination sites early in the vaccine rollout in Mississippi, partly due to failure to reach people in medically underserved areas (Doyle 2021, Gravlee et al. 2021). Even in Jackson, access to vaccines was limited; the city did not open its first drive-thru vaccination site until three weeks after sites opened in other areas (Associated Press 2021).

Discrimination also contributes to racial health disparities. Several long-term studies of Jackson, Mississippi residents have shown that racial discrimination affects cardiac health (Sims et al. 2012, Forde et al. 2020). Racial residential segregation has been shown to lead to worse health outcomes for Black Americans. Several studies have demonstrated that racial residential segregation contributes to racial gaps in cancer outcomes (Landrine et al. 2017, Blanco et al. 2021, Poulson et al. 2021). Such factors, by contributing to racial disparities in health, ultimately may affect voting because of the link between poor health and lower voter turnout.

Criminal Justice

A growing body of research shows that criminal justice interactions affect political behavior. Several studies have shown that, for individuals, contact with the criminal justice system, from police stops, to arrest, to incarceration, directly decreases voter turnout (Burch 2011, Lerman and Weaver 2014, Weaver and Lerman 2010). Primarily, criminal justice contact decreases turnout through "the combined forces of stigma, punishment and exclusion" which impose "barriers to most avenues of influence" and diminish "factors such as civic capacity, governmental trust, individual efficacy, and social connectedness that encourage activity" (Burch 2007: 12).

Black people are disproportionately represented among Mississippi's prisoners, probationers, and parolees as shown in Figure 11. As a reminder, 38.0% of Mississippi's population is Black, but according to the Mississippi Department of Corrections, 60.4% of prisoners, 52.0% of probationers, and 55.5% of parolees in Mississippi are Black. Black people were 54.1% of arrestees in Mississippi in 2020 (Federal Bureau of Investigation 2022).

Figure 11: Mississippi Correctional Populations, by Race. Source: Mississippi Department of Corrections

Racial discrimination accounts for some of this disparity. Studies have shown that racial disparities in arrest are caused by factors that make it more likely that police will stop or search Black people, such as spatially differentiated policing, racial residential segregation, and discrimination (Beckett, Nyrop, and Pfingst 2006, Gelman, Fagan, and Kiss 2007, Ousey and Lee 2008, Pierson et al. 2020). Racial disparities in bail decisions (Arnold, Dobbie, and Yang 2018) and in sentencing also may contribute to incarceration disparities (Bushway and Piehl 2001, Mitchell 2005, Steffensmeier and Demuth 2000, Steffensmeier, Ulmer, and Kramer 1998). Research shows evidence of racial discrimination in sentencing in Mississippi (Fender et al. 2006). The Mississippi legislature passed several reforms of the criminal justice system. However, the evidence suggests that racial discrimination still leads to disparate sentencing outcomes (Mississippi Office of State Public Defender 2018). Moreover, the Supreme Court

found evidence of racial discrimination in the use of peremptory challenges in *Flowers v. Mississippi* 139 S. Ct. 2228 (2019). In addition to the *Flowers* case, scholars have found that racial discrimination of the use of peremptory challenges is a widespread practice in Mississippi (DeCamp and DeCamp 2020).

Mississippi's felony disenfranchisement law was designed "to obstruct the exercise of the franchise by the Negro race," *Ratliff v. Beale,* 20 So. 865, 868 (1896), after the Civil War (Behrens, Uggen, and Manza 2003). Because of this law, involvement with the criminal justice system directly affects voting. In Mississippi, people with felony convictions for certain offenses are prevented from voting while they are serving their sentence in prison or in the community and even after they have finished serving their sentences. Because of the disproportionate involvement of Black Mississippians with the criminal justice system, Black people disproportionately are more likely to have lost their voting rights permanently. Based on an analysis of records from the Administrative Office of the Courts, an estimated 56,000 people are disenfranchised permanently in Mississippi (Rozier 2018). Black people are 61% of the disenfranchised population (Rozier 2018).,.

In Mississippi, Black people are disproportionately arrested, convicted, and punished for crimes. Research suggests that racial discrimination has played a role in these disparities historically and continues to do so because of discriminatory arrest, conviction, and sentencing practices. It is important to remember that, because of felony disenfranchisement laws, disparities in criminal justice involvement translate into disparities in voting participation because Black Mississippians are disproportionately barred from voting based on their criminal histories.

Section 5: Conclusion

To summarize the discussion, Black people in Mississippi are subjected to worse outcomes in education, socioeconomic status, housing, health, and criminal justice. Research cited in this report shows how these racial disparities partly are the result of historical and contemporary discrimination by state and local governments as well as private market actors. In particular, policies that continue to support segregation in education and fail to allocate resources equitably across domains such as health, housing, and education help maintain racial gaps in well-being. As I have demonstrated in this report, researchers have shown that such disparities in education, employment, poverty, income, housing, health, and criminal justice involvement all contribute to gaps in voter turnout.

Senate Factor 8: Lack of Responsiveness

Under Section 2 of the Voting Rights Act, courts may consider additional factors, such as whether there is a lack of responsiveness on the part of elected officials to the particularized needs of minority group members. The longstanding and persistent gaps in socioeconomic status, incarceration, and health discussed throughout this report demonstrate the lack of responsiveness of public officials to the needs of Mississippi's Black communities. Research has shown that public policies are important for creating and sustaining racial disparities. For instance, as described earlier in this report, persistent test score gaps and educational segregation continue to pose problems for Mississippi students; however, Mississippi continues to underfund public schools in the state (Parks 2021). Black Mississippians have worse health outcomes, are less likely to have health insurance, and are more likely to avoid care because of costs, and yet

Mississippi has not accepted the federal Medicaid expansion (Kaiser Family Foundation 2022). Mississippi is the poorest state in the nation, but Mississippi misused millions of dollars in funds from the Temporary Assistance to Needy Families Program, refusing to spend that money on the citizens with the most need (Wolfe 2020). Mississippi also faces allegations that money meant for rental assistance was misdirected toward millions of dollars in lawyer fees (O'Connell and Torbati 2021), and that money meant to alleviate racial disparities in COVID 19 also went mostly unused (Galewitz, Weber, and Whitehead 2022). In Jackson, a persistent water crisis has left residents without water for weeks, and yet the state refused to allocate money to help the city repeatedly (Breslow 2022). A majority of Mississippi voters favor policies such as Medicaid expansion, helping the city of Jackson with fixing the water crisis, and restoring voting rights to people with felony convictions (College 2019, 2021). Moreover, in each of these cases, federal money is there to help. The state just refuses to do so.

Prominent Black leaders in Mississippi attribute these policy decisions to racism. Representative Bennie Thompson, for instance, said of COVID 19 vaccine sites, "But that is a decision that has to go through the governor's office. And the majority of people don't have any confidence that the governor is interested in providing those kinds of services in the minority community" (Chatlani 2021). Zakiya Summers, a Mississippi State Legislator, said of her state,

> "Wealthier areas, she said, "tend to get more resources, more state support. West Jackson, we haven't seen that in a while. It's areas where poor Black people are concentrated where help is slow moving or it's none at all" (Hennessy-Fiske 2022).

Governor Reeves disagrees. He said, "There is not systemic racism in America" (Ganucheau 2021).

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U. S. Department of Justice. 2016. Federal Court Orders Justice Department Desegregation Plan for Cleveland, Mississippi Schools.

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Appendix

Traci Burch

Employment

- Associate Professor, Northwestern University Department of Political Science (2014-Present)

- Research Professor, American Bar Foundation (2007- Present)

- Assistant Professor, Northwestern University Department of Political Science (2007-2014)

Education

- *Harvard University*

Ph.D. in Government and Social Policy

Dissertation: *Punishment and Participation: How Criminal Convictions Threaten American Democracy*

Committee: Jennifer Hochschild (Chair), Sidney Verba, and Gary King

- *Princeton University*

A.B. in Politics, *magna cum laude*

Publications

- Burch, Traci. 2022. "Adding Insult to Injury: the Justification Frame in Official Narratives of Officer-Involved Killings." *Journal of Race, Ethnicity, and Politics.*

- Burch, Traci. 2022. "Officer-Involved Killings and the Repression of Protest." *Urban Affairs Review.*

- Burch, Traci. 2021. "Not All Black Lives Matter: Officer-Involved Deaths and the Role of Victim Characteristics in Shaping Political Interest and Voter Turnout." *Perspectives on Politics*.

- Kay Lehman Schlozman, Philip Edward Jones, Hye Young You, Traci Burch, Sidney Verba, Henry E. Brady. 2018. "Organizations and the Democratic Representation of Interests: What Happens When Those Organizations Have No Members?" *Perspectives on Politics*.

- Burch, Traci. 2016. "Political Equality and the Criminal Justice System." In Resources, Engagement, and Recruitment. Casey Klofstad, ed. Philadelphia: Temple University Press.

- Burch, Traci. 2016. "Review of The First Civil Right by Naomi Murakawa." *The Forum.*

- Kay Lehman Schlozman, Philip Edward Jones, Hye Young You, Traci Burch, Sidney Verba, Henry E. Brady. 2015. "Louder Chorus – Same Accent: The Representation of Interests in Pressure Politics, 1981-2011." In Darren Halpin, David Lowery, Virginia Gray, eds. The Organization Ecology of Interest Communities. New York: Palgrave Macmillan.

- Burch, Traci. 2015. "Skin Color and the Criminal Justice System: Beyond Black-White Disparities in Criminal Sentencing." *Journal of Empirical Legal Studies* 12(3): 395-420.

- Burch, Traci. 2014. "The Old Jim Crow: Racial Residential Segregation and Neighborhood Imprisonment." *Law & Policy* 36(3) 223-255.

- Burch, Traci. 2014. "The Effects of Imprisonment and Community Supervision on Political Participation." Detaining Democracy Special Issue. *The Annals of the American Academy of Political and Social Science* 651 (1) 184-201.

- Burch, Traci. 2013. Trading Democracy for Justice: Criminal Convictions and the Decline of Neighborhood Political Participation. Chicago: University of Chicago Press.

- Hochschild, Jennifer, Vesla Weaver, and Traci Burch. 2012. Transforming the American Racial Order. Princeton: Princeton University Press.

- Schlozman, Kay Lehman, Sidney Verba, Henry Brady, Traci Burch, and Phillip Jones. 2012. "Who Sings in the Heavenly Chorus? The Shape of the Organized Interest System." In Schlozman, Kay Lehman, Sidney Verba, and Henry Brady, The Unheavenly Chorus, Princeton: Princeton University Press.

- Schlozman, Kay Lehman, Sidney Verba, Henry Brady, Phillip Jones, and Traci Burch. 2012. "Political Voice through Organized Interest Activity." In Schlozman, Kay Lehman, Sidney Verba, and Henry Brady, The Unheavenly Chorus, Princeton: Princeton University Press.

- Burch, Traci. 2012. "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout and Party Registration of Florida's Ex-Felons." *Political Behavior* 34 (1); 1-26.

- Burch, Traci. 2011. "Turnout and Party Registration among Criminal Offenders in the 2008 General Election." *Law and Society Review* 45(3): 699-730.

- Burch, Traci. 2011. "Fixing the Broken System of Financial Sanctions." *Criminology and Public Policy* 10(3).

- Hochschild, Jennifer; Vesla Weaver, and Traci Burch. 2011. "Destabilizing the American Racial Order." *Daedalus* 140; 151-165.

- Burch, Traci. 2009. "Can the New Commander-In-Chief Sustain His All Volunteer Standing Army?" *The Dubois Review on Race* 6(1).

- Burch, Traci. 2009. "Review of *Imprisoning Communities,* by Todd Clear." *Law and Society Review* 43(3) 716-18.

- Burch, Traci. 2009. "American Politics and the Not-So-Benign Neglect of Criminal Justice," in The Future of American Politics, ed. Gary King, Kay Schlozman, and Norman Nie. (New York: Routledge).

- Schlozman, Kay Lehman and Traci Burch. 2009. "Political Voice in an Age of Inequality," in America at Risk: Threats to Liberal Self-Government in an Age of Uncertainty, ed. Robert Faulkner and Susan Shell (Ann Arbor: University of Michigan Press).

- Hochschild, Jennifer and Traci Burch. 2007. "Contingent Public Policies and the Stability of Racial Hierarchy: Lessons from Immigration and Census Policy," in Political Contingency: Studying the Unexpected, the Accidental, and the Unforseen, ed. Ian Shapiro and Sonu Bedi (New York: NYU Press).

Grants

- Co-Principal Investigator. "Fellowship and Mentoring Program on Law and Inequality." September 1, 2020 to August 31, 2023. $349, 313. National Science Foundation.

Honors and Fellowships

- American Political Science Association 2014 Ralph J. Bunche Award **(**for Trading Democracy for Justice).

- American Political Science Association Urban Section 2014 Best Book Award (for Trading Democracy for Justice).

- American Political Science Association Law and Courts Section 2014 C. Herman Pritchett Award (for Trading Democracy for Justice).

- Research grant, Stanford University Center for Poverty and Inequality (2012).

- American Political Science Association E. E. Schattschneider Award for the best doctoral dissertation in the field of American Government (2009)

- American Political Science Association William Anderson Award for the best doctoral dissertation in the field of state and local politics, federalism, or intergovernmental relations (2008)

- American Political Science Association Urban Section Best Dissertation in Urban Politics Award (2008)
- Harvard University Robert Noxon Toppan Prize for the best dissertation in political science (2007)
- Institute for Quantitative Social Sciences Research Fellowship (2006-07)
- *European Network on Inequality* Fellowship (2005)
- Research Fellowship, The Sentencing Project (2005)
- Doctoral Fellow, Malcolm Weiner Center for Inequality and Social Policy (2004-07)

Professional Service

- APSA Law and Courts Section Best Paper Award Committee (2020-2021)
- APSA Elections, Public Opinion, and Voting Behavior Executive Committee (2020-2023)
- General Social Survey Board of Overseers (2020-2025)
- APSA Kammerer Prize Committee (2017)
- Associate Editor, *Political Behavior* (2015-2019)
- APSA Law and Courts Section, Lifetime Achievement Award Prize Committee (2014-2015)
- Law and Society Association, Kalven Prize Committee (2013-2014)
- American Political Science Association, Urban Politics Section Dissertation Prize Committee (2012-13)
- American Political Science Association, Urban Politics Section Executive Committee (2012-13)
- Law and Society Association Diversity Committee, (2012-2013)
- American Political Science Association, Urban Politics Section Program Co-Chair (2011)
- Associate Editor, *Law and Social Inquiry*
- American Political Science Association, Urban Politics Section Book Prize Committee (2009)

- Reviewer for *The American Political Science Review, Public Opinion Quarterly, American Politics Research, and Time-Sharing Experiments in the Social Sciences.*

Presentations and Invited Talks

- University of Pennsylvania. Virtual. "Voice and Representation in American Politics." April 2021.
- University of Michigan. Virtual. "Which Lives Matter? Factors Affecting Mobilization in Response to Officer-Involved Killings." February 2021.
- University of Pittsburgh. Virtual. "Policing and Participation." November 2020.
- Hamilton College Constitution Day Seminar. Virtual. "Racial Protests and the Constitution." September 2020.
- New York Fellows of the American Bar Foundation. New York, NY. "Police Shootings and Political Participation." March 2020.
- Pennsylvania State University, State College, PA. "Effect of Officer Involved Killings on Protest. November 2019.
- Princeton University. Princeton NJ. "Effects of Police Shootings on Protest among Young Blacks." November 2019.
- Missouri Fellows of the American Bar Foundation. Branson, MO. Police Shootings and Political Participation in Chicago. September 2019.
- Northwestern University. "Police Shootings and Political Participation." November, 2018.
- Princeton University. Princeton, NJ. "Police Shootings and Political Participation." September, 2018.
- University of California at Los Angeles. Los Angeles, CA. "Police Shootings and Political Participation." August, 2018.
- American Bar Association Annual Meeting. Chicago, IL. "Police Shootings and Political Participation." August 2018.
- American Bar Endowment Annual Meeting. Lexington, KY. "Effects of Police Shooting in Chicago on Political Participation." June 2018.
- Vanderbilt University. "Effects of Police Shootings in Chicago on Political Participation." April 2018.

- Washington University in St. Louis. "Effects of Pedestrian and Auto Stops on Voter Turnout in St. Louis." February 2018.

- Fellows of the American Bar Foundation, Los Angeles. "Assaulting Democracy." January 2018.

- Northwestern University Reviving American Democracy Conference. Panel presentation. "Barriers to Voting." January 2018.

- University of Illinois at Chicago. "Effects of Police Shootings in Chicago on Political Participation." October, 2017.

- Chico State University. "Constitution Day Address: Policing and Political Participation." September, 2017.

- Fellows of the American Bar Foundation, Atlanta, Georgia. "Policing in Georgia." May 2017.

- United States Commission on Civil Rights. Testimony. "Collateral Consequences of Mass Incarceration." May 2017.

- Northwestern University Pritzker School of Law. "Effects of Police Stops of Cars and Pedestrians on Voter Turnout in St. Louis." April 2017.

- University of California at Los Angeles. Race and Ethnic Politics Workshop. "Effects of Police Stops of Cars and Pedestrians on Voter Turnout in St. Louis." March 2017.

- University of North Carolina at Chapel Hill. American Politics Workshop. "Effects of Police Stops of Cars and Pedestrians on Voter Turnout in St. Louis." February 2017.

- National Bar Association, St. Louis MO. "Political Effects of Mass Incarceration." July 2016.

- Harvard University, Edmond J. Safra Center for Ethics. Inequalities/Equalities in Cities Workshop. April 2016.

- American Political Science Association Annual Meeting. September 2015. "Responsibility for Racial Justice." Discussant.

- St. Olaf College. April 2015. "The Collateral Consequences of Mass Incarceration."

- Northwestern University. Institute for Policy Research. February 2015. "The Civic ~~Culture~~ Structure."

- Texas A&M University. Race, Ethnicity, and Politics Workshop. September 2014. "Trading Democracy for Justice."

- Columbia University Teachers College. The Suburban Promise of Brown Conference. May 2014. "Can We All Get Along, Revisited: Racial Attitudes, the Tolerance for Diversity, and the Prospects for Integration in the 21st Century."

- University of Kentucky. Reversing Trajectories: Incarceration, Violence, and Political Consequences Conference. April 2014. "Trading Democracy for Justice."

- University of Chicago. American Politics Workshop. March 2014. "How Geographic Differences in Neighborhood Civic Capacity Affect Voter Turnout."

- Kennedy School of Government, Harvard University. February 2014. "Trading Democracy for Justice.

- University of Michigan. American Politics Workshop. December 2013. "Trading Democracy for Justice."

- Yale University. American Politics and Public Policy Workshop. September 2013. "Trading Democracy for Justice."

- American Political Science Association Annual Meeting. August 2013. "The Heavenly Chorus Is Even Louder: The Growth and Changing Composition of the Washington Pressure System." With Kay Lehman Schlozman, Sidney Verba, Henry Brady, and Phillip Jones.

- National Bar Association, Miami Florida, July 2013. "The Collateral Consequences of Mass Imprisonment."

- Loyola University. American Politics Workshop. December 2012. "Mass Imprisonment and Neighborhood Voter Turnout."

- Marquette University School of Law. November 2012. "The Collateral Consequences of Mass Imprisonment."

- Yale University. Detaining Democracy Conference. November 2012. "The Effects of Imprisonment and Community Supervision on Political Participation."

- Brown University. American Politics Workshop. October 2012. "Mass Imprisonment and Neighborhood Voter Turnout."

- American Bar Association National Meeting, August 2012. "Mass Imprisonment: Consequences for Society and Politics."

- University of Madison-Wisconsin. American Politics Workshop. March 2012. "The Spatial Concentration of Imprisonment and Racial Political Inequality."

- American Political Science Association Annual Meeting. 2011. "Theme Panel: How Can Political Science Help Us Understand the Politics of Decarceration?"

- University of Pennsylvania. Democracy, Citizenship, and Constitutionalism Conference. April, 2011. "Vicarious Imprisonment and Neighborhood Political Inequality."

- University of Chicago School of Law. Public Laws Colloquium. Chicago, IL. November, 2010. ""The Effects of Neighborhood Incarceration Rates on Individual Political Efficacy and Perceptions of Discrimination."

- Pomona College. November, 2010. "Incarceration Nation."

- University of Washington. Surveying Social Marginality Workshop. October 2010. "Using Government Data to Study Current and Former Felons."

- American Bar Foundation, Chicago, IL, September 2010. "The Effects of Neighborhood Incarceration Rates on Individual Political Attitudes."

- Northwestern University. Chicago Area Behavior Conference. May 2010. "Trading Democracy for Justice: The Spillover Effects of Incarceration on Voter Turnout in Charlotte and Atlanta."

- Annual Meeting of the Law and Society Association, Chicago, IL, May 2010. "Neighborhood Criminal Justice Involvement and Voter Turnout in the 2008 General Election."

- Annual Meeting of the Southern Political Science Association, Atlanta, GA, January 2010. "The Art and Science of Voter Mobilization: Grassroots Perspectives on Registration and GOTV from Charlotte, Atlanta, and Chicago."

- University of Illinois at Chicago. Institute for Government and Public Affairs. November 2009. "Turnout and Party Registration among Convicted Offenders during the 2008 Presidential Election."

- Annual Meeting of the American Political Science Association, Toronto, Ontario, Canada, September 2009. "'I Wanted to Vote for History:' Turnout and Party Registration among Convicted Offenders during the 2008 Presidential Election."

- Harris School of Public Policy, University of Chicago. American Politics Workshop. December 2008. "Trading Democracy for Justice? The Spillover Effects of Imprisonment on Neighborhood Voter Participation."

- Northwestern University School of Law. Law and Political Economy Colloquium. November 2008. "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout Rates and Candidate Preferences of Florida's Ex-Felons."

- University of California, Berkeley. Center for the Study of Law and Society. October 2008. "Trading Democracy for Justice? The Spillover Effects of Imprisonment on Neighborhood Voter Participation."

- Law and Society Association Annual Meeting, Montreal, Canada, May 2008. "Did Disfranchisement Laws Help Elect President Bush? New Evidence on the Turnout Rates and Candidate Preferences of Florida's Ex-Felons."

- Law and Society Association Annual Meeting, Montreal, Canada, May 2008. "Trading Democracy for Justice? The Spillover Effects of Imprisonment on Neighborhood Voter Participation."

- Midwest Political Science Association Conference, Chicago, IL, April 2007. Paper: "Concentrated Incarceration: How Neighborhood Incarceration Decreases Voter Registration."

Working Papers Under Review

- "Introduction" (with Jenn Jackson and Periloux Peay) in *Freedom Dreams: A Symposium on Abolition*. Eds. Jenn Jackson, Periloux Peay, and Traci Burch. Social Science Quarterly.

- "The Effects of Community Police Performance on Protest in Chicago" (For Symposium Honoring John Hagan)

- "How Police Departments Frame Low-Threat Victims of Officer-Involved Killings"

- Which Lives Matter?

Additional Activities

- Expert witness in *Kelvin Jones vs. Ron DeSantis, etc. et al.* (U.S. District Court for the Northern District of Florida Consolidated Case No. 4:19-cv-00).

- Expert witness in *Community Success Initiative, et al., Plaintiffs v. Timothy K. Moore* (Superior Court, Wake County, NC Case No. 19-cv-15941).

- Expert witness in *People First of Alabama v. Merrill* (U.S. District Court in Birmingham, Alabama, Case No. 2: 20-cv-00619-AKK)

- Expert witness in *Florida State Conference of the NAACP v. Lee* (U.S. District Court in the Northern District of Florida, Case No. 4:21-cv-00187-MW-MAF)

- Expert witness in *One Wisconsin Institute Inc. v. Jacobs* (U.S. District Court in the Western District of Wisconsin, Case No. 15-CV-324-JDP).

- Expert witness in *Alpha Phi Alpha Fraternity Inc., et al. v. Raffensperger* (U.S. District Court for the Northern District of Georgia, Case No. 1:21-cv-05337-SCJ)

- Expert witness in *Robinson, et al. v. Ardoin* (U.S. District Court for the Middle District of Louisiana, Civil Action No. 22-cv-00211).

- Expert witness in *Nairne, et al. v. Ardoin* (U.S. District Court for the Middle District of Louisiana, Civil Action No. 3:22-cv-00178 SDD-SDJ).

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al.,	)	
	)	No. 4:22-cv-00062-SA-JMV
Plaintiffs,	)	
v.	)	**Declaration of Traci Burch**
	)	
STATE BOARD OF ELECTION COMMISSIONERS, et al.,	)	
	)	
Defendant.	)	

DECLARATION OF TRACI BURCH

I, Traci Burch, make the following declaration based on personal knowledge:

I have been retained by the Plaintiffs in the above referenced matter as an expert. I submit that the foregoing report from me is a true and accurate copy of the report I provided to Plaintiffs in this matter. I declare that the information and opinions contained in the report are true and correct to the best of my knowledge.

I declare under penalty of perjury that the foregoing is true and correct. 28 U.S.C. § 1746.

Dated: 10/1/2022

Traci Burch

Scope of Report and Summary of Conclusions

I was asked to address Dr. Swanson's report, in particular his analysis regarding racial disparities in voter participation and disparities in proximity to polling places.

My conclusions are as follows:

- First, Dr. Swanson overestimates both Black and White turnout in Mississippi. His estimates of Black turnout are further biased because he fails to account for racial differences in the extent to which people overreport voting in surveys. The unreliability of Dr. Swanson's estimates is easily established because his overall turnout estimates imply that there were hundreds of thousands more voters participating than the vote counts reported by the Mississippi Secretary of State.

- Second, in light of Dr. Swanson's analyses and criticisms, I conducted additional analyses that do not rely on self-reports of voter turnout, which confirm that Black voter turnout in Mississippi is in fact lower than White voter turnout. These analyses yield estimates of turnout for Black and White voters that are similar to each other despite the use of multiple data sources and methods of estimation, which is evidence that they are reliable. These estimates also are closer to the true turnout numbers based on actual vote counts reported by the Mississippi Secretary of State than Dr. Swanson's, which further shows that these estimates are more reliable.

- Third, polling place distance in isolation, as reported by Dr. Swanson, is a poor indicator of Black voter turnout or relative ease of access to the voting process. Among other things, scholarly studies of polling place distance typically account for access to a vehicle, among other factors, because the effects of polling place distance are different depending on whether a person has a car. However, Dr. Swanson fails to consider access to a vehicle in his analysis. As I note, Black people in Mississippi are more than three times as likely to lack access to a car than White people. The increased difficulty in accessing polling places that results from this disparity in access to a car is far more salient than the minor purported "advantage" Black Mississippians have in terms of polling place distance, assuming Dr. Swanson's analysis of relative polling place distance is correct.

- Fourth, there are many aspects of polling place experience that could discourage voting apart from polling place distance. Considering wait times, for instance, shows that Black people have longer wait times in Mississippi than White people.

- Finally, with respect to Senate Factor 5 overall, Black people in Mississippi face discrimination in education, income, housing, employment, and criminal justice that dramatically affect life outcomes, including voting. In both my initial report

and again here, I have provided evidence to demonstrate the existence and effects of long-term and contemporary discrimination on the ability of Black Mississippians to participate in the political process.

Dr. Swanson's Estimates of Voter Turnout by Race

Dr. Swanson's estimates of voter turnout by race are based on his analysis of the Current Population Survey Voting and Registration Supplement (CPS). Dr. Swanson estimates based on the CPS that 69.8% of White non-Hispanic Mississippi residents and 72.9% of Black alone or in combination Mississippi residents voted in the 2020 General Election. In total, Dr. Swanson estimates that 1,531,000 Mississippians voted in the November 2020 General Election, a turnout rate of 70.3%.[1]

However, the official vote counts certified by the Mississippi Secretary of State show that only 1,313,759 votes[2] were cast for President (the highest participation race) in Mississippi in the November 2020 general election, which represents 58.7% of the citizen voting age population of Mississippi.[3] Dr. Swanson's estimate is nearly 12 percentage points higher than the true turnout rate based on actual votes cast and overestimates the vote total by more than 200,000 votes. This 12% overestimation shows that CPS is not reliable as a benchmark for voter turnout. As I discuss below, neither is it a reliable benchmark for voter turnout by race.

As noted above, by race, Dr. Swanson estimates based on the CPS that 69.8% of White non-Hispanic Mississippi residents and 72.9% of Black alone or in combination Mississippi residents voted in the 2020 General Election. Similarly, he concludes in his report that, based on his analysis of a Mississippi State University Poll, in 2020 reported voter "frequency," or the number of people in Mississippi who say that they always vote, was "68.22% for Whites and 72.1% for Blacks"[4]—rates close to those estimated from the CPS. However, based on my research into the matter, Dr. Swanson's analysis is flawed because his analysis of *both* surveys suffers from the same problem: he fails to adjust or otherwise account for overreporting generally, and for differential overreporting of voter turnout by race in particular.

Dr. Swanson acknowledges the issue of overreporting in his report when positing that the purported advantage he claims Black Mississippians have in terms of proximity to polling places "may offset to some degree the likelihood of over-reporting."[5] This supposition is incorrect, as I will show below. But for now, this statement shows that Dr. Swanson and I agree that overreporting of voting in surveys is a known issue. However, new research shows that not only

[1] Swanson Report, p. 70.
[2] Mississippi Secretary of State. "Official Results." Available online from https://www.sos.ms.gov/elections/electionresults/2020%20GE%20Statewide%20Recapitulation%20Report.pdf. Accessed 20 Jan 2023.
[3] U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity." Available online from https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html. Accessed 20 Jan 2023.
[4] Swanson Report, p. 84.
[5] Swanson Report, p. 84.

does the CPS overestimate turnout for all groups, it does so differentially by race, such that it consistently overestimates Black turnout even more so than White turnout.[6] This research finds that it is not appropriate to conclude that there is no gap in turnout between Black and White Mississippi voters based on the CPS.

In their 2022 article, which was published recently in a peer-reviewed political science journal, Ansolabehere, Fraga, and Schaffner compare estimates of voter turnout by race from the CPS for multiple states to the Cooperative Election Study as well as to statewide voter files for those states where race is recorded. They find systematic overreporting of voting in the CPS for all racial groups. However, they also show that overreporting is more pronounced among Black voters. Ansolabehere, Fraga, and Schaffner find that the tendency to overreport voting differently by race leads the CPS to underestimate the size of the racial gap in turnout between Black and White voters in multiple states. The bias may stem from problems with the CPS sample, such as a difference in attrition from the survey, or from differences in the tendency to overreport voting.[7] As a result of these problems with the CPS, researchers should "use caution when making inferences about variation in turnout rates by racial and ethnic groups"[8] based on the CPS alone.

In sum, Dr. Swanson's opinion that 69.8% of White non-Hispanic Mississippi residents and 72.9% of Black alone or in combination Mississippi residents voted in the 2020 General Election, as well as his similar opinions about turnout in other elections, is not correct.

Dr. Swanson's Criticisms of My Analysis

In my initial report, I used CPS data to estimate 56% White and 53% Black turnout in Mississippi for the November 2020 General Election. These estimates are relatively close to the observed turnout rate of 58.7% based on Secretary of State data, and substantially closer than the over 70% turnout figure Dr. Swanson presents.

However, Dr. Swanson is correct that the estimates in my initial report reflect a calculation error. When I was working with the table of CPS data I used, I thought that the educational attainment variable that I was using excluded children. However, it actually reports educational attainment for people ages 15 and older, so for each educational level, the total includes teens aged 15-17. There are no children younger than that in the "Less than High School" category, as evidenced by the fact that cells F10, F11,F12 are 0. Dr. Swanson correctly points out that primarily, this error affects the "Less than High School" calculations and not the other educational levels.[9] I also calculated total turnout for both racial groups incorrectly. When

[6] Ansolabehere, Stephen, Bernard L. Fraga, and Brian F. Schaffner. "The Current Population Survey Voting and Registration Supplement Overstates Minority Turnout." *The Journal of Politics* 84.3 (2022): 1850:1855.
[7] Ansolabehere et al. 2022: 1853-54.
[8] Ansolabehere et al. 2022: 1854.
[9] Dr. Swanson's assessment of the source of this error is not accurate. He writes "Here, Dr. Burch is vague about the source of the information she presents in the pre-ceding exhibit and does not describe the steps she undertook to produce it. Since these statistics of voting by

Column F is subtracted from the denominator, the turnout figures calculated using CPS are consistent with those presented in Dr. Swanson's report.

When I wrote my initial report, I relied on the CPS to estimate turnout by education because the estimates that I produced were in line with turnout based on the actual vote count and thus did not lead me to believe that something was amiss. I also was unaware of the Ansolabehere et al. article that was published right before I wrote this report-- I last researched turnout and the CPS only a few weeks before that article was published. I found the new article when reviewing the literature again in response to the estimates of turnout in Dr. Swanson's report, which I found surprising. I now think, based on the strong evidence of bias in the CPS, it makes sense to "use caution when making inferences about variation in turnout rates by racial and ethnic groups,"[10] and therefore that the CPS really should be considered only in comparison with estimates from other data sources that estimate voter turnout by race in ways that do not rely on self-reporting.

Methodology and Analysis of Validated Voter Turnout: Cooperative Election Study

Because, as discussed above, turnout estimates in the CPS are unreliable not just because of overreporting in general, but because of differences in overreporting by race in particular, I conducted additional analyses which employed alternative methods of looking at turnout by race that do not rely on self-reported voter turnout. These additional analyses also are consistent with my conclusion that Black voter turnout is lower than white turnout and inconsistent with those produced by Dr. Swanson.

Because much of the bias in turnout estimates based on the CPS has to do with differential overreporting of voting by race,[11] it is necessary to examine alternative sources that do not depend on self-reporting of turnout to estimate turnout by race in Mississippi. First, I examine the 2020 Cooperative Election Study (CES), which contains a sample of 462[12]

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education level by state are not readily available in official published tables . . . " Swanson Report, p. 75. In fact, I downloaded a table from the census website using their online table generator; I have included that table in the Appendix. I did not conduct "an analysis and interpretation of the CPS "raw data" (or CPS "PUMS") data alluded to earlier" and my error was not in working with the raw data or writing software code. Swanson Report, p. 76. Instead, I calculated turnout from this table, dividing the numerator, column G, over the denominator, column B. That was incorrect. I also should have subtracted Column F, not in universe, from the denominator as well.

[10] Ansolabehere et al. 2022: 1854.

[11] Ansolabehere et al. 2022; see also Enamorado, Ted, and Kosuke Imai. "Validating self-reported turnout by linking public opinion surveys with administrative records." *Public Opinion Quarterly* 83.4 (2019): 723-748.

[12] This number is above the minimum sample size to detect small effects (Cohen's d = .2) with a standard level of statistical power (=.8) and significance level of .05. See Singh, Ajay S., and Micah B. Masuku. "Sampling techniques & determination of sample size in applied statistics research: An overview." *International Journal of economics, commerce and management* 2.11 (2014): 1-22.

Mississippi adults (unweighted).[13] The CES, although it is a survey, independently validates voter registration and turnout for respondents by attempting to match respondents to a database of registered voters maintained by Catalist, a corporation that maintains a national database of voters.[14] Catalist updates their information on voter registration and history with data directly from states.[15] In my analysis, I use the measure of validated voter turnout rather than self-reported voter turnout to estimate racial gaps in turnout, distinguishing this survey from the unvalidated self-reported turnout from CPS or Mississippi State University analyzed by Dr. Swanson.

To analyze the survey, I employ logit regression analysis. Generally, regression analysis is a statistical technique that is designed to look for relationships between an independent variable and a dependent variable.[16] Multiple regression analysis also may involve the use of control variables, which would allow for the analysis of the relationship between an independent variable and a dependent variable after accounting for these additional factors.[17] I examine the relationship between a respondent's race and their validated voter turnout. Because the dependent variable, validated voter turnout, is dichotomous, I use logit rather than ordinary-least-squares regression.[18] However, because logit coefficients are difficult to interpret for lay readers, I include the regression tables of my results in the Appendix and report the results graphically in Figures 1 and 2 below.[19]

In the Mississippi sample of the CES,[20] the CES team was able to validate that 53% of Mississippi respondents voted in the 2020 General Election. This estimate, while lower than the 58.7% benchmark, is still much closer to the actual turnout than the 70.3% number estimated by

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[13] Ansolabehere, Stephen, Brian F. Schaffner, and Sam Luks, COOPERATIVE ELECTION STUDY, 2020: COMMON CONTENT. [Computer File] Release 2: August 4th, 2021. Cambridge, MA: Harvard University [producer] http://cces.gov.harvard.edu.

[14] Ansolabehere, Stephen, Brian F. Schaffner, and Sam Luks, "Guide to the 2020 Cooperative Election Study." Release 2: August 4th, 2021. Cambridge, MA: Harvard University [producer] http://cces.gov.harvard.edu: 19.

[15] Ansolabehere et al., "Guide to the 2020 Cooperative Election Study," 2021.

[16] Chatterjee, Samprit, and Jeffrey S. Simonoff. *Handbook of regression analysis*. John Wiley & Sons, 2013.

[17] Chatterjee and Simonoff 2013: 10.

[18] Logit regression is designed for predicting dependent variables that take on only two values, rather than ordinary-least-squares regression, which is for dependent variables that are continuous. Chatterjee and Simonoff 2013: 150.

[19] The columns in the figures report the estimated probability of voting and are calculated using the equation pr(voting)= $\frac{1}{1+e^{-(B_0+xB_{1\ldots})}}$, where B_0, B_1 . . . are the estimated coefficients in the models.

[20] Including only Mississippi U.S. Citizens in the analysis and weighting by the variable "commonweight." All CES respondents are adults.

Dr. Swanson from the CPS. Breaking the CES data down further by race,[21] 60% of White respondents and 46% of Black respondents voted in Mississippi in the 2020 General Election. My regression analysis of validated turnout by race in the CES confirms these percentages, finding the same large, statistically significant gap between Black and White Mississippi voters. As I report in Figure 1, calculating the probability of voting in the 2020 General Election (based on the regression coefficients in the first column of Table 2 in the appendix) shows that 60% of White respondents voted in the 2020 General Election, compared with 46% of Black Mississippi respondents.

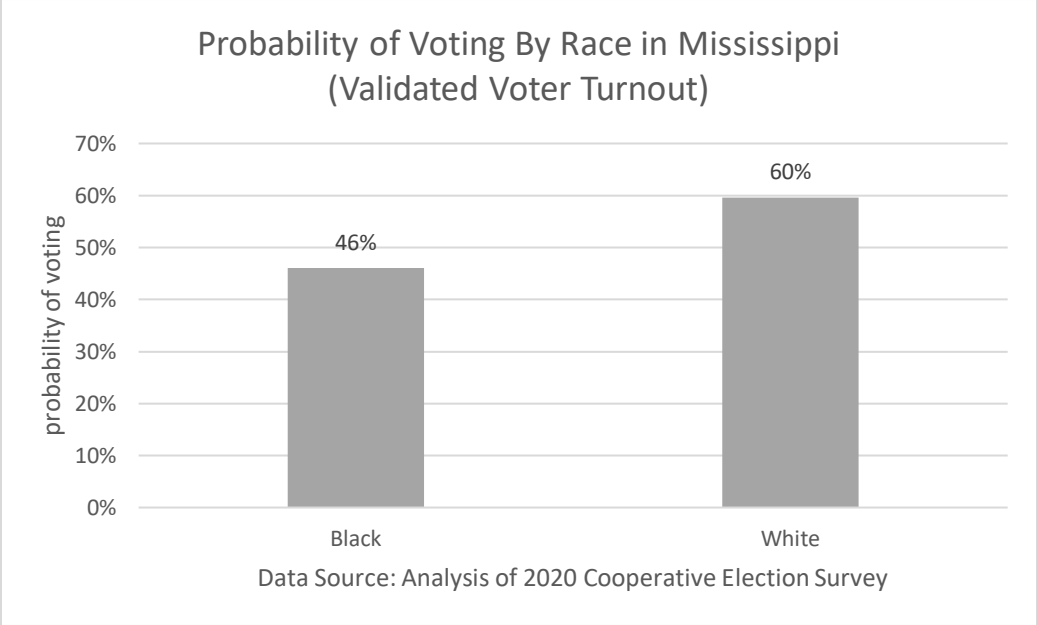


Figure 1: Probability of voting by race in Mississippi. Source: Author's analysis of 2020 CES included in column 1 of table 2 in the appendix.

It is also worth noting that the CES allows us to examine overreporting of voting. Comparing self-reported voter turnout to validated voter turnout shows substantial overreporting of voting. The CES team was able to validate in Catalist that 74% of the White Mississippi respondents who said they voted actually did so, but were only able to validate that 57% of the Black Mississippi respondents who said they voted did so.[22] Thus, as the CES shows, corroborating the recent work of Ansolabehere et al. discussed supra, differential over-reporting of voter turnout by race is an important phenomenon that affects estimates of voter turnout in Mississippi and demonstrates the problems with relying only on self-reported voting to estimate racial differences in turnout.

[21] The CES race question analyzed in this report asks: "What racial or ethnic group best describes you?" and provides the following responses: White, Black, Hispanic, Asian, Native American, Middle Eastern, Two or More Races, Other.

[22] For this analysis, which includes reported voter turnout, I weighted the sample by the variable "commonpostweight."

Effects of Educational Discrimination on Black Voter Turnout

In his report, Dr. Swanson argued that Black Mississippians vote at higher rates than White Mississippians at every educational level and thus argued that educational attainment does not detrimentally affect Black voter turnout. This conclusion is inaccurate because it relies on the CPS, which I have shown to produce biased estimates, and because it ignores the point that I make in my original report with respect to differences in educational attainment by race in Mississippi. I discuss these two points below.

My original purpose for including the CPS analysis in my first report was to show the importance of education and socioeconomic status, arenas in which Black Mississippians face discrimination, to shaping the racial gap in voter turnout. Due to the problems with reliance on CPS discussed above, for this report, I seek to reinforce and corroborate my conclusions regarding the effects of educational discrimination on Black voter turnout by deploying multiple regression analysis on the CES to examine the relationship between race and validated voter turnout while holding educational attainment constant. Multiple regression allows us to begin to compare apples to apples—for instance, comparing turnout between Black and White people with the same educational level. As I note earlier, there is a large and statistically significant gap in voter turnout overall between Black and White Mississippi residents: White turnout in the 2020 General Election is estimated to be 60%, while Black turnout is estimated to be 46%.

Further analysis shows that this large, 14 percentage point gap in turnout mostly comes from the distribution of racial groups across educational levels, rather than from differential voter turnout within each educational level. In other words, the racial gap comes less from the fact that Black people with college degrees vote less than White people with college degrees, but rather from the fact that there are proportionally fewer Black people in Mississippi with college degrees than White people.

We can see this phenomenon in Figure 2, which calculates the probability of having a validated vote for men born in 1972 by race and education among CES respondents in Mississippi using the regression coefficients reported in the second column of Appendix Table 2. In the figure, the probability of voting increases with educational attainment for both racial groups. Within each educational level, there is a small racial disparity in turnout, such that White respondents appear more likely to vote than Black respondents. However, in this multivariate analysis, the Black-White racial disparity is not statistically significant while educational attainment is, again pointing to the large racial disparity across educational levels as the driver of the overall gap in Black and White voter turnout in Mississippi. If education were not operating through race to affect validated voter turnout, including educational attainment in the regression would not have such a big effect on the size or statistical significance of the coefficient on race and turnout as shown in Appendix Table 2.[23]

[23] King, Gary, Robert O. Keohane, and Sidney Verba. *Designing social inquiry: Scientific inference in qualitative research*. Princeton university press, 2021.

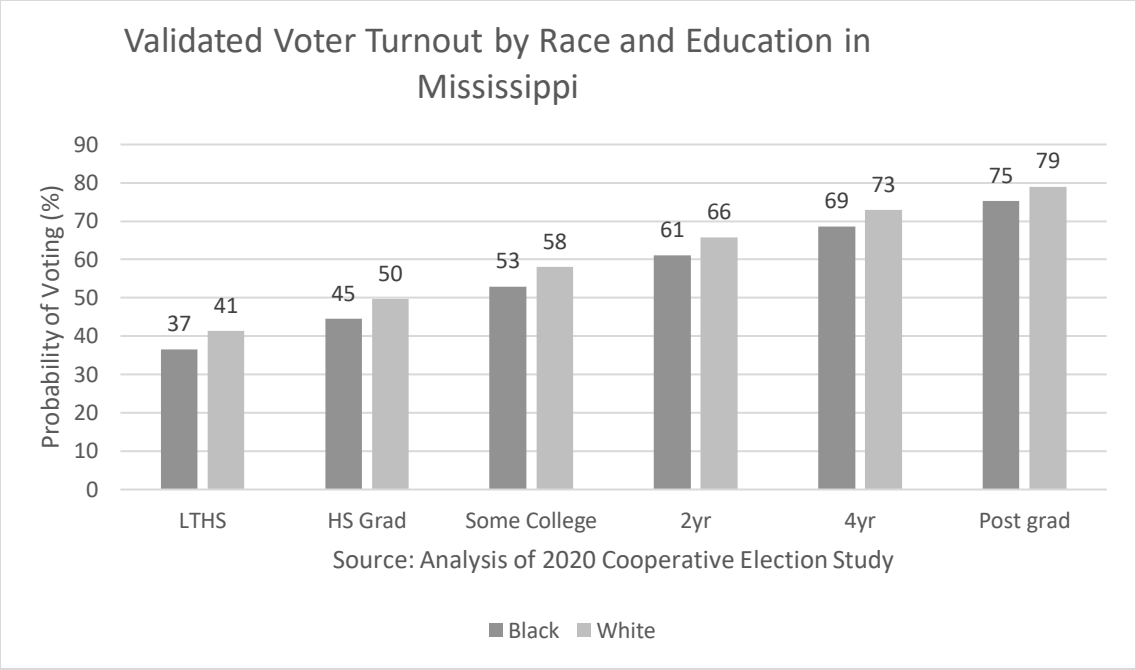
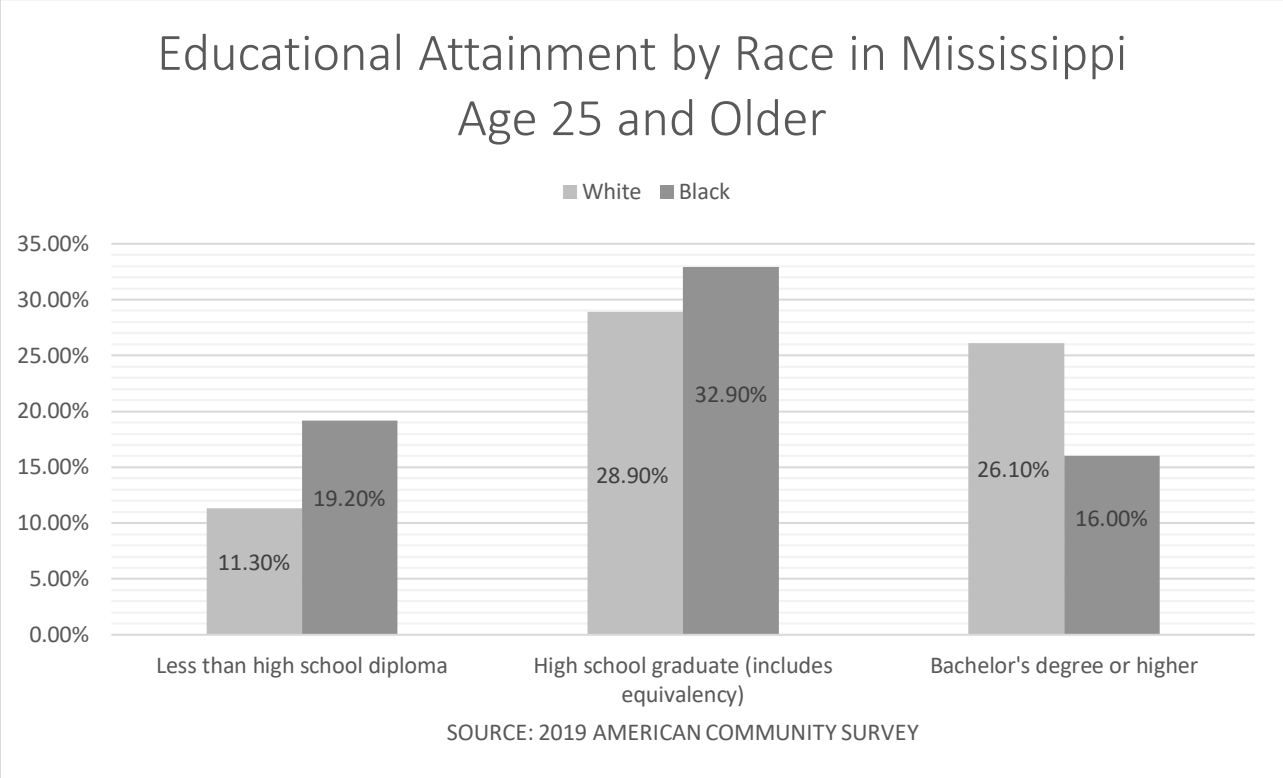


Figure 2 Probability of voting by race and education in Mississippi. Estimated probability of voting calculated for men born in 1972 by race and educational attainment. Source: Author's analysis of 2020 CES included in column 2 of table 2 in the appendix.

Dr. Swanson's conclusion that differences in educational attainment do not disadvantage Black Mississippians is based on a fundamental misunderstanding: he argues (based on faulty data) that because Black people and White people in Mississippi with similar educational levels vote similarly, that race does not matter for voter turnout. This logic ignores my original conclusion, which is borne out by the analysis here, that Black Mississippians have faced and are facing educational discrimination throughout the state. The state has maintained many aspects of educational segregation and under-investment in public education for Black students in both the historical and the contemporary period, as I note in my initial report.

This educational discrimination has led to gaps in literacy and educational attainment, with Black Mississippi residents having lower literacy and educational attainment than White Mississippi residents. This discrimination has allowed and continues to allow fewer Black Mississippians to reach educational parity with White Mississippians. As I have shown above, in line with decades of political science research, educational attainment has a strong, positive relationship to voter turnout. People with higher educational attainment are more likely to vote. Educational attainment in Mississippi thus is shaped by race in the ways that I highlight in my original report. I include those data from my original report again here as Figure 3 to clearly show the differences in educational attainment by race in Mississippi.

Figure 3: Educational Attainment by Race in Mississippi. Source: 2019 American Community Survey 1-Year Estimates



To summarize the discussion, analyzing validated voter turnout from the Mississippi sample of the CES clearly shows that White Mississippians were more likely to turn out in the 2020 General Election than Black Mississippians. This large racial gap is statistically significant. My analysis shows that educational attainment is an important factor in shaping this racial gap: accounting for educational attainment and other factors shows that while Black and White people with similar educational backgrounds vote similarly, people with lower educational attainment vote at lower rates overall than people with higher educational attainment. Because of the historical and contemporary discrimination in education faced by Black people that I highlight in my report, Black Mississippians are more likely to have lower educational attainment, and thus lower voter turnout, than White Mississippians.

Methodology and Analysis of Voter File Turnout: Ecological Inference

To further bolster the CES analysis, I turn to a second method of estimating the racial gap in turnout that avoids overreporting bias: ecological inference (EI). EI is a method of "inferring individual behavior from aggregate data"[24] that has been used as a standard statistical tool to estimate voting behavior in vote dilution cases.[25] Lewis describes "inferring the rate of voter

[24] King, Gary and Margaret Roberts. "EI: A(n R) Program for Ecological Inference." Available from https://github.com/iqss-research/eir. Accessed 20 Jan 2023.
[25] Lewis, Jeffrey B. "Extending King's Ecological Inference Model to Multiple Elections Using Markov Chain Monte Carlo." In *Ecological Inference: New Methodological Strategies*. King,

turnout among two racial groups in a set of electoral precincts from observations on the racial composition and total voter turnout in each precinct" as I will do here, as "the canonical ecological inference problem."[26] EI takes information on vote totals and racial demographics in geographic units and uses Bayesian statistical methods to estimate voting behavior—in this case, turnout by race.

EI requires data on the percent of each racial group in the geographic area and data on the overall voter turnout in the geographic area. I calculate block group voter turnout by geocoding[27] the Mississippi voter registration file to census block groups,[28] then aggregating up to produce counts of votes from each block group for the November 2020 General election. I use census block group data on the citizen voting age population by race, distinguishing non-Hispanic white population from the non-White population.[29] I also break out the data for the block groups in the counties of the Supreme Court District 1 (Central District) [30] and perform EI separately.

The estimates obtained using ecological inference show that there is a statistically significant racial gap in turnout in Mississippi: White Mississippi citizens are far more likely to vote than non-White Mississippi citizens. Based on the statewide EI analysis shown in Figure 4, the weighted mean of the proportion of non-White people who voted is 42%, while the weighted mean of the proportion of White people who voted is 58%. In the Central District, where turnout was slightly higher than the state overall, the weighted mean proportion of non-White people

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Gary, Ori Rosen and Martin A. Tanner, eds. Cambridge: Cambridge University Press, 2004; 97-122.

[26] Lewis 2004: 97.

[27] Prener, Christopher, Branson Fox and Christopher Kenny. "Censusxy: Access the U.S. Census Bureau's Geocoding API System." Available from https://chris-prener.github.io/censusxy/. Accessed 20 Jan 2023. I used benchmarks and vintages from the 2020 Census.

[28] See Lewis 2004: 97: EI may be performed for any "aggregate groupings of votes for which the racial composition is known." I was unable to match 240,527 registered voters to 2020 census block groups, and an additional 8,991 were not matched because they did not have a state listed in the voter file. 144,175 (60%) of the unmatched people voted statewide. 78,898 of the unmatched were from the Central District, of which 46,418 (59%) voted in the 2020 General election. I deleted some block groups with 0 population.

[29] U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity." Available online from https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html. Accessed 20 Jan 2023. The final sample size was 2,438 block groups for the statewide analysis and 773 for the Central District analysis.

[30] Bolivar, Claiborne, Copiah, Hinds, Holmes, Humphreys, Issaquena, Jefferson, Kemper, Lauderdale, Leake, Madison, Neshoba, Newton, Noxubee, Rankin, Scott, Sharkey, Sunflower, Warren, Washington, and Yazoo Counties. State of Mississippi Judiciary. "Mississippi Supreme Court Judicial Map." Available online from https://courts.ms.gov/appellatecourts/sc/scdistricts.php; accessed 20 Jan 2023.

who voted is 44%, while the weighted mean proportion of White people who voted is 62%.[31] More importantly, the statewide and Central District estimates for each racial group produced using EI and the CES are realistic given what we know about the actual voter participation statewide and the Central District from the Mississippi Secretary of State.

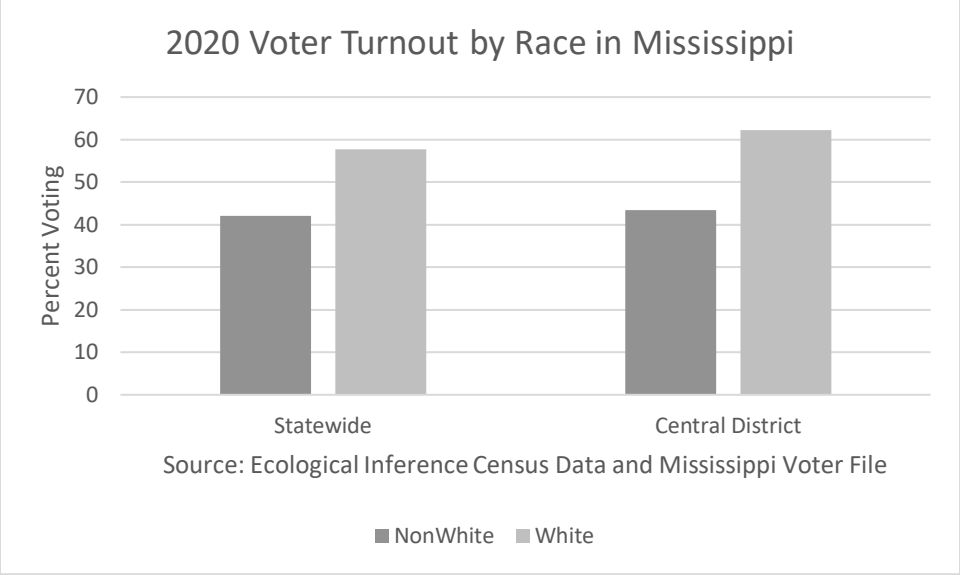

Figure 4: 2020 Voter Turnout by Race in Mississippi. Turnout by race estimated using EI on block group data from the census bureau on citizen voting age population by race, merged with turnout data from the Mississippi voter file. Results also reported in Table 1 below.

To summarize, all methods of estimating voter turnout by race in Mississippi that are not biased by racialized differential overreporting of turnout show that White people have a statistically significant advantage in voter turnout. Table 1 summarizes all the estimates of statewide voter turnout and voter turnout by race obtained from the different methods that I have discussed here. As shown in the table, the estimates of White and non-White voter turnout produced by EI are remarkably similar to those produced by my regression analysis of Black and White turnout in the CES, even though these estimates come from two different methods and sources of data. Both the regression analysis of the CES and the EI analysis using the Mississippi voter file, both of which avoid issues of differential over-reporting of voting, show large turnout gaps of between 13 to 15 percentage points statewide, and the EI analysis predicts a turnout gap of 18 points in the Central District. Both the regression analysis and the EI analysis predict White voter turnout at a rate close to 60 percent. In contrast, the CES predicts Black

[31] Performing the analysis with non-Hispanic Black alone or in combination and non-Black as the reference categories also produces estimates of lower Black voter turnout relative to non-Black residents both statewide and in the Central District. Statewide, Black turnout was estimated to be 42% (41% to 43%), while non-Black turnout was 57% (50% to 64%). In the Central District, Black turnout was estimated to be 43% (42% to 44%) while non-Black turnout was estimated to be 63% (41% to 85%).

turnout in the mid-forty percent range statewide, while the EI analysis similarly predicts non-White turnout in the low forty percent rage statewide. The estimates of turnout by race, and of turnout overall, that are based on my CES and EI analysis also are closer to the benchmark turnout rates that are based on vote counts from the Mississippi Secretary of State. Dr. Swanson fails to account for differential overreporting of turnout by race, and overreporting of turnout generally, which is why his estimates of turnout are unreasonable.

Black Voter Suppression and Experiences with In-Person Voting

There are many factors that affect voter turnout generally, and Black voter turnout in particular. However, in his report, Dr. Swanson says that he looks for Black voter suppression efforts along just one "causal" dimension: polling place distance. He hypothesizes:

> My hypothesis for this question was that if the Black voting age population were being systematically disenfranchised by the state of Mississippi, a symptomatic indicator of that would be seeing fewer of them close to polling places, and more of them a great distance from polling places.[32]

Dr. Swanson provides no literature or studies to support this supposition. Meanwhile, my examination of the literature on polling place distance finds that distance overall has a small effect on turnout, but that effect primarily has to do with access to transportation.[33] For instance, Haspel and Knotts (2005) find that voters with cars are relatively insensitive to polling place distance, while voters without cars are more sensitive. Hence, as Haspel and Knotts show, with respect to polling place distance, the actual distance from the polling place overall matters less than the availability of a car. As I show in Figure 6 of my initial report, 3.5% of White Mississippi households have no access to a car, compared to 11.3% of Black Mississippi households.[34] Considering polling place distance without accounting for racial differences in access to transportation, as Dr. Swanson does in his report, is inconsistent with published scholarly research in this area that controls for access to vehicles.

It is also important to note that Dr. Swanson ignores other aspects of the in-person voting experience that also affect turnout. For instance, long wait times at polling places may discourage voters.[35] Further analysis of the CES, which I report in Figure 5, shows that among validated Mississippi voters, 18.9% of white voters report that they waited more than 30 minutes to vote in the 2020 General Election, compared with 40.7% of black voters.[36] Consistent with

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[32] Swanson Report, p. 43.

[33] Haspel, Moshe, and H. Gibbs Knotts. "Location, location, location: Precinct placement and the costs of voting." *The Journal of Politics* 67.2 (2005): 560-573. See also Bagwe, Gaurav, Juan Margitic, and Allison Stashko. *Polling Place Location and the Costs of Voting*. Working Paper, 2020, which finds that transportation affects the relationship between distance to the polls and turnout as well.

[34] Source: 2019 American Community Survey 1 Year Estimates.

[35] Chen, M. Keith, et al. "Racial disparities in voting wait times: evidence from smartphone data." *Review of Economics and Statistics* 104.6 (2022): 1341-1350.

[36] Here, I switch to using the post weight for validated voters.

these estimates from the CES, an analysis of cell phone data also shows a racial disparity in wait times in Mississippi's 2nd congressional district.[37]

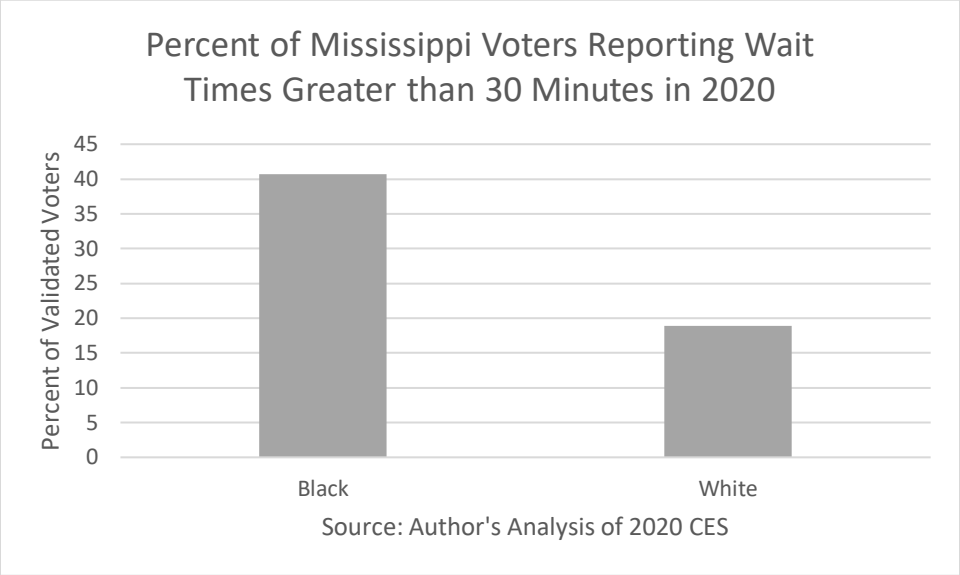

Figure 5: Percent of Mississippi Voters Reporting Wait Times Greater than 30 Minutes in 2020. Source: author's analysis of 2020 CES. Data on wait times reported for validated voters only.

Conclusion

Dr. Swanson's report does not rebut my conclusion or change my opinion that Black Mississippians' ability to participate effectively in the political process is hindered because of the discrimination they face. As I show conclusively here through the analysis of several different data sets using different methods, in Mississippi, White people vote at higher rates than Black people. This difference is partly the result of racial differences in educational attainment, which I already have shown is the result of years of racial discrimination by state actors.

Dr. Swanson points out that more White people in Mississippi live more than a mile from their polling place than Black people as further evidence that Black people do not face discrimination in voting; as I have shown, this argument ignores the fact that polling place distance really matters only for people who lack access to transportation, another arena in which Black people are disadvantaged in Mississippi relative to White people. Finally, when we consider additional aspects of the in-person voting experience in Mississippi, such as wait times, there is clear evidence that Black people are disadvantaged relative to White people.

[37] Chen et al. 2022.

Table 1 Estimates of Mississippi Voter Turnout, by Race, 2020 General Election. Estimates of voter turnout from different sources. Confidence intervals in parentheses.

Universe	**Method/Source**	**Turnout Estimates:**					
Statewide	Current Population Survey 2020 (Dr. Swanson)[38]	White Turnout:	69.8% (65.7% to 73.9%)	Black Turnout:	72.8% (67.9% to 77.7%)	Total Turnout:	70.3% (67.1% to 73.5%)
Statewide (Benchmark)	MS Secretary of State (2020 Presidential General)[39]	N/A		N/A		Total Turnout:	58.7%
Statewide	CES 2020[40]	White Turnout:	59.6%	Black Turnout:	46.1%	Total Turnout:	53.3%
Statewide	Ecological Inference (MS Voter File)	White Turnout:	58% (57% to 59%)	Non-White Turnout:	42% (33% to 51%)	Total Turnout:	58%[41]
Central District (Benchmark)	MS Secretary of State (2020 Presidential General)[42]	N/A		N/A		Total Turnout:	59.4%
Central District	Ecological Inference (MS Voter File)	White Turnout:	62% (61% to 64%)	Non-White Turnout:	44% (29% to 58%)	Total Turnout:	58%[43]

[38] Swanson Report, p. 70.
[39] Mississippi Secretary of State. "Official Results" and U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity."
[40] Calculated based on Model 1 of Appendix Table 2.
[41] Total votes/citizen voting age population from the statewide block group data (after excluding people who were unmatched to block groups as discussed in Note 28). This estimated turnout rate is close to the actual turnout rate because the turnout rate among the missing voters is 59.9%. For EI estimates that decrease the total block group CVAP by 11% to account for missing data, see the appendix.
[42] Mississippi Secretary of State. "Official Results" and U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity."
[43] Total votes/citizen voting age population from the Central District block group data (after subtracting the people who were unmatched to block groups as discussed in Note 28). For EI estimates that decrease the total block group CVAP by 11% to account for missing data, see the appendix.

Appendix

Table 1: Custom CPS 2020 Voting Supplement Table

A9 Not in Universe

	A	B	C	D	E	F	G	H	I	J
	Source: CPS Voting Supplement 202011									
	Weight used: PWSSWGT									
	Universe: selected geographies: Mississippi; Demographics- hispanic/non-hispanic origin (PEHSPNON): Non-Hispanic; Demographics-United States citizenship group (PRCITSHP): all except: Foreign Born, Not a US Citizen									
		Did you vote? (PES1)								
	Demographics-highest level of school completed (PEEDUCA)	Total	No Response	Refused	Don't Know	Not in Universe	Yes	No		
	-> Total	2774805	172861	7147	24141	650643	1507298	412715		
	-> Total -> Total Mississippi	2774805	172861	7147	24141	650643	1507298	412715		
	-> Total -> Total Mississippi -> Total White only	1611060	107149	4526	16587	315946	904127	262725		
	Not in Universe	260453	0	0	0	260453	0	0		
0	Less Than 1st Grade	1296	0	0	0	0	0	1296		
1	1st,2nd,3rd Or 4th Grade	1359	0	0	0	0	1359	0		
2	5th Or 6th Grade	5796	0	0	0	0	1929	3867		
3	7th Or 8th Grade	19291	2120	0	0	5103	2193	9875		
4	9th Grade	38123	1057	0	0	20698	8713	7655		
5	10th Grade	41388	2330	0	0	15130	11163	12765		
6	11th Grade	34188	1225	0	0	9311	9201	14451		
7	12th Grade No Diploma	12228	0	0	0	3955	5529	2744		
8	High School Grad-Diploma Or Equiv (ged)	396970	44463	1286	3504	0	230459	117258		
9	Some College But No Degree	309419	24141	2252	7224	0	227594	48208		
0	Associate Degree-Occupational/Vocationl	55762	1061	988	1342	0	46716	5655		
1	Associate Deg.-Academic Program	112454	7645	0	3294	1296	87056	13163		
2	Bachelor's Degree(ex:ba,ab,bs)	220121	20764	0	1223	0	178044	20090		
3	MASTER'S DEGREE(EX:MA,MS,MEng,MEd,MSW)	78556	967	0	0	0	74974	2615		
4	Professional School Deg(ex:md,dds,dvm)	13229	0	0	0	0	11570	1659		
5	DOCTORATE DEGREE(EX:PhD,EdD)	10427	1376	0	0	0	7627	1424		
6	-> Total -> Total Mississippi -> Total Black only	1075788	61543	2621	7554	292828	571129	140113		
7	Not in Universe	234761	0	0	0	234761	0	0		
8	Less Than 1st Grade	1530	0	0	0	0	0	1530		
9	1st,2nd,3rd Or 4th Grade	0	0	0	0	0	0	0		
0	5th Or 6th Grade	0	0	0	0	0	0	0		
1	7th Or 8th Grade	12822	1078	0	0	3961	5253	2530		
2	9th Grade	29850	0	0	0	17705	8395	3750		
3	10th Grade	50697	0	1276	0	22663	16887	9871		
4	11th Grade	57132	5652	0	0	7168	25110	19202		
5	12th Grade No Diploma	38961	4442	0	0	4308	22282	7929		
6	High School Grad-Diploma Or Equiv (ged)	303873	25778	0	5939	2262	202663	67231		
7	Some College But No Degree	143532	10315	0	0	0	121912	11305		
8	Associate Degree-Occupational/Vocationl	27863	1425	0	0	0	23122	3316		
9	Associate Deg.-Academic Program	43020	2597	0	1615	0	32800	6008		
0	Bachelor's Degree(ex:ba,ab,bs)	84496	4673	0	0	0	73818	6005		
1	MASTER'S DEGREE(EX:MA,MS,MEng,MEd,MSW)	38343	5583	0	0	0	31324	1436		
2	Professional School Deg(ex:md,dds,dvm)	1119	0	0	0	0	1119	0		
3	DOCTORATE DEGREE(EX:PhD,EdD)	7789	0	1345	0	0	6444	0		
4	-> Total -> Total Mississippi -> Total American Indian, Alaskan N	8650	0	0	0	1654	6996	0		

Table 2 Estimates of Mississippi Voter Turnout, by Race, 2020 General Election. Models estimated using Logistic Regression. Data from 2020 Cooperative Election Survey. Validated vote in 2020 General Election is the dependent variable. White is the reference racial category. *** P<.001, **P<.01, * P<.05. Standard errors below in parentheses.

	Model 1	**Model 2**
Black	-0.545**	-0.207
	(0.180)	*(0.200)*
Other Race	-1.246	-0.757
	(0.649)	*(0.697)*
Education		0.334***
		(0.069)
Birth Year		-0.040***
		(0.006)
Gender		0.167
		(0.196)
Constant	0.388***	77.210***
	(0.118)	*(11.740)*

Table 3: EI Estimates of Voter Turnout in Mississippi in the 2020 General Election. Analysis adjusts the block group data for unmatched registered voters by decreasing the total citizen voting age population of each block group by 11%.

	White Turnout	Non-White Turnout
Statewide	64% (63% to 65%)	52% (36% to 69%)
Central District	70% (68% to 71%)	53% (23% to 83%)

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., *Plaintiffs*, v. STATE BOARD OF ELECTION COMMISSIONERS, et al., *Defendant*.	)	No. 4:22-cv-00062-SA-JMV **Declaration of Traci Burch**

DECLARATION OF TRACI BURCH

I, Traci Burch, make the following declaration based on personal knowledge:

I have been retained by the Plaintiffs in the above referenced matter as an expert. I submit that the foregoing report from me is a true and accurate copy of the report I provided to Plaintiffs in this matter. I declare that the information and opinions contained in the report are true and correct to the best of my knowledge.

I declare under penalty of perjury that the foregoing is true and correct. 28 U.S.C. § 1746.

Dated: 2/6/2023

Traci Burch

Traci Burch

Scope of Report and Summary of Conclusions

I was asked to address Dr. Swanson's report, in particular his analysis regarding racial disparities in voter participation and disparities in proximity to polling places.

My conclusions are as follows:

- First, Dr. Swanson overestimates both Black and White turnout in Mississippi. His estimates of Black turnout are further biased because he fails to account for racial differences in the extent to which people overreport voting in surveys. The unreliability of Dr. Swanson's estimates is easily established because his overall turnout estimates imply that there were hundreds of thousands more voters participating than the vote counts reported by the Mississippi Secretary of State.

- Second, in light of Dr. Swanson's analyses and criticisms, I conducted additional analyses that do not rely on self-reports of voter turnout, which confirm that Black voter turnout in Mississippi is in fact lower than White voter turnout. These analyses yield estimates of turnout for Black and White voters that are similar to each other despite the use of multiple data sources and methods of estimation, which is evidence that they are reliable. These estimates also are closer to the true turnout numbers based on actual vote counts reported by the Mississippi Secretary of State than Dr. Swanson's, which further shows that these estimates are more reliable.

- Third, polling place distance in isolation, as reported by Dr. Swanson, is a poor indicator of Black voter turnout or relative ease of access to the voting process. Among other things, scholarly studies of polling place distance typically account for access to a vehicle, among other factors, because the effects of polling place distance are different depending on whether a person has a car. However, Dr. Swanson fails to consider access to a vehicle in his analysis. As I note, Black people in Mississippi are more than three times as likely to lack access to a car than White people. The increased difficulty in accessing polling places that results from this disparity in access to a car is far more salient than the minor purported "advantage" Black Mississippians have in terms of polling place distance, assuming Dr. Swanson's analysis of relative polling place distance is correct.

- Fourth, there are many aspects of polling place experience that could discourage voting apart from polling place distance. Considering wait times, for instance, shows that Black people have longer wait times in Mississippi than White people.

- Finally, with respect to Senate Factor 5 overall, Black people in Mississippi face discrimination in education, income, housing, employment, and criminal justice that dramatically affect life outcomes, including voting. In both my initial report

and again here, I have provided evidence to demonstrate the existence and effects of long-term and contemporary discrimination on the ability of Black Mississippians to participate in the political process.

Dr. Swanson's Estimates of Voter Turnout by Race

Dr. Swanson's estimates of voter turnout by race are based on his analysis of the Current Population Survey Voting and Registration Supplement (CPS). Dr. Swanson estimates based on the CPS that 69.8% of White non-Hispanic Mississippi residents and 72.9% of Black alone or in combination Mississippi residents voted in the 2020 General Election. In total, Dr. Swanson estimates that 1,531,000 Mississippians voted in the November 2020 General Election, a turnout rate of 70.3%.[1]

However, the official vote counts certified by the Mississippi Secretary of State show that only 1,313,759 votes[2] were cast for President (the highest participation race) in Mississippi in the November 2020 general election, which represents 58.7% of the citizen voting age population of Mississippi.[3] Dr. Swanson's estimate is nearly 12 percentage points higher than the true turnout rate based on actual votes cast and overestimates the vote total by more than 200,000 votes. This 12% overestimation shows that CPS is not reliable as a benchmark for voter turnout. As I discuss below, neither is it a reliable benchmark for voter turnout by race.

As noted above, by race, Dr. Swanson estimates based on the CPS that 69.8% of White non-Hispanic Mississippi residents and 72.9% of Black alone or in combination Mississippi residents voted in the 2020 General Election. Similarly, he concludes in his report that, based on his analysis of a Mississippi State University Poll, in 2020 reported voter "frequency," or the number of people in Mississippi who say that they always vote, was "68.22% for Whites and 72.1% for Blacks"[4]—rates close to those estimated from the CPS. However, based on my research into the matter, Dr. Swanson's analysis is flawed because his analysis of *both* surveys suffers from the same problem: he fails to adjust or otherwise account for overreporting generally, and for differential overreporting of voter turnout by race in particular.

Dr. Swanson acknowledges the issue of overreporting in his report when positing that the purported advantage he claims Black Mississippians have in terms of proximity to polling places "may offset to some degree the likelihood of over-reporting."[5] This supposition is incorrect, as I will show below. But for now, this statement shows that Dr. Swanson and I agree that overreporting of voting in surveys is a known issue. However, new research shows that not only

[1] Swanson Report, p. 70.
[2] Mississippi Secretary of State. "Official Results." Available online from https://www.sos.ms.gov/elections/electionresults/2020%20GE%20Statewide%20Recapitulation%20Report.pdf. Accessed 20 Jan 2023.
[3] U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity." Available online from https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html. Accessed 20 Jan 2023.
[4] Swanson Report, p. 84.
[5] Swanson Report, p. 84.

does the CPS overestimate turnout for all groups, it does so differentially by race, such that it consistently overestimates Black turnout even more so than White turnout.[6] This research finds that it is not appropriate to conclude that there is no gap in turnout between Black and White Mississippi voters based on the CPS.

In their 2022 article, which was published recently in a peer-reviewed political science journal, Ansolabehere, Fraga, and Schaffner compare estimates of voter turnout by race from the CPS for multiple states to the Cooperative Election Study as well as to statewide voter files for those states where race is recorded. They find systematic overreporting of voting in the CPS for all racial groups. However, they also show that overreporting is more pronounced among Black voters. Ansolabehere, Fraga, and Schaffner find that the tendency to overreport voting differently by race leads the CPS to underestimate the size of the racial gap in turnout between Black and White voters in multiple states. The bias may stem from problems with the CPS sample, such as a difference in attrition from the survey, or from differences in the tendency to overreport voting.[7] As a result of these problems with the CPS, researchers should "use caution when making inferences about variation in turnout rates by racial and ethnic groups"[8] based on the CPS alone.

In sum, Dr. Swanson's opinion that 69.8% of White non-Hispanic Mississippi residents and 72.9% of Black alone or in combination Mississippi residents voted in the 2020 General Election, as well as his similar opinions about turnout in other elections, is not correct.

Dr. Swanson's Criticisms of My Analysis

In my initial report, I used CPS data to estimate 56% White and 53% Black turnout in Mississippi for the November 2020 General Election. These estimates are relatively close to the observed turnout rate of 58.7% based on Secretary of State data, and substantially closer than the over 70% turnout figure Dr. Swanson presents.

However, Dr. Swanson is correct that the estimates in my initial report reflect a calculation error. When I was working with the table of CPS data I used, I thought that the educational attainment variable that I was using excluded children. However, it actually reports educational attainment for people ages 15 and older, so for each educational level, the total includes teens aged 15-17. There are no children younger than that in the "Less than High School" category, as evidenced by the fact that cells F10, F11,F12 are 0. Dr. Swanson correctly points out that primarily, this error affects the "Less than High School" calculations and not the other educational levels.[9] I also calculated total turnout for both racial groups incorrectly. When

[6] Ansolabehere, Stephen, Bernard L. Fraga, and Brian F. Schaffner. "The Current Population Survey Voting and Registration Supplement Overstates Minority Turnout." *The Journal of Politics* 84.3 (2022): 1850:1855.
[7] Ansolabehere et al. 2022: 1853-54.
[8] Ansolabehere et al. 2022: 1854.
[9] Dr. Swanson's assessment of the source of this error is not accurate. He writes "Here, Dr. Burch is vague about the source of the information she presents in the pre-ceding exhibit and does not describe the steps she undertook to produce it. Since these statistics of voting by

Column F is subtracted from the denominator, the turnout figures calculated using CPS are consistent with those presented in Dr. Swanson's report.

When I wrote my initial report, I relied on the CPS to estimate turnout by education because the estimates that I produced were in line with turnout based on the actual vote count and thus did not lead me to believe that something was amiss. I also was unaware of the Ansolabehere et al. article that was published right before I wrote this report-- I last researched turnout and the CPS only a few weeks before that article was published. I found the new article when reviewing the literature again in response to the estimates of turnout in Dr. Swanson's report, which I found surprising. I now think, based on the strong evidence of bias in the CPS, it makes sense to "use caution when making inferences about variation in turnout rates by racial and ethnic groups,"[10] and therefore that the CPS really should be considered only in comparison with estimates from other data sources that estimate voter turnout by race in ways that do not rely on self-reporting.

Methodology and Analysis of Validated Voter Turnout: Cooperative Election Study

Because, as discussed above, turnout estimates in the CPS are unreliable not just because of overreporting in general, but because of differences in overreporting by race in particular, I conducted additional analyses which employed alternative methods of looking at turnout by race that do not rely on self-reported voter turnout. These additional analyses also are consistent with my conclusion that Black voter turnout is lower than white turnout and inconsistent with those produced by Dr. Swanson.

Because much of the bias in turnout estimates based on the CPS has to do with differential overreporting of voting by race,[11] it is necessary to examine alternative sources that do not depend on self-reporting of turnout to estimate turnout by race in Mississippi. First, I examine the 2020 Cooperative Election Study (CES), which contains a sample of 462[12]

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education level by state are not readily available in official published tables . . . " Swanson Report, p. 75. In fact, I downloaded a table from the census website using their online table generator; I have included that table in the Appendix. I did not conduct "an analysis and interpretation of the CPS "raw data" (or CPS "PUMS") data alluded to earlier" and my error was not in working with the raw data or writing software code. Swanson Report, p. 76. Instead, I calculated turnout from this table, dividing the numerator, column G, over the denominator, column B. That was incorrect. I also should have subtracted Column F, not in universe, from the denominator as well.

[10] Ansolabehere et al. 2022: 1854.

[11] Ansolabehere et al. 2022; see also Enamorado, Ted, and Kosuke Imai. "Validating self-reported turnout by linking public opinion surveys with administrative records." *Public Opinion Quarterly* 83.4 (2019): 723-748.

[12] This number is above the minimum sample size to detect small effects (Cohen's d = .2) with a standard level of statistical power (=.8) and significance level of .05. See Singh, Ajay S., and Micah B. Masuku. "Sampling techniques & determination of sample size in applied statistics research: An overview." *International Journal of economics, commerce and management* 2.11 (2014): 1-22.

Mississippi adults (unweighted).[13] The CES, although it is a survey, independently validates voter registration and turnout for respondents by attempting to match respondents to a database of registered voters maintained by Catalist, a corporation that maintains a national database of voters.[14] Catalist updates their information on voter registration and history with data directly from states.[15] In my analysis, I use the measure of validated voter turnout rather than self-reported voter turnout to estimate racial gaps in turnout, distinguishing this survey from the unvalidated self-reported turnout from CPS or Mississippi State University analyzed by Dr. Swanson.

To analyze the survey, I employ logit regression analysis. Generally, regression analysis is a statistical technique that is designed to look for relationships between an independent variable and a dependent variable.[16] Multiple regression analysis also may involve the use of control variables, which would allow for the analysis of the relationship between an independent variable and a dependent variable after accounting for these additional factors.[17] I examine the relationship between a respondent's race and their validated voter turnout. Because the dependent variable, validated voter turnout, is dichotomous, I use logit rather than ordinary-least-squares regression.[18] However, because logit coefficients are difficult to interpret for lay readers, I include the regression tables of my results in the Appendix and report the results graphically in Figures 1 and 2 below.[19]

In the Mississippi sample of the CES,[20] the CES team was able to validate that 53% of Mississippi respondents voted in the 2020 General Election. This estimate, while lower than the 58.7% benchmark, is still much closer to the actual turnout than the 70.3% number estimated by

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[13] Ansolabehere, Stephen, Brian F. Schaffner, and Sam Luks, COOPERATIVE ELECTION STUDY, 2020: COMMON CONTENT. [Computer File] Release 2: August 4th, 2021. Cambridge, MA: Harvard University [producer] http://cces.gov.harvard.edu.

[14] Ansolabehere, Stephen, Brian F. Schaffner, and Sam Luks, "Guide to the 2020 Cooperative Election Study." Release 2: August 4th, 2021. Cambridge, MA: Harvard University [producer] http://cces.gov.harvard.edu: 19.

[15] Ansolabehere et al., "Guide to the 2020 Cooperative Election Study," 2021.

[16] Chatterjee, Samprit, and Jeffrey S. Simonoff. *Handbook of regression analysis*. John Wiley & Sons, 2013.

[17] Chatterjee and Simonoff 2013: 10.

[18] Logit regression is designed for predicting dependent variables that take on only two values, rather than ordinary-least-squares regression, which is for dependent variables that are continuous. Chatterjee and Simonoff 2013: 150.

[19] The columns in the figures report the estimated probability of voting and are calculated using the equation pr(voting)= $\frac{1}{1+e^{-(B_0+xB_{1\ldots})}}$, where B_0, B_1 . . . are the estimated coefficients in the models.

[20] Including only Mississippi U.S. Citizens in the analysis and weighting by the variable "commonweight." All CES respondents are adults.

Dr. Swanson from the CPS. Breaking the CES data down further by race,[21] 60% of White respondents and 46% of Black respondents voted in Mississippi in the 2020 General Election. My regression analysis of validated turnout by race in the CES confirms these percentages, finding the same large, statistically significant gap between Black and White Mississippi voters. As I report in Figure 1, calculating the probability of voting in the 2020 General Election (based on the regression coefficients in the first column of Table 2 in the appendix) shows that 60% of White respondents voted in the 2020 General Election, compared with 46% of Black Mississippi respondents.

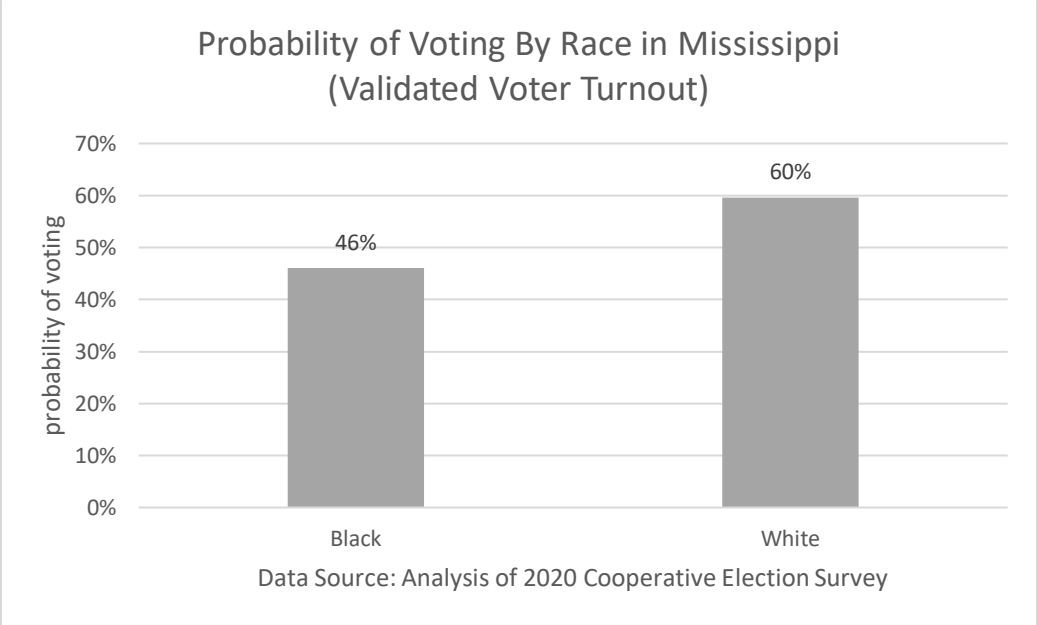


Figure 1: Probability of voting by race in Mississippi. Source: Author's analysis of 2020 CES included in column 1 of table 2 in the appendix.

It is also worth noting that the CES allows us to examine overreporting of voting. Comparing self-reported voter turnout to validated voter turnout shows substantial overreporting of voting. The CES team was able to validate in Catalist that 74% of the White Mississippi respondents who said they voted actually did so, but were only able to validate that 57% of the Black Mississippi respondents who said they voted did so.[22] Thus, as the CES shows, corroborating the recent work of Ansolabehere et al. discussed supra, differential over-reporting of voter turnout by race is an important phenomenon that affects estimates of voter turnout in Mississippi and demonstrates the problems with relying only on self-reported voting to estimate racial differences in turnout.

[21] The CES race question analyzed in this report asks: "What racial or ethnic group best describes you?" and provides the following responses: White, Black, Hispanic, Asian, Native American, Middle Eastern, Two or More Races, Other.

[22] For this analysis, which includes reported voter turnout, I weighted the sample by the variable "commonpostweight."

Effects of Educational Discrimination on Black Voter Turnout

In his report, Dr. Swanson argued that Black Mississippians vote at higher rates than White Mississippians at every educational level and thus argued that educational attainment does not detrimentally affect Black voter turnout. This conclusion is inaccurate because it relies on the CPS, which I have shown to produce biased estimates, and because it ignores the point that I make in my original report with respect to differences in educational attainment by race in Mississippi. I discuss these two points below.

My original purpose for including the CPS analysis in my first report was to show the importance of education and socioeconomic status, arenas in which Black Mississippians face discrimination, to shaping the racial gap in voter turnout. Due to the problems with reliance on CPS discussed above, for this report, I seek to reinforce and corroborate my conclusions regarding the effects of educational discrimination on Black voter turnout by deploying multiple regression analysis on the CES to examine the relationship between race and validated voter turnout while holding educational attainment constant. Multiple regression allows us to begin to compare apples to apples—for instance, comparing turnout between Black and White people with the same educational level. As I note earlier, there is a large and statistically significant gap in voter turnout overall between Black and White Mississippi residents: White turnout in the 2020 General Election is estimated to be 60%, while Black turnout is estimated to be 46%.

Further analysis shows that this large, 14 percentage point gap in turnout mostly comes from the distribution of racial groups across educational levels, rather than from differential voter turnout within each educational level. In other words, the racial gap comes less from the fact that Black people with college degrees vote less than White people with college degrees, but rather from the fact that there are proportionally fewer Black people in Mississippi with college degrees than White people.

We can see this phenomenon in Figure 2, which calculates the probability of having a validated vote for men born in 1972 by race and education among CES respondents in Mississippi using the regression coefficients reported in the second column of Appendix Table 2. In the figure, the probability of voting increases with educational attainment for both racial groups. Within each educational level, there is a small racial disparity in turnout, such that White respondents appear more likely to vote than Black respondents. However, in this multivariate analysis, the Black-White racial disparity is not statistically significant while educational attainment is, again pointing to the large racial disparity across educational levels as the driver of the overall gap in Black and White voter turnout in Mississippi. If education were not operating through race to affect validated voter turnout, including educational attainment in the regression would not have such a big effect on the size or statistical significance of the coefficient on race and turnout as shown in Appendix Table 2.[23]

[23] King, Gary, Robert O. Keohane, and Sidney Verba. *Designing social inquiry: Scientific inference in qualitative research*. Princeton university press, 2021.

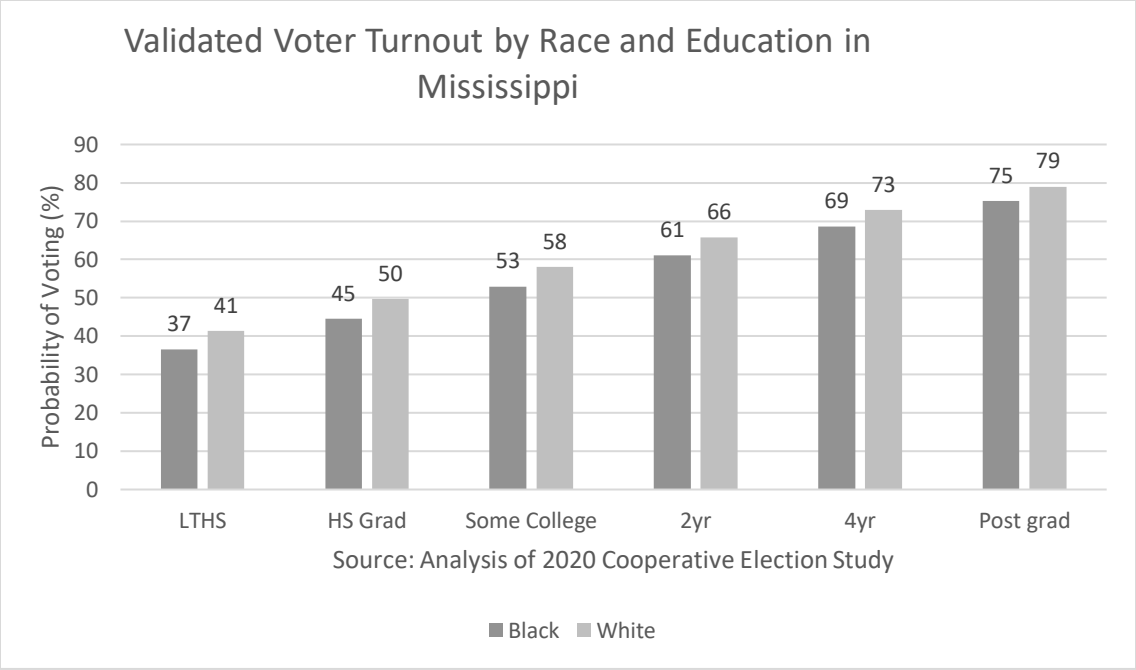
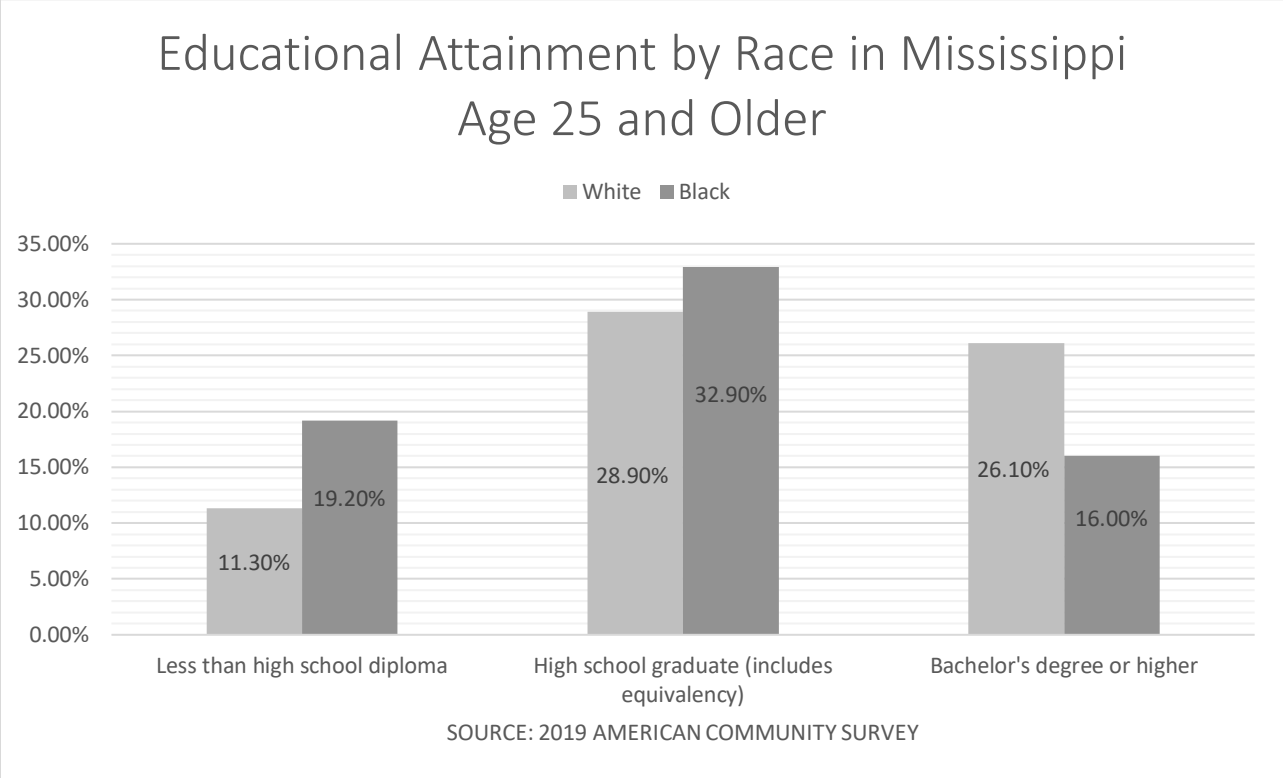


Figure 2 Probability of voting by race and education in Mississippi. Estimated probability of voting calculated for men born in 1972 by race and educational attainment. Source: Author's analysis of 2020 CES included in column 2 of table 2 in the appendix.

Dr. Swanson's conclusion that differences in educational attainment do not disadvantage Black Mississippians is based on a fundamental misunderstanding: he argues (based on faulty data) that because Black people and White people in Mississippi with similar educational levels vote similarly, that race does not matter for voter turnout. This logic ignores my original conclusion, which is borne out by the analysis here, that Black Mississippians have faced and are facing educational discrimination throughout the state. The state has maintained many aspects of educational segregation and under-investment in public education for Black students in both the historical and the contemporary period, as I note in my initial report.

This educational discrimination has led to gaps in literacy and educational attainment, with Black Mississippi residents having lower literacy and educational attainment than White Mississippi residents. This discrimination has allowed and continues to allow fewer Black Mississippians to reach educational parity with White Mississippians. As I have shown above, in line with decades of political science research, educational attainment has a strong, positive relationship to voter turnout. People with higher educational attainment are more likely to vote. Educational attainment in Mississippi thus is shaped by race in the ways that I highlight in my original report. I include those data from my original report again here as Figure 3 to clearly show the differences in educational attainment by race in Mississippi.

Figure 3: Educational Attainment by Race in Mississippi. Source: 2019 American Community Survey 1-Year Estimates



To summarize the discussion, analyzing validated voter turnout from the Mississippi sample of the CES clearly shows that White Mississippians were more likely to turn out in the 2020 General Election than Black Mississippians. This large racial gap is statistically significant. My analysis shows that educational attainment is an important factor in shaping this racial gap: accounting for educational attainment and other factors shows that while Black and White people with similar educational backgrounds vote similarly, people with lower educational attainment vote at lower rates overall than people with higher educational attainment. Because of the historical and contemporary discrimination in education faced by Black people that I highlight in my report, Black Mississippians are more likely to have lower educational attainment, and thus lower voter turnout, than White Mississippians.

Methodology and Analysis of Voter File Turnout: Ecological Inference

To further bolster the CES analysis, I turn to a second method of estimating the racial gap in turnout that avoids overreporting bias: ecological inference (EI). EI is a method of "inferring individual behavior from aggregate data"[24] that has been used as a standard statistical tool to estimate voting behavior in vote dilution cases.[25] Lewis describes "inferring the rate of voter

[24] King, Gary and Margaret Roberts. "EI: A(n R) Program for Ecological Inference." Available from https://github.com/iqss-research/eir. Accessed 20 Jan 2023.
[25] Lewis, Jeffrey B. "Extending King's Ecological Inference Model to Multiple Elections Using Markov Chain Monte Carlo." In *Ecological Inference: New Methodological Strategies*. King,

turnout among two racial groups in a set of electoral precincts from observations on the racial composition and total voter turnout in each precinct" as I will do here, as "the canonical ecological inference problem."[26] EI takes information on vote totals and racial demographics in geographic units and uses Bayesian statistical methods to estimate voting behavior—in this case, turnout by race.

EI requires data on the percent of each racial group in the geographic area and data on the overall voter turnout in the geographic area. I calculate block group voter turnout by geocoding[27] the Mississippi voter registration file to census block groups,[28] then aggregating up to produce counts of votes from each block group for the November 2020 General election. I use census block group data on the citizen voting age population by race, distinguishing non-Hispanic white population from the non-White population.[29] I also break out the data for the block groups in the counties of the Supreme Court District 1 (Central District) [30] and perform EI separately.

The estimates obtained using ecological inference show that there is a statistically significant racial gap in turnout in Mississippi: White Mississippi citizens are far more likely to vote than non-White Mississippi citizens. Based on the statewide EI analysis shown in Figure 4, the weighted mean of the proportion of non-White people who voted is 42%, while the weighted mean of the proportion of White people who voted is 58%. In the Central District, where turnout was slightly higher than the state overall, the weighted mean proportion of non-White people

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Gary, Ori Rosen and Martin A. Tanner, eds. Cambridge: Cambridge University Press, 2004; 97-122.

[26] Lewis 2004: 97.

[27] Prener, Christopher, Branson Fox and Christopher Kenny. "Censusxy: Access the U.S. Census Bureau's Geocoding API System." Available from https://chris-prener.github.io/censusxy/. Accessed 20 Jan 2023. I used benchmarks and vintages from the 2020 Census.

[28] See Lewis 2004: 97: EI may be performed for any "aggregate groupings of votes for which the racial composition is known." I was unable to match 240,527 registered voters to 2020 census block groups, and an additional 8,991 were not matched because they did not have a state listed in the voter file. 144,175 (60%) of the unmatched people voted statewide. 78,898 of the unmatched were from the Central District, of which 46,418 (59%) voted in the 2020 General election. I deleted some block groups with 0 population.

[29] U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity." Available online from https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html. Accessed 20 Jan 2023. The final sample size was 2,438 block groups for the statewide analysis and 773 for the Central District analysis.

[30] Bolivar, Claiborne, Copiah, Hinds, Holmes, Humphreys, Issaquena, Jefferson, Kemper, Lauderdale, Leake, Madison, Neshoba, Newton, Noxubee, Rankin, Scott, Sharkey, Sunflower, Warren, Washington, and Yazoo Counties. State of Mississippi Judiciary. "Mississippi Supreme Court Judicial Map." Available online from https://courts.ms.gov/appellatecourts/sc/scdistricts.php; accessed 20 Jan 2023.

who voted is 44%, while the weighted mean proportion of White people who voted is 62%.[31] More importantly, the statewide and Central District estimates for each racial group produced using EI and the CES are realistic given what we know about the actual voter participation statewide and the Central District from the Mississippi Secretary of State.

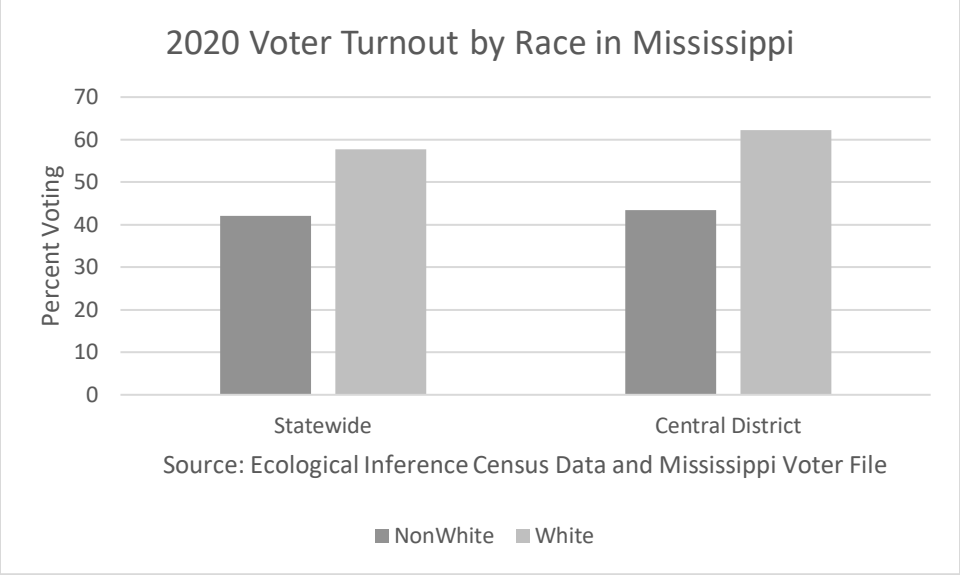

Figure 4: 2020 Voter Turnout by Race in Mississippi. Turnout by race estimated using EI on block group data from the census bureau on citizen voting age population by race, merged with turnout data from the Mississippi voter file. Results also reported in Table 1 below.

To summarize, all methods of estimating voter turnout by race in Mississippi that are not biased by racialized differential overreporting of turnout show that White people have a statistically significant advantage in voter turnout. Table 1 summarizes all the estimates of statewide voter turnout and voter turnout by race obtained from the different methods that I have discussed here. As shown in the table, the estimates of White and non-White voter turnout produced by EI are remarkably similar to those produced by my regression analysis of Black and White turnout in the CES, even though these estimates come from two different methods and sources of data. Both the regression analysis of the CES and the EI analysis using the Mississippi voter file, both of which avoid issues of differential over-reporting of voting, show large turnout gaps of between 13 to 15 percentage points statewide, and the EI analysis predicts a turnout gap of 18 points in the Central District. Both the regression analysis and the EI analysis predict White voter turnout at a rate close to 60 percent. In contrast, the CES predicts Black

[31] Performing the analysis with non-Hispanic Black alone or in combination and non-Black as the reference categories also produces estimates of lower Black voter turnout relative to non-Black residents both statewide and in the Central District. Statewide, Black turnout was estimated to be 42% (41% to 43%), while non-Black turnout was 57% (50% to 64%). In the Central District, Black turnout was estimated to be 43% (42% to 44%) while non-Black turnout was estimated to be 63% (41% to 85%).

turnout in the mid-forty percent range statewide, while the EI analysis similarly predicts non-White turnout in the low forty percent rage statewide. The estimates of turnout by race, and of turnout overall, that are based on my CES and EI analysis also are closer to the benchmark turnout rates that are based on vote counts from the Mississippi Secretary of State. Dr. Swanson fails to account for differential overreporting of turnout by race, and overreporting of turnout generally, which is why his estimates of turnout are unreasonable.

Black Voter Suppression and Experiences with In-Person Voting

There are many factors that affect voter turnout generally, and Black voter turnout in particular. However, in his report, Dr. Swanson says that he looks for Black voter suppression efforts along just one "causal" dimension: polling place distance. He hypothesizes:

> My hypothesis for this question was that if the Black voting age population were being systematically disenfranchised by the state of Mississippi, a symptomatic indicator of that would be seeing fewer of them close to polling places, and more of them a great distance from polling places.[32]

Dr. Swanson provides no literature or studies to support this supposition. Meanwhile, my examination of the literature on polling place distance finds that distance overall has a small effect on turnout, but that effect primarily has to do with access to transportation.[33] For instance, Haspel and Knotts (2005) find that voters with cars are relatively insensitive to polling place distance, while voters without cars are more sensitive. Hence, as Haspel and Knotts show, with respect to polling place distance, the actual distance from the polling place overall matters less than the availability of a car. As I show in Figure 6 of my initial report, 3.5% of White Mississippi households have no access to a car, compared to 11.3% of Black Mississippi households.[34] Considering polling place distance without accounting for racial differences in access to transportation, as Dr. Swanson does in his report, is inconsistent with published scholarly research in this area that controls for access to vehicles.

It is also important to note that Dr. Swanson ignores other aspects of the in-person voting experience that also affect turnout. For instance, long wait times at polling places may discourage voters.[35] Further analysis of the CES, which I report in Figure 5, shows that among validated Mississippi voters, 18.9% of white voters report that they waited more than 30 minutes to vote in the 2020 General Election, compared with 40.7% of black voters.[36] Consistent with

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[32] Swanson Report, p. 43.

[33] Haspel, Moshe, and H. Gibbs Knotts. "Location, location, location: Precinct placement and the costs of voting." *The Journal of Politics* 67.2 (2005): 560-573. See also Bagwe, Gaurav, Juan Margitic, and Allison Stashko. *Polling Place Location and the Costs of Voting*. Working Paper, 2020, which finds that transportation affects the relationship between distance to the polls and turnout as well.

[34] Source: 2019 American Community Survey 1 Year Estimates.

[35] Chen, M. Keith, et al. "Racial disparities in voting wait times: evidence from smartphone data." *Review of Economics and Statistics* 104.6 (2022): 1341-1350.

[36] Here, I switch to using the post weight for validated voters.

these estimates from the CES, an analysis of cell phone data also shows a racial disparity in wait times in Mississippi's 2nd congressional district.[37]

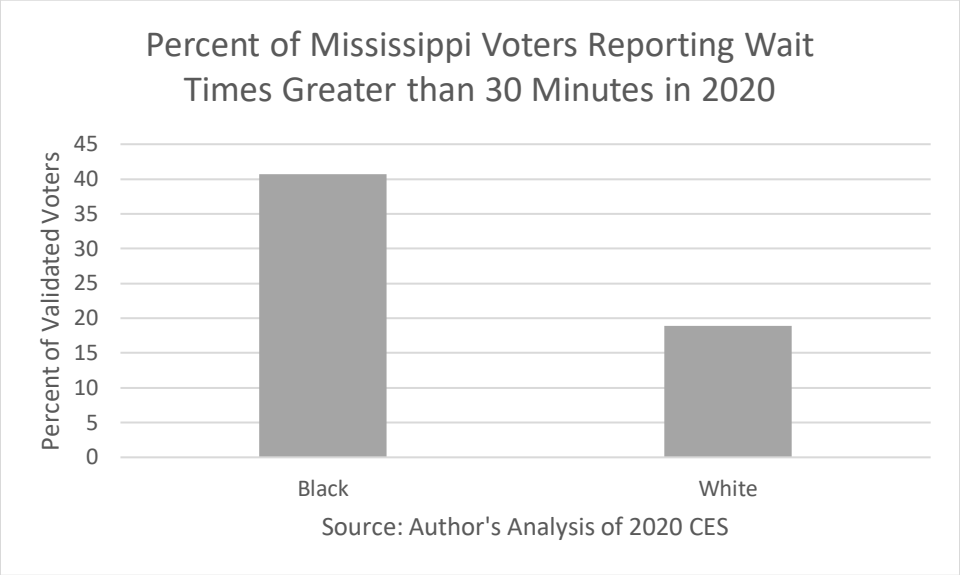

Figure 5: Percent of Mississippi Voters Reporting Wait Times Greater than 30 Minutes in 2020. Source: author's analysis of 2020 CES. Data on wait times reported for validated voters only.

Conclusion

Dr. Swanson's report does not rebut my conclusion or change my opinion that Black Mississippians' ability to participate effectively in the political process is hindered because of the discrimination they face. As I show conclusively here through the analysis of several different data sets using different methods, in Mississippi, White people vote at higher rates than Black people. This difference is partly the result of racial differences in educational attainment, which I already have shown is the result of years of racial discrimination by state actors.

Dr. Swanson points out that more White people in Mississippi live more than a mile from their polling place than Black people as further evidence that Black people do not face discrimination in voting; as I have shown, this argument ignores the fact that polling place distance really matters only for people who lack access to transportation, another arena in which Black people are disadvantaged in Mississippi relative to White people. Finally, when we consider additional aspects of the in-person voting experience in Mississippi, such as wait times, there is clear evidence that Black people are disadvantaged relative to White people.

[37] Chen et al. 2022.

Table 1 Estimates of Mississippi Voter Turnout, by Race, 2020 General Election. Estimates of voter turnout from different sources. Confidence intervals in parentheses.

Universe	**Method/Source**	**Turnout Estimates:**					
Statewide	Current Population Survey 2020 (Dr. Swanson)[38]	White Turnout:	69.8% (65.7% to 73.9%)	Black Turnout:	72.8% (67.9% to 77.7%)	Total Turnout:	70.3% (67.1% to 73.5%)
Statewide (Benchmark)	MS Secretary of State (2020 Presidential General)[39]	N/A		N/A		Total Turnout:	58.7%
Statewide	CES 2020[40]	White Turnout:	59.6%	Black Turnout:	46.1%	Total Turnout:	53.3%
Statewide	Ecological Inference (MS Voter File)	White Turnout:	58% (57% to 59%)	Non-White Turnout:	42% (33% to 51%)	Total Turnout:	58%[41]
Central District (Benchmark)	MS Secretary of State (2020 Presidential General)[42]	N/A		N/A		Total Turnout:	59.4%
Central District	Ecological Inference (MS Voter File)	White Turnout:	62% (61% to 64%)	Non-White Turnout:	44% (29% to 58%)	Total Turnout:	58%[43]

[38] Swanson Report, p. 70.
[39] Mississippi Secretary of State. "Official Results" and U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity."
[40] Calculated based on Model 1 of Appendix Table 2.
[41] Total votes/citizen voting age population from the statewide block group data (after excluding people who were unmatched to block groups as discussed in Note 28). This estimated turnout rate is close to the actual turnout rate because the turnout rate among the missing voters is 59.9%. For EI estimates that decrease the total block group CVAP by 11% to account for missing data, see the appendix.
[42] Mississippi Secretary of State. "Official Results" and U.S. Census Bureau. "Citizen Voting Age Population by Race and Ethnicity."
[43] Total votes/citizen voting age population from the Central District block group data (after subtracting the people who were unmatched to block groups as discussed in Note 28). For EI estimates that decrease the total block group CVAP by 11% to account for missing data, see the appendix.

Appendix

Table 1: Custom CPS 2020 Voting Supplement Table

A9 Not in Universe

	A	B	C	D	E	F	G	H	I	J
	Source: CPS Voting Supplement 202011									
	Weight used: PWSSWGT									
	Universe: selected geographies: Mississippi; Demographics- hispanic/non-hispanic origin (PEHSPNON): Non-Hispanic; Demographics-United States citizenship group (PRCITSHP): all except: Foreign Born, Not a US Citizen									
		Did you vote? (PES1)								
	Demographics-highest level of school completed (PEEDUCA)	Total	No Response	Refused	Don't Know	Not in Universe	Yes	No		
	-> Total	2774805	172861	7147	24141	650643	1507298	412715		
	-> Total -> Total Mississippi	2774805	172861	7147	24141	650643	1507298	412715		
	-> Total -> Total Mississippi -> Total White only	1611060	107149	4526	16587	315946	904127	262725		
	Not in Universe	260453	0	0	0	260453	0	0		
0	Less Than 1st Grade	1296	0	0	0	0	0	1296		
1	1st,2nd,3rd Or 4th Grade	1359	0	0	0	0	1359	0		
2	5th Or 6th Grade	5796	0	0	0	0	1929	3867		
3	7th Or 8th Grade	19291	2120	0	0	5103	2193	9875		
4	9th Grade	38123	1057	0	0	20698	8713	7655		
5	10th Grade	41388	2330	0	0	15130	11163	12765		
6	11th Grade	34188	1225	0	0	9311	9201	14451		
7	12th Grade No Diploma	12228	0	0	0	3955	5529	2744		
8	High School Grad-Diploma Or Equiv (ged)	396970	44463	1286	3504	0	230459	117258		
9	Some College But No Degree	309419	24141	2252	7224	0	227594	48208		
0	Associate Degree-Occupational/Vocationl	55762	1061	988	1342	0	46716	5655		
1	Associate Deg.-Academic Program	112454	7645	0	3294	1296	87056	13163		
2	Bachelor's Degree(ex:ba,ab,bs)	220121	20764	0	1223	0	178044	20090		
3	MASTER'S DEGREE(EX:MA,MS,MEng,MEd,MSW)	78556	967	0	0	0	74974	2615		
4	Professional School Deg(ex:md,dds,dvm)	13229	0	0	0	0	11570	1659		
5	DOCTORATE DEGREE(EX:PhD,EdD)	10427	1376	0	0	0	7627	1424		
6	-> Total -> Total Mississippi -> Total Black only	1075788	61543	2621	7554	292828	571129	140113		
7	Not in Universe	234761	0	0	0	234761	0	0		
8	Less Than 1st Grade	1530	0	0	0	0	0	1530		
9	1st,2nd,3rd Or 4th Grade	0	0	0	0	0	0	0		
0	5th Or 6th Grade	0	0	0	0	0	0	0		
1	7th Or 8th Grade	12822	1078	0	0	3961	5253	2530		
2	9th Grade	29850	0	0	0	17705	8395	3750		
3	10th Grade	50697	0	1276	0	22663	16887	9871		
4	11th Grade	57132	5652	0	0	7168	25110	19202		
5	12th Grade No Diploma	38961	4442	0	0	4308	22282	7929		
6	High School Grad-Diploma Or Equiv (ged)	303873	25778	0	5939	2262	202663	67231		
7	Some College But No Degree	143532	10315	0	0	0	121912	11305		
8	Associate Degree-Occupational/Vocationl	27863	1425	0	0	0	23122	3316		
9	Associate Deg.-Academic Program	43020	2597	0	1615	0	32800	6008		
0	Bachelor's Degree(ex:ba,ab,bs)	84496	4673	0	0	0	73818	6005		
1	MASTER'S DEGREE(EX:MA,MS,MEng,MEd,MSW)	38343	5583	0	0	0	31324	1436		
2	Professional School Deg(ex:md,dds,dvm)	1119	0	0	0	0	1119	0		
3	DOCTORATE DEGREE(EX:PhD,EdD)	7789	0	1345	0	0	6444	0		
4	-> Total -> Total Mississippi -> Total American Indian, Alaskan N	8650	0	0	0	1654	6996	0		

Table 2 Estimates of Mississippi Voter Turnout, by Race, 2020 General Election. Models estimated using Logistic Regression. Data from 2020 Cooperative Election Survey. Validated vote in 2020 General Election is the dependent variable. White is the reference racial category. *** P<.001, **P<.01, * P<.05. Standard errors below in parentheses.

	Model 1	**Model 2**
Black	-0.545**	-0.207
	(0.180)	*(0.200)*
Other Race	-1.246	-0.757
	(0.649)	*(0.697)*
Education		0.334***
		(0.069)
Birth Year		-0.040***
		(0.006)
Gender		0.167
		(0.196)
Constant	0.388***	77.210***
	(0.118)	*(11.740)*

Table 3: EI Estimates of Voter Turnout in Mississippi in the 2020 General Election. Analysis adjusts the block group data for unmatched registered voters by decreasing the total citizen voting age population of each block group by 11%.

	White Turnout	Non-White Turnout
Statewide	64% (63% to 65%)	52% (36% to 69%)
Central District	70% (68% to 71%)	53% (23% to 83%)

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., *Plaintiffs*, v. STATE BOARD OF ELECTION COMMISSIONERS, et al., *Defendant*.	)	No. 4:22-cv-00062-SA-JMV **Declaration of Traci Burch**

DECLARATION OF TRACI BURCH

I, Traci Burch, make the following declaration based on personal knowledge:

I have been retained by the Plaintiffs in the above referenced matter as an expert. I submit that the foregoing report from me is a true and accurate copy of the report I provided to Plaintiffs in this matter. I declare that the information and opinions contained in the report are true and correct to the best of my knowledge.

I declare under penalty of perjury that the foregoing is true and correct. 28 U.S.C. § 1746.

Dated: 2/6/2023

Traci Burch

Traci Burch

Dyamone White, et al. v. State Board of Election Commissioners, et al.

Christopher Bonneau

September 29, 2023

All depositions & exhibits are available for downloading at
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IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, ET AL.

PLAINTIFFS

V. NO. 4:22-CV-00062-SA-JMV

STATE BOARD OF ELECTION
COMMISSIONERS, ET AL.

DEFENDANTS

DEPOSITION OF CHRISTOPHER BONNEAU

Taken at the instance of the Plaintiffs at Wise, Carter, Child & Caraway, 401 E Capitol, Suite 600 Jackson, Mississippi 39201-2688, on Friday, September 29, 2023, beginning at 9:00 a.m.

REPORTED BY:

ROBIN G. BURWELL, CCR #1651

APPEARANCES:

MING CHEUNG, ESQ.
ARI J. SAVITZKY, ESQ.
Destiny Ruiz
American Civil Liberties Union of Mississippi Foundation
125 Broad Street, 18th Floor
New York, New York 1004
mcheung@aclu.org

JOSHUA TOM, ESQ.
American Civil Liberties Union of Mississippi Foundation
101 South Congress Street
Jackson, Mississippi 39201
jtom@aclu-ms.org

LESLIE FAITH JONES, ESQ.
Southern Poverty Law Center
111 East Capitol Street, Suite 280
Jackson, Mississippi 39201
leslie.jones@splcenter.org

AHMED SOUSSI, ESQ.
Southern Poverty Law Center
150 E Ponce de Leon Avenue, Suite 340
Decatur, Georgia 30030
ahmed.soussi@splcenter.org

COUNSEL FOR PLAINTIFFS

MICHAEL B. WALLACE, ESQ.
Wise Carter
401 East Capitol Street, Suite 600
Jackson, Mississippi 39201
mbw@wisecarter.com

CONT'D

REX M. SHANNON, III, ESQ.
GERALD KUCIA, ESQ.
Special Assistant Attorney General
Post Office Box 220
Jackson, Mississippi 39205
rex.shannon@ago.ms.gov

COUNSEL FOR DEFENDANTS

INDEX

EXAMINATIONS

EXHIBITS

CHRISTOPHER BONNEAU,
having been first duly sworn, was examined and testified as follows:
EXAMINATION BY MR. CHEUNG:

Q. Good morning, Dr. Bonneau, my name is Ming Cheung. I'm an attorney with the ACLU. I'm here on behalf of the plaintiffs. I'll let my colleagues also identify themselves.

MS. JONES: Leslie Faith Jones with Southern Poverty Law Center, also for the plaintiffs.

MR. TOM: Hi, my name is Joshua Tom and I'm with ACLU Mississippi for the plaintiffs.

MR. CHEUNG: Anyone else for the plaintiffs on the Zoom?

MR. SAVITZKY: Yes, this is Ari Savitzky. I'm another attorney for the plaintiffs for ACLU. Good morning.

MS. RUIZ: Hi, good morning. My name is Destiny and I'm paralegal at the ACLU.

MR. WALLACE: As long as we're introducing ourselves. I'm Mike Wallace for the defense. Welcome to Wise Carter.

MR. SHANNON: Good morning, I'm Rex Shannon with Mississippi Attorney General's Office

Page 6

here for the defendants.
MR. KUCIA: Gerald Kucia with the Mississippi Attorney General's Office for the defendants.
Q. (By Mr. Cheung) So, Dr. Bonneau, I believe you've been deposed before, but just in case I'd like to spend a minute going over some ground rules. Your attorney might object to some of the questions I ask, but in general unless he instructs you not to answer on the basis of privilege you still have to answer even if there is an objection. Do you understand that?
A. I do.
Q. Thank you. Do you understand that your answers today are under oath?
A. I do.
Q. And that means you must tell the truth just as if you were testifying in court?
A. Yes.
Q. Is there any reason you cannot provide complete and accurate testimony today?
A. Not that I'm aware of.
Q. And because the court reporter can only take down verbal responses, do you understand that you have to answer verbally instead of nodding or

Page 7

shaking your head?
A. I do.
Q. Thank you. And I'm going to try not to interrupt you today during your answers, you know, so that we have a clean transcript. I would also appreciate you if you wait until I ask a -- finish asking a question before providing your response.
A. Sounds good.
Q. Thank you. And if you don't understand a question, please let me know and I can try to ask a better question.
A. Okay.
Q. All my questions are great from the beginning.
If you need to take a break, please feel to ask. I would just ask you to finish answering the question pending before you -- before we take a break, if that's okay.
A. Sure.
Q. I'd also ask you not to discuss your testimony with your attorneys during breaks unless it's about the scope of privilege in your responses. Is that okay?
A. Sure.
Q. Any questions before we begin?

Page 8

A. No.
MR. CHEUNG: I think someone might have jumped into the Zoom just now.
MR. SOUSSI: Hi, this is Ahmed Soussi with SPLC.
Q. (By Mr. Cheung) Dr. Bonneau, I just have a few questions about sort of your preparation for the deposition today. How did you prepare for this deposition?
A. I read over my reports. I met with the lawyers for the state and I read over the reports, particularly, the report by Dr. Orey.
Q. And how much time would you say you spent preparing for this deposition?
A. So depends what you mean by preparing. I would say that I've spent probably three hours preparing, just reading over reports and talking and meetings and so on. If you consider everything before this in the last two days, I mean, it's obviously more. But that's a good ballpark.
Q. What else did you spend time on?
A. Well, as I was preparing my rebuttal report, as well as my original report, I spent a lot of time. So if that counts as preparation for

Page 9

the deposition. But in terms of since the report has been filed to today, I would estimate about three hours.
Q. Okay. Other than your reports and Dr. Orey's report, did you review any other documents to prepare for the deposition?
A. Not that I -- no, not since I filed my rebuttal report.
Q. Okay. Did you jot down any notes while preparing for the deposition?
A. No.
Q. Apart from this case, how many times have you been retained as an expert in a case?
A. I have been retained twice besides this case.
Q. Which cases are those?
A. One was the NAACP versus Alabama case. And the other one is a pending case in Colorado, Lopez versus The State of Colorado, I believe is the title of that case.
Q. Lopez versus Griswold, does that sound right?
A. Yeah, that's it.
Q. So let's go through each one of those. In the Alabama case, do you recall what opinions

Page 10

you offered?
A. I do.
Q. What did you conclude in that case?
A. I concluded that in the Alabama State Supreme Court elections there was not a violation of the Voting Right Act, that, in fact, African American candidates performed better -- particularly African American Democratic candidates performed better than white Democratic candidates. Unfortunately there were no African American Republican candidates in there so we couldn't do that comparison. And so my conclusion was it was party more so than race.
Q. Were you deposed in that case?
A. I was.
Q. Did you testify in court?
A. I did.
Q. And were you qualified as an expert on racially polarized voting?
A. I was.
Q. And specifically, were you qualified to testify about whether racially polarized voting, or RPV, whether it exists or what the causes were?
A. So I did not conduct any independent analysis of racially polarized voting. I

Page 11

stipulated that the analysis that the plaintiffs have done was correct. And the question was what were the reasons why behind the patterns they observed.
Q. And I know it's been -- it may have been a couple of years since that case, but I pulled up the Court's order related to your report. I'm going to read you a sentence from that order and you can let me know if it sounds about right. The Court in the order wrote: Dr. Bonneau was opining that party not race leads to a defeat of African American candidates. He's not opining that African American voters do or do not vote cohesively.
Does that sound like an accurate summary of your report?
A. It does.
Q. Does that accurately describe your work in this case?
A. Can you read it again?
Q. Dr. Bonneau is opining a party not race leads to defeat of African American candidates. He is not opining that African American voters do or do not vote cohesively.
A. Yes, I mean the difference -- yes,

Page 12

that's a good summary. I mean, there were some differences between this case and the Alabama case, but yes.
Q. And let's talk about the Colorado case. What was that case about?
A. So in that case political candidates are suing the State of Colorado over their campaign finance restrictions, specifically the amount of money that individuals can donate to political campaigns.
Q. And what opinions did you offer in that case?
A. I offered that the -- so my analysis showed that Colorado has one of the lowest campaign finance limits in the country, and that these limits impede the ability of challengers to successfully compete against incumbents.
Q. Were you deposed in that case?
A. Yes.
Q. Did you testify in court?
A. It's pending. I'm supposed to, yes.
Q. Okay.
A. The case has not gone to trial yet.
Q. But that case did not involve racially polarized voting?

Page 13

A. It did not.
Q. Thank you.
Have you ever performed a racially polarized voting analysis yourself?
A. No.
Q. Just to drill down on that, have you ever conducted a homogenous precinct analysis?
A. Not independently, no.
Q. What about an ecological regression analysis?
A. Not in the context of voting rights cases, no.
Q. And ecological inference?
A. So I mean, not in any published articles. So we're going back now to when I was in graduate school 25 years ago. I have recollections of performing that as part of like a class assignment in a methods class -- a political research methods class, but nothing that I've ever done my own research on or anything else.
Q. So no publications on any of the three methods that we just discussed?
A. Correct.
Q. And not as part of any expert work you've done on a case?

Page 14

A. Correct.
Q. And not part of any coursework that you've taught?
A. That I've taught? I've taught the theoretical concept of -- so the ecological fallacies of pretty standard topic in political methodology courses, so I teach graduate students methods courses or philosophy of science courses. We do talk about that theoretically. But I've not taught the mechanics behind it, no.
Q. Got it. So let's turn to the reports in this case. Did you prepare two reports?
A. I did.
Q. The first one was from January 2nd of this year?
A. That sounds correct.
Q. And then the most recent one a surrebuttal report from September 12th of this year?
A. That sounds correct.
Q. I'm going to give you a copy of that report just so you have it in front of you.
A. Great.
Q. I'm not trying to quiz you on anything in it.

Page 15

A. That's fine.
(Exhibit 1 marked for identification.)
Q. (By Mr. Cheung) That's now been marked as Exhibit 1. Dr. Bonneau, can you look at it and confirm if that's your January report?
A. It appears to be the case.
Q. Thank you. Also handing your surrebuttal report to Ms. Burwell for marking.
(Exhibit 2 marked for identification.)
Q. (By Mr. Cheung) Dr. Bonneau, does that look like your September report, Plaintiff's Exhibit 2?
A. It does.
Q. Do those reports accurately reflect your opinions in this case?
A. They do.
Q. Do those reports omit any analysis that you've conducted for this case?
A. They do not.
Q. Are there any corrections you're aware of that you would like to make to the report?
A. Not at this time.
Q. Are there any updates to your CV since January 2023?
A. There are.

Page 16

Q. Would you mind giving us some highlights of the updates?
A. I am now chair of the Spanish and Portuguese department.
Q. Oh, how did that come about?
A. How much time do we have? So the department was placed into receivership by the Dean, meaning they were no longer able to govern themselves due to a variety of longstanding policy violations and disputes. And so the Dean tasked me with going in for a couple of years to run the Spanish and Portuguese department.
Q. Any other updates?
A. I've got an article forthcoming about teaching in prison and prison education that's coming in an edited book. But I think those are the only things that have really changed since January.
Q. Okay. So no updates related to judicial elections?
A. No, I've been busy with Spanish and Portuguese.
Q. And, Dr. Bonneau, are you familiar with the Gingles preconditions in voting rights cases?
A. I am.

Page 17

Q. What is your understanding of the Gingles factors?
A. So my understanding is there are three factors that are required. One has to do with racially polarized voting, such that African Americans are not able to elect candidates of their choice -- or generally able to elect candidates of their choice.
There's a factor about the totality of circumstances that even if you establish racially polarized voting, that doesn't necessarily mean that there's a violation of the Voting Rights Act. In fact, this has to lead to certain kinds of outcomes.
And there's another factor that I -- escapes me at this moment.
Q. You're not a lawyer?
A. No, I am not.
Q. So not expecting a perfect recall of the language from Gingles. But if I could read to you some of the language from Gingles and you tell me if that's consistent with your understanding.
A. That would be great.
Q. So Gingles one, the first factor, the Court said: First, the minority group must be

Page 18

able to demonstrate that it is sufficiently large and geographically compact to constitute a majority in a single-member district.
Does that sound right?
A. That does sound right.
Q. Gingles two, second: The minority group mush be able to show that it is politically cohesive.
Does that sound right?
A. Yes.
Q. And third: The minority must be able to demonstrate that the white majority of votes sufficiently as a block to enable it usually to defeat the minority's preferred candidate.
Does that sound right?
A. Correct.
Q. And in your view, does "usually" in the third condition mean most of the time?
A. Well, I mean I wouldn't a percentage on it. I mean, you know, I think usually means usually. So if I say I usually do something, it means more often than not. I don't know if it necessarily has to be -- if there's a certain percentage threshold. But, yeah, more often than not.

Page 19

Q. Were you asked to assess any particular one of the Gingles factors for your report?
A. No.
Q. In paragraph 53 of your January report you say, quote: This does not support the third precondition of Thornburg versus Gingles(1986).
Is that right?
A. It does.
MR. WALLACE: Which page is that?
THE WITNESS: 15.
Q. (By Mr. Cheung) Is it fair to say that your reports do not dispute the existence of Gingles' precondition one in this case?
A. Correct.
Q. And is it also fair to say that you do not dispute the existence of Gingles two precondition in this case?
A. Remind me of what precondition two was.
Q. The minority group must be able to show that it is politically cohesive.
A. That's correct.
Q. And what is your understanding of racially polarized voting?
A. That voting is determined -- voting breaks down on racial lines to a significantly

Page 20

high degree, such that in this case, that black voters would not be able to elect their preferred candidate because of the presence of white voters.
Q. Is that the definition that you use in your reports for this case?
A. I don't think I give a definition in the reports for this case.
Q. Is that definition the one that you're operating under as you're analyzing the facts of this case?
A. Well, in my report I don't really talk much about the determinants of racially polarized voting. I take Orey's analysis as factual. What I do in this report is argue that even if it's present, it does not lead to black preferred candidates usually losing their elections.
Q. Got it. Thank you.
What do you think is the purpose of assessing racially polarized voting in districting cases?
MR. WALLACE: If that's asking for a legal opinion, I object to the form, but he may respond as best he can.
THE WITNESS: What do you mean, what is the purpose?

Page 21

Q. (By Mr. Cheung) Why do you think racially polarized voting is relevant in voting rights cases?
MR. WALLACE: That is a legal opinion. I object to the form, and he can answer.
THE WITNESS: Why is it relevant as a practical matter or as a --
Q. (By Mr. Cheung) A practical matter, yeah.
A. So why is racially polarized voting -- well, so if you believe that individuals should have -- that elections should allow for a fair contest, the individuals have different beliefs that if you have racially polarized voting it could be a way, right, for disenfranchisement to occur among a minority group.
Q. Thank you.
I just have a few questions about the sources that you use in your report. Your January report has an Appendix A of election results; is that right? That's on page 44.
A. I'm not seeing the Appendix A. On my January report?
Q. Yes.
MR. WALLACE: Page 19.

Page 22

THE WITNESS: Yes, it does.
Q. (By Mr. Cheung) And what sources did you use to collect the data that you used for Appendix A?
A. That's just public data from the Mississippi Secretary of State's website.
Q. Nothing else?
A. Well, to determine, you know, which candidates were African American, you know, I Googled and looked at, you know, news stories and other things about that.
Q. And in your academic work, do you maintain any kind of database pertaining to state court elections that you may have relied on for reports here?
A. I do maintain that database and it's -- so I do have, like, a document with every State Supreme Court election over the past 30 years. So it's possible that I use that to identify, like, what years to look at, because elections don't occur every year in Mississippi. So that's certainly possible.
Q. So I think in paragraph 6 of your January report you reference a dataset, is that dataset the one that you maintain in your academic

Page 23

work?
A. Yes.
Q. And what kinds of information is in that dataset?
A. Well, that dataset has a bunch of stuff. So, it has characteristics about the candidates. So race, gender, incumbency, non-incumbency, whether or not the candidate was originally appointed to the bench versus originally elected to the bench. It has results from primaries, has results from general elections. It has campaign spending where available, the amount of money spent and raised by individuals. It has the partisanship. So was the race was a partisan, nonpartisan race; was it a district race versus state wide race. So it basically has -- so if you look at any of my previous articles, any of those variables that are in those articles are in that dataset.
Q. Yeah, I did try to make it through your articles but you have quite a few of them.
A. Thank you.
Q. What time period does your dataset cover?
A. So most of it is from '90 to about 2016.

Page 24

So I have complete data from '90 to 2016. I have partial data before 1990, but a lot of stuff is missing from it because it was so long ago. And around 2016 I started doing some administrative work. And the nature of my career has shifted, and so I haven't been as diligent on updating it since then. But I did update it for this case. So the elections post 2016 here and 2020, I went and collected that information, you know, for the purposes of this case.
Q. Got it. So it would have a complete set of Mississippi Supreme Court elections starting from 1990?
A. Yes.
Q. What sources do you use for that dataset?
A. So, variety of sources. Obviously the best source is the Secretary of State's website because it's official returns. I use newspaper articles about -- so if I can't tell if a candidate, you know, what race or gender is, newspaper articles often do that. Sometimes you can go to Judge PDO which is a website that has a bunch of facts about judges. So a variety of public information sources. Because all this data

Page 25

is public data.
Q. Is the dataset itself public?
A. Parts of it are. I mean, certainly I can make it so. I mean, I've -- so if you go to my data verse page, I've released datasets for all of the articles I have published, which includes both the dataset and the code book and the instructions for running, rerunning analysis for replication purposes. But I've never done anything with, like, the full data, so the whole thing is not --
Q. Would you be able to provide that dataset to us?
A. Of course.
Q. Thank you.
A. Do you want just for the Mississippi part or do you want -- you'd have to be clear about what you wanted. I can easily do that.
Q. Just the Mississippi part will be fine. Thank you. I think you nodded. Is that okay?
A. Yes, that is fine. Sorry.
Q. Have you received any facts or sources from your attorneys in this case?
A. Yes, I've been directed occasionally,

Page 26

you know, because I'm not an expert in Mississippi, generally, of something -- sometimes some leads to pursue that would not have been apparent to somebody from the outside.

Q. Have you been asked to assume any fact to be true in the preparation of your reports?

A. I have not.

Q. In paragraph 1 of your January report, you mention having used voter registration data. Do you see that?

A. In paragraph 1. So meaning the first paragraph on Page 1.

Q. Yes.

A. I was retained -- based on Mississippi state voter registration and election data. Yes.

Q. Did you receive that voter registration data from the Secretary of State's website or some other source?

A. I don't recall, but I'm pretty sure it was the Secretary of State's website. That would be usually where I would go.

Q. Do you recall what you used the registration data for?

A. Well, I don't know if I -- no, I don't. But if I read my report again, I probably could

Page 27

find out if I used it at all or what I used it for. But off the top, no. I probably used it for -- I don't know what I would have used it for.

I would have used it -- I would have used voter data to calculate roll-off. Right? Sometimes the people who voted versus those who voted for State Supreme Court so when we look at rates. But I don't recall using the voter registration data. But I'm happy to be corrected on that.

Q. I didn't see anything in your report, which is why I'm asking about it. Because you cite the data, but I don't see any actual analysis of voter registration in your reports. Does that sound right to you?

A. It does, makes me gratified I'm not missing something.

Q. So as best as you recall you did not performing any analysis of voter registration rates?

A. That's a fair statement.

Q. I have a few questions about statistical methods, generally. In your academic work, do you evaluate statistical analyses performed by other scholars?

Page 28

A. That's a hard question to answer. Do I evaluate? So, yes, in a sense. So when I'm asked to review journal articles, my part of the job of me as a peer reviewer is to evaluate, you know, do the scholars or does the article, the submission, is it reliable, does it answer the question.

When I was editor of a journal for six years part of the decisions that we made, you know, whether or not we would accept an article for publication or not was the quality of the empirical analysis, was the research design done properly, were the methods used to analyze and arrive at the conclusions the proper ones. And so in that sense, yes.

Q. And so when you review articles for the reliability of the empirical analyses, what are the indicators that you tend to look at?

A. So there are a couple of things. The first question is, is the design suitable to answer the question. That is, so if you want to answer a question about -- I'll give you an example -- of voters' perceptions on the economy on the likelihood of voting for the president. You've got to make sure that the data being used in the way this study is designed actually allows

Page 29

you to answer that question.

The second thing is given the distribution and nature of the data, are the techniques used appropriate. So if you have a dichotomous dependent variable, a variable where it's between zero and one, and you're using regression, that's not appropriate. That won't give you bias results. You have to use a different technique. So those kind of things.

I don't go in, though, and like look at the dataset and make sure -- that's not part of the peer review thing. But it's basically, is the design suitable to answer the question and then do the results -- do the methods used to analyze the data, are they appropriate given how the data is distributed and the nature of the data.

Q. And so do you look at things like whether the sample is representative?

A. Sure.

Q. What about sample size?

A. Sure.

Q. How do you determine what the requisite sample size is for reliability?

A. Yeah, so that's -- I mean, that's a good question. I'm happy to talk about it. So it

Page 30

depends on the population, right, that you're trying to make inferences about. And so generally speaking for a nationwide survey or whatever, you're looking at sample size of, like, 1500 or so. It usually gives you pretty good results, within plus or minus 3 percent margin of error, assuming it's done randomly, a randomized sample. But you can't always get a randomized sample. What that means is, if you can't get a randomized sample, you have to be very careful about the inferences you're making from that sample. It doesn't mean it's useless but it does mean that your inferences are necessarily going to be more imprecise.

So, you know, sample size is always -- obviously more is always better to a certain point, then you get diminishable marginal returns. But those are the kind of the general things. I would not reject something because -- on the basis of the fact that they only have a sample size of, say, 500 people. It just means their estimates are going to be less precise, which means you're going to be less likely to find statistical significance because your standard hours are going to be larger. But you still actually can gain

Page 31

some good knowledge there and you still can, you know, learn something.

Q. And do you have a specific view on what a sample size should be when evaluating Mississippi elections?

A. No. I mean, Mississippi is hard because you only have elections every eight years, for example, for State Supreme Court and there are only, like, nine seats. So when you're looking at eight years, basically every judge is up once a decade. And so you're always going to have a small sample size when you look within the state. The same is true for any statewide office in any state, actually.

I mean, if you look at state legislative elections, okay, those are every couple of years. Right? You'll get good samples. You've got to work with the data that you've got. You can't just make up elections that don't exist.

Q. And I think you mentioned earlier you would look at error size?

A. Sure.

Q. Competence intervals?

A. Sure.

Q. Statistical significance?

Page 32

A. Yeah.

Q. What methods would you use to establish causation?

A. So, there's another one. Causation is really, really hard in social sciences. Because isolating an independent fact requires manipulation of an independent variable that you can't always manipulate. So if I wanted to establish a causation between, say, gender and vote choice, I need to do that experimentally and -- so the gold standard would be to do it experimentally. But you can't randomly assign somebody gender. And so if you can't have random assignment, then you can't do a real experiment. So you can try and get at it -- there are some statistical techniques to try and get at. You know, isolating causal factors through certain designs. I tend to be skeptical of those, I think. And I don't think it's always necessary to show causality. I think when we can get causality it's great, but a lot of times causality is allusive because there are multiple causes to things.

And I could show you, maybe, that gender causes vote choice, but I can't tell you how that

Page 33

is relative to other causes. Because no one will argue that it's the only cause. And so experiments will allow us to isolate a cause, but not necessarily assess the relative importance of that cause relative to other things. That requires more observational data.

And so saying all this to say that establishing causality when possible is allottable, it's not always possible. And just because we can't establish it doesn't mean that we can't advance knowledge.

Q. So in that example you just gave, how would you demonstrate that gender is one of the factors causing voter choice?

A. Well, see, I mean, it depends on what you mean by cause. There's this big debate as to whether or not you can actually use the word cause outside of an experiment, within the discipline. So you have what I would call the causal inference mafia who argue that if you don't have an experiment, you can't say anything about causation. You can have that position. It's not a majority position. It's an extreme position, but it's intellectually defensible. Or you can use observational data and try and isolate the

Page 34

effects of other factors and talk about genders' relative contribution to the vote choice. Now, does that mean it causes it, no, but, you know, if you control enough of the factors you can get to a point where -- you can establish a relationship, and then you can be pretty sure that there's something, you know, going on there. And so I think that sometimes is the best we can do. If that makes sense.

Q. Yes, thank you.

I have a few questions about incumbency.

A. Sure.

Q. In your academic work, I think you've studied the effect of incumbency on judicial elections and election outcomes?

A. Correct.

Q. What advantages are generally associated with incumbency?

A. In judicial elections specifically or in elections generally?

Q. Let's talk generally and then judicial.

A. So generally incumbents have an advantage for several reasons. One is they have an established fundraising network. One is they have increased name recognition. One is they can

Page 35

call a press conference or send mail, write to their constituents to get their names out there about policy positions they're doing or they can position take. They have all kinds of perks like that about --

And so for the incumbents there tends to be -- you know, it's one of those paradoxes, right, that everybody hates Congress but everyone loves their congressperson. You see a congressional reelection rate of 95 percent and Congress's approval rating is, what, 19 or 18, and honestly, that seems a bit high to me.

Now, in the State Supreme Court case the incumbency advantage can improve a couple of different ways. One is, again, you have an established network, you've run statewide before, presumably, or district-wide before. And because of that you've got name recognition and you've run a campaign. So you already have some donors lined up, you already are able to tap into those funds. While you can't, you know, call press conferences and talk about how you'll decide on a case, you can get your name out there by certain positions you take. For example, if you write a themed decent in a case or something like that or

Page 36

majority opinion or you get overruled by the US Supreme Court, other things that will get the public's attention. And in some states they'll actually put whether you're an incumbent on the ballot. And so when voters go into the ballot booth it will say your name, and the next one will be, like, incumbent or current judge. In other states they don't. So that could potentially signal to individuals, you know, which one is the incumbent and give them an advantage.

Q. Is there an advantage to being able to rely on prior experience on the job?

A. Yes, so -- but that's not unique to incumbents, right? So in one of my articles we showed that voter -- so if you're a lower court judge running for the State Supreme Court, you have an advantage over a candidate who has never been a judge. And so there's no necessarily increase by the fact that it's an incumbent, but rather you'll do better with any kind of prior judicial experience.

Q. Is there some kind of inherent appeal to being an incumbent?

A. What do you mean by "inherent appeal"?

Q. Some comfort that voters might have that

Page 37

they're already doing the job, for example?

A. Sure.

MR. WALLACE: You mean lawyers might have or voters might have?

MR. CHEUNG: Voters.

MR. WALLACE: I thought you said lawyers. Did I hear it wrong? I'm sorry.

THE WITNESS: Yes, assuming the voters approve of the incumbent.

Q. (By Mr. Cheung) So I know we were talking about, first, incumbency generally and then judicial candidates. What about Mississippi Supreme Court candidates. What advantages do you see in being an incumbent on the Mississippi Supreme Court?

A. I don't see any differences on the Mississippi Supreme Court compared to other courts. I have no reason to think that incumbency functions different here than it does otherwise.

Q. And generally it seems you're saying incumbents are more likely to prevail compared to challengers?

A. Correct, that's a fact.

Q. Have you done any empirical analysis to determine the likelihood of judicial incumbents to

Page 38

get reelected?
A. I have.
Q. How strong is incumbency in judicial elections?
A. So I think the last time I looked at that was probably 15 years ago. So 15 years ago-ish, if my memory is correct, the incumbent -- about 85 percent of State Supreme Court incumbents won reelection compared to 80 percent of governors, 87 percent of US senators, and like 94 percent of US House of Representatives. I'm pretty sure those are the numbers. It's in my 2005 article in American Politics Research. Since then, just, you know, eyeballing the data, those trends seem to be the same in State Supreme Court races that incumbents overwhelmingly win.
Q. That 2005 article, is that entitled Electoral Verdicts Incumbent Defeats at State Supreme Court Elections?
A. That's the one.
Q. I think I pulled a sentence from there where you say: Incumbents in partisan district state election have 55.6 chance of defeat compared to 7.2 percent chance in a nonpartisan district state.

Page 39

Does that sound right?
A. That does. What I would caution you there is those aren't artifact or virtue elections. So who are the states that are partisan district states? Louisiana and Illinois, that's it. And in nonpartisan district states you've got Kentucky and Mississippi. So you don't have a lot of states, right? So those numbers -- it's a one defeat where I can throw out the predictive probabilities significantly, right, when you have a small number of cases.
Q. And so you're saying that the sample of nonpartisan district states consists only of Kentucky and Mississippi; is that right?
A. Of contested -- let me make sure. Because Louisiana is partisan. Who else -- those are the only ones that have districts. That is correct.
Q. Based on the data that you do have, you would say that Mississippi judicial incumbents almost never lose?
A. That's right. I think if you look over the past 20 years there are two that have lost to the Mississippi Supreme Court.
Q. If that's your recollection.

Page 40

A. Yeah, I think there were two. I think there was a chief justice in 2008 and -- well, I can tell you from Table 1. So since 2000 the only loser, right, was Smith in 2008 in this district here.
Q. Thank you.
We've touched on this before, but, you know, based on the prior academic work you've done, do you believe that Mississippi system for electing Supreme Court Justice creates an incumbency advantage?
A. Do I believe that creates incumbency? No, I believe there is an incumbency advantage in these elections just like any other elections.
Q. Do you think that incumbency is a strong advantage for candidates running for Mississippi Supreme Court?
A. Yes.
Q. In the history of Mississippi, do you know if any black candidate has been able to get elected to the Mississippi Supreme Court without an incumbency advantage?
A. Without an incumbency advantage, I do not know the answer to that question.
Q. But you're not aware of any black

Page 41

candidate who has been able to win without being an incumbent?
A. Again, I don't have any recollection. So if you tell me yes, then I would believe you. If you tell me no, I would believe you. I don't know.
Q. Do you know if any white candidates have been able to get elected to the Mississippi Supreme Court without being an incumbent first?
A. Well, I do know at least Jim Kitchens because I just told you he defeated Smith in 2008.
Q. Anyone else?
A. I think that's the last incumbent who was defeated, at least in this district. Yeah, that was the last incumbent who was defeated. So one time in 20 years.
Q. What about open seat elections?
A. In District One, I don't see any open seat elections.
Q. Mississippi Supreme Court, generally?
A. I only looked at District One for this case.
Q. I'd like to point you to paragraph 18 of your January report.
A. Yes.

Page 42

Q. I think it's the third sentence where you say: Currently, six of the nine justices on the Mississippi Supreme Court obtained their position by gubinatorial appointment.
A. Correct.
Q. Would that mean that the remaining three first ascended to the bench through election?
A. Through open seat elections, that would -- yes, that would be a reasonable conclusion.
Q. And those three would consist of Jim Kitchens, Josiah Coleman and Robert Chamberlain?
MR. WALLACE: Objection, assumes facts not in evidence. You say Jim Kitchens got on with an open seat election?
MR. CHEUNG: Without a prior appointment.
MR. WALLACE: Okay. That's a different thing. That's why I objected.
Q. (By Mr. Cheung) I can rephrase. So the three justices that obtained their position on Mississippi Supreme Court without a prior appointment to the Court would be Jim Kitchens, Josiah Coleman and Robert Chamberlain. Does that sound right?

Page 43

A. That sounds right. And only Kitchens is with District One, if I remember correctly.
Q. Do you know of any other justices who won election to the Mississippi Supreme Court without prior appointment?
A. Do I know of any other justices? Not that I can recall off the top of my head. It's certainly possible in other districts. But, again, I am limiting my analysis to District One.
Q. In terms of District One, does it sound right that Chief Justice James Smith was elected in 1992 without prior appointment?
A. In '92. So would be '92, eight-year term -- yes, that sounds like it could be right.
Q. And William Waller was elected in '96 in District One without prior appointment?
A. It's possible, sure.
Q. So assuming that's right, does the fact that only white candidates have been able to win elections without first being an incumbent tell you anything about the overall ability of black candidates to get elected to Mississippi Supreme Court?
A. Well, it tells me a couple of things. I mean, I'd want to do some more research. I do

Page 44

think the further back in time we go, you know, if the demographics of the districts have changed since '92 and '96, right, it may be a completely different electorate. I don't know what the population of the district was in terms of racial breakdown before then. I don't know how many African American candidates ran for open seats. And so it could be that only white candidates have won open seats because African American candidates have not run in these open seats. And certainly there haven't been a lot of open seats, right. So we're talking about three seats since 1994. There are a whole host of things, right. So it tells me, I mean, I'd want to know more. But it wouldn't cause me to make any kind of firm conclusion on the basis of those numbers.
Q. So understanding that there are several possible conclusions that you could draw from this fact, would one reasonable suggestion be that white candidates are able to win without incumbency advantage, does that suggest that they're generally in a stronger position than black candidates?
A. I think it depends. Because if you look at like the Jim Kitchens race, my understanding

Page 45

for whatever it is, is he was endorsed by Benny Thompson and so he was actually the black preferred candidate in that race. And he defeated another white candidate. And I don't know the specifics of the Waller case or anything else.
If those white candidates were actually preferred by black voters, then that would tell me something different than if that candidate was not preferred. So at this point I don't have enough information.
Q. Yeah. I understand that there's a distinction between black candidates and black preferred candidates because the two are not necessarily the same. But looking exclusively at the ability of black candidates to get elected to the Mississippi Supreme Court, is it a reasonable -- is it one of the reasonable explanations to say that black candidates typically need incumbency advantage, while white candidates do not, to get elected to Mississippi Supreme Court?
A. I wouldn't say typically. I would say that that's possible. I would want to how many black candidates ran for those open seats and everything before I concluded. If all we have is

Page 46

white candidates running for a seat, then we don't know if blacks can win without incumbency. So, it's possible. Again, I think we would need to learn more.

Q. Okay. And if it's a fact that very few black candidates even run for these seats, what could be some explanations for that?

A. Well, there's several explanations about why. One might be they don't think they could one. One might be, you know, they're not interested. One might be that the incumbent already is doing a good job and so they feel like there's no need to try and unseat an incumbent.

So there are a number of reasons why a candidate may decide. It may be the wrong time in their life. They may have serious headwinds, right? If you are a candidate running in a presidential election here and you're a Democrat, it's probably not a good time to run here in Mississippi. So there are a lot of factors, race being one of them. But party and incumbent size (inaudible) and everything else would also be factors.

Q. I have a few questions about your work around the design of judicial election and

Page 47

election systems.

A. Sure.

Q. In your work have you studied advantages of electing versus appointing judges?

A. Well, there's no way to quantify -- yes, I have spoken about the relative advantages of elections versus appointments.

Q. And what are those relative advantages?

A. So you start with the presumption that there is no perfect system, right? And so when you're designing institutions, there are a number of considerations to balance, one of them being accountability versus independence, right? So you could design a system like the US federal system where judges are maximally independent, right? And for everyone who thinks judges should be independent, I ask them how that's going because it doesn't seem to be going too well.

So there are advantages to being independent, right? But being too independent, actually, is bad because it means you can do whatever the hell you want and you're not constrained by the law or by anything else. And we can give all kind of examples from both sides of the political aisle of the times, well, the US

Page 48

Supreme Court has decided, eh, we're not going to really do that anymore.

Elections allow for voters to participate and for voters to have a hand in how the law is interpreted in their states. And so giving the voters a choice increases political efficacy, increases the legitimacy of the institution, and it allows voters to have a direct say in the people who are making decisions that affect the legal life in the state.

So there are problems as well and no system is perfect. But it's not clear to me that -- I mean, the debate has tended to be that elections are just these awful things. And it's not clear to me from the data that that's the case. That in fact voters do know what they're doing, they do participate meaningfully, and they are able to make choices. And so this seems like an option that a state could want to have.

I mean, if I were a design institution I would not design what y'all have here. I think nonpartisan elections are awful, right? But I don't live here. So y'all want to do that, go ahead.

Q. Why are nonpartisan elections awful?

Page 49

A. Because they're ineffective. They're removing a meaningful queue from the voters. And so what you're doing is your unnecessarily shaving off voter participation. And so nonpartisan elections you have people roll off because they don't feel informed, right? And we know that Democratic judges view the law differently than Republican judges. Lawyers know this, right? You go in a courtroom, you know you're either happy or you're, like, this is going to be a tough one. We know at the US Supreme Court level, we can predict outcomes of cases really well. Why would we tell voters they can't have that information? It seems silly.

Q. I can't confirm the reaction I have walking into court, but...

A. No. This is the big difference between political scientists and lawyers, right? I can say these things.

Q. When you say remove a meaningful queue, are you referring to the partisan designation on the ballot?

A. I am.

Q. And you say voters do participate meaningfully in judicial elections?

Page 50

A. Yes.
Q. What do you mean by that?
A. Some people think voters don't know what they're doing. Voters know enough. So for example, voters, you know, can tell that they're seeing a quality challenger, right, one with prior judicial experience and one without. So if a challenger between incumbent has prior judicial experience, they do about five points better than challengers without such experience.

If you take party ID out and you -- so we did some experiments on this where we, you know, manipulated whether or not party ID was shown or not. I'm going to get the numbers here a little bit, not precise. But in partisan races, like Republicans went for the Republican candidate that we told was the Republican 94 percent of the time, and Democrats voted for the Democrat candidate, like, 85 percent of the time. In that scenario where we removed party ID by the same descriptions of real ads that candidates have run, what happens is Republicans voted for Republicans 70 percent of the time and Democrats were about 65. So you would expect without party ID those things should be close to 50/50. That is, if

Page 51

party ID wasn't meaningful, if candidates were running these ads, right, and there was no partisanship to them and voters couldn't tell, Republicans shouldn't be able to identify the Republican candidate about 70 percent of the time.

So what does a nonpartisan election do? It increases errors, right? It increases the fact that Republicans would actually vote for the non-republican even though if you gave them party ID they would vote for the Republican, right? It's what the manipulation allowed us to do. And so you have fewer voters participating, and the ones who do participate make more errors, that is they vote for the candidate who they don't intend to vote for. Who they wouldn't vote for if they had the party ID. That seems like not a good way to have elections. But that's, you know, again, not my state.

Q. So those percentages you just cited, I don't think they're in your report.
A. That's my book. The Voters' Verdicts Book, 2015. I think it's chapter 4 or 5 something.
Q. Okay. And you also mentioned efficacy earlier. Is that referring to how responsive the

Page 52

officeholders are to the voters?
A. No, without efficacy is referring to how legitimate the voters feel the court is and how much trust they have in the court. And so Jim Gibson did a series of studies looking at dual elections in (inaudible) legitimacy of the court. And what he found is actually, you know, there are some costs to contested elections, but there are also a lot of benefits. When you look at the whole cost benefit thing, it actually turns out that elections are legitimacy enhancing. That is, voters feel more positive about courts on average after elections than they do in the absence of elections. Again, it's not no say it's all positives, but the positives outweigh the negatives.
Q. But is responsiveness to voters, one of the values that you think should be promoted by judicial elections?
A. Well, responsiveness is hard. Because what does that mean, responsiveness. And I want to distinguish responsiveness from accountability. Accountability means that, you know, voters will decide, you know, when a judge is up for election if that judge should be returned to office. And

Page 53

overwhelmingly the answer is yes.

Responsiveness implies that outside of that, that judges should be like, you know, figuring out what the public wants in terms of decisions. And that kind of more, like, constant update or constant evaluation, I think one can argue is not a part of courts. I think one could argue it could be. I don't take position on that. That's outside -- I stick to the empirical data and I really don't have anything to -- yeah.
Q. Got it.

So you mentioned that you wouldn't do things the way that things are done in Mississippi. Is that purely referring to the nonpartisan valence of these elections or is there something else?
A. I think there are -- again, if I were designing an ideal system, would I have districts, I would not, at least not this way. Because I think the Supreme Court deals with all Mississippians and all Mississippians should have a chance to vote on the Supreme Court, as opposed to carving it up into districts.

You know, I think -- so I would do that. I think the terms of office are good. I might,

Page 54

for example, in an ideal situation not allow for reelection. I might allow for a single term but not reelection. So if you're worried about the corrupting effects of donors and everything else, one way to do that, right, is not allow judges to run for reelection. I'd probably publicly finance elections. Again, if you want to get rid of the stink of private contributions, go to public financing. So there are things like that that I think, you know, are -- no one does it that way.

So really, a hypothetical exercise. You know, if Mississippi wants, you know, my advice on that.

Q. When you say, you know, you would prefer no districts or at least not this way, what do you mean?

A. I think that districts for statewide offices to -- so if you live in any district, you can only vote for one-third of the justices on the Mississippi Supreme Court. I think that's a problem. But that's just my -- I mean, you know, Kentucky has districts. Illinois has districts. Of course, Illinois, Chicago has three of the seven and the other four split down state. That's problematic.

Page 55

In general, I think that having district-based elections for statewide offices is suboptimal. But, again, that's just from a purely theoretical design standpoint.

My local school board elects regions, right? We have nine members of the school board, and there were three people from each region. Which means when I vote for people for my school board, I can't vote for two-thirds of them. Well, if the other two regions are nuts, and they are, like I can only ever hope to have a third of reasonable common sense, you know, pro-teacher school board members. So, again, that's a -- I think most political scientists would agree that from a design perspective it's suboptimal.

Q. But if you were to use districts, what district design would you have?

A. There are a number of different ways. I have no opinions as to which way is better. You could carve it out into nine independent districts and each district elects one. That's the Kentucky model. You could do what Illinois does and concentrate, like, based on population, not necessarily geography. So Chicago gets three, or Cook County gets three, and the others are split

Page 56

up down state. Even though that's still not exactly with population because Chicago is more than three-sevenths of the population of Illinois. So they're still outweighed. It gives them a little bit of a bonus but not as much as it should.

You could do what Mississippi does and have basically three districts and have three from each. I don't have any opinion as to which is, you know, better or worse. You know, that's -- I haven't seen any anything -- I haven't seen any research that's looked at the effects of those different kinds of district elections on outcomes or on -- I mean, you can't really look at incumbency anywhere else because everything is unique. You have one case of this, one case of that, one case of this.

Louisiana has partisan elections in districts. Kentucky, which does it the same, right, but they're nonpartisan. So every case is unique. And so it's hard to make any kind of comparisons about across states because you have no variation.

Q. What do you think are the consequences of having three judges coming from a single

Page 57

district as opposed to nine districts with nine judges?

A. It could be nothing. I don't know. I don't think anyone knows.

Q. So in terms of the benefits of electing judges, we talked about earlier, I think you mentioned transparency, legitimacy, accountability. Is that right?

A. Yes.

Q. Would those values be better served by competitive elections versus noncompetitive elections?

A. Yes.

Q. Which one would better serve?

A. Competitive elections.

Q. Why is that?

A. Competitive elections allow for meaningful choice. Competitive elections allow voters to actually, you know -- when you have competitive elections it shows that candidates have to be more accountable. They have to be more aware. If you're never worried about losing, then you're basically independent, right, and there's no accountability mechanism. So in general elections, right, to serve their functions should

Page 58

be contested and competitive.
Q. Does the competitiveness of a district affect how responsive an officeholder is to their constituents?
MR. WALLACE: You're talking about judicial officeholders or generally? Object to the form for that reason.
Q. (By Mr. Cheung) I would say generally and then judicially.
A. Generally, absolutely. There's a lot of evidence of that. In fact, you can see it now. Why has the US Congress gone off the rails? Well, you've seen a decline of competitive elections. You know, there's no one in the middle anymore. And so you've got people who don't have to worry about actually being defeated. They're more worried about being defeated in the primary than in general election.
So when you have an increase in one party districts, it leads to increased polarization.
In judicial elections, I don't know of any evidence one way or the other. I do -- so it is true that there have been some studies in the early '90s to show that judges change their

Page 59

behavior as they approached an election, right?
So (inaudible) and Melinda Gann Hall did a series of studies looking at how judges vote on death penalty cases as an election approach. What she found is that judges were more likely to uphold death sentences as they approached their reelection than otherwise. But that -- what that interpretation is, right, matters. Is it that judges are panning to elector or does it mean that in fact, you know, they weren't doing their job all along and this is finally reigning them in. So we do have some evidence of that, but that doesn't say anything about partisanship, doesn't say anything about districts. It's the presence of elections more generally.
Q. Thank you.
I'd like to point you to the 2005 article we talked about earlier entitled Electoral Verdicts. I think you have a quote there that says: The more serious the electoral threat, the more constraints you will feel. The same should hold true for State Supreme Court incumbents.
Does that sound right?
A. It does.
Q. So is it your view that competitiveness

Page 60

or electoral threats does influence State Supreme Court Justices' decision making?
A. I think it should. Whether it does or not, right, I think is -- I think there's some evidence that it does. How strong that is and has it changed over time, I don't know. But yeah.
Q. Thank you.
Do you think it's important for the judiciary to reflect the racial diversity of the jurisdiction?
A. So what do you mean by "important"?
Q. Generally in terms of the values we just discussed.
MR. WALLACE: And I'll object to the form until you define "reflect".
THE WITNESS: So I'll answer. I think in a representative democracy it is better for our institutions to reflect the makeup of their constituents. So I think we have evidence that, you know, if you're looking at how legitimate individuals feel their government is, if you look at how perceptions in terms of role models and everything else, it absolutely is.
Like, for example, we know that, you know, when African American students come to a

Page 61

university and see all white professors, right, that doesn't send a signal that that path is open. So yes, I do. I think descriptive representation is incredibly important. I also think substantive representation is important as well.
I would submit that people who are concerned with issues of race and social justice would be better off with a liberal justice on the US Supreme Court compared to Clarence Thomas. That's not to minimize the descriptive importance of Clarence Thomas on there, but he's also not advancing the policy goals that one would think he would advance.
But yes, descriptive representation is important.
Q. (By Mr. Cheung) Thank you. So we talked before about how the difference between nonpartisan and partisan judicial elections is the designation of a party on a ballot. Is that right?
A. It is.
Q. Are there any other differences in terms of how the elections are run between partisan and nonpartisan elections?
A. Well, in terms of how they are run -- so

Page 62

we have -- there are nonpartisan elections and then there are partisan elections. So partisan elections are pretty consistent. The party ID is on the ballot, you know what they are. Nonpartisan elections oftentimes are coded, right, in a sense that you can tell which candidate is which. And I'll point you to my 2015 book which showed that, in fact, even when you remove the party ID from the ballot and you just show voters ads that are run, like, real ads, they can tell which candidate is a Democrat and which candidate is a Republican. And so nonpartisan elections do not remove partisan considerations from the voters' minds. In fact, in some ways they're just as partisan. Again, with more errors and lower voter participation.

Q. So those ads that you talked about, how do you know if the voter is picking up on a partisan queue as opposed to a policy queue or a race queue or some other queue?

A. Well, it wouldn't be a race queue. I mean there was nothing in there about race. These were vignettes that we gave -- we give them to people not in the state they were in. It wasn't -- there was no way for voters to look up

Page 63

or whatever else.

Because the only difference is the partisan. Everything else is the same. And so if I give you a paragraph and Mike a paragraph, and everything in that paragraph is the same, except in yours I say it's a Republican and in Mike's I say nothing, and there's a difference, well, that's why there's a difference. That's what the experiment does. It controls everything else. So if it was a policy, you're both responding to that queue. And so when you see these kinds of differences, right, it's because of the experimental manipulation. It really allows us to get a handle on what is going on.

Q. I see. And so I think I understand better now. That study was based on ads that you created and not real-world ads?

A. Correct, yes.

Q. And so your study did not look at the effect of the race on voter behavior?

A. Correct.

Q. What are some of the differences, if any, in terms of voter behavior in nonpartisan elections versus partisan elections?

A. I think we've talked about them. The

Page 64

two are that, one, fewer voters participate so you have higher ballot roll-off. People don't vote for those elections. They leave it blank. And the other is they tend to make more mistakes. So those who do vote, most of them are still able to identify their co-partisan, the partisan. Because most candidates who are running in these nonpartisan elections are clearly endorsed by a party, and that's pretty clear from their ads and everything else, also the things they say. But you'll have some low information voters who don't get those queues and who still participate and they vote what I would term incorrectly. Incorrectly in the sense that they're voting against the candidate that best reflects their values and their interest.

Q. They're not voting for the candidates that they would have vote for if they had full information?

A. That is correct.

Q. Do you know if nonpartisan elections are more or less likely to be contested?

A. Nonpartisan -- let me think, historically. Historically I think nonpartisan elections were more likely to be uncontested, but

Page 65

that difference has gone away in recent years. Now every seat is contested just about. I mean, on average.

Q. In paragraph 10 of your January report you say that: Elections in nonpartisan states are less likely to be contested than elections in partisan states.

A. Correct.

Q. Is that still your position?

A. Well, that's my position in those articles which are older. My looking at recent elections, you know, just my off the top recollection is that that difference has shrunk if not disappeared entirely. My recollection, I could be wrong. It certainly was true at the time those articles were written looking at older elections. But in the past decade we've seen a huge increase in both attention to and contentiousness of State Supreme Court elections.

Q. So the increased contestation, do you know if that applies to Mississippi?

A. It applies certainly to District One based on Table 1, right, where every race was, in fact, contested except for Justice Kent.

Q. Do you know if the incumbency advantage

Page 66

is stronger or weaker in nonpartisan elections?
A. I know incumbents are more likely defeated in partisan elections, historically. So that would suggest that in nonpartisan elections they're more likely to lose. In fact, I say in paragraph 11 incumbent justices are more likely to lose in nonpartisan district-based elections than they are. So in a system like Mississippi, the incumbent justice is really more likely to lose, based on my 2005 article.
Q. Sorry, more or less likely to lose?
A. Incumbent justices are more likely to lose in nonpartisan district-based elections than they are in nonpartisan statewide elections, yes.
Q. Are you familiar with a recent law that was passed in Mississippi, HB1020, concerning selection of judges in Jackson?
A. I read something about it like when it was on New York Times or NBC News. But I don't recall the specifics. I do remember it was a controversy about changing the way judges are selected in Jackson, but that's the best of my recollection.
Q. You gave a quote about that law to Yahoo News and Digital Journal. Do you recall that?

Page 67

A. Oh. I do now. I'm sure I did. What did I say?
Q. Would it help to show you the article?
A. If you want or you can just read me what I said.
Q. So this is an article from February 15th of this year. Your quote was: But what makes this Mississippi situation abnormal is that the legislature is proposing a different way of selecting prosecutors and judges but only for one area of the state and all the local representatives in that area object to it.
A. Yes. Yeah, I said that.
Q. Is that still your opinion?
A. Yes, unless the bill has changed. I haven't obviously thought about it since I gave that quote. But yeah, that's -- yeah, that sounds like me.
Q. Could you say more about why this situation is unusual or abnormal?
A. Well, yeah, because it's not -- when you -- if you think there's a problem with the way judges are selected or prosecutors are selected, that's fine, right, and the legislature certainly can change that. But when you're only signaling

Page 68

out some of them, that's unusual, right, and so then you have to ask why, you know, are we signaling out some and not others and where the criteria end and why is one method of selection good for some areas of the state and not for others. That's unusual. You don't see that a lot, if at all.
Q. So I think the title of that article that you were quoted in was: Mississippi House Bill Will Create White Appointed Court System for Blackest City in America.
Does that sound right to you?
A. It might. I mean, I will say I did not write the headline.
Q. Do you have a view on the headline?
A. Do I have a view on the headline? The headline is provocative.
Q. Do you agree with it, factually?
A. Do I agree with it? House Bill Would Create -- that sounds consistent with the objections that were raised by local officials in Jackson. So I'm not -- I don't live in Jackson. I don't follow the thing in the ground. But that is consistent with what I read about the objections to this bill.

Page 69

Q. Do you have any reason to disagree with those objections or characterizations?
A. I have no reason to opine. If that's how the local officials feel, and I certainly can see why they feel that way.
Q. Thank you.
Is there anything else that you would find notable about HB1020?
A. Not that comes to the top of my head.
If we can get a chance, I'd like a drink/bathroom break. Whenever you get done with this line of questioning.
Q. Now is a great time for a break.
(Off the record.)
Q. (By Mr. Cheung) Dr. Bonneau, have you conducted any empirical studies of the levels of racial diversity on state courts?
A. The levels of racial diversity. Yes, I think I have.
Q. I think that was a 2000 article titled: Composition of State Supreme Courts.
A. Yeah, that was my first journal article.
Q. Do you recall what you did in that article?
A. I believe in that article I simply

Page 70

compared how many justices, like, were black or women or nonwhite by selection type.
Q. Is there a reason why you have studied the level of racial representation on state courts?
MR. WALLACE: Object to the form. I don't think he said anything about racial representation the way you talked about it previously, but go ahead.
Q. (By Mr. Cheung) Or racial diversity.
A. Yeah, I mean I was in graduate school at the time and I was, like, oh, this will be interesting to see if there are any differences. Because one of the allegations is that, you know, to get a more diverse bench then elections will lead you to have a less diverse bench. And so it's an empirical question and it's an important question so, you know, I collected some data and just did a little descriptive piece.
Q. Why do you think it's an important question?
A. Well, we talked earlier about descriptive representation, right, and how descriptive representation is important. And so if it's true that one method of selection

Page 71

systematically gives you less diversity than other methods, that's something that should be part of the conversation. That's something that should go into the decision about should you change your method of selection, should you not, whatever. It's an important piece. And if it's not true, then we don't need to worry about that when we're talking about best practices.
Q. And I know earlier we used the terms "descriptive representation" and "substantive representation." What do you mean by those terms?
A. Sure. So descriptive representation is simply you look out and you see, oh, it's a diverse bench, right? And you see, oh, if there's 30 percent women in a state and you have a state legislature is 30 percent female, then you're like, okay, that's pretty good descriptive representation. That is it's properly reflective of the demographics, the characteristics of the population.
Substantive means, though, that you represent the dominant interest of that group in your behavior. So for example, you can have female legislatures who don't support women's rights or don't support some of the causes that

Page 72

are advocated by a lot of women and so -- but you can have men who do. And so that's a more substantive representation.
So substantive representation gets into policy, gets into are the policies reflective of the different groups. Whereas descriptive representation is simply when you look out, does it look like, you know, the population.
Q. And have you looked at using judicial evaluations in the context of selecting judges?
MR. WALLACE: Object to the form, until you explain what judicial evaluations mean.
THE WITNESS: Yeah, can you tell me what you mean by judicial evaluations?
Q. (By Mr. Cheung) I believe in your past work you've analyzed a system of electing judges by using assessments or evaluations of judicial performance. Do you recall that?
A. I don't.
Q. Okay.
A. What article was that?
Q. I'm not sure if it's a published article but I think you've spoken about the topic of using judicial evaluations.
A. I've spoken about judicial performance

Page 73

evaluations and certainly I think in one of my edited books there was a chapter by a colleague talking about some of her work on judicial performance evaluations. But it's not something that I've conducted independent research on.
Q. Okay. Got it. And what do you know about judicial performance evaluations?
A. So judicial performance evaluations vary across states. Sometimes they're just simple surveys of the bar, sometimes they also involve litigants, sometimes the involve whatever, right. And in some places they're published, right, and so whether a judge is -- there are scores on certain things like temperament or fairness and so on. And they can be given to voters in advance of elections. In other areas it's much more of than internal thing that's done by the bar. So there are a lot of variations about, you know, how they are.
Q. Are you aware of any literature about biases in judicial elections?
A. Judicial elections?
Q. Judicial evaluations, I'm sorry.
A. Yes.
Q. And what do you know about those?

Page 74

A. So one of my colleagues at UNLV has done a lot of studies, Rebecca Gill, on that. And basically it's similar to what you see in student performance evaluations, like when you survey students in class. Women tend to be judged more harshly, white men are perceived as being more competent. And so the same kinds of things you see in nonlegal circles, right, from what I've read are also present in these judicial evaluations as well.

Q. Are racial biases present in judicial evaluations?

A. I don't recall that specifically, but I'm not saying no. I don't recall from my reading.

Q. A few questions about redistricting. From what you know, when does redistricting typically occur?

A. After -- well, the federal level, after a census.

Q. And what about at the state level?

A. I think it depends on the state constitution, right? In some states -- I mean, it depends on the office too, right? So if it's a federal office, right, like US House,

Page 75

redistricting has to occur every 10 years after the census. If it's a state district, I suspect it varies based on the state, but I have not done any work on that.

Q. Do you think it's important to redistrict after each census?

MR. WALLACE: At this point I think I'm going to object. The order authorizes you to talk about his surrebuttal report, and I know you're entitled to go into his background as a scholar, but if he hasn't done any scholarship on that, what's the relevance to what the Court is allowing you to do today?

MR. CHEUNG: Are you asking him not to answer the question?

MR. WALLACE: I'm asking you to explain why you think you're entitled to ask it.

MR. CHEUNG: Well, Mike, I think you're entitled to ask him not to answer it if you think the question is privileged.

MR. WALLACE: I'm not going to tell him not to answer it, but the judge has given you a limited authority here, and pulling out political science questions from thin air to ask him about is I would think outside the scope of her order.

Page 76

But I'm not going to tell him not to answer it.

MR. CHEUNG: Okay. Your objection has been noted. Thank you, Mike.

THE WITNESS: Can you please repeat the question?

Q. (By Mr. Cheung) Is it important to redistrict after each census?

A. What do you mean by "important"?

Q. Well, why do you think redistricting occurs after a census?

A. Well, it's required by the Constitution.

Q. Does that make sense to you?

A. Does that make sense to me? Well, sure, it makes sense because it's required by the Constitution. Does the Constitution make sense to me on that front? I've never really thought about it. I mean, I would say that sure, that if populations change or things shift significantly then, you know, if we believe that one person's vote should equal as much as another, it should.

Now, it doesn't make a lot of sense in context of the Constitution because our electoral system with its electoral college ensures that, in fact, one person's vote doesn't equal the same as another's. But, you know, I don't know if you

Page 77

want to go down that path.

Q. But you would agree that it's important for districts to reflect the existing population of the jurisdiction?

A. Yeah, generally, that's right. Among -- I will say there are other factors, too. Like, you know, for example, not splitting up towns or historical -- the general redistricting principles that the US Supreme Court has set out about compactness and continuity and communities of interest and whatever else. I mean, yeah, that's reasonable.

Q. Yeah. I just mean in the broad sense that redistricting should occur on the basis of the most updated population data that we have. Would you agree?

A. Within certain limits, yes.

Q. Do you know the last time redistricting occurred with the Mississippi Supreme Court districts?

A. I do not.

Q. I can represent to you that the last time it happened was 1987. Do you know how many times the census has been taken since 1987?

A. Well, it's every 10 years, so that would

Page 78

be three times -- four times, right? 2000, 2010 -- no. '87. So, '90, 2000, 2010, '20.
Q. Can you -- based on your understanding of judicial election systems around the country, do you know of any other judicial district that has not been updated in the past 35 years?
A. I don't, but I don't know of any that has either. And so I'm trying to think of, like, the other four states -- the other three states that have judicial elections. I'm not aware of any times they've redistricted their districts. That doesn't mean it doesn't happen -- it hasn't happened. I'm just not aware of it.
Q. Can you think of any reason for not updating districts after four census cycles?
A. Yes.
Q. What are those reasons?
A. There hasn't been significant population change, there's no way to draw them in a way that's more reflective of the state. So those are a couple.
Q. Any other reasons?
A. Any other reasons, I think those are -- if you don't have a significant population -- if you feel like the current districts are good

Page 79

representations of the state, right, and there's not been meaningful deviations then, yeah, those would be the ones that come to mind off the top.
Q. Do you know if there has been or has not been population change in Mississippi since 1987?
A. Since '87? I'm trying to think of my electoral map. I want to say y'all have increased one electoral vote since '87, but I'm not sure. I defer to people who -- I mean, '87 is a long time ago. I wasn't even able to vote then.
Q. I wasn't born then.
A. I don't -- I can't answer that. I don't know. You can tell me anything and I'd believe it.
Q. In your work as a political scientist, have you become familiar with what people refer to as the Black Belt?
A. I refer to Black Belt -- yeah, in Alabama particularly, yes.
Q. What is your understanding of the Black Belt?
A. So my understanding of the Black Belt, is really interesting. That basically it's the part -- at least in Alabama -- of like the middle of the state where the soil was rich, the soil was

Page 80

black, and so there's a lot of agricultural interest. And it tended to be heavily nonwhite communities now because of the history of the soil and the farming.
Q. Do you know if the Black Belt extends into Mississippi?
A. I don't.
Q. Are you familiar with the Mississippi Delta as a region?
A. I am. That's the part down by the -- in the south, right, by the Gulf -- no. I guess I'm not.
MR. SHANNON: You're not.
Q. (By Mr. Cheung) As a political scientist, have you considered the extent to which black voters might have similar interests due to a shared history?
A. Have I personally considered, no, but that's a pretty common finding among others.
Q. I think you have an article from 2009 titled: Impartial Judges, Race, Institutional Context. Does that sound right?
A. Yes.
Q. You have a quote here that says: Given the history of African Americans in the United

Page 81

States, African American judges might be more sympathetic to less fortunate people.
A. Yes.
Q. Do you agree with that assessment?
A. Yes, and I think I have a bunch of citations after that, too. Because that's not something I would have said without citation. But, yes.
Q. You also said: Since most criminal defendants are either poor or racial minorities, it is not hard to imagine that African American judges would be more sympathetic to defendants because of their own negative experiences in society.
A. Correct.
Q. What is that history and that negative experience referring to?
A. Well, I think it's referring to the fact that for years African Americans were not treated as full citizens of this country. For years they weren't citizens at all. Then they were, you know, partial citizens. And then, you know, even after, you know, the Civil War and the passages of 13th, 14th and 15th amendments, we still had institutionalized oppression where individuals,

Page 82

African Americans, were not treated the same as whites, until we got to the Civil Rights Act and Voting Rights Act. Those vestiges are still there. That's not all that long ago. You know, that's my parents' generation. And so I think it's -- you know, I think it's naive to assume, right, that those vestiges don't still permeate throughout in terms of available opportunities, in terms of a whole bunch of things.

Q. So I'd like to turn to racially polarized voting. In your work as a political scientist, have you observed any patterns in terms of which parties or candidates black and white voters tend to support?

A. Oh, yeah, I think everyone knows. Yes, black voters support the Democratic party.

Q. When you say everyone knows that, are you referring to political scientists or what are you referring to?

A. Everyone. I think if you walk out in the street and ask five people they would tell you that. So it's been established by scholars but it's also -- I mean, you can look at, like, any graph, you know, in any newspaper or anything else.

Page 83

Q. Roughly speaking, do you know what percent of black voters tend to vote for Democrats?

A. It's upwards of 90.

Q. 90 percent?

A. Yeah.

Q. What about the percent of white voters that vote for Republicans?

A. Well, that varies based on state. It's not 90 percent. But I don't have a hand -- there's a lot more variations too, in terms of college-educated whites versus noncollege-educated whites. So a lot more factors, right, among white voters that help predict voter turnout that aren't as present with black voters.

Q. And what about white Mississippians?

A. What about white Mississippians?

Q. In terms of their level of support for Republican party candidates?

A. Well, I'm assuming it's pretty high because Republicans always win the elections in Mississippi. At least in statewide elections, right. Presidential elections, Senate elections. So yeah, that's my assumption.

Q. In the upwards of 90 percent of black

Page 84

voters supporting Democrats that you mentioned earlier, do you know if that pattern is true in Mississippi?

A. I have no reason to think it's not.

Q. Do you know if the contrast between white and black voters is more or less stark in Mississippi compared to other states?

A. I do not.

Q. In your review, what makes African Americans more likely to be Democratic voters?

A. Well, I think the Democratic party is the party that helped pass the Civil Rights Acts and the Voting Rights Act and also tends to promote bigger government, more social policies that help individuals, right, who need social services, who improve education, you know, for all kinds of reasons.

And the Democratic party, I think, is not -- has been much more open in terms of nominating and electing African American officials. And so I think there are historical reasons and also current reasons, policy reasons.

Q. So you mentioned the Civil Rights Act, the Voting Rights Act. At the risk of asking a very obvious question, but why would those laws be

Page 85

relevant to you by Democrats -- why black lawyers support the Democratic party?

A. Sure. Well, the Civil Rights Acts allowed -- ended public discrimination in places of accommodation. So all of a sudden now, you know, you couldn't discriminate in hotels, restaurants, other things, right, against black citizens. Voting Rights Act removed a lot of the impediments to black voters registering to vote and actually exercising their right to vote.

And so those kinds of policies, right, that improved the lives of black Americans, you know -- it wasn't just the Democrats who did that. Obviously, as you know, we had party realignment and whatever else. But it was -- the way things have sorted out is Democrats now.

Q. What is that partisan realignment that you're referring to?

A. Well, so in the -- I mean, right, the Democrats, right, in the south, right, are different than Democrats in the north back then. Same thing with Republicans. And so it was a time, right, where you'd have, you know, southern Democrats voting much more so with southern Republicans, and northern Republicans and northern

Page 86

Democrats. But now those have aligned. So just like the -- you know, the Democrats and Democratic party in the south has largely been diminished, the same thing is true with the Republicans in the northeast, right? I mean, you don't have northeast Republicans anymore. I mean, occasionally you'll get someone like a Charlie Baker in Massachusetts, but that's, you know, the exception not the rule. I'd say that's sorting.

Q. What caused that realignment?

A. A number of factors caused that realignment. I think preferences of individuals. I think political parties, right, and so seeing opportunities. I mean, in the northeast, right, you see some Republicans who vote for you, you know, maybe 50 percent of the time and Democratic parties -- again, we get a Democrat in here would vote 80 percent of the time. So you start targeting those individuals and electing more co-partisans and the American electorate become much more polarized. There are a number of causes that have led to that.

Q. Did the passage of the Civil Rights Act and the Voting Rights Act contribute to the realignment?

Page 87

A. I think without question.

Q. And in your view what makes white people more likely to be Republican voters?

A. What makes white people more likely to be Republican voters? Well, again, there are a number of things. I think white people tend to -- I think the Republican party has done a really good job of appealing to a time where white people were, I say, more prominent, right, and had better economic fortunes than they do now, where you didn't need a college education to have a good middle class life and so on. So I do think there's a economic interest. This is particularly true for lower income, lower educated whites. You know, and the Republican party does a good job of appealing to these individuals. Religion is part of it, you know. I mean, there are a lot of things.

Q. Let's move on to Dr. Orey's report. I can give you a copy of that.

A. Sure.

Q. I'm handing you a copy of the October report, 2022.

(Exhibit 3 marked for identification.)

Q. (By Mr. Cheung) That's now been marked as Plaintiff's Exhibit 3, I believe.

Page 88

Dr. Bonneau, can you confirm that that's the initial report from Dr. Orey that you reviewed and responded to?

A. It looks to be the case.

Q. Let's turn to Pages 12 through 14 of the report, and if you wouldn't mind taking a moment to review those pages.

A. Okay.

Q. So I think your testimony earlier was that you have concerns about the inferences that Dr. Orey can draw from these results, but you take his factual findings or his results to be true. Is that right?

A. I take the estimates that he has using the ecological inference, yes.

Q. So your reports do not dispute Dr. Orey's implementation of ecological inference in terms of the accuracy of its code?

A. Correct.

Q. You don't dispute the accuracy of the data that he uses?

A. Correct.

Q. And you don't dispute the accuracy of his computations?

Page 89

A. Correct.

Q. Based on those tables on pages 12 to 14, did Dr. Orey find that black voters typically support the black candidate about 90 percent of the time?

A. That's fair.

Q. For example, I think in Table 1 if we look at the Westbrooks election, Dr. Orey estimated that Ms. Latrice Westbrooks earned about 90.46 of the black vote in 2020; is that right?

A. That is correct.

Q. And white support, according to Dr. Orey's estimates, for black candidates was typically below 15 percent?

A. Typically, that's correct.

Q. And in the, again, the Westbrooks' example from 2020, she received less than 10 percent of the white vote?

A. Correct.

Q. Are those estimates consistent with your understanding of voting patterns among black and white voters?

A. Yes.

Q. In paragraph 37 of your January report you said that it is highly unlikely these

Page 90

candidates lost because they are African American?
A. Correct.
Q. Would it be fair to say that those African American candidates lost because the majority of white voters voted for a different candidate?
MR. WALLACE: I'm going to object to any questioning on paragraph 37. It's outside the scope of the order. I will not tell him not to answer, but we'll deal with it if you ever offer it in court. Proceed.
THE WITNESS: Please repeat the question.
Q. (By Mr. Cheung) Would it be fair to say that those African American candidates lost because the majority of white voters voted for a different candidate?
A. Because of the white -- I would say it differently.
Q. How would you say it?
A. I would say that those African American candidates lost because -- because they didn't get enough votes, likely because they were Democrats.
Q. And they were Democrats, and they lost because they did not earn the votes of more white

Page 91

voters?
A. Of more Republicans, or as their opponents. I mean, so they could have, right, gotten more black voters, as well. So they didn't lose -- like, if they lost because -- they could have lost because they didn't get more white voters; they could have lost because they didn't get more black voters. They could have lost because they were Democrats.
Q. Do you know if there were enough black voters in the district to put them over the top, given that, you know, someone like Ms. Westbrook is already earning over 90 percent of the black vote?
A. I don't know how many black voters voted in that election.
Q. And overall as to District One, is it your conclusion that racial polarization exists but not to the extent that black candidates are unable to win election to Mississippi Supreme Court?
A. I think, yeah, I stipulate to that.
Q. Those black candidates that did win election to Mississippi Supreme Court, they're all appointees running with an incumbency advantage;

Page 92

is that correct?
A. Well, and then there were incumbents after that, like Justice King.
Q. Right. But at the time of their election, they had already been in office?
A. I think I said earlier that I wasn't sure if any African American candidate had ever successfully run not as an appointee, so I will stick to that. But certainly the ones I looked at for my report, that is true.
Q. Your view is that District One, as currently configured, black voters can already elect their preferred candidate?
A. Correct.
Q. Is that in most cases, in some cases?
A. I would say -- in most cases, I would say two of the three justices in District One are the black preferred candidates.
Q. Based on your understanding of these voting patterns, would you agree that a district that has a majority African American population has a greater chance of electing someone preferred by African American voters than a district that is minority African Americans?
A. Sure.

Page 93

Q. Do you know what percentage of the voting age population of District One is black?
A. I do not.
Q. I can represent to you that it's about 49 percent --
MR. WALLACE: I'm going to object to the form of the question, assumes facts not in evidence.
Q. (By Mr. Cheung) Can you assume that fact to be true for purposes of this deposition?
A. I've -- can I assume that fact to be true? I mean, if we're talking about hypotheticals, we can talk about a hypothetical district where blacks are 49 percent of the vote, sure, I can stipulate that for the next few questions.
Q. Thank you. Let's turn to Appendix A of your report. In Appendix A did you identify Ms. Westbrooks as a black candidate who lost her election in District One in 2020?
A. I did.
Q. Based on your table, did Ms. Westbrooks win about 48-and-a-half percent of the vote?
A. Yes.
Q. Given that the district is 49 percent

Page 94

black voting age population, as we assumed, and that Ms. Westbrooks won 48-and-a-half percent of the vote, do you think it's a fair estimate to say that if we added another point of black voting age population to a district it's likely to increase her vote share by a little bit less than one percent?

A. Yes, and also if you added more Democrats as well.

Q. As we discussed earlier, Ms. Westbrooks, according to Dr. Orey's estimates earned about 90 percent of the black vote?

A. Correct.

Q. Given that she's earned 48-and-a-half percent of the vote shared, she's about 1.6 percent short of winning the majority of the election in 2020?

A. Correct.

Q. And taking the fact that she's earned about 90 percent of the black vote, would you agree that if the black voting age population in District One had been three to four points higher, she likely would have won in 2020?

A. I don't know if I can say that because I don't know what the voting turnout was. I don't

Page 95

know if that extra percentage would have turned out to vote or -- so I can't say that.

Q. What if we assume that voter turnout remains as it is in District One?

A. Well, I think it's -- I mean, it's hard to say, right, because again, right, she was going up against an incumbent, and we've already talked about how incumbents overwhelmingly win. And there was another incumbent in 2020, Justice King, who no one even bothered to challenge. And so it's hard to say if adding that extra percentage of the vote would have been enough to overcome the incumbency advantage. You're assuming that extra percent of vote would have voted in the same percentages as the population of the vote that's already there. I mean, yeah, it's possible. It's possible you might need to add 10 percent. I don't know. But I think there are a lot of -- I think concluding that would require a lot of assumptions that I don't think the data support make it.

Q. The point about an incumbency, that did not prevent 90 percent of the black voters from supporting Westbrooks in that election?

A. Correct.

Page 96

Q. And so do you have any reason to think that other black voters would react to incumbency differently if they were added to District One?

A. No, I mean -- no, but, again, I mean, you're assuming, again, the same kinds of turnout rate and participation rate and everything else, yes.

Q. Right. So if we assume the same turnout and participation rate, do you think that if the black voting age population of District One had been 3 to 4 percentage points higher, Ms. Westbrooks likely would have won in 2020?

A. What I'm saying is if you added 3 to 4 percent of black voters to District One and these voters behaved the same way as the voters who are already in District One, then that likely would have led to Ms. Westbrooks winning her race.

Q. Just to sum up. In 2020, Ms. Westbrooks lost even though District One had 49 percent black voting age population and she had 90 percent of that black support.

MR. WALLACE: Once again, object to the making of assumptions with facts not in evidence.

THE WITNESS: And I would also point that Justice King won with 100 percent of the

Page 97

vote, black and white.

Q. (By Mr. Cheung) Justice King was not contested in his reelection?

A. Correct, which I would argue is important, but we can talk about that later.

Q. We'll get to that later. Appreciate your answers, Dr. Bonneau.

So I'd like to turn to paragraph 49 of your January report. Point out the fact that Ceola James came in third place even though she was the only African American candidate in that race?

MR. WALLACE: Same as the prior objection. It's outside the scope of the court order. I will not tell him he can't answer it.

THE WITNESS: Correct.

Q. (By Mr. Cheung) What is the significance of the fact that James was not the preferred candidate of black voters?

A. Well, she might have been, I don't know. What I said was if she was the preferred candidate of black voters and there was a three-person race, given what you've just described as demographics of that district, she would have advanced to the runoff, with the two white canceling the white

Page 98

vote. But, in fact, it turns out she probably wasn't the preferred candidate of -- so just because, you know, you have a black candidate does not mean that candidate is the black preferred candidate. Which I think is the assumption that is made in a lot of Orey's.

Q. So you're not sure if Ms. James was the black preferred candidate or not?

A. It's hard for me to think that she was if she only got 10 percent of the vote.

Q. Okay. So your conclusion is that she likely was not the preferred black candidate in this case?

A. Correct. Well, if 49 percent of the district is African American and you have three candidates, to only get 10 percent would suggest that she was not the preferred candidate of African Americans.

Q. What is the significance of that fact?

A. That black candidates are not necessarily black preferred candidates.

Q. Why is that relevant to your analysis?

A. Well, it's relevant, right, because in the Orey report, right, he talked a lot about the black candidate, right? So if you look at

Page 99

Table 1, black candidate. Table 2, black candidate. A black candidate is not synonymous with black preferred candidate. A black preferred candidate could be Jim Kitchens, could in fact be a white candidate. And so we can't simply look and see how African American candidates do, we have to look at how African American preferred candidates do.

Q. And so in this particular race in 2008, were black voters voting cohesively for Kitchens?

A. I don't have that -- I don't know. I don't see that in -- I don't know if they were or not. I can tell you they almost certainly were not voting cohesively for James.

Q. And what do you think white voters were -- who white voters were voting for?

A. My assumption is they were voting for the Republican incumbent, Smith, but, again, I don't know.

Q. And in that election, Kitchens won?

A. Correct.

Q. And so do you think in all likelihood Mr. Kitchens was the preferred candidate of black voters?

A. I do.

Page 100

Q. Similarly, I think in your September report in paragraph 7 you point out that a black Democrat, Cecil Brown -- you point out that a black Democrat lost to the white Democrat in the 2015 primary for public service commissioner.

A. Correct.

Q. And is the significance of the fact the same as what we just discussed?

A. Correct. That if Brown was the preferred candidate to black voters in the primary, which again, which is likely given the margin of his victory, even holding a political party of that candidates' constant, black voters don't necessarily favor black candidates.

Q. And so your view is that because black voters did not necessarily prefer the black candidate, black voters, at least in the Democratic primary, are not being driven by racial bias?

A. Correct.

Q. Are you aware of any similar evidence showing that white voters are not being driven by racial bias in their choice of candidates?

A. I don't think that's been analyzed. I mean, I haven't seen anything in either Orey's

Page 101

report or -- that looked at that.

Q. But there's nothing in your report that goes to that?

A. Correct.

Q. Would you agree that in the Democratic primary context that partisan affiliation cannot explain why black and white Democrats choose different candidates?

A. Well, yes, because the party is held constant as I say in paragraph 7.

Q. If black voters don't have a stronger preference for black Democrats over white Democrats, in your view does that preclude a finding of racially polarized voting?

MR. WALLACE: Would you repeat that? I think you're asking him for a legal opinion.

Q. (By Mr. Cheung) If black voters don't have a stronger preference for black Democrats over white Democrats in your view does that preclude a finding of racially polarized voting?

MR. WALLACE: I think that's probably not a legal opinion so I think you can answer it.

THE WITNESS: Does it preclude it no, but it makes it more difficult because it suggests that party is what's really working here, not

Page 102

racial analyst.
Q. (By Mr. Cheung) Is it possible that black voters supported the white Democrat for reasons related to race?
A. Is it -- sure, it's possible that black Democrats supported a white Democrat, sure.
Q. What are some reasons that would fit that pattern?
A. Well, if they thought that the white Democratic candidate was more aligned with their views, with the voters' views on certain issues.
Q. And by issues you mean issues that have a racial component to them?
A. Yeah, issues that are salient to the black community. I mean, they may not have a racial component to them, but they may be of interest, or of higher interest.
Q. Is it possible that black voters nominate white Democrats because they view white Democrats as being more electable in the general election compared to black candidates?
A. That's possible, sure.
Q. Is it possible that a white Democrat is better aligned with black voters on issues of racial equality as opposed to a black candidate

Page 103

elected in a primary?
A. Yeah, in a given primary, sure, it's possible.
Q. Is it possible that black voters think that the white Democratic is a better messenger on issues of racial equality as compared to a black candidate?
A. Possibly.
Q. Is it possible that black voters support a white Democrat over a black Democrat because the white Democrat is endorsed by prominent black individuals?
A. Sure.
Q. Did you consider those possibilities when reaching a conclusion that black voters support white Democrats and therefore their vote preference is non-basis of race?
A. Well, I think those things confirm what I said, right, that they're making this choice, this strategic choice, as opposed to based on any number of factors. I have no -- unless we go out and we have survey data of what these voters, you know, what they said their preferences were in these elections, I don't think we can eliminate anything. But certainly I think there are more

Page 104

factors that the candidate ends up being the candidate preferred by blacks. So the black preferred candidate, the race of that candidate is one factor among several others that go into that calculation for people.
Q. And so you agree that just because that the race of the candidate does not determine who black voters vote for does not mean that those voters are making decisions independently of race?
A. Making decisions independently. Say that again, please.
Q. Would you agree that the fact that black voters are not choosing candidates on the basis of race, that does not preclude black voters from selecting candidates for reasons related to race?
A. Yes, that does not preclude that. They certainly could be doing that as well.
Q. And so in your reports here you do not conduct any analysis to rule out the possibility that black voters support candidates because of their views on race issues?
A. Correct.
Q. I have a few questions about your experience with racially polarized voting, which we talked a little bit about earlier. Could you

Page 105

give me a brief overview of the experience you have with the subject of racially polarized voting?
A. My experience as a professor?
Q. As a professor or as an expert.
A. Sure. So my experience is I have read the articles that have used or have examined racially polarized voting. I'm familiar with the reason those analyses are conducted, and -- yeah, I have consumed scholarship.
Q. Have you taught courses about racially polarized voting?
A. Racially polarized voting would not be the topic of a class. It might be something that's done in a class. And, no.
Q. Have you discussed it as a topic within a class?
A. Not that I recall.
Q. And have you written any articles about racially polarized voting?
A. No. Unless you tell me I did.
Q. Have you given any talks about racially polarized voting?
A. No.
Q. Have you ever done any racially

Page 106

polarized voting analyses to determine whether it exists in a given jurisdiction?
A. Again, thinking back to some of my methods classes it's possible I did an assignment that looked at it, but I can't recall any specifics or anything.
Q. Would you consider yourself an expert on racially polarized voting?
A. Would I consider myself on expert on racially polarized voting? I would say that's not my scholarly identity, no.
Q. Do you happen to know Dr. Orey either personally or professionally?
A. I do.
Q. Have you ever met with him?
A. I know Dr. Orey very well.
Q. Could you tell me more about your relationship with Dr. Orey?
A. Sure. I mean, D'Andra and I for years scored advanced placement governing exams together. We were in leadership there. And I occasionally see him at conferences. And so, you know, yeah, I know D'Andra professionally. We don't have a personal relationship outside of casual acquaintances.

Page 107

Q. Have you spoke to him before?
A. Sure, I've spoken to him.
Q. Have you spoken to him about this case?
A. No, but so -- we were both at a conference together in March and we ran into each other on the elevator, and he said something like, oh, I see we're going up against each other. I said, oh, yeah. And that was basically the extent of it. It was a very casual -- I didn't mention anything. He just brought it up kind of like to break the tension, I guess or whatever. Then I ran into him at the hotel bar later on and just had conversation about how he's doing, his health, the great undergraduate program he's running at Jackson State.
Q. Did you say anything to him about this case?
A. Not besides what I just told you.
Q. Did you discuss racially polarized voting analyses?
A. No.
Q. Anything else you can think of from that conference encounter?
A. Not that I can recall.
Q. Okay. I'd like to turn to ecological

Page 108

inference. We mentioned earlier the three types of ecological -- sorry, the three types of empirical methods that have been used to demonstrate racially polarized voting analyses. Ecological inference, ecological regression and homogeneous precinct analysis. Do you recall that?
A. I do.
Q. Do you know which of the three methods is considered to be the most reliable in courts in voting rights cases?
A. My under --
MR. WALLACE: That is a legal opinion when you've get to courts, and I object to the form for that reason.
THE WITNESS: My understanding is it's ecological inference.
Q. (By Mr. Cheung) Does your report identify any empirical methods that would be more reliable than ecological inference?
A. It depends what you're asking. So it depends on what questions you're asking. If you're trying to get at racially polarized voting, no, my report does not identify anything that would be more reliable than ecological inference.

Page 109

That does not mean the ecological inference, though, is the right way to approach the analyses in this case or in all cases, and it also does not, you know, mitigate any of the criticisms of ecological inference that other scholars have noted.
Q. Do you know of any empirical methods that would be better at generating racially polarized voting estimates compared to ecological inference?
A. I do not.
Q. So in your September report you identify some general concerns with EI -- with ecological inference as a method in the racially polarized voting context; is that right?
A. That is right.
Q. Did you raise those methodological concerns in your January report?
A. In my January report I did not do any work regarding ecological inference.
Q. Dr. Orey also used ecological inference in his original October 2022 report; is that right?
A. I believe that's correct.
Q. Is there a reason why your January

Page 110

report didn't address methodological concerns with ecological inference?
A. I wasn't focused on that. I was focused on other things.
Q. In paragraph 13 of your September report, you discuss a concern with ecological inference methods because they assume that minority voters behave similarly across different precincts; is that right?
A. Correct.
Q. You then go on to say that that assumption is, quote, untenable; is that right?
A. Correct.
Q. Do you cite any authority for that conclusion?
A. That it's untenable?
Q. Yes.
A. That minorities are relatively affluently racially integrated precincts and treated as distinguishable -- that assumption is a fact, right? So no, -- so my conclusion that it's an untenable assumption is that the proportion of white and minority voters who support each candidate is the same at each precinct. We can debate whether or not that's a tenable

Page 111

consumption. In my opinion that's a completely untenable assumption at each precinct. Are there no differences between precincts, right, regarding the minority and white support? I don't know anybody who would argue that that's a tenable assumption.
Q. Then in paragraph 14 of your September report you discuss an issue about using Ordinary Least Squares regression in question to estimate vote shares. Do you see that?
A. I do.
Q. Do you know if Dr. Orey used Ordinary Least Squares in his analysis?
A. My understanding is he used King's ecological inference.
So the Ordinary Least Squares, right, is a way to show -- a way to show how the ecological inference technique run by King, which is based on some of the same assumptions is -- can lead to biased parameters. The conclusion that the solution addresses the limitation. But assumes that the distribution in unimodel, but the data, of course, are bimodel. So that undermines one of the key assumptions. So EI might work, but there's no way you asses whether or not it works

Page 112

because you can't test the key assumption.
Q. So you said a lot there and I just want to break it down.
In paragraph 14, like you said, Dr. Orey said that King's solution overcomes this limitation about variation across precincts?
A. Correct.
Q. Do you agree that EI overcomes this precinct variation issue, at least King's method of EI?
A. I'm not sure. I have correspondence from one of the authors of the criticism that says that that assumption still applies to King's method as well. But I'm not -- I'm not methodologically sophisticated enough to dig under the hood and determine that for myself.
Q. Do you know -- if the precinct variation assumption is problematic, do you know what effect that has on the estimates here?
A. Sure, because if it's -- if the precinct assumption is -- it invalidates the estimates because you're making assumptions about voters and you're implying that a voter in a district here in Jackson, the same factors, you have the same percentage of the precinct here in Jackson as you

Page 113

would a precinct down in the suburbs. That assumption would lead to biased estimates.
Q. Do you know if that bias leads to an overestimate or an underestimate?
A. I do not.
Q. You did not perform any analysis in your report to determine whether the bias would be an underestimate or an overestimate?
A. Correct.
Q. In paragraphs 14 and 15 you cite this 1998 article from Wendy Cho; is that right?
A. I do.
Q. Could you walk me through what Dr. Cho's critique of ecological inference?
A. Sure. Dr. Cho's critique is that in order for ecological inference to be correct and appropriate, right, the specification has to be correct. That is the model specification has to be spot on. Because otherwise what will happen -- I give an example that she gives. The parameters, once again, right, are biased. So the big problem, though, is we don't really know if we have a specification proper -- proper specification. We don't know whether or not the model we're estimating is actually the true model.

Page 114

And so given that, it's hard to evaluate whether or not the model we estimate is accurate or not.
Q. And so Dr. Cho's discussion in paragraph 14, that's based on a hypothetical dataset where she set some level of precinct level variation; is that correct?
A. That's correct, right, to see what the bias would be. So in a simulation, she knows the true values. What we're trying to do with data, is recover the true values, right, recover data we don't have from data we have. But one way to test whether or not we can do that accurately is to generate our own data and run simulations and then we can do comparisons, which is what she does.
Q. But for your report, you did not look at the underlying data to test the assumption?
A. Correct.
Q. And so you wouldn't know if -- to the extent that there is a bias, whether that results in an underestimate versus an overestimate of racially polarized voting?
A. Correct.
Q. On this unimodel assumption point, does your report cite any academic publications after 1998?

Page 115

A. It does not.
Q. Is there a reason for that?
A. I didn't see any.
Q. Do you know if ecological inference has continued to be used to estimate racially polarized voting since 1998?
A. It has.
Q. Do you know whether ecological inference has been accepted by courts as a reliable method since 1998?
A. My understanding is it has.
Q. Are you familiar with recent scholarship showing that ecological inference estimates of racially polarized voting could generate results that are similar to that of exit polls?
MR. WALLACE: Similar to what?
MR. CHEUNG: Results from exit polls.
MR. WALLACE: Oh, okay.
THE WITNESS: I'm vaguely aware of that, yes. Not specifics, but yes.
Q. (By Mr. Cheung) Does that tell you anything about the accuracy of EI as a method in racially polarized voting context?
A. Well, I think it -- I think that's evidence that you give as some consolation. And

Page 116

so I would say it's -- you know, that would be kind of external validity for the kind of measures.
I want to point out that neither of my reports really hangs on this ecological inference issue, but yes.
Q. Okay. I'd like to show you one of those articles.
A. Sure.
(Exhibit 4 marked for identification.)
Q. (By Mr. Cheung) Do you have what's now been marked as Exhibit 4?
A. I do.
MR. WALLACE: Is it 4 or is it 5? I thought we had two reports from him, two reports from Orey. This should be 5?
MR. CHEUNG: We only showed him the first Orey report. We didn't show him the second one.
MR. WALLACE: We have not marked the second. Thank you.
Q. (By Mr. Cheung) Would you like to take a moment to review that article?
MR. WALLACE: A moment or a week?
THE WITNESS: I will skim it.

Page 117

Q. (By Mr. Cheung) Let me know when you're ready to talk about it.
A. All right.
Q. Thank you for reviewing for the pop quiz.
I'd like to turn to page 274 of that article, which I think is where the first highlighting is.
A. Yes.
Q. Do you see the first highlight where it says: There is no convincing evidence that either iterative EI or RxC is biased toward or against findings of RPV.
A. I do.
Q. Do you have any reason to disagree with that finding?
A. No.
Q. If we turn to the next highlight at the bottom of that page going to the top of 275, could you read that sentence for us?
A. "For social scientists and legal scholars interested in analyzing RPV when only ecological data are present, both approaches can be relied upon as they lead to substantively similar conclusions about the presence or absence

Page 118

of RPV."
Q. Do you have any reason to disagree with that sentence?
A. No.
Q. And if I could trouble you to read the next highlighted sentence on 275.
A. Here we go. "Beyond this, we demonstrate that both the iterative EI and the RxC methods produce results in line with individual level exit poll data."
Q. I'd like to turn to the next page, 276. I think I may have missed the highlight in here. Do you see this first complete sentence of that first paragraph beginning with: Since the late '90s?
A. I do.
Q. Could you read that sentence for us?
A. "Since the late 1990s, EI has been the benchmark method courts rely upon to evaluate RPV patterns in voting rights lawsuits."
Q. Is that consistent with your understanding of the use of EI?
A. It is.
Q. And I believe I may have forgotten to ask you on 275, that sentence that begins with:

Page 119

Beyond this we demonstrate that both...
A. I read that.
Q. Do you agree with that sentence?
MR. WALLACE: Agree with? Object to the form of that.
THE WITNESS: I agree it's what it says, yeah.
Q. (By Mr. Cheung) Do you have any reason to disagree with that conclusion?
A. I do not.
Q. Thank you. Just one more on 283. Can you read that highlighted sentence on 283?
A. "We also did not find any convincing evidence that EI will lead analysts to reach conclusions in favor of RPV."
Q. Do you disagree with that sentence?
A. No.
Q. And so just to sum up here of the highlighted -- of the sentences that you've read from this article, you don't have any reason to disagree with those findings?
A. Correct.
Q. Do you know if Dr. Orey's report used the two EI methods, iterative and RxC, described in this article?

Page 120

A. I don't recall.
Q. Can you turn to Appendix 2 of Dr. Orey's report, I think is page 44, to confirm.
A. Yes, it appears he did use both EI and RxC.
Q. And in terms of that article I just showed you of Plaintiff's Exhibit 4, do you know the authors of this article?
A. I've met Barreto and Collingwood I think maybe once, but it was a very, like, in passing at a conference thing. I don't know them, know them.
Q. Are you familiar with their work?
A. I am.
Q. Do you know if those authors are reputable in the field?
A. They are.
Q. In paragraph 4 of your September report, I think you identify a different issue that you say can have serious implications for any analysis using ecological inference. Do you see that?
A. I do.
Q. You include a quote here. Would you mind reading that to us?
A. Sure. "For example, if white voters tend to be conservative and most potential

Page 121

minority candidates are very liberal, strong minority candidates may elect not to run because they are ideologically out of step. A court that inferred disparate treatment from white voters' lack of support for minority Democrats relative to white Democrats would be doubly in error: White voting patterns may reflect ideological as well as valence differences between minority candidates and the white candidates whom the court treats as counterfactuals."
Q. Thank you.
And that quote is from a 2016 article by Elmendorf?
A. Correct.
Q. Do you consider that Elmendorf article to be a reliable source?
A. I do.
Q. So taking a look at the first part of that quote about minority candidates electing not to run because they may be ideologically out of step. Could you explain why a strong black minority candidate who is a conservative would decide not to run in Mississippi?
A. Who's a conservative?
Q. Uh-huh. (Affirmative response.)

Page 122

A. No.
Q. And so if racially polarized voting did not exist, a black conservative likely would choose to run because they can win the white conservative votes?
A. Maybe. But also if there was no incumbent, if there was an open seat, my hunch is that a black conservative against any Democrat would win regardless -- regardless of -- with the incumbency advantage no open seats. I'd love to see that election.
Q. And so do you disagree with this quote that says: Strong minority candidates may elect not to run if white voters tend to be conservative?
A. Strong minority candidates may elect not to run if -- can you say that again?
Q. Yeah, please take a look at the first sentence of that quote.
A. "If white voters tend to be conservative and most potential minority candidates are very liberal, strong minority candidates may elect not to run because of their ideological --
So what you're asking, then, is what?
Q. Do you agree with that sentence or do

Page 123

you disagree with it?
A. Yeah, I agree with that sentence.
Q. And so why would strong minority candidates elect not to run if white voters are conservative and minority candidates are liberal? I don't understand that. I'd like for you to explain the sort of causation or the thinking behind this quote.
A. Because they're not likely to win. And so the assumption is that the white voters are conservative and aren't going to vote for a black candidate. And so the -- and so they're going to take a pass because they know they have no chance of winning.
Q. Why would a black conservative candidate not have a chance of winning?
A. A black conservative candidate would have a chance of winning, sure. But this is talking about if white voters are conservative in most potential minority candidates are very liberal. Strong minority candidates may elect not to run.
Q. And so the assumption here is that the minority candidate would be liberal?
A. That's the assumption in the quote.

Page 124

Q. Are you aware of any black conservatives being elected to the Mississippi Supreme Court?
A. No.
Q. Are you aware of conservative black candidates winning elections in Mississippi, generally?
A. Winning elections, I don't know about generally. I can tell you not in District One.
Q. Is it also possible that candidate's strategic decision making might result in an underestimation of the level of racially polarized voting?
A. Well, I don't know, I mean, because if they're not on the ballot they can't be voted for. So I don't know how you estimate voting without voting. So I don't know how to answer that.
Q. Is it possible that candidate's strategic decision making, such as electing not to run, might result in an underestimation of the level of white voter discrimination?
A. Well, again, if they're not running --
MR. WALLACE: Object to the form. I'm not sure that white voter discrimination is a term that's been used in this deposition so far. So I believe it's vague.

Page 125

THE WITNESS: Sure, please clarify the vagueness.
Q. (By Mr. Cheung) Sure. Is it possible that candidate's strategic decision making such as electing not to run might result in an underestimation of the level of racial bias among white voters?
A. I'm not aware of -- I'm not aware of evidence that shows racial bias among white voters, so I don't know how to answer that question.
Q. Okay. I have a copy of the Elmendorf article. I can provide you a copy of it if you'd like to see it, or I can read you a quote from it.
A. You can read me a quote.
Q. In that Elmendorf article it says: Candidate's strategic behavior in anticipation of white voter discrimination may lead courts to make grave errors about who is a high quality or low quality candidate and then consequence to badly understate white voter discrimination.
A. Okay.
Q. Do you have any reason to disagree with that statement?
A. No.

Page 126

Q. So you would agree that strategic behavior by candidates may lead to an underestimate of racial bias among voters?
A. May lead.
Q. In work that you've done outside of this case, have you used regressions or other statistical methods?
A. Like in my scholarly research?
Q. Yes.
A. Yes.
Q. And in reports you've prepared for other cases?
A. I'm trying to think. I used -- did I do regression in Alabama? I don't think so. In Colorado, I think we did do some analysis in Colorado but that was the campaign finance case.
Q. Do your reports in this case utilize regressions or any other statistical methods?
A. I don't believe I do, no.
Q. Did you perform any statistical analyses that you've omitted from the report?
A. I did not.
Q. I'd like to turn to sort of the partisan balance, if any, of nonpartisan elections?
A. Can I use the bathroom first?

Page 127

Q. Sure.
(Off the record.)
Q. (By Mr. Cheung) Dr. Bonneau, we mentioned earlier that the ballots for Mississippi Supreme Court elections don't identify the partisan affiliation of Supreme Court Justice candidates; is that right?
A. That is correct.
Q. You also testified earlier about how that omission of partisan information may lead to some voters misidentifying the candidate and voting for the wrong candidate; is that right?
A. Correct.
Q. And so in your January report, you include a quote that says -- I think paragraph 41: Folks who tend to vote Republican have found a way to learn the identity of judicial candidates favored by Republicans, and the same has been true for Democratic voters.
Do you see that?
A. That's a quote from Salter, yes.
Q. Salter 2017 is an op-ed, right?
A. Correct.
Q. Do you know what evidence Salter uses to back up that claim?

Page 128

A. I do not. But that quote is consistent with my research, right, which I talked about earlier, that even though voters make more mistakes in nonpartisan elections, they're still able, overwhelmingly, to identify the correct candidate.
Q. That research you just mentioned, that's not cited in your report?
A. It is. It's paragraph 40.
Q. That's the Bonneau and Cann source for 2015?
A. Correct. And so the Salter paragraph just says that the general thing that my co-author and I found in that book is also a perception that happens in this state as well.
Q. And so your 2015 piece does not look at Mississippi in particular?
A. It looks at all states that have elections. So Mississippi is part of it.
Q. That's the same source that we discussed earlier in which you ran an experiment using ads that you created?
A. Well, it wasn't a -- yes, that's a book -- so there are several chapters in that book. So we embedded surveys into -- we embedded

Page 129

experiments into national surveys, and so we have a nationwide survey that we bought time on to insert our own questions. And so there are Mississippians in that survey. How many, I can't tell you.
Q. So you don't know the sample size of the Mississippians in that study?
A. Correct.
Q. Okay. And in that study you did not look at voters' awareness of the partisan affiliations of candidates running for the Mississippi Supreme Court?
A. Not specifically that, no.
Q. In paragraph 3 of your September report you discuss some efforts by Latrice Westbrooks' campaign to associate herself with Benny Thompson, Joe Biden and Mike Espy; is that right?
A. I do.
MR. WALLACE: Paragraph what?
MR. CHEUNG: Three of the September report.
Q. (By Mr. Cheung) You then conclude that it was clear to those following the race that Judge Westbrooks was a member of the Democratic party and her campaign was assisted by high

Page 130

profile Mississippi Democrats. Do you see that?
A. I do.
Q. Is that conclusion based on those campaign materials that you identify or is there something else to that?
A. No, my conclusion about how she tried to align herself with high profile Democrats is based on the evidence cited there how she associated with high profile Democrats.
Q. Do you agree that there are voters who cast a ballot in the 2020 election who may not have seen that messaging?
A. Sure.
Q. But every voter who receives a ballot sees the omission of a party affiliation next to the candidate's name.
A. Correct.
Q. And in terms of the Mississippi Democrats that you identified Ms. Westbrooks as associating herself with, were they themselves the preferred candidate for black voters in their races?
A. I don't know that. I'm assuming, but I don't know.
Q. Do you have any reason to doubt that?

Page 131

A. I do not.
Q. One thing earlier, I think you mentioned some correspondence you had with someone about whether or not there are criticisms of the EI method that persist?
A. Correct.
Q. Are you able to provide that correspondence to us?
A. I think I can, yeah. I e-mailed --
MR. WALLACE: We will take it under consideration. I think you're probably entitled to have it but we need to talk about that.
MR. CHEUNG: Okay. Thanks, Mike.
Q. (By Mr. Cheung) I'd like to turn to paragraph 5 of your September report. I think there you discuss an example of a candidate named Lynn Posey. Do you see that?
A. I do.
Q. What is the significance of this example?
A. Well, to me this shows how it's -- how party is a pretty important factor. So if we take this race here. We have Lynn Posey who defeated Addie Green. And Professor Orey talked about how Green was the preferred candidate of the black

Page 132

voters, which I think is a given. But four years prior, Posey ran as a Democratic candidate and defeated Haley Barbour's nephew, and he won as a Democrat each time he served in the State Senate.
So if Orey had analyzed the 2007 race, he probably would have found that Posey was the black preferred candidate. But then four years later, all of a sudden, Posey is not the black preferred candidate. Same dude, same preferences, the only difference is one year he was a Democrat, the other year he was a Republican. Which, to me, shows the importance of political party, when you have somebody who's no different except the party ID after their name.
Q. And so you're saying that because Posey was a black preferred candidate in '07 as a Democrat and then he suddenly lost black voter support in 2011 as a Republican, partisanship must be the reason. Why?
A. It's the most likely reason.
Q. You stand by your conclusion that the only difference in the two elections was his political party?
A. As far as I know, unless someone can tell me there was another difference between the

Page 133

two elections.
Q. Is Posey a white candidate?
A. Yes.
Q. In 2007, his opponent, Charles Barbour, was he white?
A. Yes.
Q. In 2011, Addie Green, was she black?
A. Yes.
Q. So the races of the candidates, of the opponent, also changed between 2007 and 2011?
A. Correct.
Q. Can you rule out the possibility that black voters voted for Addie Green because she was a black candidate?
A. Well, that would have to assume that the black preferred candidate, Posey, all of a sudden would not have been black preferred, right? So what would cause him to lose that preference. I would argue, right, that it's party. That had Posey run as a Democrat in 2011, he would have been the black preferred candidate. But because he ran as a Republican, he was not.
Q. Do you have any reason to think that if it were a primary race between Green and Posey, that Posey would have won the votes of black

Page 134

voters?
A. Well, he did in 2007. So unless you can tell a story why he would all of a sudden lose them. I mean, to me, this gets into the whole black candidate versus black preferred. Posey was a white candidate. He was the black preferred candidate in 2007. If he were running in a Democratic primary, my assumption would be he would still be the black preferred candidate. This is akin, I think, to the Ceola James situation, where she was a black candidate but she was not the black preferred candidate. Again, it's hypothetical. We don't know. But what we do know is Posey had a history of being a member of the Democratic party, of winning as a Democrat, winning with black support, then all of a sudden now he loses in.
Q. And so between 2007 and 2011, Posey's party affiliation changed?
A. Correct.
Q. You would also agree that the race of his opponent also changed?
A. Well, no, the race of his opponent stayed the same. But he was running against a black candidate in 2011 rather than a white

Page 135

candidate in 2007.
Q. All right.
A. But Addie Green's race did not change between '07 and '11.
Q. And when candidates switch parties, do their positions on policy issues typically change?
A. You know, not really. I mean, the evidence that I've read suggests that basically it's a -- they're just realigning, right, to be either more similar, right, to the party that represents their views or because they think it's an electoral advantage.
But, you know, when Jim Jeffreys went from a Republican independent, his party positions didn't change. If Joe Manchin would change from Democrat to an independent Republican, his position wouldn't change. He would just feel like it was either, A, to his electoral advantage to do that, or because he feels that the new party that he changed into better reflects his views.
Q. So even if the candidate's actual policy views don't change, does the change in party affiliation signal to voters that their policy positions may have changed?
A. It might. I don't think we can

Page 136

necessarily assume that. You know, I think that's a -- I think party changes like that, voters tend to be pretty cynical about. If Joe Manchin would have changed, right, people would be like, oh, yeah. Well, he's already that anyway.
So I don't know if I -- I mean, it's possible for some voters, sure, but I don't know if that's a widespread thing.
Q. So your view is that if Joe Manchin became a Republican, he wouldn't lose any Democratic votes?
A. He would lose some Democratic votes, sure. But he'd do it, right, because he knows he can't win as a Democrat so he wouldn't care.
Q. In paragraph 7 of your September report, you note that racial polarization did not prevent a black candidate from winning the Democratic primary?
A. Correct.
Q. But winning the Democratic primary doesn't mean that the candidate ultimately wins elected office, right?
A. Correct.
Q. And so a black preferred candidate can win the Democratic primary and still ultimately be

Page 137

unsuccessful because of opposition from white voters in the general election?
A. Yes.
Q. In paragraph 8 you have a quote about racial polarization in the primary. Can you explain the significance of that quote, please?
A. Sure. So what that quote does, is it talks about how -- you're talking about preference for one candidate relative to the other, so it's all relational. It's not necessarily about any kind of absolute support. So it's not a signal of how much minority voters like the preferred candidates, it's just how much do they like the preferred candidate relative to who that preferred candidate is running against.
Q. Why is that fact relevant to your report?
A. Well, I think that it's relevant to report because it suggests that the candidates matter, that it's not just some kind of racial signal, right? So it's not just whether or not you have a black candidate, right, but it's about who it is relative to their opponents.
Q. But that point about relative preference is true of all elections, right, not just

Page 138

primaries?
A. True.
Q. I just want to make sure I'm understanding. Are you suggesting that we shouldn't look at election results to measure racial polarized voting?
A. No.
Q. I'd like to turn to your January report for a moment, in paragraph 38 in particular.
A. Okay.
Q. You cite a source from 1960 for the proposition that one of the best predictors of how individuals will vote is partisan identification. Do you see that?
A. I do.
Q. Do you know how the authors of that 1960 source reached that conclusion?
MR. WALLACE: All right. I'm going to interpose the same objection as being outside the scope of the Court's order, but he may respond.
THE WITNESS: Let me just say, it's an EG, right? So, for example, this is as a canonical study of voting, right, of the American voter was done through survey research, was a large national survey. Everything that's come

Page 139

since that canonical site has found the same thing. So it looks weird because it's 1960. When I was writing the report it was a convenient citation that I had off the top of my head as opposed to saying what the newest one was that found that same that they did in 1960.
Q. (By Mr. Cheung) Thank you. Appreciate that. But do you know how the authors came to that conclusion?
A. Surveys.
Q. Surveys asking who?
A. Of voters, right, of asking voters like party ID, who did you vote for, things like that.
Q. Do you know if the authors considered the possibility that partisan identification itself is related to a voters race?
A. Partisan -- I'm sure they did. I can't remember the specifics.
Q. Do you know if the authors of that survey compared the strength of partisanship versus race as a predictor?
A. No, I mean, they wouldn't have done that. If they did, it would have been, you know, using data that is now 70 years old. So, of limited utility.

Page 140

Q. Okay. And since 1960, as we discussed earlier, black and white voters have essentially switched parties and affiliation?
A. They have.
Q. And after that switch in party identification, black and white voters continued to vote in separate blocks; is that right?
A. For different political parties. Well, blacks overwhelmingly vote for the Democratic party, whites are more split, yes.
Q. Does that history tell you anything about why the parties are split along racial lines today?
MR. WALLACE: I think it's asked and answered, but go ahead.
THE WITNESS: Does what history tell me?
Q. (By Mr. Cheung) The fact that the parties are still divided by race despite the change in party identification.
A. I don't know that I would say the parties are divided by race. I would say that blacks are overwhelmingly members of and vote for the Democratic party and whites are more mixed. I think that's consistent.
Q. I'd like to turn back to Dr. Orey's

Page 141

report again, pages 12 to 14 that you reviewed earlier.
A. Okay.
Q. I think you testified earlier that you don't dispute Dr. Orey's calculations and his data; is that correct?
A. Correct.
Q. Do you agree that in these by biracial general elections that Dr. Orey sampled, he correctly identified which candidates were black?
A. Yes.
Q. And do you agree that he correctly identified the candidates that were preferred by black voters?
A. Yes.
Q. And do you agree that in these general elections in which a black candidate ran against a white candidate, black voters generally prefer the black candidate?
MR. WALLACE: Object to the form generally as vague, but he may answer.
THE WITNESS: Yes.
Q. (By Mr. Cheung) Black voters usually preferred the black candidate?
A. Yes.

Page 142

Q. Did white voters usually prefer the white candidate?
A. Yes.
Q. And in most of these elections involving black and white candidates, did the candidate preferred by black voters lose?
A. In which tables?
Q. Looking at all three tables, Tables 1, 2, and 3.
A. Well, in Tables 1 and 2, yes. But in Table 3, it's much more split.
Q. What if we look at all three tables in the aggregate?
A. Well, in the aggregate -- so we have two elections, then we have five, so it's seven. So we have one and seven there.
So 5 out of 10 and 1 out of 7, so that's a total of 6 out of 17.
Q. Could you do that count for me again?
A. Sure. In Table 1 we have 0 out of 2.
Q. Right.
A. In Table 2 we have 1 out of five, so 1 out of 7. In Table 3 we have 10 elections and I count 5 out of 10.
Q. And that's the number of instances of --

Page 143

A. The black candidate winning.
Q. So in most of the 17 elections, the black candidate lost?
A. In more than half, yes.
Q. In paragraph 28 of your January report you say that incumbents overwhelmingly win their seats and it's only the white judges who could potentially lose their seats because they're being challenged. You see that?
A. I do.
Q. Is that conclusion based on Justice King running unopposed in his reelections?
A. Yes.
Q. Is there any other fact you're relying on for that conclusion?
A. Well, no, because only the white judges are being challenged. So if you're not challenged you can't lose your seat.
Q. Is your view that black incumbents have no electoral risk?
A. If they do, I haven't seen it.
Q. What are some factors that influence whether or not a challenger emerges?
A. Whether or not they can win.
Q. Anything else?

Page 144

A. Well, if they're satisfied with the incumbent.
Q. Any other considerations?
A. Not that I can think of off the top. Usually if you have an incumbent who's vulnerable, they will be challenged. And what makes an incumbent vulnerable could be an incumbent who's out of step with the electorate, an incumbent who can't do their job well or anything else.
Q. But it's not because the incumbent is black that there wouldn't be a challenge.
A. I don't understand how that would work.
Q. Right. I'm just trying to understand your answer that black incumbents are not at risk of losing their seats?
A. Not in District One, at least they haven't been.
Q. So your view is that black incumbents in District One have no risk of being challenged?
A. Well, there's always a risk of being challenged, they just have never been challenged.
Q. And that's based on a sample of how many elections?
A. Three or four.
Q. Would you agree that unopposed judicial

Page 145

elections are not that unusual?
A. Would I agree -- yes, I would.
Q. And it's especially --
A. No, no, sorry, I would disagree with that, that uncontested races are not the -- contested races are the norm.
Q. What about specifically in the context of nonpartisan elections in which there's an incumbent?
A. I believe contested races are still the norm.
Q. So in a 2006 article that you wrote titled Does Quality Matter, you provide the rate of uncontested elections from 1990 to 2000. And you say that the rate for uncontested nonpartisan elections is 42.02 percent. Does that sound right to you?
A. Yes. That data is 22 years old.
Q. Now talking about Justice King, specifically. We talked about the fact that he didn't draw a challenger, maybe in part because a challenger thought they would lose, right?
A. He's never drawn a challenger.
Q. Could part of that be because Justice King is perceived as a strong candidate?

Page 146

A. Yes.
Q. Also potentially because he's an incumbent?
A. Sure, just as Justice Griffis was.
Q. When he was up for reelection, was Justice King always the only black justice on Mississippi's Supreme Court?
A. I believe that's true.
Q. Is it possible that there was a reluctance to be perceived as mounting a campaign to make the Mississippi Supreme Court an all white court?
MR. WALLACE: Object to the form. Reluctance by whom?
THE WITNESS: That was going to be my question.
Q. (By Mr. Cheung) By candidates or parties endorsing candidates, relevant political actors.
A. No. If you think you can win you run. I don't -- if I'm a lower court judge or I want to be on the Mississippi Supreme Court and I think I can win, then I'm going to win. I'm going to go run and win.
Q. You testified earlier that a judicial

Page 147

candidate, although nonpartisan, often receives the backing of a political party.
A. Correct.
Q. And so is it possible that a political party might be reluctant to support a campaign that makes the Supreme Court an all white court?
A. Well, maybe the party of Justice King, the Democratic party would be, but I don't understand why a Republican party would care about that. It's about winning elections. It's not about how it looks.
Q. You use the Justice King example, the contrast with Justice Smith who lost his reelection in 2008, right?
A. Correct.
Q. Justice King's elections were in 2012 and 2020.
A. Correct.
Q. In terms of the likelihood of there being a challenger emerging, could be there some meaningful differences between 2008, 2012 and 2020?
A. Sure, but when Justice King was on the ballot in 2012 and 2020, he was on the ballot with another person who did draw a challenge. So in

Page 148

2012 Justice Waller drew a challenge, and in 2020, Justice Griffis drew a challenge.
Q. And those candidates who drew a challenge, they still won, right?
A. Yes.
Q. Okay. But are there differences between 2008, 2012 and 2020 that could influence whether or not a challenger emerges?
A. Sure, yeah.
Q. Some of that might be candidate-specific characteristics, because we're talking about different incumbents?
A. Sure.
Q. Macro-environment conditions like crime rates might be different?
A. Yep.
Q. You did not control for those differences in your comparison of Justice King to Justice Smith?
A. No. But again, we also have Justice Waller and Justice Griffis who were the same years. So those things would be the same. The only difference is the candidates.
Q. We talked earlier about, you know, the issue of sample size. Do you have a view on how

Page 149

many elections to look at would be a sufficient sample size for you to be able to draw conclusions from these patterns?
A. I would like to -- I mean, I analyzed all of the elections. I would love there to have been more elections, but I can't analyze elections that aren't there.
Q. But with the elections that you do have, in terms of Justice King's reelections not drawing a challenger, the fact that we're only talking about three, maybe four elections, does that affect the confidence you have in the patterns that you're noticing?
A. No, because it's the only patterns I can observe. So I -- you know, if we have another 10 years of data might my conclusions change, sure. I mean that's what happens when you get more data and you get more elections. But, you know, when you're looking at Appendix A, what you see is every incumbent wins except for one, and every incumbent is challenged except for Justice King. Now, I think that's informative.
Q. You testified earlier that you were deposed in the Alabama case?
A. I was.

Page 150

Q. Do you recall testifying in that case, quote: When we are dealing with a small number of elections, many of which can be decided on idiosyncratic factors, I don't think we can make a conclusion like that.
A. Well, I don't know what "like that" meant, what that's referring to. In general, that is something I would say depending upon what the conclusion is.
Q. I'm happy to show you the transcript if you would like for you to see the context.
A. If you want to, that's up to you.
(Exhibit 5 marked for identification.)
Q. (By Mr. Cheung) So that's now Plaintiffs' Exhibit 5. I'd like to point you to page 37 of the transcript. Starting from line 16 and going down to page 38, line 11.
A. Okay.
Q. Would you agree in the Alabama case you concluded that there wasn't enough information to draw a conclusion about patterns in a small sample size of elections?
A. In that case -- hold on. I've got to go back further here. So the question is: Does that -- taken in isolation, does that suggest that

Page 151

the differential in that particular race was not party because they were in the same party, but the differentiator or one differentiator was race?
I said: I don't think we have enough information to conclude.
I don't think we have enough information to conclude what the differentiator is.
Q. What do you see as a difference between the Alabama example and your ability to draw conclusions about Justice King's reelection?
A. Well, I believe we have one -- we're looking at one election, or in the Alabama case at this part -- we have an example of race where there are four candidates. So I think there are fewer elections when I made that there.
And, again, that's right, it could be any number of things. I think I say the same thing in the report here. It could be any number of things that differentiates candidates. I think the evidence is the most consistent with party. But, yeah, I mean, given the small number of elections it's impossible to say. Just like it's impossible to say it's race, it's impossible to say it's gender. The smaller the number of races we have the more difficult it is to establish

Page 152

patterns with conclusiveness. So, again, if I had 10 more years of data and we had this case 10 years from now, might my conclusions be different, sure.
Q. Do you know if apart from Justice King other black justices on the Mississippi Supreme Court have been challenged on their reelection campaigns?
A. Yeah, Justice Graves was challenged in 2004.
Q. And what about before that?
A. I only go back to 2000 in this report. I mean, I have data going back further than that, but I didn't use it for this report, so I can't --
Q. In preparing your reports in this case, did you also review the report prepared by Justice Diaz?
A. I did.
Q. In his report he noted that Justice Fred Banks ran in contested elections in '91 and '96. Does that sound right to you?
A. Yes.
Q. So you mentioned Justice Graves drawing a challenger in 2004; is that right?
A. Yes.

Page 153

Q. I think in paragraph 3 of your January report you said that a black justice has not been challenged since 2000.
A. That should be 2004. That is a typo.
Q. Okay. Thank you. And then in the paragraph after that, in paragraph 31 of the January report, you say that black candidates challenging an incumbent receive an average of 46-and-a-half percent of the vote while white challengers receive an average of 42-and-a-half percent. Do you see that?
A. Uh-huh. (Affirmative response.)
Q. Just for clarity of the record, which elections did you draw those numbers from?
A. That is from the 2000 and 2020.
Q. Did you perform any statistical analysis here to determine whether that difference is statistically significant?
A. I did not.
Q. You did not run a T test or any other type of test?
A. No, my hunch is that there's not enough cases to get any kind of precision.
Q. And so you're saying given the sample size if you had run a test on the difference, the

Page 154

result likely would not be statistically significant?
A. Well, I mean, so we can talk about statistical significance in the context of universe of cases. So statistical significance is used, right, to make inferences from a sample to a population. How likely is it that the data we have in our sample is reflective of the broader population. Here we have the full population. We have every election in District One. So we don't need use an inferential statistic like statistical significance because we observe all the data, and so that is a true data point. We're not trying to take these elections and say how reflective are they of this larger thing. So that does not -- so statistical significance doesn't really apply here because it is significant because it is true.
Q. So how do you know the difference here is not just random noise?
A. Well, it can't be random noise because I'm not making -- I'm not inferring from a sample of elections to a larger population. That's when you're worried about random noise, right, when you're trying to do -- I've got 100 people here. I want to know are these 100 people reflective of

Page 155

1,000 people. We have eight elections, or however many elections we have here. That's all we have. We're not trying to generalize to other elections. And so it's actual data. It can't be random noise.
Now, the causes -- we can talk about the causes. But the fact that African Americans states with (inaudible) candidates in District One received this percentage of the vote and white candidates received that percentage of vote is true. It's fact. There's nothing to infer.
Q. But you would agree that there would be some natural variation in results even if it's the same candidates running against each other?
A. Sure, but that doesn't change the fact that these are true figures. Sure, over time or over different elections vote totals vary. They go up, they go down. But from 2000 to 2020, the fact is that African American candidates who challenge incumbents do better than white candidates who challenge incumbents.
Q. We may be talking in circles here. I'm trying to understand here why you think this difference is of a sufficient magnitude to be notable when there's not a statistical test

Page 156

assigned to it.
A. But there can't be a statistical test assigned to it. So it's notable because it's, I guess -- you could say 4 percent is not notable. That's -- okay. We can quibble about that, that, that's fine. But you can't say that, like, this difference isn't real, because it is real.
Q. I guess my question is how do you determine whether or not that difference is real?
A. Because it's all the cases we have. So let me -- all right. So let me back up here. All right. So let's think about -- thought this was a nonteaching day.
So let's think about when we sample things. We use T tests and inferential statistics, right, when we're trying to take things from a sample to the broad population, which I've said. So I'm trying to understand -- I'm going to ask 100 people a question, you know, is the country on the right track or wrong track. And I'm going to get some data, and that data is going to be 56 percent say wrong track, 40 percent say right track, 4 percent say off track or whatever. Now, my question is, I know that's the rate among these 100 people, because I've asked

Page 157

them and I've calculated that. That's what I've got here, right, with these data. Now if I want to infer to a national sample or to the State of Mississippi or to something outside that, now I need to know how representative are these 100 people of that population. And if they're representative, then we can make an inference. If they're not representative, then we can't or we'll have a less precise inference. These election results are those 100 people. Like, we know the differences there. That 58 percent I get applies to those 100 people without question. It's a real number. It's a real difference.
So because we're dealing here with the population where I've done every election over this time period, there's no statistical test because this difference is an actual difference. You can say it's small, you can say it's not relevant, but you can't say it's not true. Does that make sense?
Q. And so -- I feel like part of what you're saying here is that you think this difference is predicative of future elections?
A. No.
Q. Are you saying that?

Page 158

A. No. What I'm saying is that exactly what I said, in the elections in these districts, African American candidates who challenge incumbents do four points better than white candidates who challenge incumbents. So if the argument is that incumbents have such a huge advantage, right, and we would agree there's an incumbency advantage, what ends up happening is actually a black candidate challenging an incumbent does better than a white candidate challenging an incumbent.

Which shows, one, that incumbency is powerful. But it also shows that, you know, race probably isn't as powerful.

Q. And so you're now relying on this difference to make a judgment about the likelihood of black candidates winning in District One in the future.

A. I didn't say that, no.

Q. And about sort of the size of the difference, are you saying that this difference is notable, of 4 percent?

A. Yes.

Q. How do you determine whether or not the difference is notable?

Page 159

A. It's 4 percent. Again, we can quibble. It's just the opinion. But you can say 4 percent, whatever, that's nothing. But you've going from 42 to 46, who cares. I would say, well, the standard for competitive elections in political science tends to be elections that are decided by 55 percent or less. And so what you're doing here is you're going from an election that's less competitive to election that's more competitive. When you have a more competitive election, that gives the challenger a better chance of winning than in a less competitive election. And if you look at over time when you see competitive elections, competitive elections beget other competitive elections. So if you have a history of competitive elections in a district, you're more likely to see competitive elections in the future, right? Because it signals other candidates that there's actually a shot of taking this person. We might be able to win. You don't get that, right, when you always are in the area where you're not getting competitive elections where the challenge of the incumbents is getting their butt kicked.

Q. In your report you did not compare that

Page 160

4 percent difference to variations or differences in other elections to assessment magnitude?

A. No.

Q. Okay. I think in the paragraph after that, paragraph 32, you say that you compared the vote share, I think, of similarly situated African American candidates to white candidates.

A. That's just a summary of paragraph 31.

Q. Okay. How did you determine that the African American candidates were similarly situated?

A. They were all challenging incumbents.

Q. But you did not control for other differences in their elections?

A. No, they were all challenging incumbents.

Q. So by similarly situated -- I just want to confirm, similarly situated just means the fact that they were challenging the incumbent?

A. Correct.

Q. I'd like to turn to paragraph 50 of the January report. You note that Banks and Westbrooks lost even though Obama and Espy won the majority of the vote in District One. Do you see that?

Page 161

A. I do.

Q. Would you agree that in general for purposes of measuring racially polarized voting, it's more useful to look at election data pertaining to the actual office being challenged?

A. State that again.

Q. In general, would you agree with the view that for purposes of measuring racially polarized voting, election data from the actual office being challenged is more useful than election data from other races?

A. Paragraph 50 doesn't talk about racially polarized voting. It talks about just election results and how people perform. So I don't have an opinion on racially polarized voting and the offices looked at.

Q. Would you agree that in terms of elections for different offices there may be different political dynamics that affect voter behavior?

A. Yes.

Q. And so Obama was running nationally and statewide in Mississippi?

A. Correct.

Q. And Espy was running statewide?

Page 162

A. Correct. But you know there's a great literature about coattails and about how the top of the ticket can influence down ballot races. Particularly, presidential coattails. And so the fact that in District One that President Obama won 53.9 percent of the vote, you would have expected, right, that he would have helped down ballot tickets. The same thing with Mike Espy.

So there are different dynamics in those races, but you have a lot of people who come in and -- you know, a rising tide lifts all boats.

Q. You also testified earlier that because the Supreme Court races are nonpartisan, there is a ballot dropoff effect?

A. There is.

MR. WALLACE: Object to the form as mischaracterizing. I don't think he said that before, but I may be wrong.

THE WITNESS: Well, there is ballot roll-off. There is ballot roll-off. And you do have more ballot roll-off in nonpartisan elections compared to partisan elections. But what the -- the effect of that, right, I think I would quibble with because you don't necessarily know, like, is it 20 percent of one party or certain demographics

Page 163

or not. That we don't know.

Q. (By Mr. Cheung) And you would agree that Obama, Espy, Banks, Westbrooks, they're all different candidates in terms of name recognition?

A. Yes.

Q. They likely differ in terms of fundraising capacity as well?

A. Yes.

Q. They also differ in terms of incumbency advantage?

A. Obama in '12 was an incumbent, Banks was an incumbent -- no, that was a different Banks.

MR. WALLACE: Different Banks.

THE WITNESS: Different Banks, okay. Espy was not an incumbent and neither was Westbrooks. So the only incumbent was Obama.

Q. (By Mr. Cheung) So going back to how we defined the third Gingles precondition about white block voting overcoming black block voting. Is it your conclusion that Gingles three is not satisfied in this case in part because black incumbents like Justice Graves and Justice King have won in District One?

MR. WALLACE: I'm going to object to the form of that because it does ask for a legal

Page 164

conclusion about the Gingles case. He may answer if he understands it.

THE WITNESS: Well, I say in paragraph 53, the evidence does not support the third precondition that the majority group does not vote as a block such that likely -- such that will usually defeat the minority group's preferred candidate. In fact the mixed success of African American candidates in District One elections strongly suggest that voters, both white and black, are making decisions based on suitability of the candidates themselves.

Q. (By Mr. Cheung) And I'm saying underlying that conclusion in paragraph 53, are you relying on the fact that Justice King was not challenged in his reelections and the fact that Justice Graves won his reelection?

A. I rely on the fact that African American candidates in District One elections for the State Supreme Court win and sometimes aren't even challenged.

Q. And so your view is that in evaluating Gingles three, we have to take into account the fact that Justice King was not challenged in his two reelections?

Page 165

MR. WALLACE: Again, that's a legal question -- a legal opinion. I may object to the form. He may answer.

THE WITNESS: I would say that when you have a competitive legal environment and you have justices challenged all the time, except for one justice, that suggests that that justice is doing something right. And I'm not aware of a story that one can tell that you'd have a political party or candidate say oh, you know, I'd love to have that seat, but I'm not going to do it because it would look bad. That's just not how politics works in the way that I'm familiar with. And so the fact that, yeah, he's not even challenged and that he's winning is, I think, really important. Because he might -- you know, District One, right, Justice Kitchens is a Democrat, too. So Justice King if he were challenged would likely win. No one is even bothering.

Q. (By Mr. Cheung) Do you agree that Justice Graves won in part because he was an incumbent at the time?

A. Well, if you look at Appendix A, then yeah, we only have one incumbent who lost. So looking at those elections, I would say that him

being an incumbent was certainly helpful.
Q. And so would it change your conclusion if I told you that in the Gingles case the Supreme Court ruled that we should disregard special circumstances such as victories by black candidates when they run unopposed or when they have an incumbency advantage?
MR. WALLACE: Object to the form, since you're asking him about a Supreme Court opinion, but he may respond.
THE WITNESS: Would it change my conclusion? No. I would say that that -- I mean, that may be their conclusion, but as a matter of, like, social science or whatever, that's nonvalid.
Q. (By Mr. Cheung) Okay.
A. I mean at that point we're eliminating useful information.
Q. But in paragraph 53 where you cite the third precondition of Gingles, are you purporting to faithfully apply the Gingles factor?
A. I'm purporting to say that based on the data, African American candidates in District One elections win. That's what I'm saying.
Q. You don't have an opinion on whether or not your data disproves the existence of the third

Gingles precondition?
A. I do not.
Q. Okay. All right. I'm done with my questions for now.
(Off the record.)
MR. WALLACE: We're back on the record. What worried us is tendering the witness "for now." I have a very few questions about questions that you asked earlier. And if any of these questions cause you to come back with anything about these questions, I think you've got a right to do it. But I don't think you've got a right to come back and ask anything else. And if you were intending to suggest you may have other questions later, then I would ask you to go ahead and ask them now. I've got two or three questions about what he's already said and then we're done.
MR. CHEUNG: Okay. Appreciate that, Mike.
MS. JONES: I think we're done.
MR. WALLACE: You're done as far as --
MR. CHEUNG: Yes.
MR. WALLACE: If any of this sets you off, you have a right to --
EXAMINATION BY MR. WALLACE:

Q. Dr. Bonneau, you were asked a few questions some time ago about House Bill 1020 because you talked to Yahoo News. Do you have any personal knowledge regarding the enactment of House Bill 1020?
A. I do not.
Q. Have you undertaken any study or analysis regarding the enactment of House Bill 1020?
A. I have not.
Q. And are you here today to offer any expert opinions regarding the enactment of House Bill 1020?
A. Not that I'm aware of.
MR. WALLACE: We've got nothing further.
(Time Noted: 12:39 p.m.)
SIGNATURE/NOT WAIVED
ORIGINAL: MR. CHEUNG, ESQ.
COPY: MR. WALLACE, ESQ.

CERTIFICATE OF DEPONENT
DEPONENT: CHRISTOPHER BONNEAU
DATE: September 29, 2023
CASE STYLE: DYAMONE WHITE, ET AL. vs. STATE BOARD OF ELECTION COMMISSIONERS, ET AL.
ORIGINAL TO: MR. CHEUNG, ESQ.

I, the above-named deponent in the deposition taken in the herein styled and numbered cause, certify that I have examined the deposition taken on the date above as to the correctness thereof, and that after reading said pages, I find them to contain a full and true transcript of the testimony as given by me.

Subject to those corrections listed below, if any, I find the transcript to be the correct testimony I gave at the aforestated time and place.

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This the ____ day of _____, 2023.

_____
CHRISTOPHER BONNEAU

State of Mississippi
County of _____

Subscribed and sworn to before me, this the _____ day of _____, 2023.
My Commission Expires:

_____ _____
Notary Public

CERTIFICATE OF COURT REPORTER

I, Robin G. Burwell, Court Reporter and Notary Public, in and for the State of Mississippi, hereby certify that the foregoing contains a true and correct transcript of the testimony of CHRISTOPHER BONNEAU, as taken by me in the aforementioned matter at the time and place heretofore stated, as taken by stenotype and later reduced to typewritten form under my supervision by means of computer-aided transcription.

I further certify that under the authority vested in me by the State of Mississippi that the witness was placed under oath by me to truthfully answer all questions in the matter.

I further certify that, to the best of my knowledge, I am not in the employ of or related to any party in this matter and have no interest, monetary or otherwise, in the final outcome of this matter.

Witness my signature and seal this the 11th day of October, 2023.

ROBIN G. BURWELL, #1651
CRR, RPR, CCR
My Commission Expires:
April 6, 2025

Dyamone White, et al. v. State Board of Election Commissioners, et al.

Christopher Bonneau

September 29, 2023

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IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, ET AL.

PLAINTIFFS

V. NO. 4:22-CV-00062-SA-JMV

STATE BOARD OF ELECTION
COMMISSIONERS, ET AL.

DEFENDANTS

DEPOSITION OF CHRISTOPHER BONNEAU

Taken at the instance of the Plaintiffs at Wise, Carter, Child & Caraway, 401 E Capitol, Suite 600 Jackson, Mississippi 39201-2688, on Friday, September 29, 2023, beginning at 9:00 a.m.

REPORTED BY:

ROBIN G. BURWELL, CCR #1651

APPEARANCES:

MING CHEUNG, ESQ.
ARI J. SAVITZKY, ESQ.
Destiny Ruiz
American Civil Liberties Union of Mississippi Foundation
125 Broad Street, 18th Floor
New York, New York 1004
mcheung@aclu.org

JOSHUA TOM, ESQ.
American Civil Liberties Union of Mississippi Foundation
101 South Congress Street
Jackson, Mississippi 39201
jtom@aclu-ms.org

LESLIE FAITH JONES, ESQ.
Southern Poverty Law Center
111 East Capitol Street, Suite 280
Jackson, Mississippi 39201
leslie.jones@splcenter.org

AHMED SOUSSI, ESQ.
Southern Poverty Law Center
150 E Ponce de Leon Avenue, Suite 340
Decatur, Georgia 30030
ahmed.soussi@splcenter.org

COUNSEL FOR PLAINTIFFS

MICHAEL B. WALLACE, ESQ.
Wise Carter
401 East Capitol Street, Suite 600
Jackson, Mississippi 39201
mbw@wisecarter.com

CONT'D

REX M. SHANNON, III, ESQ.
GERALD KUCIA, ESQ.
Special Assistant Attorney General
Post Office Box 220
Jackson, Mississippi 39205
rex.shannon@ago.ms.gov

COUNSEL FOR DEFENDANTS

INDEX

EXAMINATIONS

EXHIBITS

CHRISTOPHER BONNEAU,
having been first duly sworn, was examined and testified as follows:
EXAMINATION BY MR. CHEUNG:

Q. Good morning, Dr. Bonneau, my name is Ming Cheung. I'm an attorney with the ACLU. I'm here on behalf of the plaintiffs. I'll let my colleagues also identify themselves.

MS. JONES: Leslie Faith Jones with Southern Poverty Law Center, also for the plaintiffs.

MR. TOM: Hi, my name is Joshua Tom and I'm with ACLU Mississippi for the plaintiffs.

MR. CHEUNG: Anyone else for the plaintiffs on the Zoom?

MR. SAVITZKY: Yes, this is Ari Savitzky. I'm another attorney for the plaintiffs for ACLU. Good morning.

MS. RUIZ: Hi, good morning. My name is Destiny and I'm paralegal at the ACLU.

MR. WALLACE: As long as we're introducing ourselves. I'm Mike Wallace for the defense. Welcome to Wise Carter.

MR. SHANNON: Good morning, I'm Rex Shannon with Mississippi Attorney General's Office

Page 6

here for the defendants.
MR. KUCIA: Gerald Kucia with the Mississippi Attorney General's Office for the defendants.
Q. (By Mr. Cheung) So, Dr. Bonneau, I believe you've been deposed before, but just in case I'd like to spend a minute going over some ground rules. Your attorney might object to some of the questions I ask, but in general unless he instructs you not to answer on the basis of privilege you still have to answer even if there is an objection. Do you understand that?
A. I do.
Q. Thank you. Do you understand that your answers today are under oath?
A. I do.
Q. And that means you must tell the truth just as if you were testifying in court?
A. Yes.
Q. Is there any reason you cannot provide complete and accurate testimony today?
A. Not that I'm aware of.
Q. And because the court reporter can only take down verbal responses, do you understand that you have to answer verbally instead of nodding or

Page 7

shaking your head?
A. I do.
Q. Thank you. And I'm going to try not to interrupt you today during your answers, you know, so that we have a clean transcript. I would also appreciate you if you wait until I ask a -- finish asking a question before providing your response.
A. Sounds good.
Q. Thank you. And if you don't understand a question, please let me know and I can try to ask a better question.
A. Okay.
Q. All my questions are great from the beginning.
If you need to take a break, please feel to ask. I would just ask you to finish answering the question pending before you -- before we take a break, if that's okay.
A. Sure.
Q. I'd also ask you not to discuss your testimony with your attorneys during breaks unless it's about the scope of privilege in your responses. Is that okay?
A. Sure.
Q. Any questions before we begin?

Page 8

A. No.
MR. CHEUNG: I think someone might have jumped into the Zoom just now.
MR. SOUSSI: Hi, this is Ahmed Soussi with SPLC.
Q. (By Mr. Cheung) Dr. Bonneau, I just have a few questions about sort of your preparation for the deposition today. How did you prepare for this deposition?
A. I read over my reports. I met with the lawyers for the state and I read over the reports, particularly, the report by Dr. Orey.
Q. And how much time would you say you spent preparing for this deposition?
A. So depends what you mean by preparing. I would say that I've spent probably three hours preparing, just reading over reports and talking and meetings and so on. If you consider everything before this in the last two days, I mean, it's obviously more. But that's a good ballpark.
Q. What else did you spend time on?
A. Well, as I was preparing my rebuttal report, as well as my original report, I spent a lot of time. So if that counts as preparation for

Page 9

the deposition. But in terms of since the report has been filed to today, I would estimate about three hours.
Q. Okay. Other than your reports and Dr. Orey's report, did you review any other documents to prepare for the deposition?
A. Not that I -- no, not since I filed my rebuttal report.
Q. Okay. Did you jot down any notes while preparing for the deposition?
A. No.
Q. Apart from this case, how many times have you been retained as an expert in a case?
A. I have been retained twice besides this case.
Q. Which cases are those?
A. One was the NAACP versus Alabama case. And the other one is a pending case in Colorado, Lopez versus The State of Colorado, I believe is the title of that case.
Q. Lopez versus Griswold, does that sound right?
A. Yeah, that's it.
Q. So let's go through each one of those. In the Alabama case, do you recall what opinions

Page 10

you offered?
A. I do.
Q. What did you conclude in that case?
A. I concluded that in the Alabama State Supreme Court elections there was not a violation of the Voting Right Act, that, in fact, African American candidates performed better -- particularly African American Democratic candidates performed better than white Democratic candidates. Unfortunately there were no African American Republican candidates in there so we couldn't do that comparison. And so my conclusion was it was party more so than race.
Q. Were you deposed in that case?
A. I was.
Q. Did you testify in court?
A. I did.
Q. And were you qualified as an expert on racially polarized voting?
A. I was.
Q. And specifically, were you qualified to testify about whether racially polarized voting, or RPV, whether it exists or what the causes were?
A. So I did not conduct any independent analysis of racially polarized voting. I

Page 11

stipulated that the analysis that the plaintiffs have done was correct. And the question was what were the reasons why behind the patterns they observed.
Q. And I know it's been -- it may have been a couple of years since that case, but I pulled up the Court's order related to your report. I'm going to read you a sentence from that order and you can let me know if it sounds about right. The Court in the order wrote: Dr. Bonneau was opining that party not race leads to a defeat of African American candidates. He's not opining that African American voters do or do not vote cohesively.
Does that sound like an accurate summary of your report?
A. It does.
Q. Does that accurately describe your work in this case?
A. Can you read it again?
Q. Dr. Bonneau is opining a party not race leads to defeat of African American candidates. He is not opining that African American voters do or do not vote cohesively.
A. Yes, I mean the difference -- yes,

Page 12

that's a good summary. I mean, there were some differences between this case and the Alabama case, but yes.
Q. And let's talk about the Colorado case. What was that case about?
A. So in that case political candidates are suing the State of Colorado over their campaign finance restrictions, specifically the amount of money that individuals can donate to political campaigns.
Q. And what opinions did you offer in that case?
A. I offered that the -- so my analysis showed that Colorado has one of the lowest campaign finance limits in the country, and that these limits impede the ability of challengers to successfully compete against incumbents.
Q. Were you deposed in that case?
A. Yes.
Q. Did you testify in court?
A. It's pending. I'm supposed to, yes.
Q. Okay.
A. The case has not gone to trial yet.
Q. But that case did not involve racially polarized voting?

Page 13

A. It did not.
Q. Thank you.
Have you ever performed a racially polarized voting analysis yourself?
A. No.
Q. Just to drill down on that, have you ever conducted a homogenous precinct analysis?
A. Not independently, no.
Q. What about an ecological regression analysis?
A. Not in the context of voting rights cases, no.
Q. And ecological inference?
A. So I mean, not in any published articles. So we're going back now to when I was in graduate school 25 years ago. I have recollections of performing that as part of like a class assignment in a methods class -- a political research methods class, but nothing that I've ever done my own research on or anything else.
Q. So no publications on any of the three methods that we just discussed?
A. Correct.
Q. And not as part of any expert work you've done on a case?

Page 14

A. Correct.
Q. And not part of any coursework that you've taught?
A. That I've taught? I've taught the theoretical concept of -- so the ecological fallacies of pretty standard topic in political methodology courses, so I teach graduate students methods courses or philosophy of science courses. We do talk about that theoretically. But I've not taught the mechanics behind it, no.
Q. Got it. So let's turn to the reports in this case. Did you prepare two reports?
A. I did.
Q. The first one was from January 2nd of this year?
A. That sounds correct.
Q. And then the most recent one a surrebuttal report from September 12th of this year?
A. That sounds correct.
Q. I'm going to give you a copy of that report just so you have it in front of you.
A. Great.
Q. I'm not trying to quiz you on anything in it.

Page 15

A. That's fine.
(Exhibit 1 marked for identification.)
Q. (By Mr. Cheung) That's now been marked as Exhibit 1. Dr. Bonneau, can you look at it and confirm if that's your January report?
A. It appears to be the case.
Q. Thank you. Also handing your surrebuttal report to Ms. Burwell for marking.
(Exhibit 2 marked for identification.)
Q. (By Mr. Cheung) Dr. Bonneau, does that look like your September report, Plaintiff's Exhibit 2?
A. It does.
Q. Do those reports accurately reflect your opinions in this case?
A. They do.
Q. Do those reports omit any analysis that you've conducted for this case?
A. They do not.
Q. Are there any corrections you're aware of that you would like to make to the report?
A. Not at this time.
Q. Are there any updates to your CV since January 2023?
A. There are.

Page 16

Q. Would you mind giving us some highlights of the updates?
A. I am now chair of the Spanish and Portuguese department.
Q. Oh, how did that come about?
A. How much time do we have? So the department was placed into receivership by the Dean, meaning they were no longer able to govern themselves due to a variety of longstanding policy violations and disputes. And so the Dean tasked me with going in for a couple of years to run the Spanish and Portuguese department.
Q. Any other updates?
A. I've got an article forthcoming about teaching in prison and prison education that's coming in an edited book. But I think those are the only things that have really changed since January.
Q. Okay. So no updates related to judicial elections?
A. No, I've been busy with Spanish and Portuguese.
Q. And, Dr. Bonneau, are you familiar with the Gingles preconditions in voting rights cases?
A. I am.

Page 17

Q. What is your understanding of the Gingles factors?
A. So my understanding is there are three factors that are required. One has to do with racially polarized voting, such that African Americans are not able to elect candidates of their choice -- or generally able to elect candidates of their choice.
There's a factor about the totality of circumstances that even if you establish racially polarized voting, that doesn't necessarily mean that there's a violation of the Voting Rights Act. In fact, this has to lead to certain kinds of outcomes.
And there's another factor that I -- escapes me at this moment.
Q. You're not a lawyer?
A. No, I am not.
Q. So not expecting a perfect recall of the language from Gingles. But if I could read to you some of the language from Gingles and you tell me if that's consistent with your understanding.
A. That would be great.
Q. So Gingles one, the first factor, the Court said: First, the minority group must be

Page 18

able to demonstrate that it is sufficiently large and geographically compact to constitute a majority in a single-member district.
Does that sound right?
A. That does sound right.
Q. Gingles two, second: The minority group mush be able to show that it is politically cohesive.
Does that sound right?
A. Yes.
Q. And third: The minority must be able to demonstrate that the white majority of votes sufficiently as a block to enable it usually to defeat the minority's preferred candidate.
Does that sound right?
A. Correct.
Q. And in your view, does "usually" in the third condition mean most of the time?
A. Well, I mean I wouldn't a percentage on it. I mean, you know, I think usually means usually. So if I say I usually do something, it means more often than not. I don't know if it necessarily has to be -- if there's a certain percentage threshold. But, yeah, more often than not.

Page 19

Q. Were you asked to assess any particular one of the Gingles factors for your report?
A. No.
Q. In paragraph 53 of your January report you say, quote: This does not support the third precondition of Thornburg versus Gingles(1986).
Is that right?
A. It does.
MR. WALLACE: Which page is that?
THE WITNESS: 15.
Q. (By Mr. Cheung) Is it fair to say that your reports do not dispute the existence of Gingles' precondition one in this case?
A. Correct.
Q. And is it also fair to say that you do not dispute the existence of Gingles two precondition in this case?
A. Remind me of what precondition two was.
Q. The minority group must be able to show that it is politically cohesive.
A. That's correct.
Q. And what is your understanding of racially polarized voting?
A. That voting is determined -- voting breaks down on racial lines to a significantly

Page 20

high degree, such that in this case, that black voters would not be able to elect their preferred candidate because of the presence of white voters.
Q. Is that the definition that you use in your reports for this case?
A. I don't think I give a definition in the reports for this case.
Q. Is that definition the one that you're operating under as you're analyzing the facts of this case?
A. Well, in my report I don't really talk much about the determinants of racially polarized voting. I take Orey's analysis as factual. What I do in this report is argue that even if it's present, it does not lead to black preferred candidates usually losing their elections.
Q. Got it. Thank you.
What do you think is the purpose of assessing racially polarized voting in districting cases?
MR. WALLACE: If that's asking for a legal opinion, I object to the form, but he may respond as best he can.
THE WITNESS: What do you mean, what is the purpose?

Page 21

Q. (By Mr. Cheung) Why do you think racially polarized voting is relevant in voting rights cases?
MR. WALLACE: That is a legal opinion. I object to the form, and he can answer.
THE WITNESS: Why is it relevant as a practical matter or as a --
Q. (By Mr. Cheung) A practical matter, yeah.
A. So why is racially polarized voting -- well, so if you believe that individuals should have -- that elections should allow for a fair contest, the individuals have different beliefs that if you have racially polarized voting it could be a way, right, for disenfranchisement to occur among a minority group.
Q. Thank you.
I just have a few questions about the sources that you use in your report. Your January report has an Appendix A of election results; is that right? That's on page 44.
A. I'm not seeing the Appendix A. On my January report?
Q. Yes.
MR. WALLACE: Page 19.

Page 22

THE WITNESS: Yes, it does.
Q. (By Mr. Cheung) And what sources did you use to collect the data that you used for Appendix A?
A. That's just public data from the Mississippi Secretary of State's website.
Q. Nothing else?
A. Well, to determine, you know, which candidates were African American, you know, I Googled and looked at, you know, news stories and other things about that.
Q. And in your academic work, do you maintain any kind of database pertaining to state court elections that you may have relied on for reports here?
A. I do maintain that database and it's -- so I do have, like, a document with every State Supreme Court election over the past 30 years. So it's possible that I use that to identify, like, what years to look at, because elections don't occur every year in Mississippi. So that's certainly possible.
Q. So I think in paragraph 6 of your January report you reference a dataset, is that dataset the one that you maintain in your academic

Page 23

work?
A. Yes.
Q. And what kinds of information is in that dataset?
A. Well, that dataset has a bunch of stuff. So, it has characteristics about the candidates. So race, gender, incumbency, non-incumbency, whether or not the candidate was originally appointed to the bench versus originally elected to the bench. It has results from primaries, has results from general elections. It has campaign spending where available, the amount of money spent and raised by individuals. It has the partisanship. So was the race was a partisan, nonpartisan race; was it a district race versus state wide race. So it basically has -- so if you look at any of my previous articles, any of those variables that are in those articles are in that dataset.
Q. Yeah, I did try to make it through your articles but you have quite a few of them.
A. Thank you.
Q. What time period does your dataset cover?
A. So most of it is from '90 to about 2016.

Page 24

So I have complete data from '90 to 2016. I have partial data before 1990, but a lot of stuff is missing from it because it was so long ago. And around 2016 I started doing some administrative work. And the nature of my career has shifted, and so I haven't been as diligent on updating it since then. But I did update it for this case. So the elections post 2016 here and 2020, I went and collected that information, you know, for the purposes of this case.
Q. Got it. So it would have a complete set of Mississippi Supreme Court elections starting from 1990?
A. Yes.
Q. What sources do you use for that dataset?
A. So, variety of sources. Obviously the best source is the Secretary of State's website because it's official returns. I use newspaper articles about -- so if I can't tell if a candidate, you know, what race or gender is, newspaper articles often do that. Sometimes you can go to Judge PDO which is a website that has a bunch of facts about judges. So a variety of public information sources. Because all this data

Page 25

is public data.
Q. Is the dataset itself public?
A. Parts of it are. I mean, certainly I can make it so. I mean, I've -- so if you go to my data verse page, I've released datasets for all of the articles I have published, which includes both the dataset and the code book and the instructions for running, rerunning analysis for replication purposes. But I've never done anything with, like, the full data, so the whole thing is not --
Q. Would you be able to provide that dataset to us?
A. Of course.
Q. Thank you.
A. Do you want just for the Mississippi part or do you want -- you'd have to be clear about what you wanted. I can easily do that.
Q. Just the Mississippi part will be fine. Thank you. I think you nodded. Is that okay?
A. Yes, that is fine. Sorry.
Q. Have you received any facts or sources from your attorneys in this case?
A. Yes, I've been directed occasionally,

Page 26

you know, because I'm not an expert in Mississippi, generally, of something -- sometimes some leads to pursue that would not have been apparent to somebody from the outside.

Q. Have you been asked to assume any fact to be true in the preparation of your reports?

A. I have not.

Q. In paragraph 1 of your January report, you mention having used voter registration data. Do you see that?

A. In paragraph 1. So meaning the first paragraph on Page 1.

Q. Yes.

A. I was retained -- based on Mississippi state voter registration and election data. Yes.

Q. Did you receive that voter registration data from the Secretary of State's website or some other source?

A. I don't recall, but I'm pretty sure it was the Secretary of State's website. That would be usually where I would go.

Q. Do you recall what you used the registration data for?

A. Well, I don't know if I -- no, I don't. But if I read my report again, I probably could

Page 27

find out if I used it at all or what I used it for. But off the top, no. I probably used it for -- I don't know what I would have used it for.

I would have used it -- I would have used voter data to calculate roll-off. Right? Sometimes the people who voted versus those who voted for State Supreme Court so when we look at rates. But I don't recall using the voter registration data. But I'm happy to be corrected on that.

Q. I didn't see anything in your report, which is why I'm asking about it. Because you cite the data, but I don't see any actual analysis of voter registration in your reports. Does that sound right to you?

A. It does, makes me gratified I'm not missing something.

Q. So as best as you recall you did not performing any analysis of voter registration rates?

A. That's a fair statement.

Q. I have a few questions about statistical methods, generally. In your academic work, do you evaluate statistical analyses performed by other scholars?

Page 28

A. That's a hard question to answer. Do I evaluate? So, yes, in a sense. So when I'm asked to review journal articles, my part of the job of me as a peer reviewer is to evaluate, you know, do the scholars or does the article, the submission, is it reliable, does it answer the question.

When I was editor of a journal for six years part of the decisions that we made, you know, whether or not we would accept an article for publication or not was the quality of the empirical analysis, was the research design done properly, were the methods used to analyze and arrive at the conclusions the proper ones. And so in that sense, yes.

Q. And so when you review articles for the reliability of the empirical analyses, what are the indicators that you tend to look at?

A. So there are a couple of things. The first question is, is the design suitable to answer the question. That is, so if you want to answer a question about -- I'll give you an example -- of voters' perceptions on the economy on the likelihood of voting for the president. You've got to make sure that the data being used in the way this study is designed actually allows

Page 29

you to answer that question.

The second thing is given the distribution and nature of the data, are the techniques used appropriate. So if you have a dichotomous dependent variable, a variable where it's between zero and one, and you're using regression, that's not appropriate. That won't give you bias results. You have to use a different technique. So those kind of things.

I don't go in, though, and like look at the dataset and make sure -- that's not part of the peer review thing. But it's basically, is the design suitable to answer the question and then do the results -- do the methods used to analyze the data, are they appropriate given how the data is distributed and the nature of the data.

Q. And so do you look at things like whether the sample is representative?

A. Sure.

Q. What about sample size?

A. Sure.

Q. How do you determine what the requisite sample size is for reliability?

A. Yeah, so that's -- I mean, that's a good question. I'm happy to talk about it. So it

Page 30

depends on the population, right, that you're trying to make inferences about. And so generally speaking for a nationwide survey or whatever, you're looking at sample size of, like, 1500 or so. It usually gives you pretty good results, within plus or minus 3 percent margin of error, assuming it's done randomly, a randomized sample. But you can't always get a randomized sample. What that means is, if you can't get a randomized sample, you have to be very careful about the inferences you're making from that sample. It doesn't mean it's useless but it does mean that your inferences are necessarily going to be more imprecise.

So, you know, sample size is always -- obviously more is always better to a certain point, then you get diminishable marginal returns. But those are the kind of the general things. I would not reject something because -- on the basis of the fact that they only have a sample size of, say, 500 people. It just means their estimates are going to be less precise, which means you're going to be less likely to find statistical significance because your standard hours are going to be larger. But you still actually can gain

Page 31

some good knowledge there and you still can, you know, learn something.

Q. And do you have a specific view on what a sample size should be when evaluating Mississippi elections?

A. No. I mean, Mississippi is hard because you only have elections every eight years, for example, for State Supreme Court and there are only, like, nine seats. So when you're looking at eight years, basically every judge is up once a decade. And so you're always going to have a small sample size when you look within the state. The same is true for any statewide office in any state, actually.

I mean, if you look at state legislative elections, okay, those are every couple of years. Right? You'll get good samples. You've got to work with the data that you've got. You can't just make up elections that don't exist.

Q. And I think you mentioned earlier you would look at error size?

A. Sure.

Q. Competence intervals?

A. Sure.

Q. Statistical significance?

Page 32

A. Yeah.

Q. What methods would you use to establish causation?

A. So, there's another one. Causation is really, really hard in social sciences. Because isolating an independent fact requires manipulation of an independent variable that you can't always manipulate. So if I wanted to establish a causation between, say, gender and vote choice, I need to do that experimentally and -- so the gold standard would be to do it experimentally. But you can't randomly assign somebody gender. And so if you can't have random assignment, then you can't do a real experiment. So you can try and get at it -- there are some statistical techniques to try and get at. You know, isolating causal factors through certain designs. I tend to be skeptical of those, I think. And I don't think it's always necessary to show causality. I think when we can get causality it's great, but a lot of times causality is allusive because there are multiple causes to things.

And I could show you, maybe, that gender causes vote choice, but I can't tell you how that

Page 33

is relative to other causes. Because no one will argue that it's the only cause. And so experiments will allow us to isolate a cause, but not necessarily assess the relative importance of that cause relative to other things. That requires more observational data.

And so saying all this to say that establishing causality when possible is allottable, it's not always possible. And just because we can't establish it doesn't mean that we can't advance knowledge.

Q. So in that example you just gave, how would you demonstrate that gender is one of the factors causing voter choice?

A. Well, see, I mean, it depends on what you mean by cause. There's this big debate as to whether or not you can actually use the word cause outside of an experiment, within the discipline. So you have what I would call the causal inference mafia who argue that if you don't have an experiment, you can't say anything about causation. You can have that position. It's not a majority position. It's an extreme position, but it's intellectually defensible. Or you can use observational data and try and isolate the

Page 34

effects of other factors and talk about genders' relative contribution to the vote choice. Now, does that mean it causes it, no, but, you know, if you control enough of the factors you can get to a point where -- you can establish a relationship, and then you can be pretty sure that there's something, you know, going on there. And so I think that sometimes is the best we can do. If that makes sense.

Q. Yes, thank you.

I have a few questions about incumbency.

A. Sure.

Q. In your academic work, I think you've studied the effect of incumbency on judicial elections and election outcomes?

A. Correct.

Q. What advantages are generally associated with incumbency?

A. In judicial elections specifically or in elections generally?

Q. Let's talk generally and then judicial.

A. So generally incumbents have an advantage for several reasons. One is they have an established fundraising network. One is they have increased name recognition. One is they can

Page 35

call a press conference or send mail, write to their constituents to get their names out there about policy positions they're doing or they can position take. They have all kinds of perks like that about --

And so for the incumbents there tends to be -- you know, it's one of those paradoxes, right, that everybody hates Congress but everyone loves their congressperson. You see a congressional reelection rate of 95 percent and Congress's approval rating is, what, 19 or 18, and honestly, that seems a bit high to me.

Now, in the State Supreme Court case the incumbency advantage can improve a couple of different ways. One is, again, you have an established network, you've run statewide before, presumably, or district-wide before. And because of that you've got name recognition and you've run a campaign. So you already have some donors lined up, you already are able to tap into those funds. While you can't, you know, call press conferences and talk about how you'll decide on a case, you can get your name out there by certain positions you take. For example, if you write a themed decent in a case or something like that or

Page 36

majority opinion or you get overruled by the US Supreme Court, other things that will get the public's attention. And in some states they'll actually put whether you're an incumbent on the ballot. And so when voters go into the ballot booth it will say your name, and the next one will be, like, incumbent or current judge. In other states they don't. So that could potentially signal to individuals, you know, which one is the incumbent and give them an advantage.

Q. Is there an advantage to being able to rely on prior experience on the job?

A. Yes, so -- but that's not unique to incumbents, right? So in one of my articles we showed that voter -- so if you're a lower court judge running for the State Supreme Court, you have an advantage over a candidate who has never been a judge. And so there's no necessarily increase by the fact that it's an incumbent, but rather you'll do better with any kind of prior judicial experience.

Q. Is there some kind of inherent appeal to being an incumbent?

A. What do you mean by "inherent appeal"?

Q. Some comfort that voters might have that

Page 37

they're already doing the job, for example?

A. Sure.

MR. WALLACE: You mean lawyers might have or voters might have?

MR. CHEUNG: Voters.

MR. WALLACE: I thought you said lawyers. Did I hear it wrong? I'm sorry.

THE WITNESS: Yes, assuming the voters approve of the incumbent.

Q. (By Mr. Cheung) So I know we were talking about, first, incumbency generally and then judicial candidates. What about Mississippi Supreme Court candidates. What advantages do you see in being an incumbent on the Mississippi Supreme Court?

A. I don't see any differences on the Mississippi Supreme Court compared to other courts. I have no reason to think that incumbency functions different here than it does otherwise.

Q. And generally it seems you're saying incumbents are more likely to prevail compared to challengers?

A. Correct, that's a fact.

Q. Have you done any empirical analysis to determine the likelihood of judicial incumbents to

Page 38

get reelected?
A. I have.
Q. How strong is incumbency in judicial elections?
A. So I think the last time I looked at that was probably 15 years ago. So 15 years ago-ish, if my memory is correct, the incumbent -- about 85 percent of State Supreme Court incumbents won reelection compared to 80 percent of governors, 87 percent of US senators, and like 94 percent of US House of Representatives. I'm pretty sure those are the numbers. It's in my 2005 article in American Politics Research. Since then, just, you know, eyeballing the data, those trends seem to be the same in State Supreme Court races that incumbents overwhelmingly win.
Q. That 2005 article, is that entitled Electoral Verdicts Incumbent Defeats at State Supreme Court Elections?
A. That's the one.
Q. I think I pulled a sentence from there where you say: Incumbents in partisan district state election have 55.6 chance of defeat compared to 7.2 percent chance in a nonpartisan district state.

Page 39

Does that sound right?
A. That does. What I would caution you there is those aren't artifact or virtue elections. So who are the states that are partisan district states? Louisiana and Illinois, that's it. And in nonpartisan district states you've got Kentucky and Mississippi. So you don't have a lot of states, right? So those numbers -- it's a one defeat where I can throw out the predictive probabilities significantly, right, when you have a small number of cases.
Q. And so you're saying that the sample of nonpartisan district states consists only of Kentucky and Mississippi; is that right?
A. Of contested -- let me make sure. Because Louisiana is partisan. Who else -- those are the only ones that have districts. That is correct.
Q. Based on the data that you do have, you would say that Mississippi judicial incumbents almost never lose?
A. That's right. I think if you look over the past 20 years there are two that have lost to the Mississippi Supreme Court.
Q. If that's your recollection.

Page 40

A. Yeah, I think there were two. I think there was a chief justice in 2008 and -- well, I can tell you from Table 1. So since 2000 the only loser, right, was Smith in 2008 in this district here.
Q. Thank you.
We've touched on this before, but, you know, based on the prior academic work you've done, do you believe that Mississippi system for electing Supreme Court Justice creates an incumbency advantage?
A. Do I believe that creates incumbency? No, I believe there is an incumbency advantage in these elections just like any other elections.
Q. Do you think that incumbency is a strong advantage for candidates running for Mississippi Supreme Court?
A. Yes.
Q. In the history of Mississippi, do you know if any black candidate has been able to get elected to the Mississippi Supreme Court without an incumbency advantage?
A. Without an incumbency advantage, I do not know the answer to that question.
Q. But you're not aware of any black

Page 41

candidate who has been able to win without being an incumbent?
A. Again, I don't have any recollection. So if you tell me yes, then I would believe you. If you tell me no, I would believe you. I don't know.
Q. Do you know if any white candidates have been able to get elected to the Mississippi Supreme Court without being an incumbent first?
A. Well, I do know at least Jim Kitchens because I just told you he defeated Smith in 2008.
Q. Anyone else?
A. I think that's the last incumbent who was defeated, at least in this district. Yeah, that was the last incumbent who was defeated. So one time in 20 years.
Q. What about open seat elections?
A. In District One, I don't see any open seat elections.
Q. Mississippi Supreme Court, generally?
A. I only looked at District One for this case.
Q. I'd like to point you to paragraph 18 of your January report.
A. Yes.

Page 42

Q. I think it's the third sentence where you say: Currently, six of the nine justices on the Mississippi Supreme Court obtained their position by gubinatorial appointment.
A. Correct.
Q. Would that mean that the remaining three first ascended to the bench through election?
A. Through open seat elections, that would -- yes, that would be a reasonable conclusion.
Q. And those three would consist of Jim Kitchens, Josiah Coleman and Robert Chamberlain?
MR. WALLACE: Objection, assumes facts not in evidence. You say Jim Kitchens got on with an open seat election?
MR. CHEUNG: Without a prior appointment.
MR. WALLACE: Okay. That's a different thing. That's why I objected.
Q. (By Mr. Cheung) I can rephrase. So the three justices that obtained their position on Mississippi Supreme Court without a prior appointment to the Court would be Jim Kitchens, Josiah Coleman and Robert Chamberlain. Does that sound right?

Page 43

A. That sounds right. And only Kitchens is with District One, if I remember correctly.
Q. Do you know of any other justices who won election to the Mississippi Supreme Court without prior appointment?
A. Do I know of any other justices? Not that I can recall off the top of my head. It's certainly possible in other districts. But, again, I am limiting my analysis to District One.
Q. In terms of District One, does it sound right that Chief Justice James Smith was elected in 1992 without prior appointment?
A. In '92. So would be '92, eight-year term -- yes, that sounds like it could be right.
Q. And William Waller was elected in '96 in District One without prior appointment?
A. It's possible, sure.
Q. So assuming that's right, does the fact that only white candidates have been able to win elections without first being an incumbent tell you anything about the overall ability of black candidates to get elected to Mississippi Supreme Court?
A. Well, it tells me a couple of things. I mean, I'd want to do some more research. I do

Page 44

think the further back in time we go, you know, if the demographics of the districts have changed since '92 and '96, right, it may be a completely different electorate. I don't know what the population of the district was in terms of racial breakdown before then. I don't know how many African American candidates ran for open seats. And so it could be that only white candidates have won open seats because African American candidates have not run in these open seats. And certainly there haven't been a lot of open seats, right. So we're talking about three seats since 1994. There are a whole host of things, right. So it tells me, I mean, I'd want to know more. But it wouldn't cause me to make any kind of firm conclusion on the basis of those numbers.
Q. So understanding that there are several possible conclusions that you could draw from this fact, would one reasonable suggestion be that white candidates are able to win without incumbency advantage, does that suggest that they're generally in a stronger position than black candidates?
A. I think it depends. Because if you look at like the Jim Kitchens race, my understanding

Page 45

for whatever it is, is he was endorsed by Benny Thompson and so he was actually the black preferred candidate in that race. And he defeated another white candidate. And I don't know the specifics of the Waller case or anything else.
If those white candidates were actually preferred by black voters, then that would tell me something different than if that candidate was not preferred. So at this point I don't have enough information.
Q. Yeah. I understand that there's a distinction between black candidates and black preferred candidates because the two are not necessarily the same. But looking exclusively at the ability of black candidates to get elected to the Mississippi Supreme Court, is it a reasonable -- is it one of the reasonable explanations to say that black candidates typically need incumbency advantage, while white candidates do not, to get elected to Mississippi Supreme Court?
A. I wouldn't say typically. I would say that that's possible. I would want to how many black candidates ran for those open seats and everything before I concluded. If all we have is

Page 46

white candidates running for a seat, then we don't know if blacks can win without incumbency. So, it's possible. Again, I think we would need to learn more.

Q. Okay. And if it's a fact that very few black candidates even run for these seats, what could be some explanations for that?

A. Well, there's several explanations about why. One might be they don't think they could one. One might be, you know, they're not interested. One might be that the incumbent already is doing a good job and so they feel like there's no need to try and unseat an incumbent.

So there are a number of reasons why a candidate may decide. It may be the wrong time in their life. They may have serious headwinds, right? If you are a candidate running in a presidential election here and you're a Democrat, it's probably not a good time to run here in Mississippi. So there are a lot of factors, race being one of them. But party and incumbent size (inaudible) and everything else would also be factors.

Q. I have a few questions about your work around the design of judicial election and

Page 47

election systems.

A. Sure.

Q. In your work have you studied advantages of electing versus appointing judges?

A. Well, there's no way to quantify -- yes, I have spoken about the relative advantages of elections versus appointments.

Q. And what are those relative advantages?

A. So you start with the presumption that there is no perfect system, right? And so when you're designing institutions, there are a number of considerations to balance, one of them being accountability versus independence, right? So you could design a system like the US federal system where judges are maximally independent, right? And for everyone who thinks judges should be independent, I ask them how that's going because it doesn't seem to be going too well.

So there are advantages to being independent, right? But being too independent, actually, is bad because it means you can do whatever the hell you want and you're not constrained by the law or by anything else. And we can give all kind of examples from both sides of the political aisle of the times, well, the US

Page 48

Supreme Court has decided, eh, we're not going to really do that anymore.

Elections allow for voters to participate and for voters to have a hand in how the law is interpreted in their states. And so giving the voters a choice increases political efficacy, increases the legitimacy of the institution, and it allows voters to have a direct say in the people who are making decisions that affect the legal life in the state.

So there are problems as well and no system is perfect. But it's not clear to me that -- I mean, the debate has tended to be that elections are just these awful things. And it's not clear to me from the data that that's the case. That in fact voters do know what they're doing, they do participate meaningfully, and they are able to make choices. And so this seems like an option that a state could want to have.

I mean, if I were a design institution I would not design what y'all have here. I think nonpartisan elections are awful, right? But I don't live here. So y'all want to do that, go ahead.

Q. Why are nonpartisan elections awful?

Page 49

A. Because they're ineffective. They're removing a meaningful queue from the voters. And so what you're doing is your unnecessarily shaving off voter participation. And so nonpartisan elections you have people roll off because they don't feel informed, right? And we know that Democratic judges view the law differently than Republican judges. Lawyers know this, right? You go in a courtroom, you know you're either happy or you're, like, this is going to be a tough one. We know at the US Supreme Court level, we can predict outcomes of cases really well. Why would we tell voters they can't have that information? It seems silly.

Q. I can't confirm the reaction I have walking into court, but...

A. No. This is the big difference between political scientists and lawyers, right? I can say these things.

Q. When you say remove a meaningful queue, are you referring to the partisan designation on the ballot?

A. I am.

Q. And you say voters do participate meaningfully in judicial elections?

Page 50

A. Yes.
Q. What do you mean by that?
A. Some people think voters don't know what they're doing. Voters know enough. So for example, voters, you know, can tell that they're seeing a quality challenger, right, one with prior judicial experience and one without. So if a challenger between incumbent has prior judicial experience, they do about five points better than challengers without such experience.

If you take party ID out and you -- so we did some experiments on this where we, you know, manipulated whether or not party ID was shown or not. I'm going to get the numbers here a little bit, not precise. But in partisan races, like Republicans went for the Republican candidate that we told was the Republican 94 percent of the time, and Democrats voted for the Democrat candidate, like, 85 percent of the time. In that scenario where we removed party ID by the same descriptions of real ads that candidates have run, what happens is Republicans voted for Republicans 70 percent of the time and Democrats were about 65. So you would expect without party ID those things should be close to 50/50. That is, if

Page 51

party ID wasn't meaningful, if candidates were running these ads, right, and there was no partisanship to them and voters couldn't tell, Republicans shouldn't be able to identify the Republican candidate about 70 percent of the time.

So what does a nonpartisan election do? It increases errors, right? It increases the fact that Republicans would actually vote for the non-republican even though if you gave them party ID they would vote for the Republican, right? It's what the manipulation allowed us to do. And so you have fewer voters participating, and the ones who do participate make more errors, that is they vote for the candidate who they don't intend to vote for. Who they wouldn't vote for if they had the party ID. That seems like not a good way to have elections. But that's, you know, again, not my state.

Q. So those percentages you just cited, I don't think they're in your report.
A. That's my book. The Voters' Verdicts Book, 2015. I think it's chapter 4 or 5 something.
Q. Okay. And you also mentioned efficacy earlier. Is that referring to how responsive the

Page 52

officeholders are to the voters?
A. No, without efficacy is referring to how legitimate the voters feel the court is and how much trust they have in the court. And so Jim Gibson did a series of studies looking at dual elections in (inaudible) legitimacy of the court. And what he found is actually, you know, there are some costs to contested elections, but there are also a lot of benefits. When you look at the whole cost benefit thing, it actually turns out that elections are legitimacy enhancing. That is, voters feel more positive about courts on average after elections than they do in the absence of elections. Again, it's not no say it's all positives, but the positives outweigh the negatives.
Q. But is responsiveness to voters, one of the values that you think should be promoted by judicial elections?
A. Well, responsiveness is hard. Because what does that mean, responsiveness. And I want to distinguish responsiveness from accountability. Accountability means that, you know, voters will decide, you know, when a judge is up for election if that judge should be returned to office. And

Page 53

overwhelmingly the answer is yes.

Responsiveness implies that outside of that, that judges should be like, you know, figuring out what the public wants in terms of decisions. And that kind of more, like, constant update or constant evaluation, I think one can argue is not a part of courts. I think one could argue it could be. I don't take position on that. That's outside -- I stick to the empirical data and I really don't have anything to -- yeah.
Q. Got it.

So you mentioned that you wouldn't do things the way that things are done in Mississippi. Is that purely referring to the nonpartisan valence of these elections or is there something else?
A. I think there are -- again, if I were designing an ideal system, would I have districts, I would not, at least not this way. Because I think the Supreme Court deals with all Mississippians and all Mississippians should have a chance to vote on the Supreme Court, as opposed to carving it up into districts.

You know, I think -- so I would do that. I think the terms of office are good. I might,

Page 54

for example, in an ideal situation not allow for reelection. I might allow for a single term but not reelection. So if you're worried about the corrupting effects of donors and everything else, one way to do that, right, is not allow judges to run for reelection. I'd probably publicly finance elections. Again, if you want to get rid of the stink of private contributions, go to public financing. So there are things like that that I think, you know, are -- no one does it that way.

So really, a hypothetical exercise. You know, if Mississippi wants, you know, my advice on that.

Q. When you say, you know, you would prefer no districts or at least not this way, what do you mean?

A. I think that districts for statewide offices to -- so if you live in any district, you can only vote for one-third of the justices on the Mississippi Supreme Court. I think that's a problem. But that's just my -- I mean, you know, Kentucky has districts. Illinois has districts. Of course, Illinois, Chicago has three of the seven and the other four split down state. That's problematic.

Page 55

In general, I think that having district-based elections for statewide offices is suboptimal. But, again, that's just from a purely theoretical design standpoint.

My local school board elects regions, right? We have nine members of the school board, and there were three people from each region. Which means when I vote for people for my school board, I can't vote for two-thirds of them. Well, if the other two regions are nuts, and they are, like I can only ever hope to have a third of reasonable common sense, you know, pro-teacher school board members. So, again, that's a -- I think most political scientists would agree that from a design perspective it's suboptimal.

Q. But if you were to use districts, what district design would you have?

A. There are a number of different ways. I have no opinions as to which way is better. You could carve it out into nine independent districts and each district elects one. That's the Kentucky model. You could do what Illinois does and concentrate, like, based on population, not necessarily geography. So Chicago gets three, or Cook County gets three, and the others are split

Page 56

up down state. Even though that's still not exactly with population because Chicago is more than three-sevenths of the population of Illinois. So they're still outweighed. It gives them a little bit of a bonus but not as much as it should.

You could do what Mississippi does and have basically three districts and have three from each. I don't have any opinion as to which is, you know, better or worse. You know, that's -- I haven't seen any anything -- I haven't seen any research that's looked at the effects of those different kinds of district elections on outcomes or on -- I mean, you can't really look at incumbency anywhere else because everything is unique. You have one case of this, one case of that, one case of this.

Louisiana has partisan elections in districts. Kentucky, which does it the same, right, but they're nonpartisan. So every case is unique. And so it's hard to make any kind of comparisons about across states because you have no variation.

Q. What do you think are the consequences of having three judges coming from a single

Page 57

district as opposed to nine districts with nine judges?

A. It could be nothing. I don't know. I don't think anyone knows.

Q. So in terms of the benefits of electing judges, we talked about earlier, I think you mentioned transparency, legitimacy, accountability. Is that right?

A. Yes.

Q. Would those values be better served by competitive elections versus noncompetitive elections?

A. Yes.

Q. Which one would better serve?

A. Competitive elections.

Q. Why is that?

A. Competitive elections allow for meaningful choice. Competitive elections allow voters to actually, you know -- when you have competitive elections it shows that candidates have to be more accountable. They have to be more aware. If you're never worried about losing, then you're basically independent, right, and there's no accountability mechanism. So in general elections, right, to serve their functions should

Page 58

be contested and competitive.
Q. Does the competitiveness of a district affect how responsive an officeholder is to their constituents?
MR. WALLACE: You're talking about judicial officeholders or generally? Object to the form for that reason.
Q. (By Mr. Cheung) I would say generally and then judicially.
A. Generally, absolutely. There's a lot of evidence of that. In fact, you can see it now. Why has the US Congress gone off the rails? Well, you've seen a decline of competitive elections. You know, there's no one in the middle anymore. And so you've got people who don't have to worry about actually being defeated. They're more worried about being defeated in the primary than in general election.
So when you have an increase in one party districts, it leads to increased polarization.
In judicial elections, I don't know of any evidence one way or the other. I do -- so it is true that there have been some studies in the early '90s to show that judges change their

Page 59

behavior as they approached an election, right?
So (inaudible) and Melinda Gann Hall did a series of studies looking at how judges vote on death penalty cases as an election approach. What she found is that judges were more likely to uphold death sentences as they approached their reelection than otherwise. But that -- what that interpretation is, right, matters. Is it that judges are panning to elector or does it mean that in fact, you know, they weren't doing their job all along and this is finally reigning them in. So we do have some evidence of that, but that doesn't say anything about partisanship, doesn't say anything about districts. It's the presence of elections more generally.
Q. Thank you.
I'd like to point you to the 2005 article we talked about earlier entitled Electoral Verdicts. I think you have a quote there that says: The more serious the electoral threat, the more constraints you will feel. The same should hold true for State Supreme Court incumbents.
Does that sound right?
A. It does.
Q. So is it your view that competitiveness

Page 60

or electoral threats does influence State Supreme Court Justices' decision making?
A. I think it should. Whether it does or not, right, I think is -- I think there's some evidence that it does. How strong that is and has it changed over time, I don't know. But yeah.
Q. Thank you.
Do you think it's important for the judiciary to reflect the racial diversity of the jurisdiction?
A. So what do you mean by "important"?
Q. Generally in terms of the values we just discussed.
MR. WALLACE: And I'll object to the form until you define "reflect".
THE WITNESS: So I'll answer. I think in a representative democracy it is better for our institutions to reflect the makeup of their constituents. So I think we have evidence that, you know, if you're looking at how legitimate individuals feel their government is, if you look at how perceptions in terms of role models and everything else, it absolutely is.
Like, for example, we know that, you know, when African American students come to a

Page 61

university and see all white professors, right, that doesn't send a signal that that path is open. So yes, I do. I think descriptive representation is incredibly important. I also think substantive representation is important as well.
I would submit that people who are concerned with issues of race and social justice would be better off with a liberal justice on the US Supreme Court compared to Clarence Thomas. That's not to minimize the descriptive importance of Clarence Thomas on there, but he's also not advancing the policy goals that one would think he would advance.
But yes, descriptive representation is important.
Q. (By Mr. Cheung) Thank you. So we talked before about how the difference between nonpartisan and partisan judicial elections is the designation of a party on a ballot. Is that right?
A. It is.
Q. Are there any other differences in terms of how the elections are run between partisan and nonpartisan elections?
A. Well, in terms of how they are run -- so

Page 62

we have -- there are nonpartisan elections and then there are partisan elections. So partisan elections are pretty consistent. The party ID is on the ballot, you know what they are. Nonpartisan elections oftentimes are coded, right, in a sense that you can tell which candidate is which. And I'll point you to my 2015 book which showed that, in fact, even when you remove the party ID from the ballot and you just show voters ads that are run, like, real ads, they can tell which candidate is a Democrat and which candidate is a Republican. And so nonpartisan elections do not remove partisan considerations from the voters' minds. In fact, in some ways they're just as partisan. Again, with more errors and lower voter participation.

Q. So those ads that you talked about, how do you know if the voter is picking up on a partisan queue as opposed to a policy queue or a race queue or some other queue?

A. Well, it wouldn't be a race queue. I mean there was nothing in there about race. These were vignettes that we gave -- we give them to people not in the state they were in. It wasn't -- there was no way for voters to look up

Page 63

or whatever else.

Because the only difference is the partisan. Everything else is the same. And so if I give you a paragraph and Mike a paragraph, and everything in that paragraph is the same, except in yours I say it's a Republican and in Mike's I say nothing, and there's a difference, well, that's why there's a difference. That's what the experiment does. It controls everything else. So if it was a policy, you're both responding to that queue. And so when you see these kinds of differences, right, it's because of the experimental manipulation. It really allows us to get a handle on what is going on.

Q. I see. And so I think I understand better now. That study was based on ads that you created and not real-world ads?

A. Correct, yes.

Q. And so your study did not look at the effect of the race on voter behavior?

A. Correct.

Q. What are some of the differences, if any, in terms of voter behavior in nonpartisan elections versus partisan elections?

A. I think we've talked about them. The

Page 64

two are that, one, fewer voters participate so you have higher ballot roll-off. People don't vote for those elections. They leave it blank. And the other is they tend to make more mistakes. So those who do vote, most of them are still able to identify their co-partisan, the partisan. Because most candidates who are running in these nonpartisan elections are clearly endorsed by a party, and that's pretty clear from their ads and everything else, also the things they say. But you'll have some low information voters who don't get those queues and who still participate and they vote what I would term incorrectly. Incorrectly in the sense that they're voting against the candidate that best reflects their values and their interest.

Q. They're not voting for the candidates that they would have vote for if they had full information?

A. That is correct.

Q. Do you know if nonpartisan elections are more or less likely to be contested?

A. Nonpartisan -- let me think, historically. Historically I think nonpartisan elections were more likely to be uncontested, but

Page 65

that difference has gone away in recent years. Now every seat is contested just about. I mean, on average.

Q. In paragraph 10 of your January report you say that: Elections in nonpartisan states are less likely to be contested than elections in partisan states.

A. Correct.

Q. Is that still your position?

A. Well, that's my position in those articles which are older. My looking at recent elections, you know, just my off the top recollection is that that difference has shrunk if not disappeared entirely. My recollection, I could be wrong. It certainly was true at the time those articles were written looking at older elections. But in the past decade we've seen a huge increase in both attention to and contentiousness of State Supreme Court elections.

Q. So the increased contestation, do you know if that applies to Mississippi?

A. It applies certainly to District One based on Table 1, right, where every race was, in fact, contested except for Justice Kent.

Q. Do you know if the incumbency advantage

Page 66

is stronger or weaker in nonpartisan elections?
A. I know incumbents are more likely defeated in partisan elections, historically. So that would suggest that in nonpartisan elections they're more likely to lose. In fact, I say in paragraph 11 incumbent justices are more likely to lose in nonpartisan district-based elections than they are. So in a system like Mississippi, the incumbent justice is really more likely to lose, based on my 2005 article.
Q. Sorry, more or less likely to lose?
A. Incumbent justices are more likely to lose in nonpartisan district-based elections than they are in nonpartisan statewide elections, yes.
Q. Are you familiar with a recent law that was passed in Mississippi, HB1020, concerning selection of judges in Jackson?
A. I read something about it like when it was on New York Times or NBC News. But I don't recall the specifics. I do remember it was a controversy about changing the way judges are selected in Jackson, but that's the best of my recollection.
Q. You gave a quote about that law to Yahoo News and Digital Journal. Do you recall that?

Page 67

A. Oh. I do now. I'm sure I did. What did I say?
Q. Would it help to show you the article?
A. If you want or you can just read me what I said.
Q. So this is an article from February 15th of this year. Your quote was: But what makes this Mississippi situation abnormal is that the legislature is proposing a different way of selecting prosecutors and judges but only for one area of the state and all the local representatives in that area object to it.
A. Yes. Yeah, I said that.
Q. Is that still your opinion?
A. Yes, unless the bill has changed. I haven't obviously thought about it since I gave that quote. But yeah, that's -- yeah, that sounds like me.
Q. Could you say more about why this situation is unusual or abnormal?
A. Well, yeah, because it's not -- when you -- if you think there's a problem with the way judges are selected or prosecutors are selected, that's fine, right, and the legislature certainly can change that. But when you're only signaling

Page 68

out some of them, that's unusual, right, and so then you have to ask why, you know, are we signaling out some and not others and where the criteria end and why is one method of selection good for some areas of the state and not for others. That's unusual. You don't see that a lot, if at all.
Q. So I think the title of that article that you were quoted in was: Mississippi House Bill Will Create White Appointed Court System for Blackest City in America.
Does that sound right to you?
A. It might. I mean, I will say I did not write the headline.
Q. Do you have a view on the headline?
A. Do I have a view on the headline? The headline is provocative.
Q. Do you agree with it, factually?
A. Do I agree with it? House Bill Would Create -- that sounds consistent with the objections that were raised by local officials in Jackson. So I'm not -- I don't live in Jackson. I don't follow the thing in the ground. But that is consistent with what I read about the objections to this bill.

Page 69

Q. Do you have any reason to disagree with those objections or characterizations?
A. I have no reason to opine. If that's how the local officials feel, and I certainly can see why they feel that way.
Q. Thank you.
Is there anything else that you would find notable about HB1020?
A. Not that comes to the top of my head.
If we can get a chance, I'd like a drink/bathroom break. Whenever you get done with this line of questioning.
Q. Now is a great time for a break.
(Off the record.)
Q. (By Mr. Cheung) Dr. Bonneau, have you conducted any empirical studies of the levels of racial diversity on state courts?
A. The levels of racial diversity. Yes, I think I have.
Q. I think that was a 2000 article titled: Composition of State Supreme Courts.
A. Yeah, that was my first journal article.
Q. Do you recall what you did in that article?
A. I believe in that article I simply

Page 70

compared how many justices, like, were black or women or nonwhite by selection type.
Q. Is there a reason why you have studied the level of racial representation on state courts?
MR. WALLACE: Object to the form. I don't think he said anything about racial representation the way you talked about it previously, but go ahead.
Q. (By Mr. Cheung) Or racial diversity.
A. Yeah, I mean I was in graduate school at the time and I was, like, oh, this will be interesting to see if there are any differences. Because one of the allegations is that, you know, to get a more diverse bench then elections will lead you to have a less diverse bench. And so it's an empirical question and it's an important question so, you know, I collected some data and just did a little descriptive piece.
Q. Why do you think it's an important question?
A. Well, we talked earlier about descriptive representation, right, and how descriptive representation is important. And so if it's true that one method of selection

Page 71

systematically gives you less diversity than other methods, that's something that should be part of the conversation. That's something that should go into the decision about should you change your method of selection, should you not, whatever. It's an important piece. And if it's not true, then we don't need to worry about that when we're talking about best practices.
Q. And I know earlier we used the terms "descriptive representation" and "substantive representation." What do you mean by those terms?
A. Sure. So descriptive representation is simply you look out and you see, oh, it's a diverse bench, right? And you see, oh, if there's 30 percent women in a state and you have a state legislature is 30 percent female, then you're like, okay, that's pretty good descriptive representation. That is it's properly reflective of the demographics, the characteristics of the population.
Substantive means, though, that you represent the dominant interest of that group in your behavior. So for example, you can have female legislatures who don't support women's rights or don't support some of the causes that

Page 72

are advocated by a lot of women and so -- but you can have men who do. And so that's a more substantive representation.
So substantive representation gets into policy, gets into are the policies reflective of the different groups. Whereas descriptive representation is simply when you look out, does it look like, you know, the population.
Q. And have you looked at using judicial evaluations in the context of selecting judges?
MR. WALLACE: Object to the form, until you explain what judicial evaluations mean.
THE WITNESS: Yeah, can you tell me what you mean by judicial evaluations?
Q. (By Mr. Cheung) I believe in your past work you've analyzed a system of electing judges by using assessments or evaluations of judicial performance. Do you recall that?
A. I don't.
Q. Okay.
A. What article was that?
Q. I'm not sure if it's a published article but I think you've spoken about the topic of using judicial evaluations.
A. I've spoken about judicial performance

Page 73

evaluations and certainly I think in one of my edited books there was a chapter by a colleague talking about some of her work on judicial performance evaluations. But it's not something that I've conducted independent research on.
Q. Okay. Got it. And what do you know about judicial performance evaluations?
A. So judicial performance evaluations vary across states. Sometimes they're just simple surveys of the bar, sometimes they also involve litigants, sometimes the involve whatever, right. And in some places they're published, right, and so whether a judge is -- there are scores on certain things like temperament or fairness and so on. And they can be given to voters in advance of elections. In other areas it's much more of than internal thing that's done by the bar. So there are a lot of variations about, you know, how they are.
Q. Are you aware of any literature about biases in judicial elections?
A. Judicial elections?
Q. Judicial evaluations, I'm sorry.
A. Yes.
Q. And what do you know about those?

Page 74

A. So one of my colleagues at UNLV has done a lot of studies, Rebecca Gill, on that. And basically it's similar to what you see in student performance evaluations, like when you survey students in class. Women tend to be judged more harshly, white men are perceived as being more competent. And so the same kinds of things you see in nonlegal circles, right, from what I've read are also present in these judicial evaluations as well.

Q. Are racial biases present in judicial evaluations?

A. I don't recall that specifically, but I'm not saying no. I don't recall from my reading.

Q. A few questions about redistricting. From what you know, when does redistricting typically occur?

A. After -- well, the federal level, after a census.

Q. And what about at the state level?

A. I think it depends on the state constitution, right? In some states -- I mean, it depends on the office too, right? So if it's a federal office, right, like US House,

Page 75

redistricting has to occur every 10 years after the census. If it's a state district, I suspect it varies based on the state, but I have not done any work on that.

Q. Do you think it's important to redistrict after each census?

MR. WALLACE: At this point I think I'm going to object. The order authorizes you to talk about his surrebuttal report, and I know you're entitled to go into his background as a scholar, but if he hasn't done any scholarship on that, what's the relevance to what the Court is allowing you to do today?

MR. CHEUNG: Are you asking him not to answer the question?

MR. WALLACE: I'm asking you to explain why you think you're entitled to ask it.

MR. CHEUNG: Well, Mike, I think you're entitled to ask him not to answer it if you think the question is privileged.

MR. WALLACE: I'm not going to tell him not to answer it, but the judge has given you a limited authority here, and pulling out political science questions from thin air to ask him about is I would think outside the scope of her order.

Page 76

But I'm not going to tell him not to answer it.

MR. CHEUNG: Okay. Your objection has been noted. Thank you, Mike.

THE WITNESS: Can you please repeat the question?

Q. (By Mr. Cheung) Is it important to redistrict after each census?

A. What do you mean by "important"?

Q. Well, why do you think redistricting occurs after a census?

A. Well, it's required by the Constitution.

Q. Does that make sense to you?

A. Does that make sense to me? Well, sure, it makes sense because it's required by the Constitution. Does the Constitution make sense to me on that front? I've never really thought about it. I mean, I would say that sure, that if populations change or things shift significantly then, you know, if we believe that one person's vote should equal as much as another, it should.

Now, it doesn't make a lot of sense in context of the Constitution because our electoral system with its electoral college ensures that, in fact, one person's vote doesn't equal the same as another's. But, you know, I don't know if you

Page 77

want to go down that path.

Q. But you would agree that it's important for districts to reflect the existing population of the jurisdiction?

A. Yeah, generally, that's right. Among -- I will say there are other factors, too. Like, you know, for example, not splitting up towns or historical -- the general redistricting principles that the US Supreme Court has set out about compactness and continuity and communities of interest and whatever else. I mean, yeah, that's reasonable.

Q. Yeah. I just mean in the broad sense that redistricting should occur on the basis of the most updated population data that we have. Would you agree?

A. Within certain limits, yes.

Q. Do you know the last time redistricting occurred with the Mississippi Supreme Court districts?

A. I do not.

Q. I can represent to you that the last time it happened was 1987. Do you know how many times the census has been taken since 1987?

A. Well, it's every 10 years, so that would

Page 78

be three times -- four times, right? 2000, 2010 -- no. '87. So, '90, 2000, 2010, '20.
Q. Can you -- based on your understanding of judicial election systems around the country, do you know of any other judicial district that has not been updated in the past 35 years?
A. I don't, but I don't know of any that has either. And so I'm trying to think of, like, the other four states -- the other three states that have judicial elections. I'm not aware of any times they've redistricted their districts. That doesn't mean it doesn't happen -- it hasn't happened. I'm just not aware of it.
Q. Can you think of any reason for not updating districts after four census cycles?
A. Yes.
Q. What are those reasons?
A. There hasn't been significant population change, there's no way to draw them in a way that's more reflective of the state. So those are a couple.
Q. Any other reasons?
A. Any other reasons, I think those are -- if you don't have a significant population -- if you feel like the current districts are good

Page 79

representations of the state, right, and there's not been meaningful deviations then, yeah, those would be the ones that come to mind off the top.
Q. Do you know if there has been or has not been population change in Mississippi since 1987?
A. Since '87? I'm trying to think of my electoral map. I want to say y'all have increased one electoral vote since '87, but I'm not sure. I defer to people who -- I mean, '87 is a long time ago. I wasn't even able to vote then.
Q. I wasn't born then.
A. I don't -- I can't answer that. I don't know. You can tell me anything and I'd believe it.
Q. In your work as a political scientist, have you become familiar with what people refer to as the Black Belt?
A. I refer to Black Belt -- yeah, in Alabama particularly, yes.
Q. What is your understanding of the Black Belt?
A. So my understanding of the Black Belt, is really interesting. That basically it's the part -- at least in Alabama -- of like the middle of the state where the soil was rich, the soil was

Page 80

black, and so there's a lot of agricultural interest. And it tended to be heavily nonwhite communities now because of the history of the soil and the farming.
Q. Do you know if the Black Belt extends into Mississippi?
A. I don't.
Q. Are you familiar with the Mississippi Delta as a region?
A. I am. That's the part down by the -- in the south, right, by the Gulf -- no. I guess I'm not.
MR. SHANNON: You're not.
Q. (By Mr. Cheung) As a political scientist, have you considered the extent to which black voters might have similar interests due to a shared history?
A. Have I personally considered, no, but that's a pretty common finding among others.
Q. I think you have an article from 2009 titled: Impartial Judges, Race, Institutional Context. Does that sound right?
A. Yes.
Q. You have a quote here that says: Given the history of African Americans in the United

Page 81

States, African American judges might be more sympathetic to less fortunate people.
A. Yes.
Q. Do you agree with that assessment?
A. Yes, and I think I have a bunch of citations after that, too. Because that's not something I would have said without citation. But, yes.
Q. You also said: Since most criminal defendants are either poor or racial minorities, it is not hard to imagine that African American judges would be more sympathetic to defendants because of their own negative experiences in society.
A. Correct.
Q. What is that history and that negative experience referring to?
A. Well, I think it's referring to the fact that for years African Americans were not treated as full citizens of this country. For years they weren't citizens at all. Then they were, you know, partial citizens. And then, you know, even after, you know, the Civil War and the passages of 13th, 14th and 15th amendments, we still had institutionalized oppression where individuals,

Page 82

African Americans, were not treated the same as whites, until we got to the Civil Rights Act and Voting Rights Act. Those vestiges are still there. That's not all that long ago. You know, that's my parents' generation. And so I think it's -- you know, I think it's naive to assume, right, that those vestiges don't still permeate throughout in terms of available opportunities, in terms of a whole bunch of things.

Q. So I'd like to turn to racially polarized voting. In your work as a political scientist, have you observed any patterns in terms of which parties or candidates black and white voters tend to support?

A. Oh, yeah, I think everyone knows. Yes, black voters support the Democratic party.

Q. When you say everyone knows that, are you referring to political scientists or what are you referring to?

A. Everyone. I think if you walk out in the street and ask five people they would tell you that. So it's been established by scholars but it's also -- I mean, you can look at, like, any graph, you know, in any newspaper or anything else.

Page 83

Q. Roughly speaking, do you know what percent of black voters tend to vote for Democrats?

A. It's upwards of 90.

Q. 90 percent?

A. Yeah.

Q. What about the percent of white voters that vote for Republicans?

A. Well, that varies based on state. It's not 90 percent. But I don't have a hand -- there's a lot more variations too, in terms of college-educated whites versus noncollege-educated whites. So a lot more factors, right, among white voters that help predict voter turnout that aren't as present with black voters.

Q. And what about white Mississippians?

A. What about white Mississippians?

Q. In terms of their level of support for Republican party candidates?

A. Well, I'm assuming it's pretty high because Republicans always win the elections in Mississippi. At least in statewide elections, right. Presidential elections, Senate elections. So yeah, that's my assumption.

Q. In the upwards of 90 percent of black

Page 84

voters supporting Democrats that you mentioned earlier, do you know if that pattern is true in Mississippi?

A. I have no reason to think it's not.

Q. Do you know if the contrast between white and black voters is more or less stark in Mississippi compared to other states?

A. I do not.

Q. In your review, what makes African Americans more likely to be Democratic voters?

A. Well, I think the Democratic party is the party that helped pass the Civil Rights Acts and the Voting Rights Act and also tends to promote bigger government, more social policies that help individuals, right, who need social services, who improve education, you know, for all kinds of reasons.

And the Democratic party, I think, is not -- has been much more open in terms of nominating and electing African American officials. And so I think there are historical reasons and also current reasons, policy reasons.

Q. So you mentioned the Civil Rights Act, the Voting Rights Act. At the risk of asking a very obvious question, but why would those laws be

Page 85

relevant to you by Democrats -- why black lawyers support the Democratic party?

A. Sure. Well, the Civil Rights Acts allowed -- ended public discrimination in places of accommodation. So all of a sudden now, you know, you couldn't discriminate in hotels, restaurants, other things, right, against black citizens. Voting Rights Act removed a lot of the impediments to black voters registering to vote and actually exercising their right to vote.

And so those kinds of policies, right, that improved the lives of black Americans, you know -- it wasn't just the Democrats who did that. Obviously, as you know, we had party realignment and whatever else. But it was -- the way things have sorted out is Democrats now.

Q. What is that partisan realignment that you're referring to?

A. Well, so in the -- I mean, right, the Democrats, right, in the south, right, are different than Democrats in the north back then. Same thing with Republicans. And so it was a time, right, where you'd have, you know, southern Democrats voting much more so with southern Republicans, and northern Republicans and northern

Page 86

Democrats. But now those have aligned. So just like the -- you know, the Democrats and Democratic party in the south has largely been diminished, the same thing is true with the Republicans in the northeast, right? I mean, you don't have northeast Republicans anymore. I mean, occasionally you'll get someone like a Charlie Baker in Massachusetts, but that's, you know, the exception not the rule. I'd say that's sorting.

Q. What caused that realignment?

A. A number of factors caused that realignment. I think preferences of individuals. I think political parties, right, and so seeing opportunities. I mean, in the northeast, right, you see some Republicans who vote for you, you know, maybe 50 percent of the time and Democratic parties -- again, we get a Democrat in here would vote 80 percent of the time. So you start targeting those individuals and electing more co-partisans and the American electorate become much more polarized. There are a number of causes that have led to that.

Q. Did the passage of the Civil Rights Act and the Voting Rights Act contribute to the realignment?

Page 87

A. I think without question.

Q. And in your view what makes white people more likely to be Republican voters?

A. What makes white people more likely to be Republican voters? Well, again, there are a number of things. I think white people tend to -- I think the Republican party has done a really good job of appealing to a time where white people were, I say, more prominent, right, and had better economic fortunes than they do now, where you didn't need a college education to have a good middle class life and so on. So I do think there's a economic interest. This is particularly true for lower income, lower educated whites. You know, and the Republican party does a good job of appealing to these individuals. Religion is part of it, you know. I mean, there are a lot of things.

Q. Let's move on to Dr. Orey's report. I can give you a copy of that.

A. Sure.

Q. I'm handing you a copy of the October report, 2022.

(Exhibit 3 marked for identification.)

Q. (By Mr. Cheung) That's now been marked as Plaintiff's Exhibit 3, I believe.

Page 88

Dr. Bonneau, can you confirm that that's the initial report from Dr. Orey that you reviewed and responded to?

A. It looks to be the case.

Q. Let's turn to Pages 12 through 14 of the report, and if you wouldn't mind taking a moment to review those pages.

A. Okay.

Q. So I think your testimony earlier was that you have concerns about the inferences that Dr. Orey can draw from these results, but you take his factual findings or his results to be true. Is that right?

A. I take the estimates that he has using the ecological inference, yes.

Q. So your reports do not dispute Dr. Orey's implementation of ecological inference in terms of the accuracy of its code?

A. Correct.

Q. You don't dispute the accuracy of the data that he uses?

A. Correct.

Q. And you don't dispute the accuracy of his computations?

Page 89

A. Correct.

Q. Based on those tables on pages 12 to 14, did Dr. Orey find that black voters typically support the black candidate about 90 percent of the time?

A. That's fair.

Q. For example, I think in Table 1 if we look at the Westbrooks election, Dr. Orey estimated that Ms. Latrice Westbrooks earned about 90.46 of the black vote in 2020; is that right?

A. That is correct.

Q. And white support, according to Dr. Orey's estimates, for black candidates was typically below 15 percent?

A. Typically, that's correct.

Q. And in the, again, the Westbrooks' example from 2020, she received less than 10 percent of the white vote?

A. Correct.

Q. Are those estimates consistent with your understanding of voting patterns among black and white voters?

A. Yes.

Q. In paragraph 37 of your January report you said that it is highly unlikely these

Page 90

candidates lost because they are African American?
A. Correct.
Q. Would it be fair to say that those African American candidates lost because the majority of white voters voted for a different candidate?
MR. WALLACE: I'm going to object to any questioning on paragraph 37. It's outside the scope of the order. I will not tell him not to answer, but we'll deal with it if you ever offer it in court. Proceed.
THE WITNESS: Please repeat the question.
Q. (By Mr. Cheung) Would it be fair to say that those African American candidates lost because the majority of white voters voted for a different candidate?
A. Because of the white -- I would say it differently.
Q. How would you say it?
A. I would say that those African American candidates lost because -- because they didn't get enough votes, likely because they were Democrats.
Q. And they were Democrats, and they lost because they did not earn the votes of more white

Page 91

voters?
A. Of more Republicans, or as their opponents. I mean, so they could have, right, gotten more black voters, as well. So they didn't lose -- like, if they lost because -- they could have lost because they didn't get more white voters; they could have lost because they didn't get more black voters. They could have lost because they were Democrats.
Q. Do you know if there were enough black voters in the district to put them over the top, given that, you know, someone like Ms. Westbrook is already earning over 90 percent of the black vote?
A. I don't know how many black voters voted in that election.
Q. And overall as to District One, is it your conclusion that racial polarization exists but not to the extent that black candidates are unable to win election to Mississippi Supreme Court?
A. I think, yeah, I stipulate to that.
Q. Those black candidates that did win election to Mississippi Supreme Court, they're all appointees running with an incumbency advantage;

Page 92

is that correct?
A. Well, and then there were incumbents after that, like Justice King.
Q. Right. But at the time of their election, they had already been in office?
A. I think I said earlier that I wasn't sure if any African American candidate had ever successfully run not as an appointee, so I will stick to that. But certainly the ones I looked at for my report, that is true.
Q. Your view is that District One, as currently configured, black voters can already elect their preferred candidate?
A. Correct.
Q. Is that in most cases, in some cases?
A. I would say -- in most cases, I would say two of the three justices in District One are the black preferred candidates.
Q. Based on your understanding of these voting patterns, would you agree that a district that has a majority African American population has a greater chance of electing someone preferred by African American voters than a district that is minority African Americans?
A. Sure.

Page 93

Q. Do you know what percentage of the voting age population of District One is black?
A. I do not.
Q. I can represent to you that it's about 49 percent --
MR. WALLACE: I'm going to object to the form of the question, assumes facts not in evidence.
Q. (By Mr. Cheung) Can you assume that fact to be true for purposes of this deposition?
A. I've -- can I assume that fact to be true? I mean, if we're talking about hypotheticals, we can talk about a hypothetical district where blacks are 49 percent of the vote, sure, I can stipulate that for the next few questions.
Q. Thank you. Let's turn to Appendix A of your report. In Appendix A did you identify Ms. Westbrooks as a black candidate who lost her election in District One in 2020?
A. I did.
Q. Based on your table, did Ms. Westbrooks win about 48-and-a-half percent of the vote?
A. Yes.
Q. Given that the district is 49 percent

Page 94

black voting age population, as we assumed, and that Ms. Westbrooks won 48-and-a-half percent of the vote, do you think it's a fair estimate to say that if we added another point of black voting age population to a district it's likely to increase her vote share by a little bit less than one percent?

A. Yes, and also if you added more Democrats as well.

Q. As we discussed earlier, Ms. Westbrooks, according to Dr. Orey's estimates earned about 90 percent of the black vote?

A. Correct.

Q. Given that she's earned 48-and-a-half percent of the vote shared, she's about 1.6 percent short of winning the majority of the election in 2020?

A. Correct.

Q. And taking the fact that she's earned about 90 percent of the black vote, would you agree that if the black voting age population in District One had been three to four points higher, she likely would have won in 2020?

A. I don't know if I can say that because I don't know what the voting turnout was. I don't

Page 95

know if that extra percentage would have turned out to vote or -- so I can't say that.

Q. What if we assume that voter turnout remains as it is in District One?

A. Well, I think it's -- I mean, it's hard to say, right, because again, right, she was going up against an incumbent, and we've already talked about how incumbents overwhelmingly win. And there was another incumbent in 2020, Justice King, who no one even bothered to challenge. And so it's hard to say if adding that extra percentage of the vote would have been enough to overcome the incumbency advantage. You're assuming that extra percent of vote would have voted in the same percentages as the population of the vote that's already there. I mean, yeah, it's possible. It's possible you might need to add 10 percent. I don't know. But I think there are a lot of -- I think concluding that would require a lot of assumptions that I don't think the data support make it.

Q. The point about an incumbency, that did not prevent 90 percent of the black voters from supporting Westbrooks in that election?

A. Correct.

Page 96

Q. And so do you have any reason to think that other black voters would react to incumbency differently if they were added to District One?

A. No, I mean -- no, but, again, I mean, you're assuming, again, the same kinds of turnout rate and participation rate and everything else, yes.

Q. Right. So if we assume the same turnout and participation rate, do you think that if the black voting age population of District One had been 3 to 4 percentage points higher, Ms. Westbrooks likely would have won in 2020?

A. What I'm saying is if you added 3 to 4 percent of black voters to District One and these voters behaved the same way as the voters who are already in District One, then that likely would have led to Ms. Westbrooks winning her race.

Q. Just to sum up. In 2020, Ms. Westbrooks lost even though District One had 49 percent black voting age population and she had 90 percent of that black support.

MR. WALLACE: Once again, object to the making of assumptions with facts not in evidence.

THE WITNESS: And I would also point that Justice King won with 100 percent of the

Page 97

vote, black and white.

Q. (By Mr. Cheung) Justice King was not contested in his reelection?

A. Correct, which I would argue is important, but we can talk about that later.

Q. We'll get to that later. Appreciate your answers, Dr. Bonneau.

So I'd like to turn to paragraph 49 of your January report. Point out the fact that Ceola James came in third place even though she was the only African American candidate in that race?

MR. WALLACE: Same as the prior objection. It's outside the scope of the court order. I will not tell him he can't answer it.

THE WITNESS: Correct.

Q. (By Mr. Cheung) What is the significance of the fact that James was not the preferred candidate of black voters?

A. Well, she might have been, I don't know. What I said was if she was the preferred candidate of black voters and there was a three-person race, given what you've just described as demographics of that district, she would have advanced to the runoff, with the two white canceling the white

Page 98

vote. But, in fact, it turns out she probably wasn't the preferred candidate of -- so just because, you know, you have a black candidate does not mean that candidate is the black preferred candidate. Which I think is the assumption that is made in a lot of Orey's.

Q. So you're not sure if Ms. James was the black preferred candidate or not?

A. It's hard for me to think that she was if she only got 10 percent of the vote.

Q. Okay. So your conclusion is that she likely was not the preferred black candidate in this case?

A. Correct. Well, if 49 percent of the district is African American and you have three candidates, to only get 10 percent would suggest that she was not the preferred candidate of African Americans.

Q. What is the significance of that fact?

A. That black candidates are not necessarily black preferred candidates.

Q. Why is that relevant to your analysis?

A. Well, it's relevant, right, because in the Orey report, right, he talked a lot about the black candidate, right? So if you look at

Page 99

Table 1, black candidate. Table 2, black candidate. A black candidate is not synonymous with black preferred candidate. A black preferred candidate could be Jim Kitchens, could in fact be a white candidate. And so we can't simply look and see how African American candidates do, we have to look at how African American preferred candidates do.

Q. And so in this particular race in 2008, were black voters voting cohesively for Kitchens?

A. I don't have that -- I don't know. I don't see that in -- I don't know if they were or not. I can tell you they almost certainly were not voting cohesively for James.

Q. And what do you think white voters were -- who white voters were voting for?

A. My assumption is they were voting for the Republican incumbent, Smith, but, again, I don't know.

Q. And in that election, Kitchens won?

A. Correct.

Q. And so do you think in all likelihood Mr. Kitchens was the preferred candidate of black voters?

A. I do.

Page 100

Q. Similarly, I think in your September report in paragraph 7 you point out that a black Democrat, Cecil Brown -- you point out that a black Democrat lost to the white Democrat in the 2015 primary for public service commissioner.

A. Correct.

Q. And is the significance of the fact the same as what we just discussed?

A. Correct. That if Brown was the preferred candidate to black voters in the primary, which again, which is likely given the margin of his victory, even holding a political party of that candidates' constant, black voters don't necessarily favor black candidates.

Q. And so your view is that because black voters did not necessarily prefer the black candidate, black voters, at least in the Democratic primary, are not being driven by racial bias?

A. Correct.

Q. Are you aware of any similar evidence showing that white voters are not being driven by racial bias in their choice of candidates?

A. I don't think that's been analyzed. I mean, I haven't seen anything in either Orey's

Page 101

report or -- that looked at that.

Q. But there's nothing in your report that goes to that?

A. Correct.

Q. Would you agree that in the Democratic primary context that partisan affiliation cannot explain why black and white Democrats choose different candidates?

A. Well, yes, because the party is held constant as I say in paragraph 7.

Q. If black voters don't have a stronger preference for black Democrats over white Democrats, in your view does that preclude a finding of racially polarized voting?

MR. WALLACE: Would you repeat that? I think you're asking him for a legal opinion.

Q. (By Mr. Cheung) If black voters don't have a stronger preference for black Democrats over white Democrats in your view does that preclude a finding of racially polarized voting?

MR. WALLACE: I think that's probably not a legal opinion so I think you can answer it.

THE WITNESS: Does it preclude it no, but it makes it more difficult because it suggests that party is what's really working here, not

Page 102

racial analyst.
Q. (By Mr. Cheung) Is it possible that black voters supported the white Democrat for reasons related to race?
A. Is it -- sure, it's possible that black Democrats supported a white Democrat, sure.
Q. What are some reasons that would fit that pattern?
A. Well, if they thought that the white Democratic candidate was more aligned with their views, with the voters' views on certain issues.
Q. And by issues you mean issues that have a racial component to them?
A. Yeah, issues that are salient to the black community. I mean, they may not have a racial component to them, but they may be of interest, or of higher interest.
Q. Is it possible that black voters nominate white Democrats because they view white Democrats as being more electable in the general election compared to black candidates?
A. That's possible, sure.
Q. Is it possible that a white Democrat is better aligned with black voters on issues of racial equality as opposed to a black candidate

Page 103

elected in a primary?
A. Yeah, in a given primary, sure, it's possible.
Q. Is it possible that black voters think that the white Democratic is a better messenger on issues of racial equality as compared to a black candidate?
A. Possibly.
Q. Is it possible that black voters support a white Democrat over a black Democrat because the white Democrat is endorsed by prominent black individuals?
A. Sure.
Q. Did you consider those possibilities when reaching a conclusion that black voters support white Democrats and therefore their vote preference is non-basis of race?
A. Well, I think those things confirm what I said, right, that they're making this choice, this strategic choice, as opposed to based on any number of factors. I have no -- unless we go out and we have survey data of what these voters, you know, what they said their preferences were in these elections, I don't think we can eliminate anything. But certainly I think there are more

Page 104

factors that the candidate ends up being the candidate preferred by blacks. So the black preferred candidate, the race of that candidate is one factor among several others that go into that calculation for people.
Q. And so you agree that just because that the race of the candidate does not determine who black voters vote for does not mean that those voters are making decisions independently of race?
A. Making decisions independently. Say that again, please.
Q. Would you agree that the fact that black voters are not choosing candidates on the basis of race, that does not preclude black voters from selecting candidates for reasons related to race?
A. Yes, that does not preclude that. They certainly could be doing that as well.
Q. And so in your reports here you do not conduct any analysis to rule out the possibility that black voters support candidates because of their views on race issues?
A. Correct.
Q. I have a few questions about your experience with racially polarized voting, which we talked a little bit about earlier. Could you

Page 105

give me a brief overview of the experience you have with the subject of racially polarized voting?
A. My experience as a professor?
Q. As a professor or as an expert.
A. Sure. So my experience is I have read the articles that have used or have examined racially polarized voting. I'm familiar with the reason those analyses are conducted, and -- yeah, I have consumed scholarship.
Q. Have you taught courses about racially polarized voting?
A. Racially polarized voting would not be the topic of a class. It might be something that's done in a class. And, no.
Q. Have you discussed it as a topic within a class?
A. Not that I recall.
Q. And have you written any articles about racially polarized voting?
A. No. Unless you tell me I did.
Q. Have you given any talks about racially polarized voting?
A. No.
Q. Have you ever done any racially

Page 106

polarized voting analyses to determine whether it exists in a given jurisdiction?
A. Again, thinking back to some of my methods classes it's possible I did an assignment that looked at it, but I can't recall any specifics or anything.
Q. Would you consider yourself an expert on racially polarized voting?
A. Would I consider myself on expert on racially polarized voting? I would say that's not my scholarly identity, no.
Q. Do you happen to know Dr. Orey either personally or professionally?
A. I do.
Q. Have you ever met with him?
A. I know Dr. Orey very well.
Q. Could you tell me more about your relationship with Dr. Orey?
A. Sure. I mean, D'Andra and I for years scored advanced placement governing exams together. We were in leadership there. And I occasionally see him at conferences. And so, you know, yeah, I know D'Andra professionally. We don't have a personal relationship outside of casual acquaintances.

Page 107

Q. Have you spoke to him before?
A. Sure, I've spoken to him.
Q. Have you spoken to him about this case?
A. No, but so -- we were both at a conference together in March and we ran into each other on the elevator, and he said something like, oh, I see we're going up against each other. I said, oh, yeah. And that was basically the extent of it. It was a very casual -- I didn't mention anything. He just brought it up kind of like to break the tension, I guess or whatever. Then I ran into him at the hotel bar later on and just had conversation about how he's doing, his health, the great undergraduate program he's running at Jackson State.
Q. Did you say anything to him about this case?
A. Not besides what I just told you.
Q. Did you discuss racially polarized voting analyses?
A. No.
Q. Anything else you can think of from that conference encounter?
A. Not that I can recall.
Q. Okay. I'd like to turn to ecological

Page 108

inference. We mentioned earlier the three types of ecological -- sorry, the three types of empirical methods that have been used to demonstrate racially polarized voting analyses. Ecological inference, ecological regression and homogeneous precinct analysis. Do you recall that?
A. I do.
Q. Do you know which of the three methods is considered to be the most reliable in courts in voting rights cases?
A. My under --
MR. WALLACE: That is a legal opinion when you've get to courts, and I object to the form for that reason.
THE WITNESS: My understanding is it's ecological inference.
Q. (By Mr. Cheung) Does your report identify any empirical methods that would be more reliable than ecological inference?
A. It depends what you're asking. So it depends on what questions you're asking. If you're trying to get at racially polarized voting, no, my report does not identify anything that would be more reliable than ecological inference.

Page 109

That does not mean the ecological inference, though, is the right way to approach the analyses in this case or in all cases, and it also does not, you know, mitigate any of the criticisms of ecological inference that other scholars have noted.
Q. Do you know of any empirical methods that would be better at generating racially polarized voting estimates compared to ecological inference?
A. I do not.
Q. So in your September report you identify some general concerns with EI -- with ecological inference as a method in the racially polarized voting context; is that right?
A. That is right.
Q. Did you raise those methodological concerns in your January report?
A. In my January report I did not do any work regarding ecological inference.
Q. Dr. Orey also used ecological inference in his original October 2022 report; is that right?
A. I believe that's correct.
Q. Is there a reason why your January

Page 110

report didn't address methodological concerns with ecological inference?
A. I wasn't focused on that. I was focused on other things.
Q. In paragraph 13 of your September report, you discuss a concern with ecological inference methods because they assume that minority voters behave similarly across different precincts; is that right?
A. Correct.
Q. You then go on to say that that assumption is, quote, untenable; is that right?
A. Correct.
Q. Do you cite any authority for that conclusion?
A. That it's untenable?
Q. Yes.
A. That minorities are relatively affluently racially integrated precincts and treated as distinguishable -- that assumption is a fact, right? So no, -- so my conclusion that it's an untenable assumption is that the proportion of white and minority voters who support each candidate is the same at each precinct. We can debate whether or not that's a tenable

Page 111

consumption. In my opinion that's a completely untenable assumption at each precinct. Are there no differences between precincts, right, regarding the minority and white support? I don't know anybody who would argue that that's a tenable assumption.
Q. Then in paragraph 14 of your September report you discuss an issue about using Ordinary Least Squares regression in question to estimate vote shares. Do you see that?
A. I do.
Q. Do you know if Dr. Orey used Ordinary Least Squares in his analysis?
A. My understanding is he used King's ecological inference.
So the Ordinary Least Squares, right, is a way to show -- a way to show how the ecological inference technique run by King, which is based on some of the same assumptions is -- can lead to biased parameters. The conclusion that the solution addresses the limitation. But assumes that the distribution in unimodel, but the data, of course, are bimodel. So that undermines one of the key assumptions. So EI might work, but there's no way you asses whether or not it works

Page 112

because you can't test the key assumption.
Q. So you said a lot there and I just want to break it down.
In paragraph 14, like you said, Dr. Orey said that King's solution overcomes this limitation about variation across precincts?
A. Correct.
Q. Do you agree that EI overcomes this precinct variation issue, at least King's method of EI?
A. I'm not sure. I have correspondence from one of the authors of the criticism that says that that assumption still applies to King's method as well. But I'm not -- I'm not methodologically sophisticated enough to dig under the hood and determine that for myself.
Q. Do you know -- if the precinct variation assumption is problematic, do you know what effect that has on the estimates here?
A. Sure, because if it's -- if the precinct assumption is -- it invalidates the estimates because you're making assumptions about voters and you're implying that a voter in a district here in Jackson, the same factors, you have the same percentage of the precinct here in Jackson as you

Page 113

would a precinct down in the suburbs. That assumption would lead to biased estimates.
Q. Do you know if that bias leads to an overestimate or an underestimate?
A. I do not.
Q. You did not perform any analysis in your report to determine whether the bias would be an underestimate or an overestimate?
A. Correct.
Q. In paragraphs 14 and 15 you cite this 1998 article from Wendy Cho; is that right?
A. I do.
Q. Could you walk me through what Dr. Cho's critique of ecological inference?
A. Sure. Dr. Cho's critique is that in order for ecological inference to be correct and appropriate, right, the specification has to be correct. That is the model specification has to be spot on. Because otherwise what will happen -- I give an example that she gives. The parameters, once again, right, are biased. So the big problem, though, is we don't really know if we have a specification proper -- proper specification. We don't know whether or not the model we're estimating is actually the true model.

Page 114

And so given that, it's hard to evaluate whether or not the model we estimate is accurate or not.
Q. And so Dr. Cho's discussion in paragraph 14, that's based on a hypothetical dataset where she set some level of precinct level variation; is that correct?
A. That's correct, right, to see what the bias would be. So in a simulation, she knows the true values. What we're trying to do with data, is recover the true values, right, recover data we don't have from data we have. But one way to test whether or not we can do that accurately is to generate our own data and run simulations and then we can do comparisons, which is what she does.
Q. But for your report, you did not look at the underlying data to test the assumption?
A. Correct.
Q. And so you wouldn't know if -- to the extent that there is a bias, whether that results in an underestimate versus an overestimate of racially polarized voting?
A. Correct.
Q. On this unimodel assumption point, does your report cite any academic publications after 1998?

Page 115

A. It does not.
Q. Is there a reason for that?
A. I didn't see any.
Q. Do you know if ecological inference has continued to be used to estimate racially polarized voting since 1998?
A. It has.
Q. Do you know whether ecological inference has been accepted by courts as a reliable method since 1998?
A. My understanding is it has.
Q. Are you familiar with recent scholarship showing that ecological inference estimates of racially polarized voting could generate results that are similar to that of exit polls?
MR. WALLACE: Similar to what?
MR. CHEUNG: Results from exit polls.
MR. WALLACE: Oh, okay.
THE WITNESS: I'm vaguely aware of that, yes. Not specifics, but yes.
Q. (By Mr. Cheung) Does that tell you anything about the accuracy of EI as a method in racially polarized voting context?
A. Well, I think it -- I think that's evidence that you give as some consolation. And

Page 116

so I would say it's -- you know, that would be kind of external validity for the kind of measures.
I want to point out that neither of my reports really hangs on this ecological inference issue, but yes.
Q. Okay. I'd like to show you one of those articles.
A. Sure.
(Exhibit 4 marked for identification.)
Q. (By Mr. Cheung) Do you have what's now been marked as Exhibit 4?
A. I do.
MR. WALLACE: Is it 4 or is it 5? I thought we had two reports from him, two reports from Orey. This should be 5?
MR. CHEUNG: We only showed him the first Orey report. We didn't show him the second one.
MR. WALLACE: We have not marked the second. Thank you.
Q. (By Mr. Cheung) Would you like to take a moment to review that article?
MR. WALLACE: A moment or a week?
THE WITNESS: I will skim it.

Page 117

Q. (By Mr. Cheung) Let me know when you're ready to talk about it.
A. All right.
Q. Thank you for reviewing for the pop quiz.
I'd like to turn to page 274 of that article, which I think is where the first highlighting is.
A. Yes.
Q. Do you see the first highlight where it says: There is no convincing evidence that either iterative EI or RxC is biased toward or against findings of RPV.
A. I do.
Q. Do you have any reason to disagree with that finding?
A. No.
Q. If we turn to the next highlight at the bottom of that page going to the top of 275, could you read that sentence for us?
A. "For social scientists and legal scholars interested in analyzing RPV when only ecological data are present, both approaches can be relied upon as they lead to substantively similar conclusions about the presence or absence

Page 118

of RPV."
Q. Do you have any reason to disagree with that sentence?
A. No.
Q. And if I could trouble you to read the next highlighted sentence on 275.
A. Here we go. "Beyond this, we demonstrate that both the iterative EI and the RxC methods produce results in line with individual level exit poll data."
Q. I'd like to turn to the next page, 276. I think I may have missed the highlight in here. Do you see this first complete sentence of that first paragraph beginning with: Since the late '90s?
A. I do.
Q. Could you read that sentence for us?
A. "Since the late 1990s, EI has been the benchmark method courts rely upon to evaluate RPV patterns in voting rights lawsuits."
Q. Is that consistent with your understanding of the use of EI?
A. It is.
Q. And I believe I may have forgotten to ask you on 275, that sentence that begins with:

Page 119

Beyond this we demonstrate that both...
A. I read that.
Q. Do you agree with that sentence?
MR. WALLACE: Agree with? Object to the form of that.
THE WITNESS: I agree it's what it says, yeah.
Q. (By Mr. Cheung) Do you have any reason to disagree with that conclusion?
A. I do not.
Q. Thank you. Just one more on 283. Can you read that highlighted sentence on 283?
A. "We also did not find any convincing evidence that EI will lead analysts to reach conclusions in favor of RPV."
Q. Do you disagree with that sentence?
A. No.
Q. And so just to sum up here of the highlighted -- of the sentences that you've read from this article, you don't have any reason to disagree with those findings?
A. Correct.
Q. Do you know if Dr. Orey's report used the two EI methods, iterative and RxC, described in this article?

Page 120

A. I don't recall.
Q. Can you turn to Appendix 2 of Dr. Orey's report, I think is page 44, to confirm.
A. Yes, it appears he did use both EI and RxC.
Q. And in terms of that article I just showed you of Plaintiff's Exhibit 4, do you know the authors of this article?
A. I've met Barreto and Collingwood I think maybe once, but it was a very, like, in passing at a conference thing. I don't know them, know them.
Q. Are you familiar with their work?
A. I am.
Q. Do you know if those authors are reputable in the field?
A. They are.
Q. In paragraph 4 of your September report, I think you identify a different issue that you say can have serious implications for any analysis using ecological inference. Do you see that?
A. I do.
Q. You include a quote here. Would you mind reading that to us?
A. Sure. "For example, if white voters tend to be conservative and most potential

Page 121

minority candidates are very liberal, strong minority candidates may elect not to run because they are ideologically out of step. A court that inferred disparate treatment from white voters' lack of support for minority Democrats relative to white Democrats would be doubly in error: White voting patterns may reflect ideological as well as valence differences between minority candidates and the white candidates whom the court treats as counterfactuals."
Q. Thank you.
And that quote is from a 2016 article by Elmendorf?
A. Correct.
Q. Do you consider that Elmendorf article to be a reliable source?
A. I do.
Q. So taking a look at the first part of that quote about minority candidates electing not to run because they may be ideologically out of step. Could you explain why a strong black minority candidate who is a conservative would decide not to run in Mississippi?
A. Who's a conservative?
Q. Uh-huh. (Affirmative response.)

Page 122

A. No.
Q. And so if racially polarized voting did not exist, a black conservative likely would choose to run because they can win the white conservative votes?
A. Maybe. But also if there was no incumbent, if there was an open seat, my hunch is that a black conservative against any Democrat would win regardless -- regardless of -- with the incumbency advantage no open seats. I'd love to see that election.
Q. And so do you disagree with this quote that says: Strong minority candidates may elect not to run if white voters tend to be conservative?
A. Strong minority candidates may elect not to run if -- can you say that again?
Q. Yeah, please take a look at the first sentence of that quote.
A. "If white voters tend to be conservative and most potential minority candidates are very liberal, strong minority candidates may elect not to run because of their ideological --
So what you're asking, then, is what?
Q. Do you agree with that sentence or do

Page 123

you disagree with it?
A. Yeah, I agree with that sentence.
Q. And so why would strong minority candidates elect not to run if white voters are conservative and minority candidates are liberal? I don't understand that. I'd like for you to explain the sort of causation or the thinking behind this quote.
A. Because they're not likely to win. And so the assumption is that the white voters are conservative and aren't going to vote for a black candidate. And so the -- and so they're going to take a pass because they know they have no chance of winning.
Q. Why would a black conservative candidate not have a chance of winning?
A. A black conservative candidate would have a chance of winning, sure. But this is talking about if white voters are conservative in most potential minority candidates are very liberal. Strong minority candidates may elect not to run.
Q. And so the assumption here is that the minority candidate would be liberal?
A. That's the assumption in the quote.

Page 124

Q. Are you aware of any black conservatives being elected to the Mississippi Supreme Court?
A. No.
Q. Are you aware of conservative black candidates winning elections in Mississippi, generally?
A. Winning elections, I don't know about generally. I can tell you not in District One.
Q. Is it also possible that candidate's strategic decision making might result in an underestimation of the level of racially polarized voting?
A. Well, I don't know, I mean, because if they're not on the ballot they can't be voted for. So I don't know how you estimate voting without voting. So I don't know how to answer that.
Q. Is it possible that candidate's strategic decision making, such as electing not to run, might result in an underestimation of the level of white voter discrimination?
A. Well, again, if they're not running --
MR. WALLACE: Object to the form. I'm not sure that white voter discrimination is a term that's been used in this deposition so far. So I believe it's vague.

Page 125

THE WITNESS: Sure, please clarify the vagueness.
Q. (By Mr. Cheung) Sure. Is it possible that candidate's strategic decision making such as electing not to run might result in an underestimation of the level of racial bias among white voters?
A. I'm not aware of -- I'm not aware of evidence that shows racial bias among white voters, so I don't know how to answer that question.
Q. Okay. I have a copy of the Elmendorf article. I can provide you a copy of it if you'd like to see it, or I can read you a quote from it.
A. You can read me a quote.
Q. In that Elmendorf article it says: Candidate's strategic behavior in anticipation of white voter discrimination may lead courts to make grave errors about who is a high quality or low quality candidate and then consequence to badly understate white voter discrimination.
A. Okay.
Q. Do you have any reason to disagree with that statement?
A. No.

Page 126

Q. So you would agree that strategic behavior by candidates may lead to an underestimate of racial bias among voters?
A. May lead.
Q. In work that you've done outside of this case, have you used regressions or other statistical methods?
A. Like in my scholarly research?
Q. Yes.
A. Yes.
Q. And in reports you've prepared for other cases?
A. I'm trying to think. I used -- did I do regression in Alabama? I don't think so. In Colorado, I think we did do some analysis in Colorado but that was the campaign finance case.
Q. Do your reports in this case utilize regressions or any other statistical methods?
A. I don't believe I do, no.
Q. Did you perform any statistical analyses that you've omitted from the report?
A. I did not.
Q. I'd like to turn to sort of the partisan balance, if any, of nonpartisan elections?
A. Can I use the bathroom first?

Page 127

Q. Sure.
(Off the record.)
Q. (By Mr. Cheung) Dr. Bonneau, we mentioned earlier that the ballots for Mississippi Supreme Court elections don't identify the partisan affiliation of Supreme Court Justice candidates; is that right?
A. That is correct.
Q. You also testified earlier about how that omission of partisan information may lead to some voters misidentifying the candidate and voting for the wrong candidate; is that right?
A. Correct.
Q. And so in your January report, you include a quote that says -- I think paragraph 41: Folks who tend to vote Republican have found a way to learn the identity of judicial candidates favored by Republicans, and the same has been true for Democratic voters.
Do you see that?
A. That's a quote from Salter, yes.
Q. Salter 2017 is an op-ed, right?
A. Correct.
Q. Do you know what evidence Salter uses to back up that claim?

Page 128

A. I do not. But that quote is consistent with my research, right, which I talked about earlier, that even though voters make more mistakes in nonpartisan elections, they're still able, overwhelmingly, to identify the correct candidate.
Q. That research you just mentioned, that's not cited in your report?
A. It is. It's paragraph 40.
Q. That's the Bonneau and Cann source for 2015?
A. Correct. And so the Salter paragraph just says that the general thing that my co-author and I found in that book is also a perception that happens in this state as well.
Q. And so your 2015 piece does not look at Mississippi in particular?
A. It looks at all states that have elections. So Mississippi is part of it.
Q. That's the same source that we discussed earlier in which you ran an experiment using ads that you created?
A. Well, it wasn't a -- yes, that's a book -- so there are several chapters in that book. So we embedded surveys into -- we embedded

Page 129

experiments into national surveys, and so we have a nationwide survey that we bought time on to insert our own questions. And so there are Mississippians in that survey. How many, I can't tell you.
Q. So you don't know the sample size of the Mississippians in that study?
A. Correct.
Q. Okay. And in that study you did not look at voters' awareness of the partisan affiliations of candidates running for the Mississippi Supreme Court?
A. Not specifically that, no.
Q. In paragraph 3 of your September report you discuss some efforts by Latrice Westbrooks' campaign to associate herself with Benny Thompson, Joe Biden and Mike Espy; is that right?
A. I do.
MR. WALLACE: Paragraph what?
MR. CHEUNG: Three of the September report.
Q. (By Mr. Cheung) You then conclude that it was clear to those following the race that Judge Westbrooks was a member of the Democratic party and her campaign was assisted by high

Page 130

profile Mississippi Democrats. Do you see that?
A. I do.
Q. Is that conclusion based on those campaign materials that you identify or is there something else to that?
A. No, my conclusion about how she tried to align herself with high profile Democrats is based on the evidence cited there how she associated with high profile Democrats.
Q. Do you agree that there are voters who cast a ballot in the 2020 election who may not have seen that messaging?
A. Sure.
Q. But every voter who receives a ballot sees the omission of a party affiliation next to the candidate's name.
A. Correct.
Q. And in terms of the Mississippi Democrats that you identified Ms. Westbrooks as associating herself with, were they themselves the preferred candidate for black voters in their races?
A. I don't know that. I'm assuming, but I don't know.
Q. Do you have any reason to doubt that?

Page 131

A. I do not.
Q. One thing earlier, I think you mentioned some correspondence you had with someone about whether or not there are criticisms of the EI method that persist?
A. Correct.
Q. Are you able to provide that correspondence to us?
A. I think I can, yeah. I e-mailed --
MR. WALLACE: We will take it under consideration. I think you're probably entitled to have it but we need to talk about that.
MR. CHEUNG: Okay. Thanks, Mike.
Q. (By Mr. Cheung) I'd like to turn to paragraph 5 of your September report. I think there you discuss an example of a candidate named Lynn Posey. Do you see that?
A. I do.
Q. What is the significance of this example?
A. Well, to me this shows how it's -- how party is a pretty important factor. So if we take this race here. We have Lynn Posey who defeated Addie Green. And Professor Orey talked about how Green was the preferred candidate of the black

Page 132

voters, which I think is a given. But four years prior, Posey ran as a Democratic candidate and defeated Haley Barbour's nephew, and he won as a Democrat each time he served in the State Senate.
So if Orey had analyzed the 2007 race, he probably would have found that Posey was the black preferred candidate. But then four years later, all of a sudden, Posey is not the black preferred candidate. Same dude, same preferences, the only difference is one year he was a Democrat, the other year he was a Republican. Which, to me, shows the importance of political party, when you have somebody who's no different except the party ID after their name.
Q. And so you're saying that because Posey was a black preferred candidate in '07 as a Democrat and then he suddenly lost black voter support in 2011 as a Republican, partisanship must be the reason. Why?
A. It's the most likely reason.
Q. You stand by your conclusion that the only difference in the two elections was his political party?
A. As far as I know, unless someone can tell me there was another difference between the

Page 133

two elections.
Q. Is Posey a white candidate?
A. Yes.
Q. In 2007, his opponent, Charles Barbour, was he white?
A. Yes.
Q. In 2011, Addie Green, was she black?
A. Yes.
Q. So the races of the candidates, of the opponent, also changed between 2007 and 2011?
A. Correct.
Q. Can you rule out the possibility that black voters voted for Addie Green because she was a black candidate?
A. Well, that would have to assume that the black preferred candidate, Posey, all of a sudden would not have been black preferred, right? So what would cause him to lose that preference. I would argue, right, that it's party. That had Posey run as a Democrat in 2011, he would have been the black preferred candidate. But because he ran as a Republican, he was not.
Q. Do you have any reason to think that if it were a primary race between Green and Posey, that Posey would have won the votes of black

Page 134

voters?
A. Well, he did in 2007. So unless you can tell a story why he would all of a sudden lose them. I mean, to me, this gets into the whole black candidate versus black preferred. Posey was a white candidate. He was the black preferred candidate in 2007. If he were running in a Democratic primary, my assumption would be he would still be the black preferred candidate. This is akin, I think, to the Ceola James situation, where she was a black candidate but she was not the black preferred candidate. Again, it's hypothetical. We don't know. But what we do know is Posey had a history of being a member of the Democratic party, of winning as a Democrat, winning with black support, then all of a sudden now he loses in.
Q. And so between 2007 and 2011, Posey's party affiliation changed?
A. Correct.
Q. You would also agree that the race of his opponent also changed?
A. Well, no, the race of his opponent stayed the same. But he was running against a black candidate in 2011 rather than a white

Page 135

candidate in 2007.
Q. All right.
A. But Addie Green's race did not change between '07 and '11.
Q. And when candidates switch parties, do their positions on policy issues typically change?
A. You know, not really. I mean, the evidence that I've read suggests that basically it's a -- they're just realigning, right, to be either more similar, right, to the party that represents their views or because they think it's an electoral advantage.
But, you know, when Jim Jeffreys went from a Republican independent, his party positions didn't change. If Joe Manchin would change from Democrat to an independent Republican, his position wouldn't change. He would just feel like it was either, A, to his electoral advantage to do that, or because he feels that the new party that he changed into better reflects his views.
Q. So even if the candidate's actual policy views don't change, does the change in party affiliation signal to voters that their policy positions may have changed?
A. It might. I don't think we can

Page 136

necessarily assume that. You know, I think that's a -- I think party changes like that, voters tend to be pretty cynical about. If Joe Manchin would have changed, right, people would be like, oh, yeah. Well, he's already that anyway.
So I don't know if I -- I mean, it's possible for some voters, sure, but I don't know if that's a widespread thing.
Q. So your view is that if Joe Manchin became a Republican, he wouldn't lose any Democratic votes?
A. He would lose some Democratic votes, sure. But he'd do it, right, because he knows he can't win as a Democrat so he wouldn't care.
Q. In paragraph 7 of your September report, you note that racial polarization did not prevent a black candidate from winning the Democratic primary?
A. Correct.
Q. But winning the Democratic primary doesn't mean that the candidate ultimately wins elected office, right?
A. Correct.
Q. And so a black preferred candidate can win the Democratic primary and still ultimately be

Page 137

unsuccessful because of opposition from white voters in the general election?
A. Yes.
Q. In paragraph 8 you have a quote about racial polarization in the primary. Can you explain the significance of that quote, please?
A. Sure. So what that quote does, is it talks about how -- you're talking about preference for one candidate relative to the other, so it's all relational. It's not necessarily about any kind of absolute support. So it's not a signal of how much minority voters like the preferred candidates, it's just how much do they like the preferred candidate relative to who that preferred candidate is running against.
Q. Why is that fact relevant to your report?
A. Well, I think that it's relevant to report because it suggests that the candidates matter, that it's not just some kind of racial signal, right? So it's not just whether or not you have a black candidate, right, but it's about who it is relative to their opponents.
Q. But that point about relative preference is true of all elections, right, not just

Page 138

primaries?
A. True.
Q. I just want to make sure I'm understanding. Are you suggesting that we shouldn't look at election results to measure racial polarized voting?
A. No.
Q. I'd like to turn to your January report for a moment, in paragraph 38 in particular.
A. Okay.
Q. You cite a source from 1960 for the proposition that one of the best predictors of how individuals will vote is partisan identification. Do you see that?
A. I do.
Q. Do you know how the authors of that 1960 source reached that conclusion?
MR. WALLACE: All right. I'm going to interpose the same objection as being outside the scope of the Court's order, but he may respond.
THE WITNESS: Let me just say, it's an EG, right? So, for example, this is as a canonical study of voting, right, of the American voter was done through survey research, was a large national survey. Everything that's come

Page 139

since that canonical site has found the same thing. So it looks weird because it's 1960. When I was writing the report it was a convenient citation that I had off the top of my head as opposed to saying what the newest one was that found that same that they did in 1960.
Q. (By Mr. Cheung) Thank you. Appreciate that. But do you know how the authors came to that conclusion?
A. Surveys.
Q. Surveys asking who?
A. Of voters, right, of asking voters like party ID, who did you vote for, things like that.
Q. Do you know if the authors considered the possibility that partisan identification itself is related to a voters race?
A. Partisan -- I'm sure they did. I can't remember the specifics.
Q. Do you know if the authors of that survey compared the strength of partisanship versus race as a predictor?
A. No, I mean, they wouldn't have done that. If they did, it would have been, you know, using data that is now 70 years old. So, of limited utility.

Page 140

Q. Okay. And since 1960, as we discussed earlier, black and white voters have essentially switched parties and affiliation?
A. They have.
Q. And after that switch in party identification, black and white voters continued to vote in separate blocks; is that right?
A. For different political parties. Well, blacks overwhelmingly vote for the Democratic party, whites are more split, yes.
Q. Does that history tell you anything about why the parties are split along racial lines today?
MR. WALLACE: I think it's asked and answered, but go ahead.
THE WITNESS: Does what history tell me?
Q. (By Mr. Cheung) The fact that the parties are still divided by race despite the change in party identification.
A. I don't know that I would say the parties are divided by race. I would say that blacks are overwhelmingly members of and vote for the Democratic party and whites are more mixed. I think that's consistent.
Q. I'd like to turn back to Dr. Orey's

Page 141

report again, pages 12 to 14 that you reviewed earlier.
A. Okay.
Q. I think you testified earlier that you don't dispute Dr. Orey's calculations and his data; is that correct?
A. Correct.
Q. Do you agree that in these by biracial general elections that Dr. Orey sampled, he correctly identified which candidates were black?
A. Yes.
Q. And do you agree that he correctly identified the candidates that were preferred by black voters?
A. Yes.
Q. And do you agree that in these general elections in which a black candidate ran against a white candidate, black voters generally prefer the black candidate?
MR. WALLACE: Object to the form generally as vague, but he may answer.
THE WITNESS: Yes.
Q. (By Mr. Cheung) Black voters usually preferred the black candidate?
A. Yes.

Page 142

Q. Did white voters usually prefer the white candidate?
A. Yes.
Q. And in most of these elections involving black and white candidates, did the candidate preferred by black voters lose?
A. In which tables?
Q. Looking at all three tables, Tables 1, 2, and 3.
A. Well, in Tables 1 and 2, yes. But in Table 3, it's much more split.
Q. What if we look at all three tables in the aggregate?
A. Well, in the aggregate -- so we have two elections, then we have five, so it's seven. So we have one and seven there.
So 5 out of 10 and 1 out of 7, so that's a total of 6 out of 17.
Q. Could you do that count for me again?
A. Sure. In Table 1 we have 0 out of 2.
Q. Right.
A. In Table 2 we have 1 out of five, so 1 out of 7. In Table 3 we have 10 elections and I count 5 out of 10.
Q. And that's the number of instances of --

Page 143

A. The black candidate winning.
Q. So in most of the 17 elections, the black candidate lost?
A. In more than half, yes.
Q. In paragraph 28 of your January report you say that incumbents overwhelmingly win their seats and it's only the white judges who could potentially lose their seats because they're being challenged. You see that?
A. I do.
Q. Is that conclusion based on Justice King running unopposed in his reelections?
A. Yes.
Q. Is there any other fact you're relying on for that conclusion?
A. Well, no, because only the white judges are being challenged. So if you're not challenged you can't lose your seat.
Q. Is your view that black incumbents have no electoral risk?
A. If they do, I haven't seen it.
Q. What are some factors that influence whether or not a challenger emerges?
A. Whether or not they can win.
Q. Anything else?

Page 144

A. Well, if they're satisfied with the incumbent.
Q. Any other considerations?
A. Not that I can think of off the top. Usually if you have an incumbent who's vulnerable, they will be challenged. And what makes an incumbent vulnerable could be an incumbent who's out of step with the electorate, an incumbent who can't do their job well or anything else.
Q. But it's not because the incumbent is black that there wouldn't be a challenge.
A. I don't understand how that would work.
Q. Right. I'm just trying to understand your answer that black incumbents are not at risk of losing their seats?
A. Not in District One, at least they haven't been.
Q. So your view is that black incumbents in District One have no risk of being challenged?
A. Well, there's always a risk of being challenged, they just have never been challenged.
Q. And that's based on a sample of how many elections?
A. Three or four.
Q. Would you agree that unopposed judicial

Page 145

elections are not that unusual?
A. Would I agree -- yes, I would.
Q. And it's especially --
A. No, no, sorry, I would disagree with that, that uncontested races are not the -- contested races are the norm.
Q. What about specifically in the context of nonpartisan elections in which there's an incumbent?
A. I believe contested races are still the norm.
Q. So in a 2006 article that you wrote titled Does Quality Matter, you provide the rate of uncontested elections from 1990 to 2000. And you say that the rate for uncontested nonpartisan elections is 42.02 percent. Does that sound right to you?
A. Yes. That data is 22 years old.
Q. Now talking about Justice King, specifically. We talked about the fact that he didn't draw a challenger, maybe in part because a challenger thought they would lose, right?
A. He's never drawn a challenger.
Q. Could part of that be because Justice King is perceived as a strong candidate?

Page 146

A. Yes.
Q. Also potentially because he's an incumbent?
A. Sure, just as Justice Griffis was.
Q. When he was up for reelection, was Justice King always the only black justice on Mississippi's Supreme Court?
A. I believe that's true.
Q. Is it possible that there was a reluctance to be perceived as mounting a campaign to make the Mississippi Supreme Court an all white court?
MR. WALLACE: Object to the form. Reluctance by whom?
THE WITNESS: That was going to be my question.
Q. (By Mr. Cheung) By candidates or parties endorsing candidates, relevant political actors.
A. No. If you think you can win you run. I don't -- if I'm a lower court judge or I want to be on the Mississippi Supreme Court and I think I can win, then I'm going to win. I'm going to go run and win.
Q. You testified earlier that a judicial

Page 147

candidate, although nonpartisan, often receives the backing of a political party.
A. Correct.
Q. And so is it possible that a political party might be reluctant to support a campaign that makes the Supreme Court an all white court?
A. Well, maybe the party of Justice King, the Democratic party would be, but I don't understand why a Republican party would care about that. It's about winning elections. It's not about how it looks.
Q. You use the Justice King example, the contrast with Justice Smith who lost his reelection in 2008, right?
A. Correct.
Q. Justice King's elections were in 2012 and 2020.
A. Correct.
Q. In terms of the likelihood of there being a challenger emerging, could be there some meaningful differences between 2008, 2012 and 2020?
A. Sure, but when Justice King was on the ballot in 2012 and 2020, he was on the ballot with another person who did draw a challenge. So in

Page 148

2012 Justice Waller drew a challenge, and in 2020, Justice Griffis drew a challenge.
Q. And those candidates who drew a challenge, they still won, right?
A. Yes.
Q. Okay. But are there differences between 2008, 2012 and 2020 that could influence whether or not a challenger emerges?
A. Sure, yeah.
Q. Some of that might be candidate-specific characteristics, because we're talking about different incumbents?
A. Sure.
Q. Macro-environment conditions like crime rates might be different?
A. Yep.
Q. You did not control for those differences in your comparison of Justice King to Justice Smith?
A. No. But again, we also have Justice Waller and Justice Griffis who were the same years. So those things would be the same. The only difference is the candidates.
Q. We talked earlier about, you know, the issue of sample size. Do you have a view on how

Page 149

many elections to look at would be a sufficient sample size for you to be able to draw conclusions from these patterns?
A. I would like to -- I mean, I analyzed all of the elections. I would love there to have been more elections, but I can't analyze elections that aren't there.
Q. But with the elections that you do have, in terms of Justice King's reelections not drawing a challenger, the fact that we're only talking about three, maybe four elections, does that affect the confidence you have in the patterns that you're noticing?
A. No, because it's the only patterns I can observe. So I -- you know, if we have another 10 years of data might my conclusions change, sure. I mean that's what happens when you get more data and you get more elections. But, you know, when you're looking at Appendix A, what you see is every incumbent wins except for one, and every incumbent is challenged except for Justice King. Now, I think that's informative.
Q. You testified earlier that you were deposed in the Alabama case?
A. I was.

Page 150

Q. Do you recall testifying in that case, quote: When we are dealing with a small number of elections, many of which can be decided on idiosyncratic factors, I don't think we can make a conclusion like that.
A. Well, I don't know what "like that" meant, what that's referring to. In general, that is something I would say depending upon what the conclusion is.
Q. I'm happy to show you the transcript if you would like for you to see the context.
A. If you want to, that's up to you.
(Exhibit 5 marked for identification.)
Q. (By Mr. Cheung) So that's now Plaintiffs' Exhibit 5. I'd like to point you to page 37 of the transcript. Starting from line 16 and going down to page 38, line 11.
A. Okay.
Q. Would you agree in the Alabama case you concluded that there wasn't enough information to draw a conclusion about patterns in a small sample size of elections?
A. In that case -- hold on. I've got to go back further here. So the question is: Does that -- taken in isolation, does that suggest that

Page 151

the differential in that particular race was not party because they were in the same party, but the differentiator or one differentiator was race?
I said: I don't think we have enough information to conclude.
I don't think we have enough information to conclude what the differentiator is.
Q. What do you see as a difference between the Alabama example and your ability to draw conclusions about Justice King's reelection?
A. Well, I believe we have one -- we're looking at one election, or in the Alabama case at this part -- we have an example of race where there are four candidates. So I think there are fewer elections when I made that there.
And, again, that's right, it could be any number of things. I think I say the same thing in the report here. It could be any number of things that differentiates candidates. I think the evidence is the most consistent with party. But, yeah, I mean, given the small number of elections it's impossible to say. Just like it's impossible to say it's race, it's impossible to say it's gender. The smaller the number of races we have the more difficult it is to establish

Page 152

patterns with conclusiveness. So, again, if I had 10 more years of data and we had this case 10 years from now, might my conclusions be different, sure.
Q. Do you know if apart from Justice King other black justices on the Mississippi Supreme Court have been challenged on their reelection campaigns?
A. Yeah, Justice Graves was challenged in 2004.
Q. And what about before that?
A. I only go back to 2000 in this report. I mean, I have data going back further than that, but I didn't use it for this report, so I can't --
Q. In preparing your reports in this case, did you also review the report prepared by Justice Diaz?
A. I did.
Q. In his report he noted that Justice Fred Banks ran in contested elections in '91 and '96. Does that sound right to you?
A. Yes.
Q. So you mentioned Justice Graves drawing a challenger in 2004; is that right?
A. Yes.

Page 153

Q. I think in paragraph 3 of your January report you said that a black justice has not been challenged since 2000.
A. That should be 2004. That is a typo.
Q. Okay. Thank you. And then in the paragraph after that, in paragraph 31 of the January report, you say that black candidates challenging an incumbent receive an average of 46-and-a-half percent of the vote while white challengers receive an average of 42-and-a-half percent. Do you see that?
A. Uh-huh. (Affirmative response.)
Q. Just for clarity of the record, which elections did you draw those numbers from?
A. That is from the 2000 and 2020.
Q. Did you perform any statistical analysis here to determine whether that difference is statistically significant?
A. I did not.
Q. You did not run a T test or any other type of test?
A. No, my hunch is that there's not enough cases to get any kind of precision.
Q. And so you're saying given the sample size if you had run a test on the difference, the

Page 154

result likely would not be statistically significant?
A. Well, I mean, so we can talk about statistical significance in the context of universe of cases. So statistical significance is used, right, to make inferences from a sample to a population. How likely is it that the data we have in our sample is reflective of the broader population. Here we have the full population. We have every election in District One. So we don't need use an inferential statistic like statistical significance because we observe all the data, and so that is a true data point. We're not trying to take these elections and say how reflective are they of this larger thing. So that does not -- so statistical significance doesn't really apply here because it is significant because it is true.
Q. So how do you know the difference here is not just random noise?
A. Well, it can't be random noise because I'm not making -- I'm not inferring from a sample of elections to a larger population. That's when you're worried about random noise, right, when you're trying to do -- I've got 100 people here. I want to know are these 100 people reflective of

Page 155

1,000 people. We have eight elections, or however many elections we have here. That's all we have. We're not trying to generalize to other elections. And so it's actual data. It can't be random noise.
Now, the causes -- we can talk about the causes. But the fact that African Americans states with (inaudible) candidates in District One received this percentage of the vote and white candidates received that percentage of vote is true. It's fact. There's nothing to infer.
Q. But you would agree that there would be some natural variation in results even if it's the same candidates running against each other?
A. Sure, but that doesn't change the fact that these are true figures. Sure, over time or over different elections vote totals vary. They go up, they go down. But from 2000 to 2020, the fact is that African American candidates who challenge incumbents do better than white candidates who challenge incumbents.
Q. We may be talking in circles here. I'm trying to understand here why you think this difference is of a sufficient magnitude to be notable when there's not a statistical test

Page 156

assigned to it.
A. But there can't be a statistical test assigned to it. So it's notable because it's, I guess -- you could say 4 percent is not notable. That's -- okay. We can quibble about that, that, that's fine. But you can't say that, like, this difference isn't real, because it is real.
Q. I guess my question is how do you determine whether or not that difference is real?
A. Because it's all the cases we have. So let me -- all right. So let me back up here. All right. So let's think about -- thought this was a nonteaching day.
So let's think about when we sample things. We use T tests and inferential statistics, right, when we're trying to take things from a sample to the broad population, which I've said. So I'm trying to understand -- I'm going to ask 100 people a question, you know, is the country on the right track or wrong track. And I'm going to get some data, and that data is going to be 56 percent say wrong track, 40 percent say right track, 4 percent say off track or whatever. Now, my question is, I know that's the rate among these 100 people, because I've asked

Page 157

them and I've calculated that. That's what I've got here, right, with these data. Now if I want to infer to a national sample or to the State of Mississippi or to something outside that, now I need to know how representative are these 100 people of that population. And if they're representative, then we can make an inference. If they're not representative, then we can't or we'll have a less precise inference. These election results are those 100 people. Like, we know the differences there. That 58 percent I get applies to those 100 people without question. It's a real number. It's a real difference.
So because we're dealing here with the population where I've done every election over this time period, there's no statistical test because this difference is an actual difference. You can say it's small, you can say it's not relevant, but you can't say it's not true. Does that make sense?
Q. And so -- I feel like part of what you're saying here is that you think this difference is predicative of future elections?
A. No.
Q. Are you saying that?

Page 158

A. No. What I'm saying is that exactly what I said, in the elections in these districts, African American candidates who challenge incumbents do four points better than white candidates who challenge incumbents. So if the argument is that incumbents have such a huge advantage, right, and we would agree there's an incumbency advantage, what ends up happening is actually a black candidate challenging an incumbent does better than a white candidate challenging an incumbent.

Which shows, one, that incumbency is powerful. But it also shows that, you know, race probably isn't as powerful.

Q. And so you're now relying on this difference to make a judgment about the likelihood of black candidates winning in District One in the future.

A. I didn't say that, no.

Q. And about sort of the size of the difference, are you saying that this difference is notable, of 4 percent?

A. Yes.

Q. How do you determine whether or not the difference is notable?

Page 159

A. It's 4 percent. Again, we can quibble. It's just the opinion. But you can say 4 percent, whatever, that's nothing. But you've going from 42 to 46, who cares. I would say, well, the standard for competitive elections in political science tends to be elections that are decided by 55 percent or less. And so what you're doing here is you're going from an election that's less competitive to election that's more competitive. When you have a more competitive election, that gives the challenger a better chance of winning than in a less competitive election. And if you look at over time when you see competitive elections, competitive elections beget other competitive elections. So if you have a history of competitive elections in a district, you're more likely to see competitive elections in the future, right? Because it signals other candidates that there's actually a shot of taking this person. We might be able to win. You don't get that, right, when you always are in the area where you're not getting competitive elections where the challenge of the incumbents is getting their butt kicked.

Q. In your report you did not compare that

Page 160

4 percent difference to variations or differences in other elections to assessment magnitude?

A. No.

Q. Okay. I think in the paragraph after that, paragraph 32, you say that you compared the vote share, I think, of similarly situated African American candidates to white candidates.

A. That's just a summary of paragraph 31.

Q. Okay. How did you determine that the African American candidates were similarly situated?

A. They were all challenging incumbents.

Q. But you did not control for other differences in their elections?

A. No, they were all challenging incumbents.

Q. So by similarly situated -- I just want to confirm, similarly situated just means the fact that they were challenging the incumbent?

A. Correct.

Q. I'd like to turn to paragraph 50 of the January report. You note that Banks and Westbrooks lost even though Obama and Espy won the majority of the vote in District One. Do you see that?

Page 161

A. I do.

Q. Would you agree that in general for purposes of measuring racially polarized voting, it's more useful to look at election data pertaining to the actual office being challenged?

A. State that again.

Q. In general, would you agree with the view that for purposes of measuring racially polarized voting, election data from the actual office being challenged is more useful than election data from other races?

A. Paragraph 50 doesn't talk about racially polarized voting. It talks about just election results and how people perform. So I don't have an opinion on racially polarized voting and the offices looked at.

Q. Would you agree that in terms of elections for different offices there may be different political dynamics that affect voter behavior?

A. Yes.

Q. And so Obama was running nationally and statewide in Mississippi?

A. Correct.

Q. And Espy was running statewide?

Page 162

A. Correct. But you know there's a great literature about coattails and about how the top of the ticket can influence down ballot races. Particularly, presidential coattails. And so the fact that in District One that President Obama won 53.9 percent of the vote, you would have expected, right, that he would have helped down ballot tickets. The same thing with Mike Espy.

So there are different dynamics in those races, but you have a lot of people who come in and -- you know, a rising tide lifts all boats.

Q. You also testified earlier that because the Supreme Court races are nonpartisan, there is a ballot dropoff effect?

A. There is.

MR. WALLACE: Object to the form as mischaracterizing. I don't think he said that before, but I may be wrong.

THE WITNESS: Well, there is ballot roll-off. There is ballot roll-off. And you do have more ballot roll-off in nonpartisan elections compared to partisan elections. But what the -- the effect of that, right, I think I would quibble with because you don't necessarily know, like, is it 20 percent of one party or certain demographics

Page 163

or not. That we don't know.

Q. (By Mr. Cheung) And you would agree that Obama, Espy, Banks, Westbrooks, they're all different candidates in terms of name recognition?

A. Yes.

Q. They likely differ in terms of fundraising capacity as well?

A. Yes.

Q. They also differ in terms of incumbency advantage?

A. Obama in '12 was an incumbent, Banks was an incumbent -- no, that was a different Banks.

MR. WALLACE: Different Banks.

THE WITNESS: Different Banks, okay. Espy was not an incumbent and neither was Westbrooks. So the only incumbent was Obama.

Q. (By Mr. Cheung) So going back to how we defined the third Gingles precondition about white block voting overcoming black block voting. Is it your conclusion that Gingles three is not satisfied in this case in part because black incumbents like Justice Graves and Justice King have won in District One?

MR. WALLACE: I'm going to object to the form of that because it does ask for a legal

Page 164

conclusion about the Gingles case. He may answer if he understands it.

THE WITNESS: Well, I say in paragraph 53, the evidence does not support the third precondition that the majority group does not vote as a block such that likely -- such that will usually defeat the minority group's preferred candidate. In fact the mixed success of African American candidates in District One elections strongly suggest that voters, both white and black, are making decisions based on suitability of the candidates themselves.

Q. (By Mr. Cheung) And I'm saying underlying that conclusion in paragraph 53, are you relying on the fact that Justice King was not challenged in his reelections and the fact that Justice Graves won his reelection?

A. I rely on the fact that African American candidates in District One elections for the State Supreme Court win and sometimes aren't even challenged.

Q. And so your view is that in evaluating Gingles three, we have to take into account the fact that Justice King was not challenged in his two reelections?

Page 165

MR. WALLACE: Again, that's a legal question -- a legal opinion. I may object to the form. He may answer.

THE WITNESS: I would say that when you have a competitive legal environment and you have justices challenged all the time, except for one justice, that suggests that that justice is doing something right. And I'm not aware of a story that one can tell that you'd have a political party or candidate say oh, you know, I'd love to have that seat, but I'm not going to do it because it would look bad. That's just not how politics works in the way that I'm familiar with. And so the fact that, yeah, he's not even challenged and that he's winning is, I think, really important. Because he might -- you know, District One, right, Justice Kitchens is a Democrat, too. So Justice King if he were challenged would likely win. No one is even bothering.

Q. (By Mr. Cheung) Do you agree that Justice Graves won in part because he was an incumbent at the time?

A. Well, if you look at Appendix A, then yeah, we only have one incumbent who lost. So looking at those elections, I would say that him

being an incumbent was certainly helpful.
Q. And so would it change your conclusion if I told you that in the Gingles case the Supreme Court ruled that we should disregard special circumstances such as victories by black candidates when they run unopposed or when they have an incumbency advantage?
MR. WALLACE: Object to the form, since you're asking him about a Supreme Court opinion, but he may respond.
THE WITNESS: Would it change my conclusion? No. I would say that that -- I mean, that may be their conclusion, but as a matter of, like, social science or whatever, that's nonvalid.
Q. (By Mr. Cheung) Okay.
A. I mean at that point we're eliminating useful information.
Q. But in paragraph 53 where you cite the third precondition of Gingles, are you purporting to faithfully apply the Gingles factor?
A. I'm purporting to say that based on the data, African American candidates in District One elections win. That's what I'm saying.
Q. You don't have an opinion on whether or not your data disproves the existence of the third

Gingles precondition?
A. I do not.
Q. Okay. All right. I'm done with my questions for now.
(Off the record.)
MR. WALLACE: We're back on the record. What worried us is tendering the witness "for now." I have a very few questions about questions that you asked earlier. And if any of these questions cause you to come back with anything about these questions, I think you've got a right to do it. But I don't think you've got a right to come back and ask anything else. And if you were intending to suggest you may have other questions later, then I would ask you to go ahead and ask them now. I've got two or three questions about what he's already said and then we're done.
MR. CHEUNG: Okay. Appreciate that, Mike.
MS. JONES: I think we're done.
MR. WALLACE: You're done as far as --
MR. CHEUNG: Yes.
MR. WALLACE: If any of this sets you off, you have a right to --
EXAMINATION BY MR. WALLACE:

Q. Dr. Bonneau, you were asked a few questions some time ago about House Bill 1020 because you talked to Yahoo News. Do you have any personal knowledge regarding the enactment of House Bill 1020?
A. I do not.
Q. Have you undertaken any study or analysis regarding the enactment of House Bill 1020?
A. I have not.
Q. And are you here today to offer any expert opinions regarding the enactment of House Bill 1020?
A. Not that I'm aware of.
MR. WALLACE: We've got nothing further.
(Time Noted: 12:39 p.m.)
SIGNATURE/NOT WAIVED
ORIGINAL: MR. CHEUNG, ESQ.
COPY: MR. WALLACE, ESQ.

CERTIFICATE OF DEPONENT
DEPONENT: CHRISTOPHER BONNEAU
DATE: September 29, 2023
CASE STYLE: DYAMONE WHITE, ET AL. vs. STATE BOARD OF ELECTION COMMISSIONERS, ET AL.
ORIGINAL TO: MR. CHEUNG, ESQ.

I, the above-named deponent in the deposition taken in the herein styled and numbered cause, certify that I have examined the deposition taken on the date above as to the correctness thereof, and that after reading said pages, I find them to contain a full and true transcript of the testimony as given by me.

Subject to those corrections listed below, if any, I find the transcript to be the correct testimony I gave at the aforestated time and place.

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This the ____ day of _____, 2023.

_____
CHRISTOPHER BONNEAU

State of Mississippi
County of _____

Subscribed and sworn to before me, this the _____ day of _____, 2023.
My Commission Expires:

_____ _____
Notary Public

CERTIFICATE OF COURT REPORTER

I, Robin G. Burwell, Court Reporter and Notary Public, in and for the State of Mississippi, hereby certify that the foregoing contains a true and correct transcript of the testimony of CHRISTOPHER BONNEAU, as taken by me in the aforementioned matter at the time and place heretofore stated, as taken by stenotype and later reduced to typewritten form under my supervision by means of computer-aided transcription.

I further certify that under the authority vested in me by the State of Mississippi that the witness was placed under oath by me to truthfully answer all questions in the matter.

I further certify that, to the best of my knowledge, I am not in the employ of or related to any party in this matter and have no interest, monetary or otherwise, in the final outcome of this matter.

Witness my signature and seal this the 11th day of October, 2023.

ROBIN G. BURWELL, #1651
CRR, RPR, CCR
My Commission Expires:
April 6, 2025

Expert Report for Byron D'Andra Orey, Ph.D.

October 3, 2022

I. Introduction

I have prepared this report pursuant to Federal Rule of Civil Procedure 26(a)(2)(B). I have been asked to express opinions on whether racially polarized voting (RPV) exists in Mississippi and in particular in Mississippi Supreme Court District 1, and whether or not RPV has resulted in the defeats of Black-preferred candidates in Mississippi Supreme Court District 1. I have also been asked to consider whether RPV exists independent of polarization on the basis of partisan affiliation. I am being compensated at $200 per hour for my work on this case. My compensation is not contingent on or affected by the substance of my opinions or the outcome of this litigation. My work in this matter is ongoing, and I reserve the right to amend, modify, or supplement my analysis and opinions.

II. Background on Racially Polarized Voting

In the landmark *Thornburg v. Gingles* case, the Supreme Court set forth a three-prong test for assessing minority vote dilution in litigation arising under Section 2 of the Voting Rights Act (VRA). The *Gingles* test asks whether: 1) the racial or language minority group is "sufficiently large and geographically compact to constitute a majority in a single-member district"; 2) the minority group is "politically cohesive" (meaning its members tend to vote for the same candidate); and 3) the "majority votes sufficiently as a bloc to enable it ... usually to defeat the minority's preferred candidate."[1] In particular, the second and the third preconditions

[1] *Thornburg v. Gingles*, 478 U.S. 30, 50-51 (1986).

under the *Gingles* test have become the legal definition of RPV. Moreover, one of the so-called "Senate Factors" that courts consider in evaluating the presence of unlawful minority vote dilution under Section 2 of the Voting Rights Act is "the extent to which voting in the elections of the state or political subdivision is racially polarized."[2]

III. Summary of Professional Qualifications

I am a full professor with tenure in the Department of Political Science at Jackson State University and a former chair of the Department of Political Science. I have conducted significant research in the area of racial polarized voting. This research has been presented at professional conferences and published in peer reviewed scholarly journals. These journals include, but are not limited to, *Social Science Quarterly*, *PS: Political Science and Politics*, *American Politics Research*, *Politics and Policy*, *Race and Policy* and *State Politics and Policy Quarterly*. I have also served on the executive committees for the American Political Science Association, the Southern Political Science Association, and the National Conference of Black Political Scientists. I have served as Vice President for the Southern Political Science Association and served on the Editorial Board for the American Political Science Review and State Politics and Policy Quarterly. Commentary related to my work has appeared in several media outlets, including National Public Radio, Al Jazeera, MSNBC, CNN, the Daily Beast, and the News Hour (PBS).

Attached as **Appendix 1** is a curriculum vitae setting forth my professional background, which includes a list of all publications I have authored or co-authored. I have also testified, at trial, as an expert trial witness *Johnson v. Hamrick*, No. 2:91-CV-02-WCO (N.D. Ga.), a

[2] *Id.* at 44-45.

redistricting case involving city council elections in Gainesville, Georgia. I have served as an expert in numerous other cases where I have given depositions but did not testify. These include *Lewis, et al. v. Alamance County, et al.*, No. 2:92-cv-00614 (M.D. N.C.) and *Jackson v. Nassau County Board of Supervisors*, No. CV 91-3720 (E.D. N.Y.). I have also provided consultation related to the electoral structure for the City of Hampton, Virginia.

IV. Opinions

I have formed the following opinions: Based on the data available at the time of writing this report, voting in Mississippi (and in particular in Supreme Court District 1) since 2011 is racially polarized. In particular, in 17 of the 17 biracial elections analyzed, Black voters expressed a clear preference for the same candidate and voted cohesively for that candidate, typically at a rate of more than 90%. Furthermore, this preference was not shared by the White voters, who provided very low support for the Black-preferred candidates, and typically voted against Black-preferred candidates at a rate of more than 90%. As a result, the Black preferred candidates were usually defeated due to White bloc voting in the elections analyzed. I identified all biracial statewide and Supreme Court District 1 general election contests (including Public Service Commission and Transportation Commission Central District) from the 2011 election cycle through 2020. Notably, the dataset includes two biracial endogenous contests, consisting of the 2012 and 2020 contests for Supreme Court Justice in Supreme Court District 1. Endogenous elections are elections held using the challenged district at issue (here, the Supreme Court district lines at issue). The dataset also includes five "quasi-endogenous" contests whereby the districts consist of the same lines as Supreme Court District 1, but the position sought is Public Service Commissioner or Transportation Commissioner. In addition to those five "quasi-endogenous," I

also identified and reviewed 10 exogenous biracial elections. Exogenous elections are elections that do not utilize the particular district lines at issue.[3] It should be noted here that estimates for all racial polarized voting analyses are derived only from the precincts contained in Supreme Court District 1. All of those contests exhibited very high levels of racially polarized voting, and the Black-preferred candidate was defeated in Supreme Court District 1 by White bloc voting in 11 contests, including both of the biracial elections for Supreme Court justice, which were non-partisan races in which party affiliation cannot have driven the results.

In sum, it is my opinion that the data demonstrates a high degree of racial polarization and that the second and third *Gingles* criteria are met in this case.

V. Elections Analyzed

The attorneys for the plaintiffs in this case have asked me to analyze whether and to what extent voters' candidate preferences reveal the presence of racially polarized voting. I am aware of case law stating that endogenous elections and biracial elections are generally considered the most probative for assessing RPV.[4]

[3] Evidence from exogenous elections can be used to supplement evidence from endogenous elections, particularly where there is little data from recent endogenous elections. The court premised its holding on *Gingles's* view of sparse data: "'[W]here a minority group has begun to sponsor candidates just recently the fact that statistics from only one or a few elections are available for examination does not foreclose a vote dilution claim.'" *Citizens for a Better Gretna v. City of Gretna*, 834 F.2d 496, 502 (5th Cir. 1987) quoting *Gingles*, 478 U.S. at 57 n.25).

[4] *See Wright v. Sumter Cnty.*, 979 F. 3d 1282, 1292-93 (11th Cir. 2020) ("[E]vidence drawn from elections involving black candidates is more probative in Section Two cases"); *Clark v. Calhoun Cnty., Miss.*, 88 F.3d 1393, 1397 (5th Cir. 1996) ("[E]xogenous elections-those not involving the particular office at issue are less probative than elections involving the specific office that is the subject of the litigation.").

In total, seventeen biracial elections of recent vintage were identified for this report. Two of these elections were Supreme Court contests held in 2012 and 2020. The 2012 election involved the unsuccessful bid by Earle Banks to win a Supreme Court District 1 seat and the 2020 election involved the unsuccessful effort of Latrice Westbrooks to win a Supreme Court District 1 seat. Both of those elections were non-partisan (that is, candidates not appear on the ballot with any partisan affiliation). In addition to these two contests, there have been five biracial general election contests for Public Service Commission and Transportation Commission in 2011, 2015, and 2019. These contests are noted as "quasi-endogenous" contests because they utilize the same lines as Supreme Court District 1. Another 10 exogenous statewide contests were also examined.

My focus on biracial elections is consistent with scholarly research, which finds that minority voters are particularly mobilized in elections involving a minority candidate running against White candidates.[5] Biracial elections are particularly salient because, in the contest of potential racial polarization, these elections are more likely to satisfy the necessary conditions in which Black voters and non-Black voters had a realistic opportunity to vote for the candidate of their choice, which is not necessarily available in uni-racial elections involving only White candidates (or involving only Black candidates). In addition to elections from the Central District, elections included in this report consist of all biracial statewide contests for U.S. President, U.S. Senator, and various statewide offices (e.g., Governor or Secretary of State) since 2011. For those statewide contests, I analyzed RPV by examining election results in those precincts that are within Supreme Court District 1 lines. There is a total of ten such contests. I

[5] Matt A. Barreto. 2012. *Ethnic Cues: The Role of Shared Ethnicity in Latino Political Participation*. University of Michigan Press; Karen M. Kaufmann. 2004. *The Urban Voter: Group Conflict and Mayoral Voting Behavior in American Cities*. University of Michigan Press.

focused on elections since 2011 because more recent contests are more relevant in determining the presence of racial polarization in the here and now.

VI. Data

To analyze voting patterns by race using aggregate level information, a database that combines election results with demographic information is required. This database is almost always constructed using election precincts as the unit of analysis. The demographic composition of the precincts is based on voter registration or turnout by race/ethnicity if this information is available; if it is not, then voting age population is used. Here, Mississippi does not collect voter registration data by race and therefore voting age population (VAP) by race and ethnicity as reported in the PL 94-171 U.S. Census redistricting data was used for ascertaining the demographic composition of the precincts.

In particular, VAP by race and ethnicity for each precinct and year was calculated by aggregating Census block-level population data to the precinct level. For 2020 and 2010, VAP by race and ethnicity for each precinct and year was calculated by aggregating 2020 and 2010 Census block-level population data to the precinct level. For years between 2010 and 2020, population for each precinct was calculated according to the following interpolation procedure:

> (a) the total population change between 2010 and 2020 for each racial group was calculated for each Census Block by subtracting 2010 population from 2020 population, with 2010 and 2020 Census Blocks matched using the U.S. Census Bureau's Block Relationship files;[6]

[6] *See* U.S. Census Bureau, *Relationship Files*, https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.html.

(b) the resulting total change number for each Block was then multiplied by the fraction of the decade that had passed (e.g., the 2010-2020 change number was multiplied by 6/10 or .6 for the year 2016, 5/10 or .5 for 2015, etc.);

(c) that product, representing the marginal increase in population for a particular group in each Census Block at a given point of time, was then added to the 2010 baseline population for each Census Block to yield the block-level population in a given year;

(d) the block-level data for each year was then aggregated to the precinct level.

Analyzing voting patterns by race requires a database that combines population data by race (or registration or turnout by race if it is available) with election returns. To build the dataset in this instance, 2010 and 2020 official voting tabulation district (VTD) shapefiles were acquired from the U.S Census Bureau as part of the P.L. 94-171 file. In years near the decennial Census, VTDs are a close approximation to voting precincts. In addition, in-cycle precinct-level shapefile datasets for 2016, 2018, and 2019 were acquired from the Harvard dataverse website.[7] These shapefiles were joined to precinct-level election returns, which were obtained from the Mississippi State Secretary of State's Office, processed, and cleaned (i.e., rendered in a machine-readable format) by More Equitable Democracy, a consultant for the attorneys in this case, with review by counsel. The precinct-level results were then joined with the precinct-level population data described above.

[7] Voting and Election Science Team, 2018, "2016 Precinct-Level Election Results," https://doi.org/10.7910/DVN/NH5S2I, Harvard Dataverse, V86; Voting and Election Science Team, 2019, "2018 Precinct-Level Election Results," https://doi.org/10.7910/DVN/UBKYRU, Harvard Dataverse, V61; Voting and Election Science Team, 2020, "2019 Precinct-Level Election Results," https://doi.org/10.7910/DVN/2AJUII, Harvard Dataverse, V5.

The complete dataset used for this report, including the interpolated U.S. Census population data described above, was prepared and provided to me by counsel, and is being made available to Defendants.

VII. Analysis of Voting Patterns by Race

An analysis of voting patterns by race serves as the foundation of two of the three threshold elements of the "results test" as outlined in *Thornburg v. Gingles*: a racial bloc voting analysis is needed to determine whether the minority group is politically cohesive; and the analysis is required to determine if Whites are voting sufficiently as a bloc to usually defeat the candidates preferred by minority voters. The voting patterns of White and minority voters must be estimated using statistical techniques because direct information about the race of the voters is not, of course, available on the ballots cast.

To carry out an analysis of voting patterns by race, an aggregate level database must be constructed, usually employing election precincts as the units of observation. Information relating to the demographic composition and election results in these precincts is collected, combined, and statistically analyzed to determine if there is a relationship between the racial composition of the precincts and support for specific candidates across the precincts.

I used the following two-step operational rules to measure whether a particular election is racially polarized: First, I estimated the Black and White group support for the Black candidate in a given biracial election; and second, I further analyzed the extent of racial polarization by considering the gap between the level of Black support for Black preferred candidates, and the level of White support for Black-preferred candidates. Since voting in the United States takes place in privacy, the only way to determine the levels of Black and White group support is

through statistical procedures. In this report, I analyzed the set of biracial elections described above using the Ecological Inference (EI) method developed by Professor Gary King of Harvard University.[8] EI is a statistical procedure for estimating voting results of voter groups (in this case racial groups).

Here, I use a more recently developed version of ecological inference software known as EI Compare to run the EI model. EI Compare software provides the results from estimates of the King EI model and a comparison estimate in what is known as the EI RxC model. EI RxC expands the analysis so that more than two racial/ethnic groups can be considered simultaneously. In the next section, I report estimates calculated using a two-group version of the King EI model, which is well suited to estimating voter results where the electorate is divided between two groups.[9] That analysis is appropriate here because Mississippi's racial population

[8] *See* Gary King, *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data* (Princeton University Press, 1997). This procedure is superior to the methodologies relied upon in the *Gingles* case itself, which were homogeneous precinct analysis and ecological regression analyses. Homogenous Precinct Analyses simply report the percentage of the votes received by a candidate or set of candidates within the precincts in which a particular group, Blacks or Whites, constitutes over 90 percent of the people receiving ballots. Voters in such precincts might not vote in a similar way to that of voters residing in mixed precincts, however. Ecological Regression (ER) derives estimates, based on all of the precincts, through a linear model premised on the notion that the percentages of Blacks that vote for a particular candidate or candidates are the same in every precinct, and likewise that the percentages of Whites that vote for a candidate or set of candidates are the same in every precinct. EI also takes into account every precinct, but does not rely on an assumption of linearity. Instead, it employs a "maximum likelihood" model for deriving estimates. The EI procedure further incorporates the method of bounds in the analysis, which precludes group estimates from exceeding real-world limits, for example preventing a group's estimated support for a candidate or group of candidates from being above 100.0 percent or below 0.0 percent, as can happen with ER. EI, which can also be used for other purposes, is now used widely in racially polarized voting analyses.

[9] Here, the underlying demographic data functionally includes three racial groups: Black VAP, White VAP, and Other VAP, i.e., the difference between Total VAP and the sum of Black VAP and White VAP. The vast majority of voters fall into the Black VAP or White VAP categories, and the Other VAP number is small. However, because the EI model is sometimes said to be preferred when there are only two racial groups at issue, e.g., Collingwood, Loren et

is highly binary, i.e., Black and White. I also separately generated three-group (White, Black, and Other) King EI and EI RxC analyses using the EI Compare software, both of which produced similar estimates of racial group support (i.e., similarly high levels of racial polarization) which corroborate the results of the two-group King EI model.[10] The full results of these analyses are reported in a summary table in **Appendix 2** and the raw results are included in **Appendix 3** and **Appendix 4** along with the scripts that were run to produce the results.

The methods employed here not only provide a specific, or point, estimate of a group's support for a particular candidate, but also provide confidence intervals for that estimate. These intervals identify the range of estimates within which we can be 95 percent confident, statistically, of where the actual value of a group's support for a candidate falls. The point estimate is the best estimate, in that it is most likely to be the actual value. EI has been widely

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al. (2016). *eiCompare: Comparing Ecological Inference Estimates across EI and EI:RC*. The R Journal. 92-101, I reduced the number of race variables to two to employ a two-group EI model. The two-group EI estimates set forth in the body of this report were derived in the following manner: First, I estimated the Black vote by running the EI model with a Black VAP variable and a combined White VAP and Other VAP variable (i.e., I combined the White VAP and Other VAP data to create one variable). Second, I similarly estimated the White vote by running the EI model with a White VAP variable and a combined Black VAP and "Other VAP" variable. The scripts used to generate the two-group King EI analysis described above are included in **Appendix 3**.

As noted in text, and set forth in the Appendix 2 summary table, running the King EI model using all three groups, rather than reducing to two, produced nearly identical results to the two-group procedure.

[10] Because the EI RxC method is designed to allow for the simultaneous estimation of support by more than two groups, the EI RxC analysis included in the Appendix 2 summary table and in Appendix 4 raw data estimates levels of candidate support for each of the three racial groups reflected in the demographic data (Black VAP, White VAP, and Other VAP). The scripts used to generate the RxC estimates are also included in **Appendix 4**. While the EI RxC analysis also shows racial polarization across the board, and generally produces estimates of Black support for Black candidates that are very close to the EI model estimates, the EI RxC analysis in a number of cases estimates levels of White support for Black candidates that are *even lower* than the estimates produced by the King EI models.

used as the most advanced and reliable statistical procedure for RPV estimates in not only academic research but also voting rights cases. To estimate support for candidates from different racial groups using an EI operation, precinct-level election return data for a given election is matched against demographic data regarding the voting-age population (VAP) of various racial groups (here, White, Black, and "all other" racial groups) typically also at the precinct level from the time of the election. These data are used to calculate coefficient estimates to determine racial bloc voting.

VIII. The Findings[11]

As explained above, the selection of the elections for my RPV analysis is based on three criteria: (1) biracial elections involving at least one Black major candidate and one white major candidate[12]; (2) since 2011; (3) which are endogenous elections supplemented by "quasi-endogenous" elections and exogenous statewide elections. As set forth in Table 1, the two endogenous Supreme Court District 1 elections reveal high levels of racial polarized voting.

In particular, in the 2012 Supreme Court contest in that district, according to the table using 95% confidence limits around the estimated coefficients, we can expect the "true" value of the estimated Black support for Candidate Banks to lie between 80.80 and 81.80 percent, with 81.26 being our best estimate, while the 95% confidence limits around White support are such that we expect the "true" value of the estimate for the White vote to lie between 5.01 and 5.83 percent, with 5.44 being our best estimate. Likewise, for the 2020 Supreme Court election, when

[11] I used the eiCompare package from the library within the RStudio-software to derive the racial polarized voting estimates for EI.

[12] There was one other bi-racial contest that included a third party Black candidate. This contest was excluded because the Black candidate was not from a major party.

estimating the support for Candidate Westbrooks by race, we can expect the "true" value of the estimated Black support for Westbrooks to lie between 89.97 and 91.03 percent, with 90.46 being the best estimate. The best estimate for White support for Westbrooks is 6.43%. As is indicated by the estimated coefficients, each of the Black candidates in these endogenous, non-partisan races received substantial Black support, but less than 10% of the White vote, leading to the defeat of Black voters' candidates of choice. Notably, both of those biracial Supreme Court District 1 contests were non-partisan elections, and thus the high levels of racial polarization in those races cannot have been driven by political party affiliation.

Table 1. Estimated Racial Support for Black Candidates in Endogenous Elections

Election	Black Candidate	White Candidate	% Vote Black Candidate	Black Vote Black Candidate (CI)[13]	White Vote Black Candidate (CI)	Black Candidate Won	RPV
2012 Supreme Court	Banks	Waller	44.4	81.26 (80.80-81.80)	5.44 (5.01-5.83)	No	Yes
2020 Supreme Court	Westbrooks	Griffis	48.5	90.46 (89.97-91.03)	6.43 (5.89-6.88)	No	Yes

As set forth in Table 2, five additional "quasi-endogenous" biracial elections in Supreme Court District 1 corroborate the existence of high levels of racial polarization in that district, and corroborate that such polarization usually leads to the defeat of Black-preferred candidates. In each of those races, Black voters typically supported Black candidates at rates of around 90% or more, while White voters supported the Black candidate with less than 10% of the vote (typically around 8%). In four of the five elections, this high level of White bloc voting led to the defeat of the Black-preferred candidate despite high levels of Black support.

[13] C.I. is the confidence interval for each of the estimates.

Table 2. Quasi-Endogenous Elections

Election	White Candidate	Black Candidate	% Black Candidate	Black Vote Black Candidate (CI)	White Vote Black Candidate (CI)	Black Candidate Won	RPV
2011 Central Public Service Commission	Posey	Green	44	90.94 (90.27-91.50)	8.16 (7.47-8.80)	No	Yes
2011 Central Transportation Commission	Hall	Crisler	47	91.04 (90.44-91.42)	8.29 (7.80-8.76)	No	Yes
2015 Central Transportation Commission	Hall	Coleman	45	89.36 (88.90-89.83)	4.87 (4.42-5.38)	No	Yes
2019 Central Public Service Commission	Bailey	Stamps	49	91.36 (91.52-92.83)	7.60 (7.07-8.51)	No	Yes
2019 Central Transportation Commission	Lee	Simmons	51	93.97 (93.33-94.44)	8.81 (8.12-9.79)	Yes	Yes

Finally, the results in Table 3, which shows exogenous statewide biracial contests since 2011, again reveal high levels of racially polarized voting, with Blacks overwhelmingly supporting the Black candidate with approximately 90% or more of their vote and Whites supporting the Black candidate with typically 15% or less of their vote (sometimes much less). Based on the data, even in these partisan statewide contests, half of the Black candidates were defeated in Supreme Court District 1, despite Black support in the high 80s or 90s due to the level of White bloc voting.

Table 3. Exogenous Elections

Election	White Candidate	Black Candidate	Percent Black Candidate	Black Vote Black Candidate	White Vote Black Candidate	Black Candidate Won	RPV
2011 Governor	Bryant	DuPree	53	90.94 (90.20-91.51)	8.11 (7.45-8.71)	No	Yes
2012 President	Romney	Obama	54	92.72 (92.13-93.32)	12.12 (11.13-13.38)	Yes	Yes
2015 Governor	Bryant	Gray	41	87.76 (87.06-88.17)	4.44 (4.04-5.01)	No	Yes
2015 Secretary of State	Hosemann	Graham	44	87.58 (87.12-87.97)	4.67 (4.11-5.21)	No	Yes
2018 U.S. Senate	Hyde-Smith	Espy	57	94.91 (94.27-95.49)	16.42 (15.70-17.36)	Yes	Yes
2019 Treasurer	McRae	Green	49	92.38 (92.20-93.49)	7.16 (6.48-7.76)	No	Yes
2019 Sec. of State	Watson	DuPree	51	94.35 (93.81-94.84)	8.73 (8.24-9.51)	Yes	Yes
2019 Insurance Commission	Chaney	Amos	49	92.08 (91.52-92.62)	6.66 (6.08-7.26)	No	Yes
2019 Attorney General	Fitch	Collins	53	94.54 (93.87-95.08)	10.82 (10.13-11.51)	Yes	Yes
2020 U.S. Senate	Hyde- Smith	Espy	55	96.34 (95.94-96.68)	13.5 (12.71-14.30)	Yes	Yes

IX. Conclusion

The empirical analyses clearly reveal that in 17 of 17 biracial elections in the last decade, Black voters expressed a strong, cohesive preference for Black candidates, but that preference was not shared by White voters, who voted cohesively against Black-preferred candidates every time. This clear RPV pattern is demonstrated by two endogenous biracial Supreme Court elections, which are non-partisan races and thus cannot be explained by party affiliation, as well as five additional quasi-endogenous contests, Transportation and Public Service Commissioner races, and ten more statewide biracial elections during the last decade. Despite Black voters uniting cohesively behind their preferred candidates, the White majority typically voted sufficiently as a bloc to defeat the Black candidates in these elections, including in both endogenous biracial Supreme Court elections, and four out of five "quasi endogenous" commissioner races.

Based on my empirical analysis of Mississippi's recent elections, I conclude that Mississippi's elections, particularly in Supreme Court District 1, exhibit a high level of polarization, and that the second and third threshold criteria involving racial polarization as set forth in *Gingles* are met.

As noted, I reserve the right to amend, modify, or supplement my analysis and opinions. Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the information and opinions contained in this report are true and correct to the best of my knowledge.

October 3, 2022 Dr. B. D'Andra Orey, Ph. D

APPENDIX 1: CURRICULUM VITAE

B. D'Andra Orey, PhD
Curriculum Vitae

Office:
Department of Political Science
Jackson State University
1400 John R. Lynch St.
Jackson, MS 39217
(601) 979-2737
byron.d.orey@jsums.edu

Education

University of New Orleans
Ph. D., Political Science, 1999

State University of New York at Stony Brook,
M.A., Political Science, 1993

University of Mississippi, Oxford, MS
Master of Public Administration, August 1990

Mississippi Valley State University, Itta Bena, MS
B.S., Business Administration, May 1988

Continuing Education

International Workshop on Statistical Genetic Methods for Human Complex Traits. March 3 –March 7, 2014. Boulder, Colorado

International Workshop on Statistical Genetics and Methodology of Twin and Family Studies. February 28-March 6, 2010. Boulder, Colorado
-Received training in the area of structural equation modeling, using R and Mx using twin data

Inter-University Consortium of Political and Social Research, University of Michigan, 2006, Course: "Empirical Summer Program in Applied Multi-Ethnic Research"

Institute for Professional Education, Virginia Tech University**,** 1995. Linear and Nonlinear Regression with Applications

Inter-University Consortium of Political and Social Research, University of Michigan, 1993, Courses: Logit and Log-Linear Models; Regression Analysis, Maximum Likelihood Estimation; and Structural Equations (Causal) Models

Professional Training

Duke University Community Census and Redistricting Institute, August 2010.
-Received training to prepare redistricting plans using Geographical Information Systems.

Southern Regional Council, Voting Rights Expert Witness Training.
January-December 1993
-Received training in the areas of ecological regression and homogenous case analysis. Mentors included: James Loewen, Ph.D. University of Vermont, Bernard Grofman, Ph.. D. University of California Irvine and Alan Lichtman, Ph.D., The American University, Washington D.C.

Southern Regional Council, Voting Rights Expert Witness Training.
January-December 1994
-Received training to prepare redistricting plans using Geographical Information Systems.

Academic Positions

Jackson State University, Jackson, MS
Professor, Political Science (Fall 2008-Present)

Jackson State University, Jackson, MS
Professor and Chair, Political Science (Fall 2008-2012)

The University of Nebraska, Lincoln, NE
Associate Professor, Political Science (Spring 2007-Spring 2008).

The University of Nebraska, Lincoln, NE
Assistant Professor, Political Science (Fall 2001-Spring 2007).

University of Mississippi, Oxford, MS
Assistant Professor, Political Science and Afro American Studies (1999-2001).

Professional Publications (Peer-Reviewed Articles)

"Racial Differences in Feelings of Distress during the COVID-19 Pandemic and John Henryism Active Coping in the United States: Results from a National

Survey." 2022. *Social Science Quarterly*. (Jas Sullivan, Samaah Sullivan, Byron D'Andra Orey and Najja Baptist).

"Racial Identity and Emotional Responses to Confederate Symbols." 2021. *Social Science Quarterly*. (**Byron D'Andra Orey**, Najja Baptist and Valeria Sinclair- Chapman).

"Melanated Millennials and the Politics of Black Hair." 2019. *Social Science Quarterly*. (**Byron D'Andra Orey** and Yu Zhang)

"Race and Wellbeing in the US: The Psychological Toll of a Broken System." 2019 **Byron D'Andra Orey** *Scientia*.

"Implicit Black Identification and Stereotype Threat Among African American Students." 2017. *Social Science Research*. (Thomas Cramer and **Byron D'Andra Orey**).

"Mississippi and the Great White Switheroo." April 2016, *PS Political Science and Politics*. (**Byron D'Andra Orey** and Ernest Dupree)

"The 50th Anniversary of the Voting Rights Act and the Quiet Revolution." 2015, *National Political Science Review* (**Byron D'Andra Orey**, Gloria Billingsly and Athena King).

"Professional Conferences and the Challenges of Studying Black Politics." April 2015, *PS Political Science and Politics* (Nikol Alexander-Floyd, **Byron D'Andra Orey** and Khalilah Brown-Dean)

"Black Women State Legislators: Electoral Trend Data 1995-2011." 2014 *National Political Science Review* 2014 (**Byron D'Andra Orey** and Nadia Brown) Volume 16: 143-149.

"Black Opposition to Welfare in the Age of Obama" *Race, Gender, and Class*. 2013 (**Byron D'Andra Orey** Athena King, Shonda Lawrence and Brian E. Anderson)

"Using Black Samples to Conduct Implicit Racial Attitudes Research" *PS: Political Science and Politics* (July 2013) (**Byron D'Andra Orey**, Thomas Craemer and Melanye Price)

"Black Opposition to Progressive Racial Policies and the "Double (Non)Consciousness" Thesis. 2012 *Race & Policy* 8: 52-66. (**Byron D'Andra Orey**, Athena King, Leniece Titani-Smith)

"Nature, Nurture, and Ethnocentrism in the Minnesota Twin Study" (**Byron D'Andra Orey** and Hyung Park). *Twin Research and Human Genetics. Volume 15, Number 1.* 2012

"White Support for Racial Referenda in the South" *Politics & Policy* (**Byron D'Andra Orey**, Marvin Overby, Peter Hatemi and Baodong Liu). August 2011

"The Politics of Race, Gender, Ethnicity and Representation in the Texas Legislature." *Race & Policy* (Jessica L. Lavariega Monforti, **Byron D'Andra Orey** and Andrew Conroy) Spring/Summer 2009

"Church Attendance, Social Capital, and Black Voting Participation." *Social Science Quarterly* (Paul Liu, Sharon Austin and **Byron D'Andra Orey**) September 2009

"Racial Threat Republicanism and the Rebel Flag: Trent Lott and the 2006 Mississippi Senate Race." **Byron D'Andra Orey** *National Political Science Review,* Vol. 12, 2009

"The Role of Race, Gender and Structure in State Policymaking." *Race & Policy* (**Byron D'Andra Orey** and Chris Larimer) Spring/Summer 2008

"The Politics of AIDS in the Black Community." *Forum on Public Policy* (Oxford University) Summer 2007

"African Americans in the State Legislative Power Structure: Committee Chairs." **Byron D'Andra Orey**, Marvin Overby and Chris Larimer. *Social Science Quarterly,* September 2007

"Accounting for "Racism: Responses to Political Predicaments in Two States." **Byron D'Andra Orey** and Marvin Overby with Barbara J. Walkosz and Kimberly Walker. *State Politics and Policy Quarterly,* Fall 2007: 235-255

"A Systematic Analysis of the Deracialization Concept." **Byron D'Andra Orey** and Boris Ricks. *The National Political Science Review.* January 2007: 325-334

"Deracialization or Racialization: The Making of a Black Mayor in Jackson, Mississippi" **Byron D'Andra Orey**, *Politics and Policy*. December 2006: 814-836

"Race and Gender Matter: Refining Models of Legislative Policy Making in State Legislatures." 2006. **Byron D'Andra Orey**, Wendy Smooth with Kimberly Adams and Kish Harris-Clark. *Journal of Women, Politics and Policy* 28: 97-119

"Framing the Issue, When the Issue is Race." **Byron D'Andra Orey** *International Journal of Africana Studies.* January 2005: 209-223

"Explaining Black Conservatives: Racial Uplift or Racial Resentment." **Byron D'Andra Orey** *The Black Scholar*. 2004: 18-22.

"A Research Note on White Racial Attitudes and Support for the Mississippi State Flag." **Byron D'Andra Orey** *American Politics Research*. January 2004: 102-116

"A New Racial Threat in the New South? (A Conditional) Yes!" **Byron D'Andra Orey** *American Review of Politics,* Summer 2001: 233-255

"Symbolic Racism in the 1995 Louisiana Gubernatorial Election," Jonathan Knuckey and **Byron D'Andra Orey**. *Social Science Quarterly,* December 2000: 1027-1035

"Black Legislative Politics in Mississippi," **Byron D'Andra Orey** *Journal of Black Studies*, July 2000.

"The Race Race in Black and White: An analysis of the 1995 Louisiana Gubernatorial Election," **Byron D'Andra Orey** *Southeastern Political Review*, December 1998

Books

Mississippi Conflict and Change (forthcoming) 2023. Contracted with the University of Mississippi Press. James Loewen, Charles Sallis and **Byron D'Andra Orey**).

Professional Publications (Book Chapters)

"Learning the Lessons of History" in Robert Wood Johnson Foundation's Culture of Health. (forthcoming) 2022. Cambridge Press. Madeline England, Cristy Johnston Limon, **Byron D'Andra Orey**, Jason Reece and Geoff K. Ward.

"The Liberal Arts Faculty and Writing Bootcamp" in Redefining Liberal Arts Education in the 21st Century Edited by Robert Luckett. University of Mississippi Press. (Preselfanie McDaniels, **Byron D'Andra Orey** Rico Chapman and Monica Flippin-Wynn.

"The Evolution of Racial Attitudes from Martin Luther King to Barack Obama" in Assessing Public Policy and Contemporary Social Developments: Through the Prism of Dr. Martin Luther King's Dream. Edited by Michael Clemmons. University Press, 2017. (**Byron D'Andra Orey**, Lakeyta Bonnette and Athena King)

"Evolution and Devolution of the Voting Rights Act? Black Descriptive and Substantive Representation" **Byron D'Andra Orey** In Minority Voting in the United States. August 2015. Editors: Kyle Kreider and Thomas Balidino (Praeger).

"The Ascendency of Black Political Power in Mississippi." **Byron D'Andra Orey** In The Civil Rights Movement in Mississippi, University of Mississippi Press, 2013. Edited by Ted Ownby

"Course Portfolio for POLS 100: Power and Politics." In Inquiry into the Classroom: A Practical Guide for the Scholarship of Teaching and Learning, **Byron D'Andra Orey** Edited by Paul Savory, Amy Goodburn, and Amy Burnett Nelson. Boston: Anker Publishing, 2007

"Race and Gender Matter: Refining Models of Legislative Policy Making in State Legislatures." 2006, Reprinted in Intersectionality and Politics Recent Research on Gender, Race, and Political Representation in the United States, Edited by Carol Hardy-Fanta

"Black and Brown Conflict? Intergroup Attitudes and their Impact on Policy Preferences." **Byron D'Andra Orey** and Jessica Monfort 2006. In Jessica Perez-Monforti and William Nelson's Black And Latina/o Politics: Issues In Political Development In The United States Barnhardt & Ashe Publishing Company

"Teaching the Politics of Race in a Majority White Institution." **Byron D'Andra Orey** 2006. In C.A. Stanley (Ed.), Faculty of color teaching in predominantly white colleges and universities. Bolton, MA: Anker Publishing Company (2006)

"Participation in Electoral Politics", **Byron D'Andra Orey** 2004. In African Americans and Political Participation, edited by K.C. Morrison (ABC-CLIO Press) with Reginald Vance

On-Line Publications

"Understanding the Important Role of Support Staff." American Political Science Association.

Non-Peer Reviewed Articles/Manuscripts

"The Ascendency to Black Power: Mississippi State Legislators," in Who's Who in Black Mississippi. Mississippi Press. 2012

"The Cross-Cutting Issue of AIDS in the Black Community." *Oracle*, Winter 2008

Newspaper Articles

"Is Black History Still Relevancy" Jackson Free Press, March 6, 2013. http://www.jacksonfreepress.com/news/2013/mar/06/relevance-black-history/

Courses Taught

Undergraduate: Power and Politics (honors); Power and Politics; Public Issues The Black Experience; Minority Politics; Political Participation Polls, Politics, and Public Opinion; Elections; Blacks and the American Political System; and Political Parties and Interest Groups; Research, Scope and Methods; The Legislative Process

Graduate: Race and the U.S. Political System; Blacks in the American Political System; Research Scopes and Methods; Political Inquiry & Research

Personal Awards/Grants/Fellowships

Kellogg Foundation, $500,000 Emmett Till Interpretative Center, Tougaloo College, B. D'Andra Orey and James Loewen. This grant will allow the PIs to disseminate their textbook, Mississippi Conflict and Change and to conduct a social justice institute at Tougaloo College in Summer 2023.

National Science Foundation, "The Intersection of Race, Exposure to Trauma, and Politics." $500,000. Grant #: 2128198 Pending Negotiation (2021).

University of Michigan, Minority Serving Institutions Outreach and Collaboration Grant$30,000. This award will help build collaborations between faculty and students at Jackson State University and the University of Michigan. Received 2020

National Science Foundation Intern Grant, $47,000. This grant is a supplement to NSF grant #1649960. It will provide an opportunity for two graduate students to conduct internships that will help them develop professional work skills related to their field of study. 2020

National Park Service, $27,569 This grant provides funding for an oral history project. It includes one graduate assistant. 2019

National Science Foundation Intern Grant, $35,000. This grant is a supplement to NSF grant #1649960. It will provide an opportunity for a graduate student to conduct an internship that would help her develop her professional skills. 2019

University of Michigan, $8,000. This award will help build collaborations between faculty and students at Jackson State University and the University of Michigan. Received 2019

W. K. Kellogg Foundation Community Leadership Network Fellowship, $25,000. Nominated and awarded out of 800 applicants only 80 were accepted. 2019

Anna Julia Cooper Teacher of the Year National Conference of Black Political Scientists. 2019

National Science Foundation. $35,000. This award is a supplement to NSF grant #1649960.

Alpha Kappa Alpha. Teacher of the Year. 2017

*National Science Foundation Grant, $*179,000. Awarded August 2016. Title: "Racial Biases and Physiological Responses." # 1649960

*National Science Foundation Grant, $*170,000. Awarded May 2015. Title: "The Impact of Racially Traumatic Events on African Americans? Physiological, Psychological and Political Reponses." #1541562

Academic Exchange Fellowship, August 2 – August 10, 2015—This is an invitation-only fellowship. I was nominated by Professor Judith Kelley, the Stephan Haggard, Krause Distinguished Professor at Duke University. This purpose of the program is to invite Political Scientists to Israel to attend meetings with prominent Israeli and Palestinian policymakers, scholars and opinion leaders, covering a wide range of topics and political perspectives on domestic, foreign policy and security issues. I attended the law section of the program.

Center for Undergraduate Research, Awarded 2014-2015—Received a grant in the amount of $7,000 to conduct research in collaborations with a team of undergraduates on physiological responses to racially traumatic events. Experimental research will be conducted with students who will conduct the experiments and analyze the data. Students presented their findings at the Mississippi Political Science Association and the National Conference of Black Political Scientists.

2014 Jackson State University Faculty Excellence Award

2014 Liberal Art's Outstanding Researcher Award

Center for Undergraduate Research, Awarded 2013-2014—Received a grant in the amount of $7,000 to conduct research with undergraduate students in the area of experimental research. Students will conduct experiments and analyze data to examining the impact of hair texture on African-American political attitudes. Students will present their findings at three national, regional and local conferences.

Jackson State University Creative Arts Award, 2014-2015. "The Study of Hairtexture and Candidate Evaluation." This award in the amount of $5,000 was presented by the President of Jackson State University to provide seed money for innovative research.

Palestinian American Research Center Fellow, 2013
- The fellowship provided full funding to investigate Palestinian in-group subconscious attitudes. This project compares African-American attitudes in the United States to Palestinian attitudes (Travel Dates: May 15-May 27, 2013).

Center for Undergraduate Research, Awarded 2012-2013—Received a grant in the amount of $7,000 to conduct research with undergraduate students in the area of survey research. Students conducted a random digit dialing survey of respondents from various counties in Mississippi using "landline only telephone numbers." The results revealed that a bias existed due to the failure of employing cell phones. Students used this project to present at three conferences, including a national conference.

UC-HBCU Initiative, Awarded 2012-2013— Awarded $28,090 grant from the University of California-Historically Black Colleges and Universities Initiative (UC-HBCU) for 2012-13, Belinda Robnett and Katherine Tate, co-PIs. The HBCU partners are Byron Orey (Jackson State University) and Desiree Pedescleaux (Spelman College).

Diamond Award for Outstanding Teaching—Undergraduate Chapter of Kappa Alpha Psi, Jackson State University Awarded 2012.

"Who's Who in Black Mississippi." 2012. Recognized for achievements in the field of education.

Service Learning Faculty Fellow, Jackson State University Service Learning, $2,500, 2011-2012

Jewel Limar Prestage Mentorship Award, National Conference of Black Political Scientists, March 2011 ($1,000)

Global Inquiry Faculty Teaching Seminar Fellow, Jackson State University. $5,000. July 2011

Advisor of the Year, Jackson State University Political Science Club. 2011

Virginia Institute for Psychiatric and Behavioral Genetics, Virginia Commonwealth University. Was invited to participate in a working Group using Minnesota Twin Data, August 2010 (Travel Grant)

Fellow, Community Census and Redistricting Institute, Duke University. $2,000. August 2010

Global Inquiry Faculty Teaching Seminar Fellow, Jackson State University. $5,000. July 2010

Help America Vote Act, $2,500. "Teaching students about Poll Working." Fall 2010

International Workshop on Statistical Genetics and Methodology of Twin and Family Studies. February 28-March 6, 2010. Boulder, Colorado (Travel Grant plus tuition waiver)

TESS: Time Sharing Experiments for the Social Sciences (2009): Winner of a competition to collect data for the following project: "Trusted Sources and Racial Attitudes" (with Lester Spence)

National Science Foundation Grant, $69,000. "The 2008 Presidential Election." 1/09-12/31/09. SES-0905629

Mississippi Humanities Council, "Oral History Interviews of Members of the Legislative Black Caucus." $2,000, September 2008

Anna Julia Cooper National Teaching Award 2008, National Conference of Black Political Scientists

Research Council, Visiting Scholar Grant, 2007 ($800): Received funds to assist in defraying the cost for the guest speaker of the Annual MLK Banquet sponsored by the Afrikan People Union (student organization)

Senning Summer Faculty Fellowship. "African-American Legislative Chairs." (2007): $10,000

Initiative for Teaching and Learning Excellence III, UNL. "Sankofa: Challenging Racial Mythologies Here and Abroad" (2006: $16,500, Denied)

Emerging Scholars Summer Fellow, University of Michigan, 2006, "Empirical Summer Program in Applied Multi-Ethnic Research at the Inter-University consortium for Political and Social Research" $2,500

Layman Fund Award 2006, "Black Intra-Cultural Attitudes Toward Race-based Policies." (2006-2007): $9,500

Senning Summer Faculty Fellowship, "The Intersection of Race and Gender in examining descriptive and substantive representation." (2006): $6,500

Department of Labor, Broad Agency Small Contract, "Race and the Uninsured," with Tina Mueller. (2006, $25,000, denied)

Initiative for Teaching and Learning Excellence II, UNL. "Sankofa, a Return to the Middle Passage." (2005): $15,000, denied

Senning Summer Faculty Fellowship, 2005, "Race, Gender and Structure Matter: Descriptive versus Substantive Representation." (2005): $6,500

Summer Grant Writing Institute, 2005, "Opposition to Racially-Targeted Redistributive Programs." ($2,750)

National Science Foundation, 2004, "Black Racial Conservatives: Racial Uplift or Racial Resentment?" (Denied, $204,000)

Maude Hammond Fellowship, 2004, Research Council, University of Nebraska, Lincoln, "Black Conservatives and Intra-group resentment." (2004): $10,000

Senning Summer Faculty Fellowship, "African Americans in the State Legislative Power Structure: Committee Chairs." (Summer 2004): $6,500

Gallup Research Professorship 2003-2004, "Explaining Black Conservatives: Racial Resentment or Racial Uplift?" (Summer 2003): $4,600

Faculty Research Small Grant, "Deracialization or Racialization: The Making of a Black Mayor," University of Mississippi, (Summer 2000): $3,500

National Science Foundation/Quality Education for Minority Network (January 1993) Amount: $2,500
-To conduct research on the Federal Government's financial contributions to Historically Black Colleges and Universities

Conference Participation

"Racial Bias and the Shooting of Unarmed Blacks." Invited Talk. Miniconference on inequality of public administration/policy, May 21-22, 2020. American University, Washington, D.C. **CANCELED**

"A System of Bad Apples: When Racial Identity Trumps Resentment in the Shooting of Unarmed Blacks by Black Officers," with Periloux Peay. National Conference of Black Political Scientists, March 12-14, 2020. Buckhead, GA

"How Culture Shapes Equity and Health." Invited Talk. 2020 Sharing Knowledge to Build a Culture of Health Conference. March 4-6, 2020 at the Jackson Convention Complex in Jackson, Mississippi.

"African Americans' Emotional Responses to the Mississippi State Flag." Southern Political Science Association, San Juan Puerto Rico. January 9-11, 2020, Caribe Hilton Hotel, San Juan Puerto Rico.

"Intersection of Political Science and Other Disciplines." College Day. Jackson State University, Student Center. April 15, 2019.

Roundtable, 'NCOBPS History: An Overview of Presidential Administrations." National Conference of Black Political Scientists, Baton Rouge, LA. 2019.

"African Americans Emotional Responses to Trump, the Confederate Flag and Police." American Political Science Association. Boston, MA. September 2018.

"African Americans Physiological Responses to Confederate Symbols." Midwestern Political Science Association, Chicago, Illinois, April 7, 2017.

"Environmental Justice Policy, Intersectionality and Racial Context," National Conference of Black Political Scientists, March 16, 2017.

"Understanding Black Political Attitudes and the Intersection of Hair Texture and Colorism," Annual Conference of the Mississippi Political Science Association, Jackson, MS, February 10, 2017.

"The 50th Anniversary of the Voting Rights Act and the Quiet Revolution," Mississippi Political Science Association, Jackson, MS. Gloria Billingsley, B. D'Andra Orey and Athena M. King. February 10, 2017.

"Accountability, Customization, Sustainability, & Production: The Interdisciplinary Faculty Writing Boot Camp" Mississippi Philological Association Annual Conference. February 11, 2017. Mississippi Valley State University, Itta Bena, MS.

"Author Meets Critics: Robert Mickey's Paths Out of Dixie," Southern Political Science Association, New Orleans, LA, January 14, 2017

"Accountability, Customization, Sustainability, & Production: Reflecting on Our Liberal Arts Faculty Writing Boot Camp." College of Liberal Arts Conference, Jackson, MS. October 8, 2016.

"Teaching about Mississippi in Trying Times." Roundtable, College of Liberal Arts Conference, Jackson, MS. October 7, 2016.

Paper: "HBCUs to Conduct Research on Black Political Attitudes and Behavior." (Students: Kiescia Dickinson, Courtney Viverette and Jauan Knight). National

Conference of Black Political Scientist conference (March 17-19 2016). Hilton Garden Inn. Jackson, Mississippi.

Paper: "Southern White Legislative backlash to the Voting Rights Act of 1965." (Student: Ernest DuPree). Southern Political Science Association conference. (January 7-9, 2016 at the Caribe Hilton, San Juan Puerto Rico.

Round Table: "Reflections on Voting Rights in the South in the Age of *Shelby v. Holder."* Southern Political Science Association Southern Political Science Association conference. (January 7-9, 2016 at the Caribe Hilton, San Juan Puerto Rico.

"Blacks' Political Attitudes and Psychological Responses to Racially Traumatic Stressful Events." Southern Political Science Association Southern Political Science Association conference. (January 7-9, 2016 at the Caribe Hilton, San Juan Puerto Rico.

Paper: "Black Strategic Voting or Genuine Republican Support: The 2014 Mississippi Senate." (Student: Nafessa Edges). National Conference of Black Political Scientists conference (March 17-21, 2015). Double Tree Hotel. Atlanta, GA.

Paper: "Psychological and Physiological Responses to Traumatic Events: The Case of Ferguson, Missouri." (Students: Kyler Lee and Jasmine Jackson). Paper presented at the National Conference of Black Political Scientists conference (March 17-21, 2015). Double Tree Hotel, Atlanta, GA.

Paper: "The Evolution and Devolution of the Voting Rights Act (1965-2014). National Conference of Black Political Scientists Conference (March 17-21, 2015). Double Tree Hotel, Atlanta, GA.

Paper: "Sources We Can Believe In: The Effect of Elite Level Cueing on Black Attributions of Inequality." Mississippi Political Science Association (February 13, 2015). Jackson State University, Jackson, MS.

Roundtable: "(Non)Traditional Methods in the Study of Black Politics: Voices from the Field." American Political Science Association: Roundtable (August 30, 2014). Washington, D.C. Hilton.

Paper: "Candidate Evaluation of Black Women Candidates' Hair Style and Texture," (with Nadia Brown). Paper presented at the Southern Political Science Association's annual meeting. (January 9-11, 2014) New Orleans, Louisiana.

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Paper: "Moving Beyond Race and Gender: An Intersectional Analysis of Bill Sponsorship in State Legislatures," (with Nadia Brown). Paper to be presented

at the Southern Political Science Association's annual meeting (January 9-11, 2014) New Orleans, Louisiana

Round Table: "The Status of the APSA Task Force on Political Science in the 21st Century." The Southern Political Science Association's annual meeting, (January 9-11, 2014) New Orleans, Louisiana

Panel: Author Meets Critics: "Black Mayors White Majorities The Balancing Act of Racial Politics." Ravi Perry Author. ." The Southern Political Science Association's annual meeting, (January 9-11, 2014) New Orleans, Louisiana

Moderator: "New Mayor's Perspective of the First 100 Days." Mississippi Legislative Black Caucus Mayor's Summit (September 26, 2013), Jackson State University, Jackson, MS

Paper: "Environmental Justice Policy, Intersectionality and Racial Context" (with Athena King). Paper presented at the Midwestern Political Science Association's annual meeting, (April 11-13, 2013) Chicago, Illinois

Paper: "Intersectionality: Race, Gender and Party." Paper presented at the National Conference of Black Political Scientists, (March 14-16, 2013) Oak Brook, Illinois

Roundtable Participant: "Research Opportunities at Historically Black Colleges and Universities." National Conference of Black Political Scientists, (March 14-16, 2013) Oak Brook, Illinois

Paper: "Revisiting Black Racial Identity Using Subconscious Measures" Byron D'Andra Orey, Thomas Craemer and Melanye Price. Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Roundtable: Using ICPSR Data in Undergraduate Research, Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Invited Panelists: Conference within a Conference--Gender, Race, & Intersectionality, Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Discussant: "The Representation and Presentation of Race and Gender" Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Paper: "Using Black Samples to Investigate the Validity of Implicit Racial Attitude Measures" (Paper nominated for Best Paper for Race and Ethnicity Section) (Paper written, however, Conference Cancelled), (September 2013), American Political Science Association, New Orleans, LA

Paper: Invited Participant: APSA Working Group on Implicit Attitudes, "Comparing AMP, IATs, Subliminal Priming and Black Identity" (Paper written, however, Conference Cancelled) Byron D'Andra Orey and Thomas Craemer, American Political Science Association, (September 2013) New Orleans, LA

Paper: "The Intersectionality of Race and Gender in State Legislatures," Women for Progress Conference, (September 2012) Jackson, MS.

Paper: "Validating Implicit Racial Attitude Measures in Black HBCU Samples," Midwestern Political Science Association, (April 12-15, 2012), Chicago, Illinois

Paper: "Black Conservatism and Opposition to Racial Policies," National Conference of Black Political Scientist, (March 14-17, 2012, Las Vegas, Nevada

Paper: "Black Legislative Politics in Mississippi," (with Rhonda Cooper), Southern Political Science Association, (January 11-14, 2012), New Orleans, LA

Chair, Panel: "Status of African Americans in the South," Southern Political Science Association, (January 11-14, 2012), New Orleans, LA

Participant: "SPSA 2013 Program Committee," Southern Political Science Association, (January 11-14, 2012), New Orleans, LA

Paper: "Intersections, Interactions, and Legislative Behavior," (with Shoronda Wofford), Mississippi Political Science Association, Millsaps College, (November 11-12, 2011), Jackson, MS

Discussant: Local Politics in Mississippi, Mississippi Political Science Association, Millsaps College, (November 11-12, 2011), Jackson, MS

Invited Panelist: Chairs Luncheon and Workshop: "Unwitting Leader: How to be an Effective Department Chair, and Live to Tell About It" (Departmental Services Committee), **American Political Science Association, (September 1-4, 2011), Washington State Convention Center, Seattle Washington**

Paper: "Genetic Similarity, Ethnocentrism, and Political Attitudes." **American Political Science Association, (September 1-4, 2011), Washington State Convention Center, Seattle Washington**

Chair, Panel: **Race, Immigration and Public Opinion, American Political Science Association, (September 1-4, 2011), Washington State Convention Center Seattle Washington**

Chair, Panel: "Racial Attitudes and the Role of Race in Electoral Politics." Southern Political Science Association (January 6-8, 2011), Intercontinental Hotel, New Orleans, LA

Paper: "Black Support for Racial Policies and The Double (Non)-Consciousness Thesis." Southern Political Science Association (January 6-8, 2011), Intercontinental Hotel. (with Leniece Davis and Byron Williams)

Paper: "Pro-Black Political Opinions, Participation and Stereotype Threat Among African-American College Students." American Political Science Association, (September 2010), Washington, D.C. (with Thomas Craemer and Hyung Park)

Paper: "Implicit Black Group-Identification and Stereotype Threat in the Age of Obama." International Society of Political Psychology, (July 2010), San Francisco, CA. (with Thomas Craemer)

Paper: "Implicit Racial Attitudes, Stereotype Threat, and Political Behavior among Young African Americans in the Age of Obama," Midwestern Political Science Association's Annual Meeting, (April 22, 2010), Chicago, IL, Palmer House. (with Thomas Cramer and Hyung Park)

Paper: "Black Elite Rhetoric and System Justification Ideology." American Political Science Association's Annual Meeting. Toronto, (September 5, 2009), Ontario, Canada, (with Hyung Park)

Paper: "American Patriotism and the Reverend Wrights of the World." National Conference of Black Political Scientists. Houston, TX (March 2009). (with Najja Baptist)

Paper: "American Identity and Disillusioned Liberalism Among African Americans." Midwestern Political Science Association's Annual Meeting. Chicago, IL, Palmer House. (April 2-5, 2009). (with Najja Baptist)

Paper: "Public Opinion and Substantive Representation." *Discussant* Midwestern Political Science Association's Annual Meeting. (April 2-5, 2009), Chicago, IL, Palmer House

Paper: "Political Socialization and Racial Conservatism." Southern Political Science Association's Annual Meeting, (January 9, 2009) New Orleans, LA Intercontinental Hotel

Paper: "System Justification Ideology and Black Opposition to Affirmative Action." (March 2007), National Conference of Black Political Scientists, San Francisco, CA

Paper: "When Race, Party and Gender Matter: State Legislative Behavior." Western Political Science Association, (March 2007), Las Vegas, Nevada

Chair, "Race and Fear." Hendricks Conference on Biology and Political Behavior, (October 13-14, 2006), Lincoln, Nebraska

Paper: "Roundtable: A Retro and Prospective: The 10th Anniversary of Robert Smith's *We Have No Leaders*." The National Conference of Black Political Scientists' Annual Conference," (March 22-25, 2006), Atlanta, GA

Paper: "Roundtable: Representation and the Intersections of Gender, Race and Ethnicity." The Southern Political Science Association's Annual Meeting, (January 6-8, 2006), Atlanta, GA

Paper: "Mentoring Task Force Panel: Finding Mentors and Advocates in the Ivory Tower." American Political Science Association, (September 2005,) Washington, D.C.

Paper: "A Tale of Two Flags: The Mississippi and Georgia Flag Referenda." Midwestern Political Science Association, (April 7-9, 2005), Chicago, IL

Paper: "Explaining Black Conservatives." Western Political Science Association, (March 17-20, 2005), Oakland, CA

Paper: "Not Exactly What We Had in Mind for Inclusion: The Impact of Racial Resentment on Latinos" (with Jessica Perez-Monforti). Western Political Science Association, (March 17-20, 2005), Oakland, CA

Discussant: "Perspectives on Race and Ethnicity," (January 6-8, 2005), Southern Political Science Association

Paper: "Teaching Race in a Majority White Place." People of Color at Traditional White Institutions, (November 15-16, 2004), University of Nebraska, Lincoln, Lincoln, Nebraska

Paper: "Black Conservatives and Black Nationalists: Convergence or Divergence." National Conference of Black Political Science, (March 25-27, 2004), Chicago, Illinois, Hyatt- Mcormick Place

Paper: "African American Racial Conservatives and Intra-group Resentment." Southern Political Science Association, (January 2004), New Orleans, LA (with LeKesha Harris)

Paper: "Race and Gender Matter: Black Legislative Politics in Mississippi" (with Wendy Smooth), National Conference of Black Political Science, (March 25-27, 2004), Chicago, Illinois, Hyatt- Mcormick Place

Roundtable Participant: "The Role of College Faculty in AP Success." National AP Equity Colloquium, (March 20-21, 2004), Houston, TX, Houston Intercontinental Marriott

Paper: "Black Conservatives: A Systematic Analysis." African and Latino Conference, (January 2003), Lincoln, Nebraska

Paper: "Measuring Deracialization: A Systematic Analysis of the Deracialization Concept." Western Political Science Association, March 27-29, 2003

Paper: "Explaining Black Conservatives: Racial Uplift or Racial Resentment?" National Conference of Black Political Scientists, Oakland, California

Discussant, Southern Political Science Association, (November 6-10, 2002), Savannah, GA

Paper: "Black Legislative Politics in Mississippi: Gender Matters," Southern Political Science Association, (November 6-10, 2002), Savannah, GA

Paper: "Racial Uplift or Racial Resentment," Midwest Political Science Association, (April 2002), Chicago, IL

Paper: "Racial Attitudes toward the Confederate Flag," Southern Political Science Association, (November 7-10, 2001) Atlanta, GA, with Khalilah Brown

Paper: "White Opposition to Affirmative Action," Southern Political Science Association, (November 7-10, 2001) Atlanta, GA

Paper: "The New Black Conservative: Rhetoric or Reality?" National Conference of Black Political Scientists, (March 8-10, 2001)

Paper: "New Racial Attitudes in the New South." Race in America (Hendricks Symposium), University of Nebraska, (November 2-3, 2000) Lincoln, NE

Paper: "African Americans in the State Legislative Power Structure: Committee Chairs," American Political Science Association, (August 2000, Washington, D.C.)

Paper: "One Person-N Votes: An empirical analysis of Proportional representation in Cincinnati, Ohio," Midwest Political Science Association, (April 2000, Chicago, Illinois), with Kimberly Adams

Paper: "From Protest to Politics: A look at the success of black legislators in Mississippi," Midwest Political Science Association, (April 2000, Chicago, Illinois), with Kimberly Adams

Paper: “Framing the Issue, When the Issue is Race.” American Political Science Association, (September 2-5, 1999), Atlanta, GA

Poster: ARacialization or Deracialization: The Making of a Black Mayor in Jackson, Mississippi,” American Political Science Association, (September 2-6, 1998), Boston, MA

Paper: “The Race Race in Black and White: The 1995 Louisiana Gubernatorial Election,” Southwest Political Science Association, (March 26-29, 1997), New Orleans, LA

Paper: “Mississippi Legislative Politics in Mississippi,” Southern Political Science Association, (November 7-9,1996), Atlanta, GA.

Paper: “Dispelling the Myth and Revealing the Truth: the Overrepresentation of Whites on City Councils,” American Political Science Association, (September 1996) San Francisco, CA.

Roundtable Participant: “The Impact of Alternative Voting Systems” National Conference of Black Political Scientists, (March 1996), Norfolk, VA.

Paper: “Mississippi Black Legislators,” National Conference of Black Political Scientists, (March 1996) Savannah, GA.

Paper: “Black Representation in the South,” The Southern Regional Council=s Annual Voting Rights Seminar, Fall 1995 New Orleans, LA.

Paper: “One Person, N-Votes: In Search of a Remedy for Vote Dilution Claims in the Absence of Geographical Compactness,” American Political Science Association, (September 1995) Chicago, Ill.

Paper: “Status Crow Politics and the Under-Representation of Black Women on the Bench” Southern Political Science Association, (November 3-5, 1994) Atlanta, GA

Paper: “One Person, N-Votes: Minority Representation on the Bench,” The National Conference of Black Political Scientists (March 1994) Hampton, VA

Panel Chair: “The Politics of Electoral Reform,” American Political Science Association, (September, 1994) New York, NY.

Discussant: Race and Reapportionment after *Shaw v. Reno***,** Southern Political Science Association, (November 3-5, 1994) Atlanta, GA.

Participant: Mock Voting Rights Trial, The Southern Regional Council, Annual Voting Rights Seminar (October 1993), Peachtree City, Georgia

Paper: "When Excess Creates Progress: An Assessment of the Federal Government's Financial Contribution to HBCUs," The Southern Political Science Association (Fall 1993) Savannah, GA.

Paper: "When Excess Creates Progress: An Assessment of the National Science Foundation's Financial Contribution to HBCUs," The National Black Graduate Student Association's Annual Conference (May 1993) University of Minnesota

Paper: "The Disparity of Federal Expenditures received by Historically Black Colleges and Universities (HBCUs) compared to Non-HBCUs," The Quality Education for Minority Network's Annual Education Conference (August 1992), Georgetown University, Washington, D.C.

Paper: "The Purpose of Cognitive Inventories for Secondary Students," Southern Association for Educational Opportunity Program Personnel (1990), Tupelo, MS

Invited Presentations

"Mississippi Conflict and Change," University of Michigan, May 10, 2022.

"The Power of Perseverance: Black Politics of American Democracy Workshop, Facilitator. Princeton University, March 31, 2022.

Intersectionality and Intersections: Race, Gender and Legislative Behavior. Princeton University, March 30, 2022.

Trusted Sources, University of Tennessee, Knoxville, March 8 2022

MLK Convocation, Creighton University, January 18, 2022.

"Does the Confederate Flag Make You Sick?" University of Mississippi, **April 12, 2017.**

"The Impact of Race and Gender on the 2016 Presidential Election," Metropolitan Community College, Omaha, Nebraska. February 2, 2017.

"The Strange Career of Black Politics," Florida State University, January 26, 2017.

"New Developments in the Study of Race and Politics," Buffalo State University, November 1, 2016.

"Contemporary Topics in the Study of Race and Politics," Annual Joseph T. Taylor Symposium at Indiana University, Purdue University Indiana (IUPUI), February 25, 2014

"A Dare to Be Great: Honoring our Ancestors." National Association for the Advancement of Colored People's Annual Banquet. Lincoln, Nebraska. November 9, 2013.

"Alumni Given at HBCUs." The Douglas T. Porter Athletic Scholarship Banquet. October 25, 2013. Mississippi Valley State University, Itta Bena, MS.

"One Man's Journey to African, the Middle East and the Caribbean." Metropolitan Community College September 12, 2013.

"Reflecting on the Life and Work of Attorney Isaiah Madison." Isaiah Madison Memorial Symposium on Higher Education, April 18, 2013

"Voter Suppression in the United States," Mississippi Valley State University's Pi Sigma Alpha Honor Society April 8, 2013

"Research Opportunities at Historically Black Colleges and Universities." University of California, Irvine February 27, 2013

Roundtable discussion, "Has the Dream Been Fulfilled?" February 19, 2013, Jackson State University Political Science Club, Jackson, MS

Mississippi Valley State University Black History Month Convocation, Guest Speaker February 18, 2013

"New Developments in Race and Politics." St Andrews High School, December 12, 2013

"Voting and Democracy," St. Andrews High School, Ridgeland, MS, November 15, 2011

Robert Clark Symposium, "2011 Election Day: Implication and Analysis, What does it Really Mean?" Jackson State University, November 9, 2011

Emerging Scholars Conference, (with mentee JaLisa Jorden). "Black Political Attitudes and Obama as a Trusted Source: Is it the Message or the Messenger?" University of Michigan, September 29-October 1, 2011

"Mentoring Graduate Assistants." Workshop: Activity 7 Program, May 18, 2011. Jackson State University Student Center

Conference on Laboratory Experiments in Political Science, Stereotype Threat Among African-American College Students, Vanderbilt University, May 4-6, 2011

University Development Foundation Board Meeting. Invited by the President of the University to make a presentation on the research agenda in the Department of Political Science, MS e-Center, December 10, 2010

Hendrick's Symposium (with mentees JaLisa Jorden and Ebou Sowe). "Elites as Trusted Sources: Do Blacks Believe Everything President Obama Says?" November 3-5, 2010. University of Nebraska, Lincoln

Terry High School. "To Thine Own Self Be True." October 19, 2010. Terry Mississippi

Porter L. Fortune, History Symposium: Future of the South Conference. "Substantive Representation and the Mississippi Legislative Black Caucus." University of Mississippi, Oxford, MS. February 18, 2010

"Obama Administration: One Year Later." Roundtable Participant. Medgar Evers/Ella Baker Lecture Series, Tougaloo College, Tougaloo, MS. November 16, 2009

"Presidential Approval Ratings." Lecture at St. Andrews High School's Advanced Placement U.S. Government course, November 10, 2009

Matthew Holden, Jr. Symposium Lecture. "A Response to Glen Loury." November 5, 2009. Jackson State University

University of Nebraska, Lincoln. Keynote Speaker: **Hurricane Katrina: A Remembrance in Three Acts, September 25, 2007**

New York University, John Jost's Psychology Laboratory. "System Justification and Black Opposition to Affirmative Action." September 13, 2007

Oxford University (Oxford, England), Oxford Roundtable, "Religion and Politics." July 2007

Williams College, Voting Rights Roundtable, February 9-10, 2007

Emory University School of Law Public Interest Committee, "Annual Public Interest Conference." October 7, 2006

Yale University, Presenter: "Lessons from the Past, Prospects for the Future: A Conference in honor the Fortieth Anniversary of the Voting Rights Act of 1965." April 21-23, 2005

University of Nebraska, Lincoln. "From Selma to Washington," April 18, 2005

University of Nebraska, Lincoln. "Martin Luther King Forum on Reparations." (January 20, 2005)

University of Mississippi. "Race and the Mississippi State Flag." February, 2005

University of Southern Illinois. "Explaining Black Racial Conservatives." December 9, 2004

Middle Tennessee State University. "The Year of the Ballot or the Bullet." April 22, 2004

The College Board, Arranged a Panel on "The Role of College Faculty in AP Success." *National AP Equity Colloquium*. March 20-21, 2004

Washington University, Lecture: "Racial Uplift or Racial Resentment: Explaining Black Conservatives?" February 6, 2004

University of Winneba, Winneba, Ghana (West Africa). June 2004

University of Mississippi, "Retaining Black Faculty and about Tenure," Panelist. January 23, 2004

University of Nebraska, Lincoln. "What does it take to get elected in the United States?" Round Table, sponsored by Pi Sigma Alpha. February 20, 2003

Southern Association for College Student Affairs**,** Panelists: "Town Hall Meeting on Symbols," November 2002

University of Nebraska, Lincoln. "Post Election Roundtable Panelists," sponsored by Pi Sigma Alpha. November 2002

November 2-3, 2000. "New Racial Attitudes in the New South" Hendricks Symposium on Race, University of Nebraska

September 2000. Lecture, "A New Racism in the New South." Center for the Study of Southern Culture, University of Mississippi

Ph. D. Committees

Rob Denne, Jackson State University, Department of Education
Ronella Gollman, Jackson State University, Department of Psychology

Princeton Smith, Jackson State University, Department of Psychology
Daphine Foster, Public Policy, Jackson State University (member)
Peter Hatemi, Political Science, University of Nebraska, Lincoln. Defense: Spring 2007 (member)
Reginald Vance, Southern University, Baton Rouge, Defense: December 2006 (Chair)
James H. Moore, Howard University (Economics), Defense: December 2004 (member)
Kimberly Adams, University of Mississippi, Defense: Spring 2003 (outside member)
Mitch Herring, University of Nebraska, Lincoln Defense: Spring 2008 (Political Science, member)
Yolanda Johnson, University of Nebraska, Lincoln (Sociology, member)
Eric Whitaker, University of Nebraska, Lincoln (Political Science, member)

Master's Theses:

Communications

Janeya Smith, Jackson State University, Department of Political Science (Chair, Completion date: December 2018)
Spencer McClenty, Jackson State University, Department of Communication (Completion October 2018)
Caleb Smith, Jackson State University, Department of History (Completion date: October 2017)
Sharonda Woodford, Jackson State University, Department of Political Science (Completion date: summer 2013)
Alfonso Franklin, Jackson State University, Department of History (Completion date: May 2013)
Emmitt Riley, Jackson State University (Chair, Completion date: May 2010)
Najja Baptist, Jackson State University (Chair, Completion: August 2010)
Matthew Hastings, University of Nebraska, Lincoln. (Chair, Thesis Completion: Spring 2007)

Honor's Thesis:

Andy Conroy (Co-Advisor), Completed: Spring, 2006

University Services

Promotion and Tenure Committee Psychology 2018
Mentor, Ronald E. McNair Summer Program, Jackson State University (Mentee: Keirrah Wheeler)
Promotion and Tenure Committee Psychology 2017
Political Science Club Advisor, 2014-2015
Pi Sigma Alpha Advisor, 2017-Present
Pi Sigma Alpha Advisor, 2014-2015
Member of the Faculty Senate, 2014-2015

Faculty Third Year Review, Department of Political Science, Chair Spring of 2015
Faculty Third Year Review, Department of Political Science, Chair Fall of 2014
Faculty Third Year Review, Department of History Fall 2013
Search Committee for the Bachelor of Social Work and Masters of Social Work Program Directors. Fall 2013
University Think Tank Committee, Jackson State University (appointed Fall 2013)
Advisory Board, Center for Excellence in Minority Health and Health Disparities (appointed Spring 2013)
Tenure Committee, Department of History Fall 2012
Promotion Committee, Department of Public Policy Fall 2012
Conference Coordinator for the National Bar Association—Served as the Coordinator in hosting the NBA's annual meeting at Jackson State University. September 2012
Promotion Committee, Department of Music Fall 2011
College of Liberal Arts Promotion and Tenure Committee. 2011-2012 (elected position)
Jackson State University, Advisory Board, Advance Project (National Science Foundation Grant), appointed by PI. 2011-present
Symposia Subcommittee of the Presidential Inaugural Planning Committee Fall 2011
Research Advisory Council, 2011-present, appointed by Vice President for Research
Employment/Hiring Committee Public Policy Spring 2011
Search Committee for Office of Student Life, January 2011
Promotion Committee, Department of Business Fall 2010
Promotion Committee, Department of Psychology Fall 2010
Promotion Committee, Department of Public Health Fall 2010
College of Liberal Arts Promotion and Tenure Committee. 2010-2011 (elected position)
Quality Enhancement Plan, Jackson State University, 2008-2011
40th Gibbs-Green Anniversary Observance Planning Committee, Jackson State University, 2010
Executive Committee, University of Nebraska, Division of Arts and Sciences, 2007-2008
Diversity Committee, University of Nebraska, 2007-2008
Executive Committee, University of Nebraska, Department of Political Science, 2006-2007 and 2002-2003
Undergraduate Creative Activities and Research Experiences (UCARE), Student Advisor, University of Nebraska, 2006 (Amanda Ponce)
Mentor, Ronald E. McNair Summer Program, University of Nebraska, Lincoln, Summer, 2006 (Mentee: Amanda Ponce)
Graduate Committee, Department of Political Science, (2005-2006)
Political Science Unit Review Committee, University of Nebraska (2005-2008)

University of Nebraska Marshal Corp: Appointed by the dean of Arts and Sciences (Summer 2004-Present)
Member, Undergraduate Committee (2003-Present)
Mentor, Ronald E. McNair Summer Program, University of Nebraska, Lincoln, 2003 (Mentees: Donald McCauley and Potso Byndon)
Member, Executive Committee, University of Nebraska, Department of Political Science, 2002-present
Mentor, Ronald E. McNair Summer Program, University of Mississippi, 1999 (Mentee: Kimberly Walker, Alcorn State University)

Professional Services and Activities

Conference Program Chair, Southern Political Science Association, 2023
Vice President, Southern Political Science Association. 2022

Commissioner, Mississippi Civil Rights Education Commission
Executive Council, Southern Political Science Association 2014-2015
American Political Science Association: Committee for Best Book in the Race, Ethnicity and Politics section. 2014
American Political Science Association's Minority Fellows Program Selection Committee 2013
Dianne Blair Award Committee, Southern Political Science Association. 2013
Section Chair, Professional and Career Development, Midwestern Political Science Association. 2013 (Conference to be held in 2014).
External Reviewer, Tenure and Promotion, Southern Illinois University, Fall 2013.
Section Chair, National Conference of Black Political Scientists: Undergraduate Research 2013.
Section Chair: Teaching Political Science, Southern Political Science Association, Orlando, Florida January 3-5, 2013
Member of the Status of Blacks in the Discipline, American Political Science Association (appointed 2012-present)
Section Chair, Southern Political Science Association: Teaching Political Science, 2012
Member of the Membership Committee for the Southern Political Science Association (appointed 2012)
External Reviewer, Tenure and Promotion Committee, September 2012, University of Houston, Clearwater
External Reviewer, Third Year Review, Clark University, November 2011
External Reviewer, Tenure and Promotion Committee, Rutgers University, Newark, September 2011
Section Chair: The Status of Blacks in the South, Southern Political Science Association, 2012
Section Chair: Public Opinion, Midwestern Political Science Association, 2009
Lucius Barker Award Committee, 2008 Midwestern Political Science Association.

Executive Committee (member), National Conference of Political Science (2007-2010)
Section Chair: **Identity Politics: Gender, Class, Ethnicity, Sexuality, and Religion,** National Conference of Black Political Scientists, 2007.
Section Chair: Race and Politics, National Conference of Black Political Scientists 2005.
Jewell Prestage Awards Committee, Southwestern Political Science Association 2004.
Section Chair: Race and Ethnicity, Southwest Political Science Association. 2004.
Section Chair: Race and Ethnicity, Midwestern Political Science Association, 2002.
University of Nebraska, Lincoln. "What does it take to get elected in the United States?" Round Table, sponsored by Pi Sigma Alpha. February 20, 2003.
Southern Association for College Student Affairs**,** Panelists: "Town Hall Meeting on Symbols," Biloxi, Mississippi. November 2002.
University of Nebraska, Lincoln. "Post Election Roundtable Panelists," sponsored by Pi Sigma Alpha. November 2002.

Other Professional Activities
Education Consultation:

Testing Development Committee (member) 2008-2011, Education Testing Services (Princeton, New Jersey): Assist in writing objective questions for the Advanced Placement Exam (Government and Politics).

College Board Consultant—Conduct workshops to High School Government Instructors on teaching Advanced Placement Government and Politics (April 2002-Present).

Question Leader for the Advance Placement Exam, in U.S. Government and Politics (Summers 2007-Present).

Table Leader for the Advance Placement Exam, in American Government, Educational Testing Services (Summers 1996-2003).

Reader for the Advance Placement Exam, in American Government, Educational Testing Services (Summers 1996-1998).

Expert Witness Work:
Mark A. Anderson v. City of McComb, Mississippi, Gregory Martin and John Does 1-5.
Voting Rights Expert Witness Work:
Cecil Cantrell v. Monroe County, Mississippi (Deposition given)
Testified before the Mississippi Legislative Reapportionment Committee (April 2001)
Lewis, et al. v. Alamance County, et al. (Deposition given).

Rose Johnson, et al. v. The City of Gainesville, GA (Testified)
Jackson v. Nassau County Board of Supervisors
City of Hampton, Virginia

Editorial Review Boards

American Political Science Review
The Ralph Bunche Journal of Public Affairs
Journal of Race and Policy
Pi Sigma Alpha Undergraduate Journal (Faculty Advisory Board)
State Politics and Policy Quarterly

Reviewer

American Political Science Review; Journal of Politics; American Journal of Political Science; Legislative Studies Quarterly; Women, Politics and Policy; National Political Science Review; American Politics Research; Political Research Quarterly; Politics and Policy; Oxford University Press; Lynne Rienner Publishers; *Journal of Race and Policy; Social Science Quarterly; Urban Affairs Quarterly;* SUNY PRESS; *Political Communication*, University of Michigan Press; TESS (Time-Sharing Experiences for the Social Sciences); National Science Foundation; the *Social Science Journal*; Routledge Press; *Journal of African American Studies; Social Psychological and Personality Science; Pi Sigma Alpha Undergraduate Journal.*

Community Services

Mentor, Empowering Males to Build Opportunities for Developing Independence (EMBODI)
Mentor, New Focus for Youth after-school program
Board of Directors of the PERICO Institute for Youth Development and Entrepreneurship (PRIYDE), Jackson, MS (November 1, 2011-Present)
Member, Charter Revision Commission, Lincoln, Nebraska 2002-2006
Member, Nebraska's Help America Vote Act (Secretary of State's Office) 2002-2006

Professional Organizations

American Political Science Association
National Conference of Black Political Scientists
Southern Political Science Association
Midwestern Political Science Association
Mississippi Political Science Association

APPENDIX 2: Summary Table of Two Group EI and Three-Group EI and EI RxC

	Two-Group EI (Black vs. White and Others)	Two-Group EI (White vs. Black and Others)	EI Compare Three-Group EI	EI Compare Three-Group EI	EI Compare Three-Group EI RxC	EI Compare Three-Group EI RxC
Election	Black Support for Black Candidate	White Support for Black Candidate	Black Support for Black Candidate	White Support for Black Candidate	Black Support for Black Candidate	White Support for Black Candidate
Westbrooks 2020	90.46	6.43	90.46	6.36	90.22	6.37
Espy 2020	96.34	13.5	96.38	13.39	98	10.99
Amos 2019	92.08	6.66	92.05	6.66	94.43	4.6
DuPree 2019	94.35	8.73	94.31	8.7	96.46	6.24
Collins 2019	94.54	10.82	94.55	10.76	96.81	8.27
Simmons 2019	93.97	8.81	94.05	8.59	96.67	6.01
Stamps 2019	92.22	7.6	93.3	7.65	94.96	5.52
Green 2019	92.83	7.16	92.82	6.9	95.42	4.89
Espy 2018	94.91	16.42	94.89	16.31	97.6	12.48
Graham 2015	87.58	4.67	87.7	4.49	89.78	2.69
Coleman 2015	89.36	4.87	89.38	4.85	91.16	3.15
Gray 2015	87.76	4.44	87.74	4.52	89.88	2.72
Banks 2012	81.26	5.44	81.34	5.45	79.92	7.27
Obama 2012	92.72	12.12	92.72	12.14	93.65	5.53
Crisler 2011	91.04	8.29	90.98	8.37	92.35	7.52

DuPree 2011	90.88	8.11	90.89	8.12	93.65	5.53
Green 2011	90.94	8.16	90.88	8.08	93.67	5.56

APPENDIX 3: TWO-GROUP EI RAW RESULTS AND SCRIPT

Raw Results

Westbrooks 2020

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	90.46	0.27	89.97
pVoteB	9.53	0.24	9.09

	ci_95_upper_Iterative.EI
pVoteA	91.03
pVoteB	10.01

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	6.43	0.25	5.89
pVoteB	93.59	0.28	92.95

	ci_95_upper_Iterative.EI
pVoteA	6.88
pVoteB	94.03

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	10.64	0.20	10.25
pVoteB	89.38	0.24	88.88

	ci_95_upper_Iterative.EI
pVoteA	11.06
pVoteB	89.76

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.39	0.26	86.91
pVoteB	12.56	0.21	12.22

	ci_95_upper_Iterative.EI
pVoteA	87.97
pVoteB	13.08

Espy 2020

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	96.34	0.20	95.94
pVoteB	3.65	0.21	3.18

	ci_95_upper_Iterative.EI
pVoteA	96.68
pVoteB	4.02

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	13.50	0.37	12.71
pVoteB	86.51	0.36	85.84

	ci_95_upper_Iterative.EI
pVoteA	14.30
pVoteB	87.21

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	18.15	0.23	17.77
pVoteB	81.87	0.18	81.52

	ci_95_upper_Iterative.EI
pVoteA	18.67
pVoteB	82.20

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	93.88	0.30	93.30
pVoteB	6.09	0.29	5.56

	ci_95_upper_Iterative.EI
pVoteA	94.44
pVoteB	6.68

Collins 2019

$pBlackVAP

$pWhiteVAP

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 94.54 0.30 93.87
pVoteB 5.46 0.26 4.98
ci_95_upper_Iterative.EI
pVoteA 95.08
pVoteB 5.99

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 10.82 0.32 10.13
pVoteB 89.21 0.28 88.60
ci_95_upper_Iterative.EI
pVoteA 11.51
pVoteB 89.72

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 15.14 0.23 14.67
pVoteB 84.83 0.22 84.42
ci_95_upper_Iterative.EI
pVoteA 15.67
pVoteB 85.31

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.06 0.29 91.53
pVoteB 7.95 0.28 7.48
ci_95_upper_Iterative.EI
pVoteA 92.69
pVoteB 8.56

DuPree 2019

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 94.31 0.28 93.77
pVoteB 5.67 0.24 5.19
ci_95_upper_Iterative.EI
pVoteA 94.81
pVoteB 6.18

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 8.73 0.32 8.16
pVoteB 91.27 0.30 90.64
ci_95_upper_Iterative.EI
pVoteA 9.32
pVoteB 91.80

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 12.89 0.25 12.48
pVoteB 87.11 0.21 86.71
ci_95_upper_Iterative.EI
pVoteA 13.44
pVoteB 87.53

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 91.46 0.32 90.84
pVoteB 8.53 0.31 8.04
ci_95_upper_Iterative.EI
pVoteA 92.12
pVoteB 9.26

Amos 2019

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.04 0.30 91.39
pVoteB 7.94 0.33 7.30

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 6.63 0.38 5.71
pVoteB 93.34 0.38 92.80

ci_95_upper_Iterative.EI
pVoteA 92.52
pVoteB 8.59

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 9.69 0.25 9.20
pVoteB 90.21 0.25 89.75
ci_95_upper_Iterative.EI
pVoteA 10.25
pVoteB 90.79

ci_95_upper_Iterative.EI
pVoteA 7.27
pVoteB 93.98

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 88.13 0.34 87.49
pVoteB 11.88 0.33 11.21
ci_95_upper_Iterative.EI
pVoteA 88.77
pVoteB 12.49

Green 2019

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.83 0.31 92.20
pVoteB 7.64 0.36 6.88
ci_95_upper_Iterative.EI
pVoteA 93.49
pVoteB 8.35

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 7.16 0.33 6.48
pVoteB 92.90 0.32 92.24
ci_95_upper_Iterative.EI
pVoteA 7.76
pVoteB 93.44

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 11.55 0.29 11.03
pVoteB 88.23 0.27 87.66
ci_95_upper_Iterative.EI
pVoteA 12.20
pVoteB 88.77

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 87.68 0.26 87.09
pVoteB 12.40 0.29 11.84
ci_95_upper_Iterative.EI
pVoteA 88.12
pVoteB 12.98

Simmons 2019

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 93.97 0.30 93.33
pVoteB 6.10 0.28 5.60
ci_95_upper_Iterative.EI
pVoteA 94.44
pVoteB 6.56

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 8.81 0.44 8.12
pVoteB 91.21 0.37 90.56
ci_95_upper_Iterative.EI
pVoteA 9.79
pVoteB 91.97

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI

pVoteA	13.56	0.27	13.13
pVoteB	86.42	0.25	85.82

ci_95_upper_Iterative.EI

pVoteA	14.23
pVoteB	86.85

pVoteA	89.15	0.38	88.28
pVoteB	10.78	0.35	10.08

ci_95_upper_Iterative.EI

pVoteA	89.88
pVoteB	11.49

Stamps 2019

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	92.22	0.33	91.52
pVoteB	7.64	0.30	7.09

ci_95_upper_Iterative.EI

pVoteA	92.83
pVoteB	8.30

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	7.60	0.37	7.07
pVoteB	92.38	0.36	91.64

ci_95_upper_Iterative.EI

pVoteA	8.51
pVoteB	93.04

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	12.39	0.25	11.86
pVoteB	87.62	0.28	87.13

ci_95_upper_Iterative.EI

pVoteA	12.89
pVoteB	88.16

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.67	0.31	87.04
pVoteB	12.36	0.33	11.83

ci_95_upper_Iterative.EI

pVoteA	88.20
pVoteB	13.15

Espy 2018

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	94.91	0.29	94.27
pVoteB	5.04	0.30	4.46

ci_95_upper_Iterative.EI

pVoteA	95.49
pVoteB	5.64

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	16.42	0.43	15.70
pVoteB	83.56	0.44	82.59

ci_95_upper_Iterative.EI

pVoteA	17.36
pVoteB	84.52

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	19.83	0.26	19.40
pVoteB	80.17	0.29	79.53

ci_95_upper_Iterative.EI

pVoteA	20.28
pVoteB	80.67

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	92.16	0.40	91.18
pVoteB	7.81	0.42	6.84

ci_95_upper_Iterative.EI

pVoteA	92.73
pVoteB	8.56

Graham 2015

Black

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.58	0.22	87.12
pVoteB	12.42	0.26	11.83

	ci_95_upper_Iterative.EI
pVoteA	87.97
pVoteB	12.90

White

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	4.67	0.26	4.11
pVoteB	95.35	0.28	94.80

	ci_95_upper_Iterative.EI
pVoteA	5.21
pVoteB	95.87

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	5.91	0.25	5.39
pVoteB	94.11	0.23	93.61

	ci_95_upper_Iterative.EI
pVoteA	6.44
pVoteB	94.52

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	83.13	0.23	82.50
pVoteB	16.94	0.23	16.43

	ci_95_upper_Iterative.EI
pVoteA	83.48
pVoteB	17.39

Coleman 2015

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	89.36	0.26	88.90
pVoteB	10.61	0.25	10.16

	ci_95_upper_Iterative.EI
pVoteA	89.83
pVoteB	11.06

White

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	4.87	0.24	4.42
pVoteB	95.11	0.28	94.52

	ci_95_upper_Iterative.EI
pVoteA	5.38
pVoteB	95.65

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	6.18	0.20	5.79
pVoteB	93.83	0.18	93.43

	ci_95_upper_Iterative.EI
pVoteA	6.54
pVoteB	94.16

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	84.92	0.28	84.35
pVoteB	15.06	0.27	14.52

	ci_95_upper_Iterative.EI
pVoteA	85.42
pVoteB	15.62

Gray 2015

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.76	0.25	87.06

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	4.44	0.26	4.04

pVoteB 12.21 0.25 11.66
ci_95_upper_Iterative.EI
pVoteA 88.17
pVoteB 12.75

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 5.80 0.25 5.39
pVoteB 94.17 0.25 93.69
ci_95_upper_Iterative.EI
pVoteA 6.34
pVoteB 94.62

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 83.38 0.26 82.86
pVoteB 16.61 0.25 16.16
ci_95_upper_Iterative.EI
pVoteA 83.86
pVoteB 17.17

Banks 2012

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 81.26 0.26 80.80
pVoteB 18.66 0.26 18.15
ci_95_upper_Iterative.EI
pVoteA 81.80
pVoteB 19.22

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 5.44 0.21 5.01
pVoteB 94.58 0.25 94.08
ci_95_upper_Iterative.EI
pVoteA 5.83
pVoteB 95.03

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 9.41 0.25 8.94
pVoteB 90.59 0.29 89.91
ci_95_upper_Iterative.EI
pVoteA 9.88
pVoteB 91.11

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 80.53 0.24 80.06
pVoteB 19.47 0.29 18.89
ci_95_upper_Iterative.EI
pVoteA 81.06
pVoteB 20.05

Obama 2012

> summary(iter)

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.72 0.34 92.13
pVoteB 6.59 0.29 6.05
ci_95_upper_Iterative.EI
pVoteA 93.32
pVoteB 7.08

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 12.12 0.58 11.13
pVoteB 87.27 0.51 86.31
ci_95_upper_Iterative.EI
pVoteA 13.38
pVoteB 88.40

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	15.30	0.29	14.68
pVoteB	83.88	0.30	83.06

	ci_95_upper_Iterative.EI
pVoteA	15.92
pVoteB	84.46

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.16	0.42	86.36
pVoteB	11.99	0.39	11.24

	ci_95_upper_Iterative.EI
pVoteA	87.90
pVoteB	12.88

Crisler 2011

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	91.04	0.26	90.44
pVoteB	8.93	0.28	8.36

	ci_95_upper_Iterative.EI
pVoteA	91.42
pVoteB	9.39

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	8.29	0.27	7.80
pVoteB	91.69	0.31	91.06

	ci_95_upper_Iterative.EI
pVoteA	8.76
pVoteB	92.23

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	10.56	0.26	10.03
pVoteB	89.41	0.23	88.94

	ci_95_upper_Iterative.EI
pVoteA	11.04
pVoteB	89.91

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	88.86	0.27	88.24
pVoteB	11.21	0.28	10.68

	ci_95_upper_Iterative.EI
pVoteA	89.34
pVoteB	11.67

DuPree 2011

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	90.88	0.33	90.20
pVoteB	9.14	0.29	8.57

	ci_95_upper_Iterative.EI
pVoteA	91.51
pVoteB	9.76

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	8.11	0.34	7.45
pVoteB	91.87	0.33	91.25

	ci_95_upper_Iterative.EI
pVoteA	8.71
pVoteB	92.48

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	9.76	0.21	9.38
pVoteB	90.18	0.26	89.62

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	88.00	0.38	87.12
pVoteB	11.97	0.35	11.35

	ci_95_upper_Iterative.EI
pVoteA	10.22
pVoteB	90.61

	ci_95_upper_Iterative.EI
pVoteA	88.67
pVoteB	12.75

Green 2011

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	90.94	0.32	90.27
pVoteB	9.09	0.31	8.47

	ci_95_upper_Iterative.EI
pVoteA	91.50
pVoteB	9.62

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	8.16	0.34	7.47
pVoteB	91.91	0.25	91.23

	ci_95_upper_Iterative.EI
pVoteA	8.80
pVoteB	92.37

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	9.72	0.23	9.36
pVoteB	90.31	0.27	89.89

	ci_95_upper_Iterative.EI
pVoteA	10.18
pVoteB	90.87

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.96	0.30	87.42
pVoteB	11.97	0.33	11.35

	ci_95_upper_Iterative.EI
pVoteA	88.65
pVoteB	12.62

Script

```
## Ecological Inference Analyses
##USE this one
# Outline:
#         Loading libraries & importing data
#   King's iterative EI
#   Row by Columns (RxC) EI
#         Summarizing results
#         DataVis

# Data files:

# Libraries and Data -----------------------------------------------------

library(eiCompare) # Use from latest release, which was summer 2020
dat <- read.csv("C:/Users/J00584364/Downloads/Simmons2019_b.csv", sep=",")
dat$pVoteA <- dat$pVoteA/100
dat$pVoteB <- dat$pVoteB/100
#dat$pBlackVAP <- dat$pBlackVAP/100
dat$pWhiteVAP <- dat$pWhiteVAP/100
#dat$pWhite_Other <- dat$pWhite_Other/100
dat$pBlack_Other <- dat$pBlack_Other/100
```

```
# Iterative EI (King's EI) ----------------------------------------------
iter <- ei_iter(
  data = dat,
  cand_cols = c("pVoteA", "pVoteB"),
#  race_cols = c("pBlackVAP", "pWhite_Other"),
 race_cols = c("pWhiteVAP", "pBlack_Other"),
  totals_col = "total_votes",
  name = "Iterative EI"
)

#summary(iter)
summary(iter)
```

APPENDIX 4: THREE-GROUP EI COMPARE RAW RESULTS AND SCRIPT

Raw Results

2020 Westbrooks

```
> dat <-
read.csv("C:/Users/J00584364/Downloads/Westbrook2020BW.csv",
sep=",")
```

```
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          90.46          0.26
89.98
pVoteB           9.52          0.23
9.04
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                91.01      90.22     0.32           89.55
pVoteB                 9.90       9.78     0.32
9.14
     ci_95_upper_RxC.EI
pVoteA          90.86
pVoteB          10.45

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           6.36          0.27
5.87
pVoteB          93.61          0.25
93.21
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                6.95       6.37     0.43
5.59
pVoteB               94.20      93.63     0.43           92.70
     ci_95_upper_RxC.EI
pVoteA           7.30
pVoteB          94.41

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          47.43          3.96
39.67
pVoteB          52.26          4.22
44.38
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                55.44      58.73     4.68           48.56
pVoteB                60.11      41.27     4.68           32.33
     ci_95_upper_RxC.EI
pVoteA          67.67
```

pVoteB 51.44

2012 Banks dat <- read.csv("C:/Users/J00584364/Downloads/BanksGW1.csv", sep=",")

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 81.34 0.27
80.89
pVoteB 18.64 0.26
18.18
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 81.91 79.92 0.43 79.03
pVoteB 19.24 20.08 0.43 19.23
ci_95_upper_RxC.EI
pVoteA 80.77
pVoteB 20.97

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 5.45 0.26
4.99
pVoteB 94.58 0.25
94.10
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 6.00 7.27 0.51
6.19
pVoteB 95.11 92.73 0.51 91.75
ci_95_upper_RxC.EI
pVoteA 8.25
pVoteB 93.81

$pOtherVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 44.35 4.52
34.67
pVoteB 56.01 3.68
48.12
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 51.95 33.68 4.48 25.35
pVoteB 62.20 66.32 4.48 56.45
ci_95_upper_RxC.EI
pVoteA 43.55
pVoteB 74.65

2011 Green dat <- read.csv("C:/Users/J00584364/Downloads/Green2011.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          90.88          0.29
90.31
pVoteB           9.06          0.30
8.52
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                91.48      93.67     0.31           93.02
pVoteB                 9.65       6.33     0.31
5.74
      ci_95_upper_RxC.EI
pVoteA          94.26
pVoteB           6.98

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           8.08          0.32
7.48
pVoteB          91.93          0.28
91.49
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                 8.69       5.56     0.28
5.01
pVoteB                92.53      94.44     0.28           93.83
      ci_95_upper_RxC.EI
pVoteA           6.17
pVoteB          94.99

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          46.97          5.66
37.51
pVoteB          51.54          3.98
43.45
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                60.77      43.23     4.66           33.18
pVoteB                59.79      56.77     4.66           47.60
      ci_95_upper_RxC.EI
pVoteA          52.40
pVoteB          66.82
```

2011 Crisler dat <- read.csv("C:/Users/J00584364/Downloads/Crisler2011b.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
```

```
pVoteA          90.98          0.27
90.46
pVoteB           8.99          0.30
8.46
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               91.54      92.35     0.34           91.63
pVoteB                9.65       7.65     0.34
6.99
      ci_95_upper_RxC.EI
pVoteA           93.01
pVoteB            8.37

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           8.37          0.31
7.77
pVoteB          91.62          0.28
91.04
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                9.02       7.52     0.36
6.80
pVoteB               92.21      92.48     0.36           91.74
      ci_95_upper_RxC.EI
pVoteA            8.26
pVoteB           93.20

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          46.05          18.35
3.13
pVoteB          52.75           6.89
40.41
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               75.96      46.39     5.44           35.20
pVoteB               68.60      53.61     5.44           42.32
      ci_95_upper_RxC.EI
pVoteA           57.68
pVoteB           64.80
```

Coleman 2015

```
dat <- read.csv("C:/Users/J00584364/Downloads/Coleman2015.csv", sep=",")

$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          89.38          0.27
88.86
```

```
pVoteB          10.66          0.26
10.16
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               89.94      91.16      0.3           90.55
pVoteB               11.14       8.84      0.3
8.27
     ci_95_upper_RxC.EI
pVoteA           91.73
pVoteB            9.45

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           4.85          0.28
4.41
pVoteB          95.13          0.29
94.66
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               5.48       3.15      0.26
2.65
pVoteB               95.63      96.85      0.26           96.30
     ci_95_upper_RxC.EI
pVoteA            3.70
pVoteB           97.35

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          36.90          6.24
25.89
pVoteB          62.14          5.76
50.18
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               49.17      27.23      3.76           19.81
pVoteB               72.81      72.77      3.76           64.61
     ci_95_upper_RxC.EI
pVoteA           35.38
pVoteB           80.19
```

Stamps 2019 dat <- read.csv("C:/Users/J00584364/Downloads/Stamps20191.csv", sep=",")

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          92.30          0.33
91.62
pVoteB           7.67          0.35
6.96
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               92.95      94.96      0.33           94.25
```

```
pVoteB               8.34       5.04      0.33
4.41
     ci_95_upper_RxC.EI
pVoteA          95.59
pVoteB           5.75

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           7.65          0.37
6.94
pVoteB          92.36          0.36
91.69
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               8.39       5.52      0.39
4.76
pVoteB              93.15      94.48      0.39          93.65
     ci_95_upper_RxC.EI
pVoteA           6.35
pVoteB          95.24

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          54.87          3.56
48.13
pVoteB          45.26          3.19
38.36
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              61.08      47.25      3.52          40.25
pVoteB              50.26      52.75      3.52          45.66
     ci_95_upper_RxC.EI
pVoteA          54.34
pVoteB          59.75
```

Simmons 2019

```
dat <- read.csv("C:/Users/J00584364/Downloads/Simmons20191.csv", sep=",")


$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          94.05          0.3
93.41
pVoteB           6.00          0.3
5.37
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              94.58      96.67      0.29          96.01
```

```
pVoteB              6.67      3.33     0.29
2.81
    ci_95_upper_RxC.EI
pVoteA          97.19
pVoteB           3.99

$pWhiteVAP
    mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          8.59          0.35
7.97
pVoteB         91.45          0.36
90.61
    ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              9.35      6.01     0.37
5.29
pVoteB             92.03     93.99     0.37          93.22
    ci_95_upper_RxC.EI
pVoteA           6.78
pVoteB          94.71

$pOtherVAP
    mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          58.52          4.75
48.71
pVoteB          41.22          4.62
33.74
    ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA             67.58     51.87     3.22          45.17
pVoteB             51.27     48.13     3.22          41.79
    ci_95_upper_RxC.EI
pVoteA          58.21
pVoteB          54.83
```

DuPree 2011 dat <- read.csv("C:/Users/J00584364/Downloads/DuPree2011.csv", sep=",")

```
$pBlackVAP
    mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          90.89          0.34
90.25
pVoteB          9.14           0.35
8.55
    ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA             91.51     93.65     0.3           93.01
pVoteB              9.80      6.35     0.3
5.79
```

```
     ci_95_upper_RxC.EI
pVoteA          94.21
pVoteB           6.99

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          8.12          0.31
7.53
pVoteB         91.80          0.29
91.19
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               8.69       5.53      0.28
5.00
pVoteB              92.33      94.47      0.28          93.89
     ci_95_upper_RxC.EI
pVoteA           6.11
pVoteB          95.00

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         47.76          6.19
37.32
pVoteB         52.88          5.23
43.72
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              60.81      44.13      4.84          34.05
pVoteB              64.20      55.87      4.84          45.65
     ci_95_upper_RxC.EI
pVoteA          54.35
pVoteB          65.95
```

Obama 2012 dat <- read.csv("C:/Users/J00584364/Downloads/Obama2012.csv", sep=",")

```
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         92.72          0.28
92.25
pVoteB          6.59          0.31
6.06
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              93.37      93.65      0.3           93.01
pVoteB               7.24       6.35      0.3
5.79
     ci_95_upper_RxC.EI
pVoteA          94.21
```

pVoteB 6.99

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 12.14 0.49
11.22
pVoteB 87.34 0.51
86.37
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 13.27 5.53 0.28 5.00
pVoteB 88.32 94.47 0.28 93.89
ci_95_upper_RxC.EI
pVoteA 6.11
pVoteB 95.00

$pOtherVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 80.85 2.15
76.26
pVoteB 14.55 1.70
11.72
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 84.38 44.13 4.84 34.05
pVoteB 18.14 55.87 4.84 45.65
ci_95_upper_RxC.EI
pVoteA 54.35
pVoteB 65.95

Gray 2015

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 87.74 0.30
87.10
pVoteB 12.24 0.28
11.73
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 88.26 89.88 0.31 89.23
pVoteB 12.78 10.12 0.31 9.54
ci_95_upper_RxC.EI
pVoteA 90.46
pVoteB 10.77

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI

```
pVoteA          4.52         0.26
4.04
pVoteB         95.48         0.22
95.12
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                 4.96      2.72     0.23
2.28
pVoteB                95.95     97.28     0.23          96.80
      ci_95_upper_RxC.EI
pVoteA           3.20
pVoteB          97.72

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         44.31         5.24
35.10
pVoteB         56.17         4.38
47.21
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                53.75     23.75     3.23          17.78
pVoteB                64.56     76.25     3.23          69.19
      ci_95_upper_RxC.EI
pVoteA          30.81
pVoteB          82.22
```

Espy 2018 dat <- read.csv("C:/Users/J00584364/Downloads/Espy20182.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         94.89         0.30
94.31
pVoteB          5.05         0.29
4.47
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                95.42     97.6     0.33          96.83
pVoteB                 5.63      2.4     0.33
1.79
      ci_95_upper_RxC.EI
pVoteA          98.21
pVoteB           3.17

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         16.31         0.40
15.42
```

```
pVoteB          83.76          0.41
82.90
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               17.12      12.48      0.4           11.73
pVoteB               84.59      87.52      0.4           86.64
     ci_95_upper_RxC.EI
pVoteA           13.36
pVoteB           88.27

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          68.38          0.25
67.84
pVoteB          31.66          0.22
31.18
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               68.98      69.01      4.21          60.17
pVoteB               32.07      30.99      4.21          22.72
     ci_95_upper_RxC.EI
pVoteA           77.27
pVoteB           39.83
```

Graham 2015 <- read.csv("C:/Users/J00584364/Downloads/Graham20151.csv", sep=",")

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          87.70          0.28
87.17
pVoteB          12.29          0.27
11.83
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               88.20      89.78      0.29          89.17
pVoteB               12.79      10.22      0.29           9.66
     ci_95_upper_RxC.EI
pVoteA           90.34
pVoteB           10.83

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           4.49          0.26
4.03
pVoteB          95.52          0.25
95.04
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
```

```
pVoteA              4.97      2.69     0.22
2.28
pVoteB             96.03     97.31     0.22          96.84
     ci_95_upper_RxC.EI
pVoteA           3.16
pVoteB          97.72

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          44.32         4.76
35.59
pVoteB          55.47         4.39
48.10
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              55.99     24.32     3.04          18.55
pVoteB              64.14     75.68     3.04          69.08
     ci_95_upper_RxC.EI
pVoteA          30.92
pVoteB          81.45
```

Green 2019

```
                dat <- read.csv("C:/Users/J00584364/Downloads/Green20191.csv", sep=",")
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          92.82         0.30
92.27
pVoteB           7.24         0.31
6.48
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              93.47     95.42     0.31          94.76
pVoteB               7.71      4.58     0.31
4.00
     ci_95_upper_RxC.EI
pVoteA          96.00
pVoteB           5.24

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           6.90         0.35
6.21
pVoteB          93.09         0.34
92.39
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               7.54      4.89     0.35
4.21
pVoteB              93.75     95.11     0.35          94.37
```

```
     ci_95_upper_RxC.EI
pVoteA           5.63
pVoteB          95.79

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          51.88          3.14
45.08
pVoteB          47.93          4.08
39.40
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               56.96      44.64     3.08          38.35
pVoteB               55.32      55.36     3.08          49.05
     ci_95_upper_RxC.EI
pVoteA          50.95
pVoteB          61.65
```

DuPree 2019

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          94.31          0.30
93.72
pVoteB           5.64          0.25
5.14
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               94.96      96.46     0.26          95.92
pVoteB                6.10       3.54     0.26
3.04
     ci_95_upper_RxC.EI
pVoteA          96.96
pVoteB           4.08

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           8.70          0.32
8.16
pVoteB          91.27          0.32
90.60
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               9.40       6.24     0.37
5.54
pVoteB              91.88      93.76     0.37          92.97
     ci_95_upper_RxC.EI
pVoteA           7.03
```

```
pVoteB          94.46

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          52.35          5.03
43.18
pVoteB          46.61          6.04
36.67
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               61.32      63.87     3.87          55.55
pVoteB               59.24      36.13     3.87          28.59
      ci_95_upper_RxC.EI
pVoteA          71.41
pVoteB          44.45
```

Amos 2019 dat <- read.csv("C:/Users/J00584364/Downloads/Amos20191.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          92.05          0.30
91.48
pVoteB          7.98          0.29
7.43
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               92.63      94.43     0.29          93.83
pVoteB               8.53       5.57     0.29
5.00
      ci_95_upper_RxC.EI
pVoteA          95.00
pVoteB           6.17

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          6.66          0.34
5.93
pVoteB          93.37          0.33
92.77
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               7.32       4.6     0.34
3.91
pVoteB               94.08      95.4     0.34          94.69
      ci_95_upper_RxC.EI
pVoteA           5.31
pVoteB          96.09
```

$pOtherVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 45.38 5.73
34.50
pVoteB 52.84 4.68
42.47
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 55.11 42.49 3.92 34.54
pVoteB 60.60 57.51 3.92 49.15
ci_95_upper_RxC.EI
pVoteA 50.85
pVoteB 65.46

Collins 2019 collins20191

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 94.55 0.3
93.97
pVoteB 5.44 0.3
4.85
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 95.13 96.81 0.25 96.26
pVoteB 6.02 3.19 0.25
2.71
ci_95_upper_RxC.EI
pVoteA 97.29
pVoteB 3.74

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 10.76 0.33
10.00
pVoteB 89.24 0.30
88.67
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 11.40 8.27 0.36 7.58
pVoteB 89.81 91.73 0.36 90.92
ci_95_upper_RxC.EI
pVoteA 9.08
pVoteB 92.42

$pOtherVAP

```
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         60.19         6.11
48.64
pVoteB         40.28         6.58
28.13
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               71.87      66.92     3.84          58.77
pVoteB               52.42      33.08     3.84          25.86
     ci_95_upper_RxC.EI
pVoteA          74.14
pVoteB          41.23
```

Espy 2020

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         96.38         0.18
96.05
pVoteB          3.63         0.23
3.14
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               96.75        98     0.24          97.48
pVoteB                4.02         2     0.24
1.57
     ci_95_upper_RxC.EI
pVoteA          98.43
pVoteB           2.52

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         13.39         0.28
12.79
pVoteB         86.60         0.28
85.90
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               13.99      10.99     0.38          10.26
pVoteB               87.00      89.01     0.38          88.21
     ci_95_upper_RxC.EI
pVoteA          11.79
pVoteB          89.74

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
```

```
pVoteA         72.78         5.24
61.98
pVoteB         27.67         4.09
18.81
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                80.88      75.91    3.53          68.79
pVoteB                34.54      24.09    3.53          17.16
      ci_95_upper_RxC.EI
pVoteA          82.84
pVoteB          31.21
```

Script

```
## Ecological Inference Analyses
##USE this one
# Outline:
#           Loading libraries & importing data
#   King's iterative EI
#   Row by Columns (RxC) EI
#           Summarizing results
#           DataVis

# Data files:

# Libraries and Data -------------------------------------------------

library(eiCompare) # Use from latest release, which was summer 2020
###dat <- read.csv("C:/Users/J00584364/Downloads/PracticeData-ReCoded.csv", sep=",")###
dat <- read.csv("C:/Users/J00584364/Downloads/Espy2020.csv", sep=",")

summary(dat$Espy)

dat$pVoteA <- dat$pVoteA/100
dat$pVoteB <- dat$pVoteB/100
dat$pBlackVAP <- dat$pBlackVAP/100
dat$pWhiteVAP <- dat$pWhiteVAP/100
dat$pOtherVAP <- dat$pOtherVAP/100

# Iterative EI (King's EI) ------------------------------------------
iter <- ei_iter(
  data = dat,
  #cand_cols = c("pVoteA", "pVoteB"),
  cand_cols = c("pVoteA", "pVoteB"),
  race_cols = c("pBlackVAP", "pWhiteVAP", "pOtherVAP"),
  #race_cols = c("pBlackVAP", "pWhiteVAP" , "pOtherVAP"),
  totals_col = "total_votes",
  name = "Iterative EI"
)
```

```
# Rows by Columns (RxC) ----------------------------------------------
rxc <- ei_rxc(
  data = dat,
  cand_cols = c("pVoteA", "pVoteB"),
  race_cols = c("pBlackVAP", "pWhiteVAP", "pOtherVAP"),
  totals_col = "total_votes",
  name = "RxC EI",
)
# Summary Table ------------------------------------------------------
summary(iter, rxc)


# Plot out Results ---------------------------------------------------
plot(iter, rxc)
```

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., Plaintiffs, vs. STATE BOARD OF ELECTION COMMISSIONERS, et al., Defendants.	No. 4:22cv62-MPM-JMV

DECLARATION OF BYRON D'ANDRA OREY

I, Byron D'Andra Orey, make the following declaration based on personal knowledge:

1. I have been retained by the Plaintiffs in the above referenced matter as expert.

2. I submit that the foregoing report from me dated October 3, 2022 is a true and accurate copy of the report I provided to Plaintiffs in this matter. I declare that the information and opinions contained in the report are true and correct to the best of my knowledge.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

October 3, 2022

Byron D'Andra Orey
BYRON D'ANDRA OREY

Expert Report for Byron D'Andra Orey, Ph.D.

October 3, 2022

I. Introduction

I have prepared this report pursuant to Federal Rule of Civil Procedure 26(a)(2)(B). I have been asked to express opinions on whether racially polarized voting (RPV) exists in Mississippi and in particular in Mississippi Supreme Court District 1, and whether or not RPV has resulted in the defeats of Black-preferred candidates in Mississippi Supreme Court District 1. I have also been asked to consider whether RPV exists independent of polarization on the basis of partisan affiliation. I am being compensated at $200 per hour for my work on this case. My compensation is not contingent on or affected by the substance of my opinions or the outcome of this litigation. My work in this matter is ongoing, and I reserve the right to amend, modify, or supplement my analysis and opinions.

II. Background on Racially Polarized Voting

In the landmark *Thornburg v. Gingles* case, the Supreme Court set forth a three-prong test for assessing minority vote dilution in litigation arising under Section 2 of the Voting Rights Act (VRA). The *Gingles* test asks whether: 1) the racial or language minority group is "sufficiently large and geographically compact to constitute a majority in a single-member district"; 2) the minority group is "politically cohesive" (meaning its members tend to vote for the same candidate); and 3) the "majority votes sufficiently as a bloc to enable it ... usually to defeat the minority's preferred candidate."[1] In particular, the second and the third preconditions

[1] *Thornburg v. Gingles*, 478 U.S. 30, 50-51 (1986).

under the *Gingles* test have become the legal definition of RPV. Moreover, one of the so-called "Senate Factors" that courts consider in evaluating the presence of unlawful minority vote dilution under Section 2 of the Voting Rights Act is "the extent to which voting in the elections of the state or political subdivision is racially polarized."[2]

III. Summary of Professional Qualifications

I am a full professor with tenure in the Department of Political Science at Jackson State University and a former chair of the Department of Political Science. I have conducted significant research in the area of racial polarized voting. This research has been presented at professional conferences and published in peer reviewed scholarly journals. These journals include, but are not limited to, *Social Science Quarterly*, *PS: Political Science and Politics*, *American Politics Research*, *Politics and Policy*, *Race and Policy* and *State Politics and Policy Quarterly*. I have also served on the executive committees for the American Political Science Association, the Southern Political Science Association, and the National Conference of Black Political Scientists. I have served as Vice President for the Southern Political Science Association and served on the Editorial Board for the American Political Science Review and State Politics and Policy Quarterly. Commentary related to my work has appeared in several media outlets, including National Public Radio, Al Jazeera, MSNBC, CNN, the Daily Beast, and the News Hour (PBS).

Attached as **Appendix 1** is a curriculum vitae setting forth my professional background, which includes a list of all publications I have authored or co-authored. I have also testified, at trial, as an expert trial witness *Johnson v. Hamrick*, No. 2:91-CV-02-WCO (N.D. Ga.), a

[2] *Id.* at 44-45.

redistricting case involving city council elections in Gainesville, Georgia. I have served as an expert in numerous other cases where I have given depositions but did not testify. These include *Lewis, et al. v. Alamance County, et al.*, No. 2:92-cv-00614 (M.D. N.C.) and *Jackson v. Nassau County Board of Supervisors*, No. CV 91-3720 (E.D. N.Y.). I have also provided consultation related to the electoral structure for the City of Hampton, Virginia.

IV. Opinions

I have formed the following opinions: Based on the data available at the time of writing this report, voting in Mississippi (and in particular in Supreme Court District 1) since 2011 is racially polarized. In particular, in 17 of the 17 biracial elections analyzed, Black voters expressed a clear preference for the same candidate and voted cohesively for that candidate, typically at a rate of more than 90%. Furthermore, this preference was not shared by the White voters, who provided very low support for the Black-preferred candidates, and typically voted against Black-preferred candidates at a rate of more than 90%. As a result, the Black preferred candidates were usually defeated due to White bloc voting in the elections analyzed. I identified all biracial statewide and Supreme Court District 1 general election contests (including Public Service Commission and Transportation Commission Central District) from the 2011 election cycle through 2020. Notably, the dataset includes two biracial endogenous contests, consisting of the 2012 and 2020 contests for Supreme Court Justice in Supreme Court District 1. Endogenous elections are elections held using the challenged district at issue (here, the Supreme Court district lines at issue). The dataset also includes five "quasi-endogenous" contests whereby the districts consist of the same lines as Supreme Court District 1, but the position sought is Public Service Commissioner or Transportation Commissioner. In addition to those five "quasi-endogenous," I

also identified and reviewed 10 exogenous biracial elections. Exogenous elections are elections that do not utilize the particular district lines at issue.[3] It should be noted here that estimates for all racial polarized voting analyses are derived only from the precincts contained in Supreme Court District 1. All of those contests exhibited very high levels of racially polarized voting, and the Black-preferred candidate was defeated in Supreme Court District 1 by White bloc voting in 11 contests, including both of the biracial elections for Supreme Court justice, which were non-partisan races in which party affiliation cannot have driven the results.

In sum, it is my opinion that the data demonstrates a high degree of racial polarization and that the second and third *Gingles* criteria are met in this case.

V. Elections Analyzed

The attorneys for the plaintiffs in this case have asked me to analyze whether and to what extent voters' candidate preferences reveal the presence of racially polarized voting. I am aware of case law stating that endogenous elections and biracial elections are generally considered the most probative for assessing RPV.[4]

[3] Evidence from exogenous elections can be used to supplement evidence from endogenous elections, particularly where there is little data from recent endogenous elections. The court premised its holding on *Gingles's* view of sparse data: "'[W]here a minority group has begun to sponsor candidates just recently the fact that statistics from only one or a few elections are available for examination does not foreclose a vote dilution claim.'" *Citizens for a Better Gretna v. City of Gretna*, 834 F.2d 496, 502 (5th Cir. 1987) quoting *Gingles*, 478 U.S. at 57 n.25).

[4] *See Wright v. Sumter Cnty.*, 979 F. 3d 1282, 1292-93 (11th Cir. 2020) ("[E]vidence drawn from elections involving black candidates is more probative in Section Two cases"); *Clark v. Calhoun Cnty., Miss.*, 88 F.3d 1393, 1397 (5th Cir. 1996) ("[E]xogenous elections-those not involving the particular office at issue are less probative than elections involving the specific office that is the subject of the litigation.").

In total, seventeen biracial elections of recent vintage were identified for this report. Two of these elections were Supreme Court contests held in 2012 and 2020. The 2012 election involved the unsuccessful bid by Earle Banks to win a Supreme Court District 1 seat and the 2020 election involved the unsuccessful effort of Latrice Westbrooks to win a Supreme Court District 1 seat. Both of those elections were non-partisan (that is, candidates not appear on the ballot with any partisan affiliation). In addition to these two contests, there have been five biracial general election contests for Public Service Commission and Transportation Commission in 2011, 2015, and 2019. These contests are noted as "quasi-endogenous" contests because they utilize the same lines as Supreme Court District 1. Another 10 exogenous statewide contests were also examined.

My focus on biracial elections is consistent with scholarly research, which finds that minority voters are particularly mobilized in elections involving a minority candidate running against White candidates.[5] Biracial elections are particularly salient because, in the contest of potential racial polarization, these elections are more likely to satisfy the necessary conditions in which Black voters and non-Black voters had a realistic opportunity to vote for the candidate of their choice, which is not necessarily available in uni-racial elections involving only White candidates (or involving only Black candidates). In addition to elections from the Central District, elections included in this report consist of all biracial statewide contests for U.S. President, U.S. Senator, and various statewide offices (e.g., Governor or Secretary of State) since 2011. For those statewide contests, I analyzed RPV by examining election results in those precincts that are within Supreme Court District 1 lines. There is a total of ten such contests. I

[5] Matt A. Barreto. 2012. *Ethnic Cues: The Role of Shared Ethnicity in Latino Political Participation*. University of Michigan Press; Karen M. Kaufmann. 2004. *The Urban Voter: Group Conflict and Mayoral Voting Behavior in American Cities*. University of Michigan Press.

focused on elections since 2011 because more recent contests are more relevant in determining the presence of racial polarization in the here and now.

VI. Data

To analyze voting patterns by race using aggregate level information, a database that combines election results with demographic information is required. This database is almost always constructed using election precincts as the unit of analysis. The demographic composition of the precincts is based on voter registration or turnout by race/ethnicity if this information is available; if it is not, then voting age population is used. Here, Mississippi does not collect voter registration data by race and therefore voting age population (VAP) by race and ethnicity as reported in the PL 94-171 U.S. Census redistricting data was used for ascertaining the demographic composition of the precincts.

In particular, VAP by race and ethnicity for each precinct and year was calculated by aggregating Census block-level population data to the precinct level. For 2020 and 2010, VAP by race and ethnicity for each precinct and year was calculated by aggregating 2020 and 2010 Census block-level population data to the precinct level. For years between 2010 and 2020, population for each precinct was calculated according to the following interpolation procedure:

> (a) the total population change between 2010 and 2020 for each racial group was calculated for each Census Block by subtracting 2010 population from 2020 population, with 2010 and 2020 Census Blocks matched using the U.S. Census Bureau's Block Relationship files;[6]

[6] *See* U.S. Census Bureau, *Relationship Files*, https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.html.

(b) the resulting total change number for each Block was then multiplied by the fraction of the decade that had passed (e.g., the 2010-2020 change number was multiplied by 6/10 or .6 for the year 2016, 5/10 or .5 for 2015, etc.);

(c) that product, representing the marginal increase in population for a particular group in each Census Block at a given point of time, was then added to the 2010 baseline population for each Census Block to yield the block-level population in a given year;

(d) the block-level data for each year was then aggregated to the precinct level.

Analyzing voting patterns by race requires a database that combines population data by race (or registration or turnout by race if it is available) with election returns. To build the dataset in this instance, 2010 and 2020 official voting tabulation district (VTD) shapefiles were acquired from the U.S Census Bureau as part of the P.L. 94-171 file. In years near the decennial Census, VTDs are a close approximation to voting precincts. In addition, in-cycle precinct-level shapefile datasets for 2016, 2018, and 2019 were acquired from the Harvard dataverse website.[7] These shapefiles were joined to precinct-level election returns, which were obtained from the Mississippi State Secretary of State's Office, processed, and cleaned (i.e., rendered in a machine-readable format) by More Equitable Democracy, a consultant for the attorneys in this case, with review by counsel. The precinct-level results were then joined with the precinct-level population data described above.

[7] Voting and Election Science Team, 2018, "2016 Precinct-Level Election Results," https://doi.org/10.7910/DVN/NH5S2I, Harvard Dataverse, V86; Voting and Election Science Team, 2019, "2018 Precinct-Level Election Results," https://doi.org/10.7910/DVN/UBKYRU, Harvard Dataverse, V61; Voting and Election Science Team, 2020, "2019 Precinct-Level Election Results," https://doi.org/10.7910/DVN/2AJUII, Harvard Dataverse, V5.

The complete dataset used for this report, including the interpolated U.S. Census population data described above, was prepared and provided to me by counsel, and is being made available to Defendants.

VII. Analysis of Voting Patterns by Race

An analysis of voting patterns by race serves as the foundation of two of the three threshold elements of the "results test" as outlined in *Thornburg v. Gingles*: a racial bloc voting analysis is needed to determine whether the minority group is politically cohesive; and the analysis is required to determine if Whites are voting sufficiently as a bloc to usually defeat the candidates preferred by minority voters. The voting patterns of White and minority voters must be estimated using statistical techniques because direct information about the race of the voters is not, of course, available on the ballots cast.

To carry out an analysis of voting patterns by race, an aggregate level database must be constructed, usually employing election precincts as the units of observation. Information relating to the demographic composition and election results in these precincts is collected, combined, and statistically analyzed to determine if there is a relationship between the racial composition of the precincts and support for specific candidates across the precincts.

I used the following two-step operational rules to measure whether a particular election is racially polarized: First, I estimated the Black and White group support for the Black candidate in a given biracial election; and second, I further analyzed the extent of racial polarization by considering the gap between the level of Black support for Black preferred candidates, and the level of White support for Black-preferred candidates. Since voting in the United States takes place in privacy, the only way to determine the levels of Black and White group support is

through statistical procedures. In this report, I analyzed the set of biracial elections described above using the Ecological Inference (EI) method developed by Professor Gary King of Harvard University.[8] EI is a statistical procedure for estimating voting results of voter groups (in this case racial groups).

Here, I use a more recently developed version of ecological inference software known as EI Compare to run the EI model. EI Compare software provides the results from estimates of the King EI model and a comparison estimate in what is known as the EI RxC model. EI RxC expands the analysis so that more than two racial/ethnic groups can be considered simultaneously. In the next section, I report estimates calculated using a two-group version of the King EI model, which is well suited to estimating voter results where the electorate is divided between two groups.[9] That analysis is appropriate here because Mississippi's racial population

[8] *See* Gary King, *A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data* (Princeton University Press, 1997). This procedure is superior to the methodologies relied upon in the *Gingles* case itself, which were homogeneous precinct analysis and ecological regression analyses. Homogenous Precinct Analyses simply report the percentage of the votes received by a candidate or set of candidates within the precincts in which a particular group, Blacks or Whites, constitutes over 90 percent of the people receiving ballots. Voters in such precincts might not vote in a similar way to that of voters residing in mixed precincts, however. Ecological Regression (ER) derives estimates, based on all of the precincts, through a linear model premised on the notion that the percentages of Blacks that vote for a particular candidate or candidates are the same in every precinct, and likewise that the percentages of Whites that vote for a candidate or set of candidates are the same in every precinct. EI also takes into account every precinct, but does not rely on an assumption of linearity. Instead, it employs a "maximum likelihood" model for deriving estimates. The EI procedure further incorporates the method of bounds in the analysis, which precludes group estimates from exceeding real-world limits, for example preventing a group's estimated support for a candidate or group of candidates from being above 100.0 percent or below 0.0 percent, as can happen with ER. EI, which can also be used for other purposes, is now used widely in racially polarized voting analyses.

[9] Here, the underlying demographic data functionally includes three racial groups: Black VAP, White VAP, and Other VAP, i.e., the difference between Total VAP and the sum of Black VAP and White VAP. The vast majority of voters fall into the Black VAP or White VAP categories, and the Other VAP number is small. However, because the EI model is sometimes said to be preferred when there are only two racial groups at issue, e.g., Collingwood, Loren et

is highly binary, i.e., Black and White. I also separately generated three-group (White, Black, and Other) King EI and EI RxC analyses using the EI Compare software, both of which produced similar estimates of racial group support (i.e., similarly high levels of racial polarization) which corroborate the results of the two-group King EI model.[10] The full results of these analyses are reported in a summary table in **Appendix 2** and the raw results are included in **Appendix 3** and **Appendix 4** along with the scripts that were run to produce the results.

The methods employed here not only provide a specific, or point, estimate of a group's support for a particular candidate, but also provide confidence intervals for that estimate. These intervals identify the range of estimates within which we can be 95 percent confident, statistically, of where the actual value of a group's support for a candidate falls. The point estimate is the best estimate, in that it is most likely to be the actual value. EI has been widely

---

al. (2016). *eiCompare: Comparing Ecological Inference Estimates across EI and EI:RC*. The R Journal. 92-101, I reduced the number of race variables to two to employ a two-group EI model. The two-group EI estimates set forth in the body of this report were derived in the following manner: First, I estimated the Black vote by running the EI model with a Black VAP variable and a combined White VAP and Other VAP variable (i.e., I combined the White VAP and Other VAP data to create one variable). Second, I similarly estimated the White vote by running the EI model with a White VAP variable and a combined Black VAP and "Other VAP" variable. The scripts used to generate the two-group King EI analysis described above are included in **Appendix 3**.

As noted in text, and set forth in the Appendix 2 summary table, running the King EI model using all three groups, rather than reducing to two, produced nearly identical results to the two-group procedure.

[10] Because the EI RxC method is designed to allow for the simultaneous estimation of support by more than two groups, the EI RxC analysis included in the Appendix 2 summary table and in Appendix 4 raw data estimates levels of candidate support for each of the three racial groups reflected in the demographic data (Black VAP, White VAP, and Other VAP). The scripts used to generate the RxC estimates are also included in **Appendix 4**. While the EI RxC analysis also shows racial polarization across the board, and generally produces estimates of Black support for Black candidates that are very close to the EI model estimates, the EI RxC analysis in a number of cases estimates levels of White support for Black candidates that are *even lower* than the estimates produced by the King EI models.

used as the most advanced and reliable statistical procedure for RPV estimates in not only academic research but also voting rights cases. To estimate support for candidates from different racial groups using an EI operation, precinct-level election return data for a given election is matched against demographic data regarding the voting-age population (VAP) of various racial groups (here, White, Black, and "all other" racial groups) typically also at the precinct level from the time of the election. These data are used to calculate coefficient estimates to determine racial bloc voting.

VIII. The Findings[11]

As explained above, the selection of the elections for my RPV analysis is based on three criteria: (1) biracial elections involving at least one Black major candidate and one white major candidate[12]; (2) since 2011; (3) which are endogenous elections supplemented by "quasi-endogenous" elections and exogenous statewide elections. As set forth in Table 1, the two endogenous Supreme Court District 1 elections reveal high levels of racial polarized voting.

In particular, in the 2012 Supreme Court contest in that district, according to the table using 95% confidence limits around the estimated coefficients, we can expect the "true" value of the estimated Black support for Candidate Banks to lie between 80.80 and 81.80 percent, with 81.26 being our best estimate, while the 95% confidence limits around White support are such that we expect the "true" value of the estimate for the White vote to lie between 5.01 and 5.83 percent, with 5.44 being our best estimate. Likewise, for the 2020 Supreme Court election, when

[11] I used the eiCompare package from the library within the RStudio-software to derive the racial polarized voting estimates for EI.

[12] There was one other bi-racial contest that included a third party Black candidate. This contest was excluded because the Black candidate was not from a major party.

estimating the support for Candidate Westbrooks by race, we can expect the "true" value of the estimated Black support for Westbrooks to lie between 89.97 and 91.03 percent, with 90.46 being the best estimate. The best estimate for White support for Westbrooks is 6.43%. As is indicated by the estimated coefficients, each of the Black candidates in these endogenous, non-partisan races received substantial Black support, but less than 10% of the White vote, leading to the defeat of Black voters' candidates of choice. Notably, both of those biracial Supreme Court District 1 contests were non-partisan elections, and thus the high levels of racial polarization in those races cannot have been driven by political party affiliation.

Table 1. Estimated Racial Support for Black Candidates in Endogenous Elections

Election	Black Candidate	White Candidate	% Vote Black Candidate	Black Vote Black Candidate (CI)[13]	White Vote Black Candidate (CI)	Black Candidate Won	RPV
2012 Supreme Court	Banks	Waller	44.4	81.26 (80.80-81.80)	5.44 (5.01-5.83)	No	Yes
2020 Supreme Court	Westbrooks	Griffis	48.5	90.46 (89.97-91.03)	6.43 (5.89-6.88)	No	Yes

As set forth in Table 2, five additional "quasi-endogenous" biracial elections in Supreme Court District 1 corroborate the existence of high levels of racial polarization in that district, and corroborate that such polarization usually leads to the defeat of Black-preferred candidates. In each of those races, Black voters typically supported Black candidates at rates of around 90% or more, while White voters supported the Black candidate with less than 10% of the vote (typically around 8%). In four of the five elections, this high level of White bloc voting led to the defeat of the Black-preferred candidate despite high levels of Black support.

[13] C.I. is the confidence interval for each of the estimates.

Table 2. Quasi-Endogenous Elections

Election	White Candidate	Black Candidate	% Black Candidate	Black Vote Black Candidate (CI)	White Vote Black Candidate (CI)	Black Candidate Won	RPV
2011 Central Public Service Commission	Posey	Green	44	90.94 (90.27-91.50)	8.16 (7.47-8.80)	No	Yes
2011 Central Transportation Commission	Hall	Crisler	47	91.04 (90.44-91.42)	8.29 (7.80-8.76)	No	Yes
2015 Central Transportation Commission	Hall	Coleman	45	89.36 (88.90-89.83)	4.87 (4.42-5.38)	No	Yes
2019 Central Public Service Commission	Bailey	Stamps	49	91.36 (91.52-92.83)	7.60 (7.07-8.51)	No	Yes
2019 Central Transportation Commission	Lee	Simmons	51	93.97 (93.33-94.44)	8.81 (8.12-9.79)	Yes	Yes

Finally, the results in Table 3, which shows exogenous statewide biracial contests since 2011, again reveal high levels of racially polarized voting, with Blacks overwhelmingly supporting the Black candidate with approximately 90% or more of their vote and Whites supporting the Black candidate with typically 15% or less of their vote (sometimes much less). Based on the data, even in these partisan statewide contests, half of the Black candidates were defeated in Supreme Court District 1, despite Black support in the high 80s or 90s due to the level of White bloc voting.

Table 3. Exogenous Elections

Election	White Candidate	Black Candidate	Percent Black Candidate	Black Vote Black Candidate	White Vote Black Candidate	Black Candidate Won	RPV
2011 Governor	Bryant	DuPree	53	90.94 (90.20-91.51)	8.11 (7.45-8.71)	No	Yes
2012 President	Romney	Obama	54	92.72 (92.13-93.32)	12.12 (11.13-13.38)	Yes	Yes
2015 Governor	Bryant	Gray	41	87.76 (87.06-88.17)	4.44 (4.04-5.01)	No	Yes
2015 Secretary of State	Hosemann	Graham	44	87.58 (87.12-87.97)	4.67 (4.11-5.21)	No	Yes
2018 U.S. Senate	Hyde-Smith	Espy	57	94.91 (94.27-95.49)	16.42 (15.70-17.36)	Yes	Yes
2019 Treasurer	McRae	Green	49	92.38 (92.20-93.49)	7.16 (6.48-7.76)	No	Yes
2019 Sec. of State	Watson	DuPree	51	94.35 (93.81-94.84)	8.73 (8.24-9.51)	Yes	Yes
2019 Insurance Commission	Chaney	Amos	49	92.08 (91.52-92.62)	6.66 (6.08-7.26)	No	Yes
2019 Attorney General	Fitch	Collins	53	94.54 (93.87-95.08)	10.82 (10.13-11.51)	Yes	Yes
2020 U.S. Senate	Hyde- Smith	Espy	55	96.34 (95.94-96.68)	13.5 (12.71-14.30)	Yes	Yes

IX. Conclusion

The empirical analyses clearly reveal that in 17 of 17 biracial elections in the last decade, Black voters expressed a strong, cohesive preference for Black candidates, but that preference was not shared by White voters, who voted cohesively against Black-preferred candidates every time. This clear RPV pattern is demonstrated by two endogenous biracial Supreme Court elections, which are non-partisan races and thus cannot be explained by party affiliation, as well as five additional quasi-endogenous contests, Transportation and Public Service Commissioner races, and ten more statewide biracial elections during the last decade. Despite Black voters uniting cohesively behind their preferred candidates, the White majority typically voted sufficiently as a bloc to defeat the Black candidates in these elections, including in both endogenous biracial Supreme Court elections, and four out of five "quasi endogenous" commissioner races.

Based on my empirical analysis of Mississippi's recent elections, I conclude that Mississippi's elections, particularly in Supreme Court District 1, exhibit a high level of polarization, and that the second and third threshold criteria involving racial polarization as set forth in *Gingles* are met.

As noted, I reserve the right to amend, modify, or supplement my analysis and opinions. Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the information and opinions contained in this report are true and correct to the best of my knowledge.

October 3, 2022 Dr. B. D'Andra Orey, Ph. D

APPENDIX 1: CURRICULUM VITAE

B. D'Andra Orey, PhD
Curriculum Vitae

Office:
Department of Political Science
Jackson State University
1400 John R. Lynch St.
Jackson, MS 39217
(601) 979-2737
byron.d.orey@jsums.edu

Education

University of New Orleans
Ph. D., Political Science, 1999

State University of New York at Stony Brook,
M.A., Political Science, 1993

University of Mississippi, Oxford, MS
Master of Public Administration, August 1990

Mississippi Valley State University, Itta Bena, MS
B.S., Business Administration, May 1988

Continuing Education

International Workshop on Statistical Genetic Methods for Human Complex Traits. March 3 –March 7, 2014. Boulder, Colorado

International Workshop on Statistical Genetics and Methodology of Twin and Family Studies. February 28-March 6, 2010. Boulder, Colorado
-Received training in the area of structural equation modeling, using R and Mx using twin data

Inter-University Consortium of Political and Social Research, University of Michigan, 2006, Course: "Empirical Summer Program in Applied Multi-Ethnic Research"

Institute for Professional Education, Virginia Tech University**,** 1995. Linear and Nonlinear Regression with Applications

Inter-University Consortium of Political and Social Research, University of Michigan, 1993, Courses: Logit and Log-Linear Models; Regression Analysis, Maximum Likelihood Estimation; and Structural Equations (Causal) Models

Professional Training

Duke University Community Census and Redistricting Institute, August 2010.
-Received training to prepare redistricting plans using Geographical Information Systems.

Southern Regional Council, Voting Rights Expert Witness Training.
January-December 1993
-Received training in the areas of ecological regression and homogenous case analysis. Mentors included: James Loewen, Ph.D. University of Vermont, Bernard Grofman, Ph.. D. University of California Irvine and Alan Lichtman, Ph.D., The American University, Washington D.C.

Southern Regional Council, Voting Rights Expert Witness Training.
January-December 1994
-Received training to prepare redistricting plans using Geographical Information Systems.

Academic Positions

Jackson State University, Jackson, MS
Professor, Political Science (Fall 2008-Present)

Jackson State University, Jackson, MS
Professor and Chair, Political Science (Fall 2008-2012)

The University of Nebraska, Lincoln, NE
Associate Professor, Political Science (Spring 2007-Spring 2008).

The University of Nebraska, Lincoln, NE
Assistant Professor, Political Science (Fall 2001-Spring 2007).

University of Mississippi, Oxford, MS
Assistant Professor, Political Science and Afro American Studies (1999-2001).

Professional Publications (Peer-Reviewed Articles)

"Racial Differences in Feelings of Distress during the COVID-19 Pandemic and John Henryism Active Coping in the United States: Results from a National

Survey." 2022. *Social Science Quarterly*. (Jas Sullivan, Samaah Sullivan, Byron D'Andra Orey and Najja Baptist).

"Racial Identity and Emotional Responses to Confederate Symbols." 2021. *Social Science Quarterly*. (**Byron D'Andra Orey**, Najja Baptist and Valeria Sinclair- Chapman).

"Melanated Millennials and the Politics of Black Hair." 2019. *Social Science Quarterly*. (**Byron D'Andra Orey** and Yu Zhang)

"Race and Wellbeing in the US: The Psychological Toll of a Broken System." 2019 **Byron D'Andra Orey** *Scientia*.

"Implicit Black Identification and Stereotype Threat Among African American Students." 2017. *Social Science Research*. (Thomas Cramer and **Byron D'Andra Orey**).

"Mississippi and the Great White Switheroo." April 2016, *PS Political Science and Politics*. (**Byron D'Andra Orey** and Ernest Dupree)

"The 50th Anniversary of the Voting Rights Act and the Quiet Revolution." 2015, *National Political Science Review* (**Byron D'Andra Orey**, Gloria Billingsly and Athena King).

"Professional Conferences and the Challenges of Studying Black Politics." April 2015, *PS Political Science and Politics* (Nikol Alexander-Floyd, **Byron D'Andra Orey** and Khalilah Brown-Dean)

"Black Women State Legislators: Electoral Trend Data 1995-2011." 2014 *National Political Science Review* 2014 (**Byron D'Andra Orey** and Nadia Brown) Volume 16: 143-149.

"Black Opposition to Welfare in the Age of Obama" *Race, Gender, and Class*. 2013 (**Byron D'Andra Orey** Athena King, Shonda Lawrence and Brian E. Anderson)

"Using Black Samples to Conduct Implicit Racial Attitudes Research" *PS: Political Science and Politics* (July 2013) (**Byron D'Andra Orey**, Thomas Craemer and Melanye Price)

"Black Opposition to Progressive Racial Policies and the "Double (Non)Consciousness" Thesis. 2012 *Race & Policy* 8: 52-66. (**Byron D'Andra Orey**, Athena King, Leniece Titani-Smith)

"Nature, Nurture, and Ethnocentrism in the Minnesota Twin Study" (**Byron D'Andra Orey** and Hyung Park). *Twin Research and Human Genetics. Volume 15, Number 1.* 2012

"White Support for Racial Referenda in the South" *Politics & Policy* (**Byron D'Andra Orey**, Marvin Overby, Peter Hatemi and Baodong Liu). August 2011

"The Politics of Race, Gender, Ethnicity and Representation in the Texas Legislature." *Race & Policy* (Jessica L. Lavariega Monforti, **Byron D'Andra Orey** and Andrew Conroy) Spring/Summer 2009

"Church Attendance, Social Capital, and Black Voting Participation." *Social Science Quarterly* (Paul Liu, Sharon Austin and **Byron D'Andra Orey**) September 2009

"Racial Threat Republicanism and the Rebel Flag: Trent Lott and the 2006 Mississippi Senate Race." **Byron D'Andra Orey** *National Political Science Review,* Vol. 12, 2009

"The Role of Race, Gender and Structure in State Policymaking." *Race & Policy* (**Byron D'Andra Orey** and Chris Larimer) Spring/Summer 2008

"The Politics of AIDS in the Black Community." *Forum on Public Policy* (Oxford University) Summer 2007

"African Americans in the State Legislative Power Structure: Committee Chairs." **Byron D'Andra Orey**, Marvin Overby and Chris Larimer. *Social Science Quarterly,* September 2007

"Accounting for "Racism: Responses to Political Predicaments in Two States." **Byron D'Andra Orey** and Marvin Overby with Barbara J. Walkosz and Kimberly Walker. *State Politics and Policy Quarterly,* Fall 2007: 235-255

"A Systematic Analysis of the Deracialization Concept." **Byron D'Andra Orey** and Boris Ricks. *The National Political Science Review.* January 2007: 325-334

"Deracialization or Racialization: The Making of a Black Mayor in Jackson, Mississippi" **Byron D'Andra Orey**, *Politics and Policy*. December 2006: 814-836

"Race and Gender Matter: Refining Models of Legislative Policy Making in State Legislatures." 2006. **Byron D'Andra Orey**, Wendy Smooth with Kimberly Adams and Kish Harris-Clark. *Journal of Women, Politics and Policy* 28: 97-119

"Framing the Issue, When the Issue is Race." **Byron D'Andra Orey** *International Journal of Africana Studies.* January 2005: 209-223

"Explaining Black Conservatives: Racial Uplift or Racial Resentment." **Byron D'Andra Orey** *The Black Scholar*. 2004: 18-22.

"A Research Note on White Racial Attitudes and Support for the Mississippi State Flag." **Byron D'Andra Orey** *American Politics Research*. January 2004: 102-116

"A New Racial Threat in the New South? (A Conditional) Yes!" **Byron D'Andra Orey** *American Review of Politics,* Summer 2001: 233-255

"Symbolic Racism in the 1995 Louisiana Gubernatorial Election," Jonathan Knuckey and **Byron D'Andra Orey**. *Social Science Quarterly,* December 2000: 1027-1035

"Black Legislative Politics in Mississippi," **Byron D'Andra Orey** *Journal of Black Studies*, July 2000.

"The Race Race in Black and White: An analysis of the 1995 Louisiana Gubernatorial Election," **Byron D'Andra Orey** *Southeastern Political Review*, December 1998

Books

Mississippi Conflict and Change (forthcoming) 2023. Contracted with the University of Mississippi Press. James Loewen, Charles Sallis and **Byron D'Andra Orey**).

Professional Publications (Book Chapters)

"Learning the Lessons of History" in Robert Wood Johnson Foundation's Culture of Health. (forthcoming) 2022. Cambridge Press. Madeline England, Cristy Johnston Limon, **Byron D'Andra Orey**, Jason Reece and Geoff K. Ward.

"The Liberal Arts Faculty and Writing Bootcamp" in Redefining Liberal Arts Education in the 21st Century Edited by Robert Luckett. University of Mississippi Press. (Preselfanie McDaniels, **Byron D'Andra Orey** Rico Chapman and Monica Flippin-Wynn.

"The Evolution of Racial Attitudes from Martin Luther King to Barack Obama" in Assessing Public Policy and Contemporary Social Developments: Through the Prism of Dr. Martin Luther King's Dream. Edited by Michael Clemmons. University Press, 2017. (**Byron D'Andra Orey**, Lakeyta Bonnette and Athena King)

"Evolution and Devolution of the Voting Rights Act? Black Descriptive and Substantive Representation" **Byron D'Andra Orey** In Minority Voting in the United States. August 2015. Editors: Kyle Kreider and Thomas Balidino (Praeger).

"The Ascendency of Black Political Power in Mississippi." **Byron D'Andra Orey** In The Civil Rights Movement in Mississippi, University of Mississippi Press, 2013. Edited by Ted Ownby

"Course Portfolio for POLS 100: Power and Politics." In Inquiry into the Classroom: A Practical Guide for the Scholarship of Teaching and Learning, **Byron D'Andra Orey** Edited by Paul Savory, Amy Goodburn, and Amy Burnett Nelson. Boston: Anker Publishing, 2007

"Race and Gender Matter: Refining Models of Legislative Policy Making in State Legislatures." 2006, Reprinted in Intersectionality and Politics Recent Research on Gender, Race, and Political Representation in the United States, Edited by Carol Hardy-Fanta

"Black and Brown Conflict? Intergroup Attitudes and their Impact on Policy Preferences." **Byron D'Andra Orey** and Jessica Monfort 2006. In Jessica Perez-Monforti and William Nelson's Black And Latina/o Politics: Issues In Political Development In The United States Barnhardt & Ashe Publishing Company

"Teaching the Politics of Race in a Majority White Institution." **Byron D'Andra Orey** 2006. In C.A. Stanley (Ed.), Faculty of color teaching in predominantly white colleges and universities. Bolton, MA: Anker Publishing Company (2006)

"Participation in Electoral Politics", **Byron D'Andra Orey** 2004. In African Americans and Political Participation, edited by K.C. Morrison (ABC-CLIO Press) with Reginald Vance

On-Line Publications

"Understanding the Important Role of Support Staff." American Political Science Association.

Non-Peer Reviewed Articles/Manuscripts

"The Ascendency to Black Power: Mississippi State Legislators," in Who's Who in Black Mississippi. Mississippi Press. 2012

"The Cross-Cutting Issue of AIDS in the Black Community." *Oracle*, Winter 2008

Newspaper Articles

"Is Black History Still Relevancy" Jackson Free Press, March 6, 2013. http://www.jacksonfreepress.com/news/2013/mar/06/relevance-black-history/

Courses Taught

Undergraduate: Power and Politics (honors); Power and Politics; Public Issues The Black Experience; Minority Politics; Political Participation Polls, Politics, and Public Opinion; Elections; Blacks and the American Political System; and Political Parties and Interest Groups; Research, Scope and Methods; The Legislative Process

Graduate: Race and the U.S. Political System; Blacks in the American Political System; Research Scopes and Methods; Political Inquiry & Research

Personal Awards/Grants/Fellowships

Kellogg Foundation, $500,000 Emmett Till Interpretative Center, Tougaloo College, B. D'Andra Orey and James Loewen. This grant will allow the PIs to disseminate their textbook, Mississippi Conflict and Change and to conduct a social justice institute at Tougaloo College in Summer 2023.

National Science Foundation, "The Intersection of Race, Exposure to Trauma, and Politics." $500,000. Grant #: 2128198 Pending Negotiation (2021).

University of Michigan, Minority Serving Institutions Outreach and Collaboration Grant$30,000. This award will help build collaborations between faculty and students at Jackson State University and the University of Michigan. Received 2020

National Science Foundation Intern Grant, $47,000. This grant is a supplement to NSF grant #1649960. It will provide an opportunity for two graduate students to conduct internships that will help them develop professional work skills related to their field of study. 2020

National Park Service, $27,569 This grant provides funding for an oral history project. It includes one graduate assistant. 2019

National Science Foundation Intern Grant, $35,000. This grant is a supplement to NSF grant #1649960. It will provide an opportunity for a graduate student to conduct an internship that would help her develop her professional skills. 2019

University of Michigan, $8,000. This award will help build collaborations between faculty and students at Jackson State University and the University of Michigan. Received 2019

W. K. Kellogg Foundation Community Leadership Network Fellowship, $25,000. Nominated and awarded out of 800 applicants only 80 were accepted. 2019

Anna Julia Cooper Teacher of the Year National Conference of Black Political Scientists. 2019

National Science Foundation. $35,000. This award is a supplement to NSF grant #1649960.

Alpha Kappa Alpha. Teacher of the Year. 2017

*National Science Foundation Grant, $*179,000. Awarded August 2016. Title: "Racial Biases and Physiological Responses." # 1649960

*National Science Foundation Grant, $*170,000. Awarded May 2015. Title: "The Impact of Racially Traumatic Events on African Americans? Physiological, Psychological and Political Reponses." #1541562

Academic Exchange Fellowship, August 2 – August 10, 2015—This is an invitation-only fellowship. I was nominated by Professor Judith Kelley, the Stephan Haggard, Krause Distinguished Professor at Duke University. This purpose of the program is to invite Political Scientists to Israel to attend meetings with prominent Israeli and Palestinian policymakers, scholars and opinion leaders, covering a wide range of topics and political perspectives on domestic, foreign policy and security issues. I attended the law section of the program.

Center for Undergraduate Research, Awarded 2014-2015—Received a grant in the amount of $7,000 to conduct research in collaborations with a team of undergraduates on physiological responses to racially traumatic events. Experimental research will be conducted with students who will conduct the experiments and analyze the data. Students presented their findings at the Mississippi Political Science Association and the National Conference of Black Political Scientists.

2014 Jackson State University Faculty Excellence Award

2014 Liberal Art's Outstanding Researcher Award

Center for Undergraduate Research, Awarded 2013-2014—Received a grant in the amount of $7,000 to conduct research with undergraduate students in the area of experimental research. Students will conduct experiments and analyze data to examining the impact of hair texture on African-American political attitudes. Students will present their findings at three national, regional and local conferences.

Jackson State University Creative Arts Award, 2014-2015. "The Study of Hairtexture and Candidate Evaluation." This award in the amount of $5,000 was presented by the President of Jackson State University to provide seed money for innovative research.

Palestinian American Research Center Fellow, 2013
- The fellowship provided full funding to investigate Palestinian in-group subconscious attitudes. This project compares African-American attitudes in the United States to Palestinian attitudes (Travel Dates: May 15-May 27, 2013).

Center for Undergraduate Research, Awarded 2012-2013—Received a grant in the amount of $7,000 to conduct research with undergraduate students in the area of survey research. Students conducted a random digit dialing survey of respondents from various counties in Mississippi using "landline only telephone numbers." The results revealed that a bias existed due to the failure of employing cell phones. Students used this project to present at three conferences, including a national conference.

UC-HBCU Initiative, Awarded 2012-2013— Awarded $28,090 grant from the University of California-Historically Black Colleges and Universities Initiative (UC-HBCU) for 2012-13, Belinda Robnett and Katherine Tate, co-PIs. The HBCU partners are Byron Orey (Jackson State University) and Desiree Pedescleaux (Spelman College).

Diamond Award for Outstanding Teaching—Undergraduate Chapter of Kappa Alpha Psi, Jackson State University Awarded 2012.

"Who's Who in Black Mississippi." 2012. Recognized for achievements in the field of education.

Service Learning Faculty Fellow, Jackson State University Service Learning, $2,500, 2011-2012

Jewel Limar Prestage Mentorship Award, National Conference of Black Political Scientists, March 2011 ($1,000)

Global Inquiry Faculty Teaching Seminar Fellow, Jackson State University. $5,000. July 2011

Advisor of the Year, Jackson State University Political Science Club. 2011

Virginia Institute for Psychiatric and Behavioral Genetics, Virginia Commonwealth University. Was invited to participate in a working Group using Minnesota Twin Data, August 2010 (Travel Grant)

Fellow, Community Census and Redistricting Institute, Duke University. $2,000. August 2010

Global Inquiry Faculty Teaching Seminar Fellow, Jackson State University. $5,000. July 2010

Help America Vote Act, $2,500. "Teaching students about Poll Working." Fall 2010

International Workshop on Statistical Genetics and Methodology of Twin and Family Studies. February 28-March 6, 2010. Boulder, Colorado (Travel Grant plus tuition waiver)

TESS: Time Sharing Experiments for the Social Sciences (2009): Winner of a competition to collect data for the following project: "Trusted Sources and Racial Attitudes" (with Lester Spence)

National Science Foundation Grant, $69,000. "The 2008 Presidential Election." 1/09-12/31/09. SES-0905629

Mississippi Humanities Council, "Oral History Interviews of Members of the Legislative Black Caucus." $2,000, September 2008

Anna Julia Cooper National Teaching Award 2008, National Conference of Black Political Scientists

Research Council, Visiting Scholar Grant, 2007 ($800): Received funds to assist in defraying the cost for the guest speaker of the Annual MLK Banquet sponsored by the Afrikan People Union (student organization)

Senning Summer Faculty Fellowship. "African-American Legislative Chairs." (2007): $10,000

Initiative for Teaching and Learning Excellence III, UNL. "Sankofa: Challenging Racial Mythologies Here and Abroad" (2006: $16,500, Denied)

Emerging Scholars Summer Fellow, University of Michigan, 2006, "Empirical Summer Program in Applied Multi-Ethnic Research at the Inter-University consortium for Political and Social Research" $2,500

Layman Fund Award 2006, "Black Intra-Cultural Attitudes Toward Race-based Policies." (2006-2007): $9,500

Senning Summer Faculty Fellowship, "The Intersection of Race and Gender in examining descriptive and substantive representation." (2006): $6,500

Department of Labor, Broad Agency Small Contract, "Race and the Uninsured," with Tina Mueller. (2006, $25,000, denied)

Initiative for Teaching and Learning Excellence II, UNL. "Sankofa, a Return to the Middle Passage." (2005): $15,000, denied

Senning Summer Faculty Fellowship, 2005, "Race, Gender and Structure Matter: Descriptive versus Substantive Representation." (2005): $6,500

Summer Grant Writing Institute, 2005, "Opposition to Racially-Targeted Redistributive Programs." ($2,750)

National Science Foundation, 2004, "Black Racial Conservatives: Racial Uplift or Racial Resentment?" (Denied, $204,000)

Maude Hammond Fellowship, 2004, Research Council, University of Nebraska, Lincoln, "Black Conservatives and Intra-group resentment." (2004): $10,000

Senning Summer Faculty Fellowship, "African Americans in the State Legislative Power Structure: Committee Chairs." (Summer 2004): $6,500

Gallup Research Professorship 2003-2004, "Explaining Black Conservatives: Racial Resentment or Racial Uplift?" (Summer 2003): $4,600

Faculty Research Small Grant, "Deracialization or Racialization: The Making of a Black Mayor," University of Mississippi, (Summer 2000): $3,500

National Science Foundation/Quality Education for Minority Network (January 1993) Amount: $2,500
-To conduct research on the Federal Government's financial contributions to Historically Black Colleges and Universities

Conference Participation

"Racial Bias and the Shooting of Unarmed Blacks." Invited Talk. Miniconference on inequality of public administration/policy, May 21-22, 2020. American University, Washington, D.C. **CANCELED**

"A System of Bad Apples: When Racial Identity Trumps Resentment in the Shooting of Unarmed Blacks by Black Officers," with Periloux Peay. National Conference of Black Political Scientists, March 12-14, 2020. Buckhead, GA

"How Culture Shapes Equity and Health." Invited Talk. 2020 Sharing Knowledge to Build a Culture of Health Conference. March 4-6, 2020 at the Jackson Convention Complex in Jackson, Mississippi.

"African Americans' Emotional Responses to the Mississippi State Flag." Southern Political Science Association, San Juan Puerto Rico. January 9-11, 2020, Caribe Hilton Hotel, San Juan Puerto Rico.

"Intersection of Political Science and Other Disciplines." College Day. Jackson State University, Student Center. April 15, 2019.

Roundtable, 'NCOBPS History: An Overview of Presidential Administrations." National Conference of Black Political Scientists, Baton Rouge, LA. 2019.

"African Americans Emotional Responses to Trump, the Confederate Flag and Police." American Political Science Association. Boston, MA. September 2018.

"African Americans Physiological Responses to Confederate Symbols." Midwestern Political Science Association, Chicago, Illinois, April 7, 2017.

"Environmental Justice Policy, Intersectionality and Racial Context," National Conference of Black Political Scientists, March 16, 2017.

"Understanding Black Political Attitudes and the Intersection of Hair Texture and Colorism," Annual Conference of the Mississippi Political Science Association, Jackson, MS, February 10, 2017.

"The 50th Anniversary of the Voting Rights Act and the Quiet Revolution," Mississippi Political Science Association, Jackson, MS. Gloria Billingsley, B. D'Andra Orey and Athena M. King. February 10, 2017.

"Accountability, Customization, Sustainability, & Production: The Interdisciplinary Faculty Writing Boot Camp" Mississippi Philological Association Annual Conference. February 11, 2017. Mississippi Valley State University, Itta Bena, MS.

"Author Meets Critics: Robert Mickey's Paths Out of Dixie," Southern Political Science Association, New Orleans, LA, January 14, 2017

"Accountability, Customization, Sustainability, & Production: Reflecting on Our Liberal Arts Faculty Writing Boot Camp." College of Liberal Arts Conference, Jackson, MS. October 8, 2016.

"Teaching about Mississippi in Trying Times." Roundtable, College of Liberal Arts Conference, Jackson, MS. October 7, 2016.

Paper: "HBCUs to Conduct Research on Black Political Attitudes and Behavior." (Students: Kiescia Dickinson, Courtney Viverette and Jauan Knight). National

Conference of Black Political Scientist conference (March 17-19 2016). Hilton Garden Inn. Jackson, Mississippi.

Paper: "Southern White Legislative backlash to the Voting Rights Act of 1965." (Student: Ernest DuPree). Southern Political Science Association conference. (January 7-9, 2016 at the Caribe Hilton, San Juan Puerto Rico.

Round Table: "Reflections on Voting Rights in the South in the Age of *Shelby v. Holder."* Southern Political Science Association Southern Political Science Association conference. (January 7-9, 2016 at the Caribe Hilton, San Juan Puerto Rico.

"Blacks' Political Attitudes and Psychological Responses to Racially Traumatic Stressful Events." Southern Political Science Association Southern Political Science Association conference. (January 7-9, 2016 at the Caribe Hilton, San Juan Puerto Rico.

Paper: "Black Strategic Voting or Genuine Republican Support: The 2014 Mississippi Senate." (Student: Nafessa Edges). National Conference of Black Political Scientists conference (March 17-21, 2015). Double Tree Hotel. Atlanta, GA.

Paper: "Psychological and Physiological Responses to Traumatic Events: The Case of Ferguson, Missouri." (Students: Kyler Lee and Jasmine Jackson). Paper presented at the National Conference of Black Political Scientists conference (March 17-21, 2015). Double Tree Hotel, Atlanta, GA.

Paper: "The Evolution and Devolution of the Voting Rights Act (1965-2014). National Conference of Black Political Scientists Conference (March 17-21, 2015). Double Tree Hotel, Atlanta, GA.

Paper: "Sources We Can Believe In: The Effect of Elite Level Cueing on Black Attributions of Inequality." Mississippi Political Science Association (February 13, 2015). Jackson State University, Jackson, MS.

Roundtable: "(Non)Traditional Methods in the Study of Black Politics: Voices from the Field." American Political Science Association: Roundtable (August 30, 2014). Washington, D.C. Hilton.

Paper: "Candidate Evaluation of Black Women Candidates' Hair Style and Texture," (with Nadia Brown). Paper presented at the Southern Political Science Association's annual meeting. (January 9-11, 2014) New Orleans, Louisiana.

.

Paper: "Moving Beyond Race and Gender: An Intersectional Analysis of Bill Sponsorship in State Legislatures," (with Nadia Brown). Paper to be presented

at the Southern Political Science Association's annual meeting (January 9-11, 2014) New Orleans, Louisiana

Round Table: "The Status of the APSA Task Force on Political Science in the 21st Century." The Southern Political Science Association's annual meeting, (January 9-11, 2014) New Orleans, Louisiana

Panel: Author Meets Critics: "Black Mayors White Majorities The Balancing Act of Racial Politics." Ravi Perry Author. ." The Southern Political Science Association's annual meeting, (January 9-11, 2014) New Orleans, Louisiana

Moderator: "New Mayor's Perspective of the First 100 Days." Mississippi Legislative Black Caucus Mayor's Summit (September 26, 2013), Jackson State University, Jackson, MS

Paper: "Environmental Justice Policy, Intersectionality and Racial Context" (with Athena King). Paper presented at the Midwestern Political Science Association's annual meeting, (April 11-13, 2013) Chicago, Illinois

Paper: "Intersectionality: Race, Gender and Party." Paper presented at the National Conference of Black Political Scientists, (March 14-16, 2013) Oak Brook, Illinois

Roundtable Participant: "Research Opportunities at Historically Black Colleges and Universities." National Conference of Black Political Scientists, (March 14-16, 2013) Oak Brook, Illinois

Paper: "Revisiting Black Racial Identity Using Subconscious Measures" Byron D'Andra Orey, Thomas Craemer and Melanye Price. Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Roundtable: Using ICPSR Data in Undergraduate Research, Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Invited Panelists: Conference within a Conference--Gender, Race, & Intersectionality, Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Discussant: "The Representation and Presentation of Race and Gender" Southern Political Science Association, (January 3-5, 2013) Orlando, FL

Paper: "Using Black Samples to Investigate the Validity of Implicit Racial Attitude Measures" (Paper nominated for Best Paper for Race and Ethnicity Section) (Paper written, however, Conference Cancelled), (September 2013), American Political Science Association, New Orleans, LA

Paper: Invited Participant: APSA Working Group on Implicit Attitudes, "Comparing AMP, IATs, Subliminal Priming and Black Identity" (Paper written, however, Conference Cancelled) Byron D'Andra Orey and Thomas Craemer, American Political Science Association, (September 2013) New Orleans, LA

Paper: "The Intersectionality of Race and Gender in State Legislatures," Women for Progress Conference, (September 2012) Jackson, MS.

Paper: "Validating Implicit Racial Attitude Measures in Black HBCU Samples," Midwestern Political Science Association, (April 12-15, 2012), Chicago, Illinois

Paper: "Black Conservatism and Opposition to Racial Policies," National Conference of Black Political Scientist, (March 14-17, 2012, Las Vegas, Nevada

Paper: "Black Legislative Politics in Mississippi," (with Rhonda Cooper), Southern Political Science Association, (January 11-14, 2012), New Orleans, LA

Chair, Panel: "Status of African Americans in the South," Southern Political Science Association, (January 11-14, 2012), New Orleans, LA

Participant: "SPSA 2013 Program Committee," Southern Political Science Association, (January 11-14, 2012), New Orleans, LA

Paper: "Intersections, Interactions, and Legislative Behavior," (with Shoronda Wofford), Mississippi Political Science Association, Millsaps College, (November 11-12, 2011), Jackson, MS

Discussant: Local Politics in Mississippi, Mississippi Political Science Association, Millsaps College, (November 11-12, 2011), Jackson, MS

Invited Panelist: Chairs Luncheon and Workshop: "Unwitting Leader: How to be an Effective Department Chair, and Live to Tell About It" (Departmental Services Committee), **American Political Science Association, (September 1-4, 2011), Washington State Convention Center, Seattle Washington**

Paper: "Genetic Similarity, Ethnocentrism, and Political Attitudes." **American Political Science Association, (September 1-4, 2011), Washington State Convention Center, Seattle Washington**

Chair, Panel: **Race, Immigration and Public Opinion, American Political Science Association, (September 1-4, 2011), Washington State Convention Center Seattle Washington**

Chair, Panel: "Racial Attitudes and the Role of Race in Electoral Politics." Southern Political Science Association (January 6-8, 2011), Intercontinental Hotel, New Orleans, LA

Paper: "Black Support for Racial Policies and The Double (Non)-Consciousness Thesis." Southern Political Science Association (January 6-8, 2011), Intercontinental Hotel. (with Leniece Davis and Byron Williams)

Paper: "Pro-Black Political Opinions, Participation and Stereotype Threat Among African-American College Students." American Political Science Association, (September 2010), Washington, D.C. (with Thomas Craemer and Hyung Park)

Paper: "Implicit Black Group-Identification and Stereotype Threat in the Age of Obama." International Society of Political Psychology, (July 2010), San Francisco, CA. (with Thomas Craemer)

Paper: "Implicit Racial Attitudes, Stereotype Threat, and Political Behavior among Young African Americans in the Age of Obama," Midwestern Political Science Association's Annual Meeting, (April 22, 2010), Chicago, IL, Palmer House. (with Thomas Cramer and Hyung Park)

Paper: "Black Elite Rhetoric and System Justification Ideology." American Political Science Association's Annual Meeting. Toronto, (September 5, 2009), Ontario, Canada, (with Hyung Park)

Paper: "American Patriotism and the Reverend Wrights of the World." National Conference of Black Political Scientists. Houston, TX (March 2009). (with Najja Baptist)

Paper: "American Identity and Disillusioned Liberalism Among African Americans." Midwestern Political Science Association's Annual Meeting. Chicago, IL, Palmer House. (April 2-5, 2009). (with Najja Baptist)

Paper: "Public Opinion and Substantive Representation." *Discussant* Midwestern Political Science Association's Annual Meeting. (April 2-5, 2009), Chicago, IL, Palmer House

Paper: "Political Socialization and Racial Conservatism." Southern Political Science Association's Annual Meeting, (January 9, 2009) New Orleans, LA Intercontinental Hotel

Paper: "System Justification Ideology and Black Opposition to Affirmative Action." (March 2007), National Conference of Black Political Scientists, San Francisco, CA

Paper: "When Race, Party and Gender Matter: State Legislative Behavior." Western Political Science Association, (March 2007), Las Vegas, Nevada

Chair, "Race and Fear." Hendricks Conference on Biology and Political Behavior, (October 13-14, 2006), Lincoln, Nebraska

Paper: "Roundtable: A Retro and Prospective: The 10th Anniversary of Robert Smith's *We Have No Leaders*." The National Conference of Black Political Scientists' Annual Conference," (March 22-25, 2006), Atlanta, GA

Paper: "Roundtable: Representation and the Intersections of Gender, Race and Ethnicity." The Southern Political Science Association's Annual Meeting, (January 6-8, 2006), Atlanta, GA

Paper: "Mentoring Task Force Panel: Finding Mentors and Advocates in the Ivory Tower." American Political Science Association, (September 2005,) Washington, D.C.

Paper: "A Tale of Two Flags: The Mississippi and Georgia Flag Referenda." Midwestern Political Science Association, (April 7-9, 2005), Chicago, IL

Paper: "Explaining Black Conservatives." Western Political Science Association, (March 17-20, 2005), Oakland, CA

Paper: "Not Exactly What We Had in Mind for Inclusion: The Impact of Racial Resentment on Latinos" (with Jessica Perez-Monforti). Western Political Science Association, (March 17-20, 2005), Oakland, CA

Discussant: "Perspectives on Race and Ethnicity," (January 6-8, 2005), Southern Political Science Association

Paper: "Teaching Race in a Majority White Place." People of Color at Traditional White Institutions, (November 15-16, 2004), University of Nebraska, Lincoln, Lincoln, Nebraska

Paper: "Black Conservatives and Black Nationalists: Convergence or Divergence." National Conference of Black Political Science, (March 25-27, 2004), Chicago, Illinois, Hyatt- Mcormick Place

Paper: "African American Racial Conservatives and Intra-group Resentment." Southern Political Science Association, (January 2004), New Orleans, LA (with LeKesha Harris)

Paper: "Race and Gender Matter: Black Legislative Politics in Mississippi" (with Wendy Smooth), National Conference of Black Political Science, (March 25-27, 2004), Chicago, Illinois, Hyatt- Mcormick Place

Roundtable Participant: "The Role of College Faculty in AP Success." National AP Equity Colloquium, (March 20-21, 2004), Houston, TX, Houston Intercontinental Marriott

Paper: "Black Conservatives: A Systematic Analysis." African and Latino Conference, (January 2003), Lincoln, Nebraska

Paper: "Measuring Deracialization: A Systematic Analysis of the Deracialization Concept." Western Political Science Association, March 27-29, 2003

Paper: "Explaining Black Conservatives: Racial Uplift or Racial Resentment?" National Conference of Black Political Scientists, Oakland, California

Discussant, Southern Political Science Association, (November 6-10, 2002), Savannah, GA

Paper: "Black Legislative Politics in Mississippi: Gender Matters," Southern Political Science Association, (November 6-10, 2002), Savannah, GA

Paper: "Racial Uplift or Racial Resentment," Midwest Political Science Association, (April 2002), Chicago, IL

Paper: "Racial Attitudes toward the Confederate Flag," Southern Political Science Association, (November 7-10, 2001) Atlanta, GA, with Khalilah Brown

Paper: "White Opposition to Affirmative Action," Southern Political Science Association, (November 7-10, 2001) Atlanta, GA

Paper: "The New Black Conservative: Rhetoric or Reality?" National Conference of Black Political Scientists, (March 8-10, 2001)

Paper: "New Racial Attitudes in the New South." Race in America (Hendricks Symposium), University of Nebraska, (November 2-3, 2000) Lincoln, NE

Paper: "African Americans in the State Legislative Power Structure: Committee Chairs," American Political Science Association, (August 2000, Washington, D.C.)

Paper: "One Person-N Votes: An empirical analysis of Proportional representation in Cincinnati, Ohio," Midwest Political Science Association, (April 2000, Chicago, Illinois), with Kimberly Adams

Paper: "From Protest to Politics: A look at the success of black legislators in Mississippi," Midwest Political Science Association, (April 2000, Chicago, Illinois), with Kimberly Adams

Paper: “Framing the Issue, When the Issue is Race.” American Political Science Association, (September 2-5, 1999), Atlanta, GA

Poster: ARacialization or Deracialization: The Making of a Black Mayor in Jackson, Mississippi,” American Political Science Association, (September 2-6, 1998), Boston, MA

Paper: “The Race Race in Black and White: The 1995 Louisiana Gubernatorial Election,” Southwest Political Science Association, (March 26-29, 1997), New Orleans, LA

Paper: “Mississippi Legislative Politics in Mississippi,” Southern Political Science Association, (November 7-9,1996), Atlanta, GA.

Paper: “Dispelling the Myth and Revealing the Truth: the Overrepresentation of Whites on City Councils,” American Political Science Association, (September 1996) San Francisco, CA.

Roundtable Participant: “The Impact of Alternative Voting Systems” National Conference of Black Political Scientists, (March 1996), Norfolk, VA.

Paper: “Mississippi Black Legislators,” National Conference of Black Political Scientists, (March 1996) Savannah, GA.

Paper: “Black Representation in the South,” The Southern Regional Council=s Annual Voting Rights Seminar, Fall 1995 New Orleans, LA.

Paper: “One Person, N-Votes: In Search of a Remedy for Vote Dilution Claims in the Absence of Geographical Compactness,” American Political Science Association, (September 1995) Chicago, Ill.

Paper: “Status Crow Politics and the Under-Representation of Black Women on the Bench” Southern Political Science Association, (November 3-5, 1994) Atlanta, GA

Paper: “One Person, N-Votes: Minority Representation on the Bench,” The National Conference of Black Political Scientists (March 1994) Hampton, VA

Panel Chair: “The Politics of Electoral Reform,” American Political Science Association, (September, 1994) New York, NY.

Discussant: Race and Reapportionment after *Shaw v. Reno***,** Southern Political Science Association, (November 3-5, 1994) Atlanta, GA.

Participant: Mock Voting Rights Trial, The Southern Regional Council, Annual Voting Rights Seminar (October 1993), Peachtree City, Georgia

Paper: "When Excess Creates Progress: An Assessment of the Federal Government's Financial Contribution to HBCUs," The Southern Political Science Association (Fall 1993) Savannah, GA.

Paper: "When Excess Creates Progress: An Assessment of the National Science Foundation's Financial Contribution to HBCUs," The National Black Graduate Student Association's Annual Conference (May 1993) University of Minnesota

Paper: "The Disparity of Federal Expenditures received by Historically Black Colleges and Universities (HBCUs) compared to Non-HBCUs," The Quality Education for Minority Network's Annual Education Conference (August 1992), Georgetown University, Washington, D.C.

Paper: "The Purpose of Cognitive Inventories for Secondary Students," Southern Association for Educational Opportunity Program Personnel (1990), Tupelo, MS

Invited Presentations

"Mississippi Conflict and Change," University of Michigan, May 10, 2022.

"The Power of Perseverance: Black Politics of American Democracy Workshop, Facilitator. Princeton University, March 31, 2022.

Intersectionality and Intersections: Race, Gender and Legislative Behavior. Princeton University, March 30, 2022.

Trusted Sources, University of Tennessee, Knoxville, March 8 2022

MLK Convocation, Creighton University, January 18, 2022.

"Does the Confederate Flag Make You Sick?" University of Mississippi, **April 12, 2017.**

"The Impact of Race and Gender on the 2016 Presidential Election," Metropolitan Community College, Omaha, Nebraska. February 2, 2017.

"The Strange Career of Black Politics," Florida State University, January 26, 2017.

"New Developments in the Study of Race and Politics," Buffalo State University, November 1, 2016.

"Contemporary Topics in the Study of Race and Politics," Annual Joseph T. Taylor Symposium at Indiana University, Purdue University Indiana (IUPUI), February 25, 2014

"A Dare to Be Great: Honoring our Ancestors." National Association for the Advancement of Colored People's Annual Banquet. Lincoln, Nebraska. November 9, 2013.

"Alumni Given at HBCUs." The Douglas T. Porter Athletic Scholarship Banquet. October 25, 2013. Mississippi Valley State University, Itta Bena, MS.

"One Man's Journey to African, the Middle East and the Caribbean." Metropolitan Community College September 12, 2013.

"Reflecting on the Life and Work of Attorney Isaiah Madison." Isaiah Madison Memorial Symposium on Higher Education, April 18, 2013

"Voter Suppression in the United States," Mississippi Valley State University's Pi Sigma Alpha Honor Society April 8, 2013

"Research Opportunities at Historically Black Colleges and Universities." University of California, Irvine February 27, 2013

Roundtable discussion, "Has the Dream Been Fulfilled?" February 19, 2013, Jackson State University Political Science Club, Jackson, MS

Mississippi Valley State University Black History Month Convocation, Guest Speaker February 18, 2013

"New Developments in Race and Politics." St Andrews High School, December 12, 2013

"Voting and Democracy," St. Andrews High School, Ridgeland, MS, November 15, 2011

Robert Clark Symposium, "2011 Election Day: Implication and Analysis, What does it Really Mean?" Jackson State University, November 9, 2011

Emerging Scholars Conference, (with mentee JaLisa Jorden). "Black Political Attitudes and Obama as a Trusted Source: Is it the Message or the Messenger?" University of Michigan, September 29-October 1, 2011

"Mentoring Graduate Assistants." Workshop: Activity 7 Program, May 18, 2011. Jackson State University Student Center

Conference on Laboratory Experiments in Political Science, Stereotype Threat Among African-American College Students, Vanderbilt University, May 4-6, 2011

University Development Foundation Board Meeting. Invited by the President of the University to make a presentation on the research agenda in the Department of Political Science, MS e-Center, December 10, 2010

Hendrick's Symposium (with mentees JaLisa Jorden and Ebou Sowe). "Elites as Trusted Sources: Do Blacks Believe Everything President Obama Says?" November 3-5, 2010. University of Nebraska, Lincoln

Terry High School. "To Thine Own Self Be True." October 19, 2010. Terry Mississippi

Porter L. Fortune, History Symposium: Future of the South Conference. "Substantive Representation and the Mississippi Legislative Black Caucus." University of Mississippi, Oxford, MS. February 18, 2010

"Obama Administration: One Year Later." Roundtable Participant. Medgar Evers/Ella Baker Lecture Series, Tougaloo College, Tougaloo, MS. November 16, 2009

"Presidential Approval Ratings." Lecture at St. Andrews High School's Advanced Placement U.S. Government course, November 10, 2009

Matthew Holden, Jr. Symposium Lecture. "A Response to Glen Loury." November 5, 2009. Jackson State University

University of Nebraska, Lincoln. Keynote Speaker: **Hurricane Katrina: A Remembrance in Three Acts, September 25, 2007**

New York University, John Jost's Psychology Laboratory. "System Justification and Black Opposition to Affirmative Action." September 13, 2007

Oxford University (Oxford, England), Oxford Roundtable, "Religion and Politics." July 2007

Williams College, Voting Rights Roundtable, February 9-10, 2007

Emory University School of Law Public Interest Committee, "Annual Public Interest Conference." October 7, 2006

Yale University, Presenter: "Lessons from the Past, Prospects for the Future: A Conference in honor the Fortieth Anniversary of the Voting Rights Act of 1965." April 21-23, 2005

University of Nebraska, Lincoln. "From Selma to Washington," April 18, 2005

University of Nebraska, Lincoln. "Martin Luther King Forum on Reparations." (January 20, 2005)

University of Mississippi. "Race and the Mississippi State Flag." February, 2005

University of Southern Illinois. "Explaining Black Racial Conservatives." December 9, 2004

Middle Tennessee State University. "The Year of the Ballot or the Bullet." April 22, 2004

The College Board, Arranged a Panel on "The Role of College Faculty in AP Success." *National AP Equity Colloquium*. March 20-21, 2004

Washington University, Lecture: "Racial Uplift or Racial Resentment: Explaining Black Conservatives?" February 6, 2004

University of Winneba, Winneba, Ghana (West Africa). June 2004

University of Mississippi, "Retaining Black Faculty and about Tenure," Panelist. January 23, 2004

University of Nebraska, Lincoln. "What does it take to get elected in the United States?" Round Table, sponsored by Pi Sigma Alpha. February 20, 2003

Southern Association for College Student Affairs**,** Panelists: "Town Hall Meeting on Symbols," November 2002

University of Nebraska, Lincoln. "Post Election Roundtable Panelists," sponsored by Pi Sigma Alpha. November 2002

November 2-3, 2000. "New Racial Attitudes in the New South" Hendricks Symposium on Race, University of Nebraska

September 2000. Lecture, "A New Racism in the New South." Center for the Study of Southern Culture, University of Mississippi

Ph. D. Committees

Rob Denne, Jackson State University, Department of Education
Ronella Gollman, Jackson State University, Department of Psychology

Princeton Smith, Jackson State University, Department of Psychology
Daphine Foster, Public Policy, Jackson State University (member)
Peter Hatemi, Political Science, University of Nebraska, Lincoln. Defense: Spring 2007 (member)
Reginald Vance, Southern University, Baton Rouge, Defense: December 2006 (Chair)
James H. Moore, Howard University (Economics), Defense: December 2004 (member)
Kimberly Adams, University of Mississippi, Defense: Spring 2003 (outside member)
Mitch Herring, University of Nebraska, Lincoln Defense: Spring 2008 (Political Science, member)
Yolanda Johnson, University of Nebraska, Lincoln (Sociology, member)
Eric Whitaker, University of Nebraska, Lincoln (Political Science, member)

Master's Theses:

Communications

Janeya Smith, Jackson State University, Department of Political Science (Chair, Completion date: December 2018)
Spencer McClenty, Jackson State University, Department of Communication (Completion October 2018)
Caleb Smith, Jackson State University, Department of History (Completion date: October 2017)
Sharonda Woodford, Jackson State University, Department of Political Science (Completion date: summer 2013)
Alfonso Franklin, Jackson State University, Department of History (Completion date: May 2013)
Emmitt Riley, Jackson State University (Chair, Completion date: May 2010)
Najja Baptist, Jackson State University (Chair, Completion: August 2010)
Matthew Hastings, University of Nebraska, Lincoln. (Chair, Thesis Completion: Spring 2007)

Honor's Thesis:

Andy Conroy (Co-Advisor), Completed: Spring, 2006

University Services

Promotion and Tenure Committee Psychology 2018
Mentor, Ronald E. McNair Summer Program, Jackson State University (Mentee: Keirrah Wheeler)
Promotion and Tenure Committee Psychology 2017
Political Science Club Advisor, 2014-2015
Pi Sigma Alpha Advisor, 2017-Present
Pi Sigma Alpha Advisor, 2014-2015
Member of the Faculty Senate, 2014-2015

Faculty Third Year Review, Department of Political Science, Chair Spring of 2015
Faculty Third Year Review, Department of Political Science, Chair Fall of 2014
Faculty Third Year Review, Department of History Fall 2013
Search Committee for the Bachelor of Social Work and Masters of Social Work Program Directors. Fall 2013
University Think Tank Committee, Jackson State University (appointed Fall 2013)
Advisory Board, Center for Excellence in Minority Health and Health Disparities (appointed Spring 2013)
Tenure Committee, Department of History Fall 2012
Promotion Committee, Department of Public Policy Fall 2012
Conference Coordinator for the National Bar Association—Served as the Coordinator in hosting the NBA's annual meeting at Jackson State University. September 2012
Promotion Committee, Department of Music Fall 2011
College of Liberal Arts Promotion and Tenure Committee. 2011-2012 (elected position)
Jackson State University, Advisory Board, Advance Project (National Science Foundation Grant), appointed by PI. 2011-present
Symposia Subcommittee of the Presidential Inaugural Planning Committee Fall 2011
Research Advisory Council, 2011-present, appointed by Vice President for Research
Employment/Hiring Committee Public Policy Spring 2011
Search Committee for Office of Student Life, January 2011
Promotion Committee, Department of Business Fall 2010
Promotion Committee, Department of Psychology Fall 2010
Promotion Committee, Department of Public Health Fall 2010
College of Liberal Arts Promotion and Tenure Committee. 2010-2011 (elected position)
Quality Enhancement Plan, Jackson State University, 2008-2011
40th Gibbs-Green Anniversary Observance Planning Committee, Jackson State University, 2010
Executive Committee, University of Nebraska, Division of Arts and Sciences, 2007-2008
Diversity Committee, University of Nebraska, 2007-2008
Executive Committee, University of Nebraska, Department of Political Science, 2006-2007 and 2002-2003
Undergraduate Creative Activities and Research Experiences (UCARE), Student Advisor, University of Nebraska, 2006 (Amanda Ponce)
Mentor, Ronald E. McNair Summer Program, University of Nebraska, Lincoln, Summer, 2006 (Mentee: Amanda Ponce)
Graduate Committee, Department of Political Science, (2005-2006)
Political Science Unit Review Committee, University of Nebraska (2005-2008)

University of Nebraska Marshal Corp: Appointed by the dean of Arts and Sciences (Summer 2004-Present)
Member, Undergraduate Committee (2003-Present)
Mentor, Ronald E. McNair Summer Program, University of Nebraska, Lincoln, 2003 (Mentees: Donald McCauley and Potso Byndon)
Member, Executive Committee, University of Nebraska, Department of Political Science, 2002-present
Mentor, Ronald E. McNair Summer Program, University of Mississippi, 1999 (Mentee: Kimberly Walker, Alcorn State University)

Professional Services and Activities

Conference Program Chair, Southern Political Science Association, 2023
Vice President, Southern Political Science Association. 2022

Commissioner, Mississippi Civil Rights Education Commission
Executive Council, Southern Political Science Association 2014-2015
American Political Science Association: Committee for Best Book in the Race, Ethnicity and Politics section. 2014
American Political Science Association's Minority Fellows Program Selection Committee 2013
Dianne Blair Award Committee, Southern Political Science Association. 2013
Section Chair, Professional and Career Development, Midwestern Political Science Association. 2013 (Conference to be held in 2014).
External Reviewer, Tenure and Promotion, Southern Illinois University, Fall 2013.
Section Chair, National Conference of Black Political Scientists: Undergraduate Research 2013.
Section Chair: Teaching Political Science, Southern Political Science Association, Orlando, Florida January 3-5, 2013
Member of the Status of Blacks in the Discipline, American Political Science Association (appointed 2012-present)
Section Chair, Southern Political Science Association: Teaching Political Science, 2012
Member of the Membership Committee for the Southern Political Science Association (appointed 2012)
External Reviewer, Tenure and Promotion Committee, September 2012, University of Houston, Clearwater
External Reviewer, Third Year Review, Clark University, November 2011
External Reviewer, Tenure and Promotion Committee, Rutgers University, Newark, September 2011
Section Chair: The Status of Blacks in the South, Southern Political Science Association, 2012
Section Chair: Public Opinion, Midwestern Political Science Association, 2009
Lucius Barker Award Committee, 2008 Midwestern Political Science Association.

Executive Committee (member), National Conference of Political Science (2007-2010)
Section Chair: **Identity Politics: Gender, Class, Ethnicity, Sexuality, and Religion,** National Conference of Black Political Scientists, 2007.
Section Chair: Race and Politics, National Conference of Black Political Scientists 2005.
Jewell Prestage Awards Committee, Southwestern Political Science Association 2004.
Section Chair: Race and Ethnicity, Southwest Political Science Association. 2004.
Section Chair: Race and Ethnicity, Midwestern Political Science Association, 2002.
University of Nebraska, Lincoln. "What does it take to get elected in the United States?" Round Table, sponsored by Pi Sigma Alpha. February 20, 2003.
Southern Association for College Student Affairs**,** Panelists: "Town Hall Meeting on Symbols," Biloxi, Mississippi. November 2002.
University of Nebraska, Lincoln. "Post Election Roundtable Panelists," sponsored by Pi Sigma Alpha. November 2002.

Other Professional Activities
Education Consultation:

Testing Development Committee (member) 2008-2011, Education Testing Services (Princeton, New Jersey): Assist in writing objective questions for the Advanced Placement Exam (Government and Politics).

College Board Consultant—Conduct workshops to High School Government Instructors on teaching Advanced Placement Government and Politics (April 2002-Present).

Question Leader for the Advance Placement Exam, in U.S. Government and Politics (Summers 2007-Present).

Table Leader for the Advance Placement Exam, in American Government, Educational Testing Services (Summers 1996-2003).

Reader for the Advance Placement Exam, in American Government, Educational Testing Services (Summers 1996-1998).

Expert Witness Work:
Mark A. Anderson v. City of McComb, Mississippi, Gregory Martin and John Does 1-5.
Voting Rights Expert Witness Work:
Cecil Cantrell v. Monroe County, Mississippi (Deposition given)
Testified before the Mississippi Legislative Reapportionment Committee (April 2001)
Lewis, et al. v. Alamance County, et al. (Deposition given).

Rose Johnson, et al. v. The City of Gainesville, GA (Testified)
Jackson v. Nassau County Board of Supervisors
City of Hampton, Virginia

Editorial Review Boards

American Political Science Review
The Ralph Bunche Journal of Public Affairs
Journal of Race and Policy
Pi Sigma Alpha Undergraduate Journal (Faculty Advisory Board)
State Politics and Policy Quarterly

Reviewer

American Political Science Review; Journal of Politics; American Journal of Political Science; Legislative Studies Quarterly; Women, Politics and Policy; National Political Science Review; American Politics Research; Political Research Quarterly; Politics and Policy; Oxford University Press; Lynne Rienner Publishers; *Journal of Race and Policy; Social Science Quarterly; Urban Affairs Quarterly;* SUNY PRESS; *Political Communication*, University of Michigan Press; TESS (Time-Sharing Experiences for the Social Sciences); National Science Foundation; the *Social Science Journal*; Routledge Press; *Journal of African American Studies; Social Psychological and Personality Science; Pi Sigma Alpha Undergraduate Journal.*

Community Services

Mentor, Empowering Males to Build Opportunities for Developing Independence (EMBODI)
Mentor, New Focus for Youth after-school program
Board of Directors of the PERICO Institute for Youth Development and Entrepreneurship (PRIYDE), Jackson, MS (November 1, 2011-Present)
Member, Charter Revision Commission, Lincoln, Nebraska 2002-2006
Member, Nebraska's Help America Vote Act (Secretary of State's Office) 2002-2006

Professional Organizations

American Political Science Association
National Conference of Black Political Scientists
Southern Political Science Association
Midwestern Political Science Association
Mississippi Political Science Association

APPENDIX 2: Summary Table of Two Group EI and Three-Group EI and EI RxC

	Two-Group EI (Black vs. White and Others)	Two-Group EI (White vs. Black and Others)	EI Compare Three-Group EI	EI Compare Three-Group EI	EI Compare Three-Group EI RxC	EI Compare Three-Group EI RxC
Election	Black Support for Black Candidate	White Support for Black Candidate	Black Support for Black Candidate	White Support for Black Candidate	Black Support for Black Candidate	White Support for Black Candidate
Westbrooks 2020	90.46	6.43	90.46	6.36	90.22	6.37
Espy 2020	96.34	13.5	96.38	13.39	98	10.99
Amos 2019	92.08	6.66	92.05	6.66	94.43	4.6
DuPree 2019	94.35	8.73	94.31	8.7	96.46	6.24
Collins 2019	94.54	10.82	94.55	10.76	96.81	8.27
Simmons 2019	93.97	8.81	94.05	8.59	96.67	6.01
Stamps 2019	92.22	7.6	93.3	7.65	94.96	5.52
Green 2019	92.83	7.16	92.82	6.9	95.42	4.89
Espy 2018	94.91	16.42	94.89	16.31	97.6	12.48
Graham 2015	87.58	4.67	87.7	4.49	89.78	2.69
Coleman 2015	89.36	4.87	89.38	4.85	91.16	3.15
Gray 2015	87.76	4.44	87.74	4.52	89.88	2.72
Banks 2012	81.26	5.44	81.34	5.45	79.92	7.27
Obama 2012	92.72	12.12	92.72	12.14	93.65	5.53
Crisler 2011	91.04	8.29	90.98	8.37	92.35	7.52

DuPree 2011	90.88	8.11	90.89	8.12	93.65	5.53
Green 2011	90.94	8.16	90.88	8.08	93.67	5.56

APPENDIX 3: TWO-GROUP EI RAW RESULTS AND SCRIPT

Raw Results

Westbrooks 2020

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	90.46	0.27	89.97
pVoteB	9.53	0.24	9.09

	ci_95_upper_Iterative.EI
pVoteA	91.03
pVoteB	10.01

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	6.43	0.25	5.89
pVoteB	93.59	0.28	92.95

	ci_95_upper_Iterative.EI
pVoteA	6.88
pVoteB	94.03

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	10.64	0.20	10.25
pVoteB	89.38	0.24	88.88

	ci_95_upper_Iterative.EI
pVoteA	11.06
pVoteB	89.76

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.39	0.26	86.91
pVoteB	12.56	0.21	12.22

	ci_95_upper_Iterative.EI
pVoteA	87.97
pVoteB	13.08

Espy 2020

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	96.34	0.20	95.94
pVoteB	3.65	0.21	3.18

	ci_95_upper_Iterative.EI
pVoteA	96.68
pVoteB	4.02

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	13.50	0.37	12.71
pVoteB	86.51	0.36	85.84

	ci_95_upper_Iterative.EI
pVoteA	14.30
pVoteB	87.21

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	18.15	0.23	17.77
pVoteB	81.87	0.18	81.52

	ci_95_upper_Iterative.EI
pVoteA	18.67
pVoteB	82.20

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	93.88	0.30	93.30
pVoteB	6.09	0.29	5.56

	ci_95_upper_Iterative.EI
pVoteA	94.44
pVoteB	6.68

Collins 2019

$pBlackVAP

$pWhiteVAP

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 94.54 0.30 93.87
pVoteB 5.46 0.26 4.98
ci_95_upper_Iterative.EI
pVoteA 95.08
pVoteB 5.99

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 10.82 0.32 10.13
pVoteB 89.21 0.28 88.60
ci_95_upper_Iterative.EI
pVoteA 11.51
pVoteB 89.72

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 15.14 0.23 14.67
pVoteB 84.83 0.22 84.42
ci_95_upper_Iterative.EI
pVoteA 15.67
pVoteB 85.31

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.06 0.29 91.53
pVoteB 7.95 0.28 7.48
ci_95_upper_Iterative.EI
pVoteA 92.69
pVoteB 8.56

DuPree 2019

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 94.31 0.28 93.77
pVoteB 5.67 0.24 5.19
ci_95_upper_Iterative.EI
pVoteA 94.81
pVoteB 6.18

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 8.73 0.32 8.16
pVoteB 91.27 0.30 90.64
ci_95_upper_Iterative.EI
pVoteA 9.32
pVoteB 91.80

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 12.89 0.25 12.48
pVoteB 87.11 0.21 86.71
ci_95_upper_Iterative.EI
pVoteA 13.44
pVoteB 87.53

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 91.46 0.32 90.84
pVoteB 8.53 0.31 8.04
ci_95_upper_Iterative.EI
pVoteA 92.12
pVoteB 9.26

Amos 2019

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.04 0.30 91.39
pVoteB 7.94 0.33 7.30

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 6.63 0.38 5.71
pVoteB 93.34 0.38 92.80

ci_95_upper_Iterative.EI
pVoteA 92.52
pVoteB 8.59

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 9.69 0.25 9.20
pVoteB 90.21 0.25 89.75
ci_95_upper_Iterative.EI
pVoteA 10.25
pVoteB 90.79

ci_95_upper_Iterative.EI
pVoteA 7.27
pVoteB 93.98

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 88.13 0.34 87.49
pVoteB 11.88 0.33 11.21
ci_95_upper_Iterative.EI
pVoteA 88.77
pVoteB 12.49

Green 2019

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.83 0.31 92.20
pVoteB 7.64 0.36 6.88
ci_95_upper_Iterative.EI
pVoteA 93.49
pVoteB 8.35

mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 7.16 0.33 6.48
pVoteB 92.90 0.32 92.24
ci_95_upper_Iterative.EI
pVoteA 7.76
pVoteB 93.44

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 11.55 0.29 11.03
pVoteB 88.23 0.27 87.66
ci_95_upper_Iterative.EI
pVoteA 12.20
pVoteB 88.77

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 87.68 0.26 87.09
pVoteB 12.40 0.29 11.84
ci_95_upper_Iterative.EI
pVoteA 88.12
pVoteB 12.98

Simmons 2019

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 93.97 0.30 93.33
pVoteB 6.10 0.28 5.60
ci_95_upper_Iterative.EI
pVoteA 94.44
pVoteB 6.56

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 8.81 0.44 8.12
pVoteB 91.21 0.37 90.56
ci_95_upper_Iterative.EI
pVoteA 9.79
pVoteB 91.97

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI

pVoteA	13.56	0.27	13.13
pVoteB	86.42	0.25	85.82

ci_95_upper_Iterative.EI

pVoteA	14.23
pVoteB	86.85

pVoteA	89.15	0.38	88.28
pVoteB	10.78	0.35	10.08

ci_95_upper_Iterative.EI

pVoteA	89.88
pVoteB	11.49

Stamps 2019

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	92.22	0.33	91.52
pVoteB	7.64	0.30	7.09

ci_95_upper_Iterative.EI

pVoteA	92.83
pVoteB	8.30

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	7.60	0.37	7.07
pVoteB	92.38	0.36	91.64

ci_95_upper_Iterative.EI

pVoteA	8.51
pVoteB	93.04

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	12.39	0.25	11.86
pVoteB	87.62	0.28	87.13

ci_95_upper_Iterative.EI

pVoteA	12.89
pVoteB	88.16

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.67	0.31	87.04
pVoteB	12.36	0.33	11.83

ci_95_upper_Iterative.EI

pVoteA	88.20
pVoteB	13.15

Espy 2018

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	94.91	0.29	94.27
pVoteB	5.04	0.30	4.46

ci_95_upper_Iterative.EI

pVoteA	95.49
pVoteB	5.64

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	16.42	0.43	15.70
pVoteB	83.56	0.44	82.59

ci_95_upper_Iterative.EI

pVoteA	17.36
pVoteB	84.52

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	19.83	0.26	19.40
pVoteB	80.17	0.29	79.53

ci_95_upper_Iterative.EI

pVoteA	20.28
pVoteB	80.67

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	92.16	0.40	91.18
pVoteB	7.81	0.42	6.84

ci_95_upper_Iterative.EI

pVoteA	92.73
pVoteB	8.56

Graham 2015

Black

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.58	0.22	87.12
pVoteB	12.42	0.26	11.83

	ci_95_upper_Iterative.EI
pVoteA	87.97
pVoteB	12.90

White

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	4.67	0.26	4.11
pVoteB	95.35	0.28	94.80

	ci_95_upper_Iterative.EI
pVoteA	5.21
pVoteB	95.87

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	5.91	0.25	5.39
pVoteB	94.11	0.23	93.61

	ci_95_upper_Iterative.EI
pVoteA	6.44
pVoteB	94.52

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	83.13	0.23	82.50
pVoteB	16.94	0.23	16.43

	ci_95_upper_Iterative.EI
pVoteA	83.48
pVoteB	17.39

Coleman 2015

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	89.36	0.26	88.90
pVoteB	10.61	0.25	10.16

	ci_95_upper_Iterative.EI
pVoteA	89.83
pVoteB	11.06

White

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	4.87	0.24	4.42
pVoteB	95.11	0.28	94.52

	ci_95_upper_Iterative.EI
pVoteA	5.38
pVoteB	95.65

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	6.18	0.20	5.79
pVoteB	93.83	0.18	93.43

	ci_95_upper_Iterative.EI
pVoteA	6.54
pVoteB	94.16

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	84.92	0.28	84.35
pVoteB	15.06	0.27	14.52

	ci_95_upper_Iterative.EI
pVoteA	85.42
pVoteB	15.62

Gray 2015

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.76	0.25	87.06

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	4.44	0.26	4.04

pVoteB 12.21 0.25 11.66
ci_95_upper_Iterative.EI
pVoteA 88.17
pVoteB 12.75

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 5.80 0.25 5.39
pVoteB 94.17 0.25 93.69
ci_95_upper_Iterative.EI
pVoteA 6.34
pVoteB 94.62

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 83.38 0.26 82.86
pVoteB 16.61 0.25 16.16
ci_95_upper_Iterative.EI
pVoteA 83.86
pVoteB 17.17

Banks 2012

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 81.26 0.26 80.80
pVoteB 18.66 0.26 18.15
ci_95_upper_Iterative.EI
pVoteA 81.80
pVoteB 19.22

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 5.44 0.21 5.01
pVoteB 94.58 0.25 94.08
ci_95_upper_Iterative.EI
pVoteA 5.83
pVoteB 95.03

$pWhite_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 9.41 0.25 8.94
pVoteB 90.59 0.29 89.91
ci_95_upper_Iterative.EI
pVoteA 9.88
pVoteB 91.11

$pBlack_Other
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 80.53 0.24 80.06
pVoteB 19.47 0.29 18.89
ci_95_upper_Iterative.EI
pVoteA 81.06
pVoteB 20.05

Obama 2012

> summary(iter)

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 92.72 0.34 92.13
pVoteB 6.59 0.29 6.05
ci_95_upper_Iterative.EI
pVoteA 93.32
pVoteB 7.08

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 12.12 0.58 11.13
pVoteB 87.27 0.51 86.31
ci_95_upper_Iterative.EI
pVoteA 13.38
pVoteB 88.40

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	15.30	0.29	14.68
pVoteB	83.88	0.30	83.06

	ci_95_upper_Iterative.EI
pVoteA	15.92
pVoteB	84.46

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.16	0.42	86.36
pVoteB	11.99	0.39	11.24

	ci_95_upper_Iterative.EI
pVoteA	87.90
pVoteB	12.88

Crisler 2011

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	91.04	0.26	90.44
pVoteB	8.93	0.28	8.36

	ci_95_upper_Iterative.EI
pVoteA	91.42
pVoteB	9.39

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	8.29	0.27	7.80
pVoteB	91.69	0.31	91.06

	ci_95_upper_Iterative.EI
pVoteA	8.76
pVoteB	92.23

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	10.56	0.26	10.03
pVoteB	89.41	0.23	88.94

	ci_95_upper_Iterative.EI
pVoteA	11.04
pVoteB	89.91

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	88.86	0.27	88.24
pVoteB	11.21	0.28	10.68

	ci_95_upper_Iterative.EI
pVoteA	89.34
pVoteB	11.67

DuPree 2011

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	90.88	0.33	90.20
pVoteB	9.14	0.29	8.57

	ci_95_upper_Iterative.EI
pVoteA	91.51
pVoteB	9.76

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	8.11	0.34	7.45
pVoteB	91.87	0.33	91.25

	ci_95_upper_Iterative.EI
pVoteA	8.71
pVoteB	92.48

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	9.76	0.21	9.38
pVoteB	90.18	0.26	89.62

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	88.00	0.38	87.12
pVoteB	11.97	0.35	11.35

	ci_95_upper_Iterative.EI
pVoteA	10.22
pVoteB	90.61

	ci_95_upper_Iterative.EI
pVoteA	88.67
pVoteB	12.75

Green 2011

$pBlackVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	90.94	0.32	90.27
pVoteB	9.09	0.31	8.47

	ci_95_upper_Iterative.EI
pVoteA	91.50
pVoteB	9.62

$pWhiteVAP

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	8.16	0.34	7.47
pVoteB	91.91	0.25	91.23

	ci_95_upper_Iterative.EI
pVoteA	8.80
pVoteB	92.37

$pWhite_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	9.72	0.23	9.36
pVoteB	90.31	0.27	89.89

	ci_95_upper_Iterative.EI
pVoteA	10.18
pVoteB	90.87

$pBlack_Other

	mean_Iterative.EI	sd_Iterative.EI	ci_95_lower_Iterative.EI
pVoteA	87.96	0.30	87.42
pVoteB	11.97	0.33	11.35

	ci_95_upper_Iterative.EI
pVoteA	88.65
pVoteB	12.62

Script

```
## Ecological Inference Analyses
##USE this one
# Outline:
#         Loading libraries & importing data
#   King's iterative EI
#   Row by Columns (RxC) EI
#         Summarizing results
#         DataVis

# Data files:

# Libraries and Data -----------------------------------------------------

library(eiCompare) # Use from latest release, which was summer 2020
dat <- read.csv("C:/Users/J00584364/Downloads/Simmons2019_b.csv", sep=",")
dat$pVoteA <- dat$pVoteA/100
dat$pVoteB <- dat$pVoteB/100
#dat$pBlackVAP <- dat$pBlackVAP/100
dat$pWhiteVAP <- dat$pWhiteVAP/100
#dat$pWhite_Other <- dat$pWhite_Other/100
dat$pBlack_Other <- dat$pBlack_Other/100
```

```
# Iterative EI (King's EI) ----------------------------------------------
iter <- ei_iter(
  data = dat,
  cand_cols = c("pVoteA", "pVoteB"),
#  race_cols = c("pBlackVAP", "pWhite_Other"),
 race_cols = c("pWhiteVAP", "pBlack_Other"),
  totals_col = "total_votes",
  name = "Iterative EI"
)

#summary(iter)
summary(iter)
```

APPENDIX 4: THREE-GROUP EI COMPARE RAW RESULTS AND SCRIPT

Raw Results

2020 Westbrooks

```
> dat <-
read.csv("C:/Users/J00584364/Downloads/Westbrook2020BW.csv",
sep=",")
```

```
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          90.46          0.26
89.98
pVoteB           9.52          0.23
9.04
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                91.01      90.22     0.32           89.55
pVoteB                 9.90       9.78     0.32
9.14
     ci_95_upper_RxC.EI
pVoteA          90.86
pVoteB          10.45

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           6.36          0.27
5.87
pVoteB          93.61          0.25
93.21
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                6.95       6.37     0.43
5.59
pVoteB               94.20      93.63     0.43           92.70
     ci_95_upper_RxC.EI
pVoteA           7.30
pVoteB          94.41

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          47.43          3.96
39.67
pVoteB          52.26          4.22
44.38
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                55.44      58.73     4.68           48.56
pVoteB                60.11      41.27     4.68           32.33
     ci_95_upper_RxC.EI
pVoteA          67.67
```

pVoteB 51.44

2012 Banks dat <- read.csv("C:/Users/J00584364/Downloads/BanksGW1.csv", sep=",")

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 81.34 0.27
80.89
pVoteB 18.64 0.26
18.18
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 81.91 79.92 0.43 79.03
pVoteB 19.24 20.08 0.43 19.23
ci_95_upper_RxC.EI
pVoteA 80.77
pVoteB 20.97

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 5.45 0.26
4.99
pVoteB 94.58 0.25
94.10
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 6.00 7.27 0.51
6.19
pVoteB 95.11 92.73 0.51 91.75
ci_95_upper_RxC.EI
pVoteA 8.25
pVoteB 93.81

$pOtherVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 44.35 4.52
34.67
pVoteB 56.01 3.68
48.12
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 51.95 33.68 4.48 25.35
pVoteB 62.20 66.32 4.48 56.45
ci_95_upper_RxC.EI
pVoteA 43.55
pVoteB 74.65

2011 Green dat <- read.csv("C:/Users/J00584364/Downloads/Green2011.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          90.88          0.29
90.31
pVoteB           9.06          0.30
8.52
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                91.48      93.67     0.31           93.02
pVoteB                 9.65       6.33     0.31
5.74
      ci_95_upper_RxC.EI
pVoteA          94.26
pVoteB           6.98

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           8.08          0.32
7.48
pVoteB          91.93          0.28
91.49
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                 8.69       5.56     0.28
5.01
pVoteB                92.53      94.44     0.28           93.83
      ci_95_upper_RxC.EI
pVoteA           6.17
pVoteB          94.99

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          46.97          5.66
37.51
pVoteB          51.54          3.98
43.45
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                60.77      43.23     4.66           33.18
pVoteB                59.79      56.77     4.66           47.60
      ci_95_upper_RxC.EI
pVoteA          52.40
pVoteB          66.82
```

2011 Crisler dat <- read.csv("C:/Users/J00584364/Downloads/Crisler2011b.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
```

```
pVoteA          90.98          0.27
90.46
pVoteB           8.99          0.30
8.46
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               91.54      92.35     0.34           91.63
pVoteB                9.65       7.65     0.34
6.99
      ci_95_upper_RxC.EI
pVoteA           93.01
pVoteB            8.37

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           8.37          0.31
7.77
pVoteB          91.62          0.28
91.04
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                9.02       7.52     0.36
6.80
pVoteB               92.21      92.48     0.36           91.74
      ci_95_upper_RxC.EI
pVoteA            8.26
pVoteB           93.20

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          46.05          18.35
3.13
pVoteB          52.75           6.89
40.41
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               75.96      46.39     5.44           35.20
pVoteB               68.60      53.61     5.44           42.32
      ci_95_upper_RxC.EI
pVoteA           57.68
pVoteB           64.80
```

Coleman 2015

```
dat <- read.csv("C:/Users/J00584364/Downloads/Coleman2015.csv", sep=",")

$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          89.38          0.27
88.86
```

```
pVoteB          10.66          0.26
10.16
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               89.94      91.16      0.3           90.55
pVoteB               11.14       8.84      0.3
8.27
     ci_95_upper_RxC.EI
pVoteA           91.73
pVoteB            9.45

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           4.85          0.28
4.41
pVoteB          95.13          0.29
94.66
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               5.48       3.15      0.26
2.65
pVoteB               95.63      96.85      0.26           96.30
     ci_95_upper_RxC.EI
pVoteA            3.70
pVoteB           97.35

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          36.90          6.24
25.89
pVoteB          62.14          5.76
50.18
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               49.17      27.23      3.76           19.81
pVoteB               72.81      72.77      3.76           64.61
     ci_95_upper_RxC.EI
pVoteA           35.38
pVoteB           80.19
```

Stamps 2019 dat <- read.csv("C:/Users/J00584364/Downloads/Stamps20191.csv", sep=",")

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          92.30          0.33
91.62
pVoteB           7.67          0.35
6.96
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               92.95      94.96      0.33           94.25
```

```
pVoteB               8.34       5.04      0.33
4.41
     ci_95_upper_RxC.EI
pVoteA          95.59
pVoteB           5.75

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           7.65          0.37
6.94
pVoteB          92.36          0.36
91.69
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               8.39       5.52      0.39
4.76
pVoteB              93.15      94.48      0.39          93.65
     ci_95_upper_RxC.EI
pVoteA           6.35
pVoteB          95.24

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          54.87          3.56
48.13
pVoteB          45.26          3.19
38.36
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              61.08      47.25      3.52          40.25
pVoteB              50.26      52.75      3.52          45.66
     ci_95_upper_RxC.EI
pVoteA          54.34
pVoteB          59.75
```

Simmons 2019

```
dat <- read.csv("C:/Users/J00584364/Downloads/Simmons20191.csv", sep=",")


$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          94.05          0.3
93.41
pVoteB           6.00          0.3
5.37
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              94.58      96.67      0.29          96.01
```

```
pVoteB              6.67      3.33     0.29
2.81
    ci_95_upper_RxC.EI
pVoteA          97.19
pVoteB           3.99

$pWhiteVAP
    mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          8.59          0.35
7.97
pVoteB         91.45          0.36
90.61
    ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              9.35      6.01     0.37
5.29
pVoteB             92.03     93.99     0.37          93.22
    ci_95_upper_RxC.EI
pVoteA           6.78
pVoteB          94.71

$pOtherVAP
    mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          58.52          4.75
48.71
pVoteB          41.22          4.62
33.74
    ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA             67.58     51.87     3.22          45.17
pVoteB             51.27     48.13     3.22          41.79
    ci_95_upper_RxC.EI
pVoteA          58.21
pVoteB          54.83
```

DuPree 2011 dat <- read.csv("C:/Users/J00584364/Downloads/DuPree2011.csv", sep=",")

```
$pBlackVAP
    mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          90.89          0.34
90.25
pVoteB          9.14           0.35
8.55
    ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA             91.51     93.65     0.3           93.01
pVoteB              9.80      6.35     0.3
5.79
```

```
     ci_95_upper_RxC.EI
pVoteA          94.21
pVoteB           6.99

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          8.12          0.31
7.53
pVoteB         91.80          0.29
91.19
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               8.69       5.53      0.28
5.00
pVoteB              92.33      94.47      0.28          93.89
     ci_95_upper_RxC.EI
pVoteA           6.11
pVoteB          95.00

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         47.76          6.19
37.32
pVoteB         52.88          5.23
43.72
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              60.81      44.13      4.84          34.05
pVoteB              64.20      55.87      4.84          45.65
     ci_95_upper_RxC.EI
pVoteA          54.35
pVoteB          65.95
```

Obama 2012 dat <- read.csv("C:/Users/J00584364/Downloads/Obama2012.csv", sep=",")

```
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         92.72          0.28
92.25
pVoteB          6.59          0.31
6.06
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              93.37      93.65      0.3           93.01
pVoteB               7.24       6.35      0.3
5.79
     ci_95_upper_RxC.EI
pVoteA          94.21
```

pVoteB 6.99

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 12.14 0.49
11.22
pVoteB 87.34 0.51
86.37
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 13.27 5.53 0.28 5.00
pVoteB 88.32 94.47 0.28 93.89
ci_95_upper_RxC.EI
pVoteA 6.11
pVoteB 95.00

$pOtherVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 80.85 2.15
76.26
pVoteB 14.55 1.70
11.72
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 84.38 44.13 4.84 34.05
pVoteB 18.14 55.87 4.84 45.65
ci_95_upper_RxC.EI
pVoteA 54.35
pVoteB 65.95

Gray 2015

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 87.74 0.30
87.10
pVoteB 12.24 0.28
11.73
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 88.26 89.88 0.31 89.23
pVoteB 12.78 10.12 0.31 9.54
ci_95_upper_RxC.EI
pVoteA 90.46
pVoteB 10.77

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI

```
pVoteA          4.52         0.26
4.04
pVoteB         95.48         0.22
95.12
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                 4.96      2.72     0.23
2.28
pVoteB                95.95     97.28     0.23          96.80
      ci_95_upper_RxC.EI
pVoteA           3.20
pVoteB          97.72

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         44.31         5.24
35.10
pVoteB         56.17         4.38
47.21
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                53.75     23.75     3.23          17.78
pVoteB                64.56     76.25     3.23          69.19
      ci_95_upper_RxC.EI
pVoteA          30.81
pVoteB          82.22
```

Espy 2018 dat <- read.csv("C:/Users/J00584364/Downloads/Espy20182.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         94.89         0.30
94.31
pVoteB          5.05         0.29
4.47
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                95.42     97.6     0.33          96.83
pVoteB                 5.63      2.4     0.33
1.79
      ci_95_upper_RxC.EI
pVoteA          98.21
pVoteB           3.17

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         16.31         0.40
15.42
```

```
pVoteB          83.76          0.41
82.90
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               17.12      12.48      0.4           11.73
pVoteB               84.59      87.52      0.4           86.64
     ci_95_upper_RxC.EI
pVoteA           13.36
pVoteB           88.27

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          68.38          0.25
67.84
pVoteB          31.66          0.22
31.18
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               68.98      69.01      4.21          60.17
pVoteB               32.07      30.99      4.21          22.72
     ci_95_upper_RxC.EI
pVoteA           77.27
pVoteB           39.83
```

Graham 2015 <- read.csv("C:/Users/J00584364/Downloads/Graham20151.csv", sep=",")

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          87.70          0.28
87.17
pVoteB          12.29          0.27
11.83
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               88.20      89.78      0.29          89.17
pVoteB               12.79      10.22      0.29           9.66
     ci_95_upper_RxC.EI
pVoteA           90.34
pVoteB           10.83

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           4.49          0.26
4.03
pVoteB          95.52          0.25
95.04
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
```

```
pVoteA              4.97      2.69     0.22
2.28
pVoteB             96.03     97.31     0.22          96.84
     ci_95_upper_RxC.EI
pVoteA           3.16
pVoteB          97.72

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          44.32         4.76
35.59
pVoteB          55.47         4.39
48.10
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              55.99     24.32     3.04          18.55
pVoteB              64.14     75.68     3.04          69.08
     ci_95_upper_RxC.EI
pVoteA          30.92
pVoteB          81.45
```

Green 2019

```
                dat <- read.csv("C:/Users/J00584364/Downloads/Green20191.csv", sep=",")
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          92.82         0.30
92.27
pVoteB           7.24         0.31
6.48
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA              93.47     95.42     0.31          94.76
pVoteB               7.71      4.58     0.31
4.00
     ci_95_upper_RxC.EI
pVoteA          96.00
pVoteB           5.24

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           6.90         0.35
6.21
pVoteB          93.09         0.34
92.39
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               7.54      4.89     0.35
4.21
pVoteB              93.75     95.11     0.35          94.37
```

```
     ci_95_upper_RxC.EI
pVoteA           5.63
pVoteB          95.79

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          51.88          3.14
45.08
pVoteB          47.93          4.08
39.40
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               56.96      44.64     3.08          38.35
pVoteB               55.32      55.36     3.08          49.05
     ci_95_upper_RxC.EI
pVoteA          50.95
pVoteB          61.65
```

DuPree 2019

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          94.31          0.30
93.72
pVoteB           5.64          0.25
5.14
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               94.96      96.46     0.26          95.92
pVoteB                6.10       3.54     0.26
3.04
     ci_95_upper_RxC.EI
pVoteA          96.96
pVoteB           4.08

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA           8.70          0.32
8.16
pVoteB          91.27          0.32
90.60
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               9.40       6.24     0.37
5.54
pVoteB              91.88      93.76     0.37          92.97
     ci_95_upper_RxC.EI
pVoteA           7.03
```

```
pVoteB          94.46

$pOtherVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          52.35          5.03
43.18
pVoteB          46.61          6.04
36.67
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               61.32      63.87     3.87          55.55
pVoteB               59.24      36.13     3.87          28.59
      ci_95_upper_RxC.EI
pVoteA          71.41
pVoteB          44.45
```

Amos 2019 dat <- read.csv("C:/Users/J00584364/Downloads/Amos20191.csv", sep=",")

```
$pBlackVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          92.05          0.30
91.48
pVoteB          7.98          0.29
7.43
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               92.63      94.43     0.29          93.83
pVoteB               8.53       5.57     0.29
5.00
      ci_95_upper_RxC.EI
pVoteA          95.00
pVoteB           6.17

$pWhiteVAP
      mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA          6.66          0.34
5.93
pVoteB          93.37          0.33
92.77
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               7.32       4.6     0.34
3.91
pVoteB               94.08      95.4     0.34          94.69
      ci_95_upper_RxC.EI
pVoteA           5.31
pVoteB          96.09
```

$pOtherVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 45.38 5.73
34.50
pVoteB 52.84 4.68
42.47
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 55.11 42.49 3.92 34.54
pVoteB 60.60 57.51 3.92 49.15
ci_95_upper_RxC.EI
pVoteA 50.85
pVoteB 65.46

Collins 2019 collins20191

$pBlackVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 94.55 0.3
93.97
pVoteB 5.44 0.3
4.85
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 95.13 96.81 0.25 96.26
pVoteB 6.02 3.19 0.25
2.71
ci_95_upper_RxC.EI
pVoteA 97.29
pVoteB 3.74

$pWhiteVAP
mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA 10.76 0.33
10.00
pVoteB 89.24 0.30
88.67
ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA 11.40 8.27 0.36 7.58
pVoteB 89.81 91.73 0.36 90.92
ci_95_upper_RxC.EI
pVoteA 9.08
pVoteB 92.42

$pOtherVAP

```
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         60.19         6.11
48.64
pVoteB         40.28         6.58
28.13
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               71.87      66.92     3.84          58.77
pVoteB               52.42      33.08     3.84          25.86
     ci_95_upper_RxC.EI
pVoteA          74.14
pVoteB          41.23
```

Espy 2020

```
$pBlackVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         96.38         0.18
96.05
pVoteB          3.63         0.23
3.14
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               96.75        98     0.24          97.48
pVoteB                4.02         2     0.24
1.57
     ci_95_upper_RxC.EI
pVoteA          98.43
pVoteB           2.52

$pWhiteVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
pVoteA         13.39         0.28
12.79
pVoteB         86.60         0.28
85.90
     ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA               13.99      10.99     0.38          10.26
pVoteB               87.00      89.01     0.38          88.21
     ci_95_upper_RxC.EI
pVoteA          11.79
pVoteB          89.74

$pOtherVAP
     mean_Iterative.EI sd_Iterative.EI ci_95_lower_Iterative.EI
```

```
pVoteA         72.78         5.24
61.98
pVoteB         27.67         4.09
18.81
      ci_95_upper_Iterative.EI mean_RxC.EI sd_RxC.EI ci_95_lower_RxC.EI
pVoteA                80.88      75.91    3.53          68.79
pVoteB                34.54      24.09    3.53          17.16
      ci_95_upper_RxC.EI
pVoteA          82.84
pVoteB          31.21
```

Script

```
## Ecological Inference Analyses
##USE this one
# Outline:
#           Loading libraries & importing data
#   King's iterative EI
#   Row by Columns (RxC) EI
#           Summarizing results
#           DataVis

# Data files:

# Libraries and Data -------------------------------------------------

library(eiCompare) # Use from latest release, which was summer 2020
###dat <- read.csv("C:/Users/J00584364/Downloads/PracticeData-ReCoded.csv", sep=",")###
dat <- read.csv("C:/Users/J00584364/Downloads/Espy2020.csv", sep=",")

summary(dat$Espy)

dat$pVoteA <- dat$pVoteA/100
dat$pVoteB <- dat$pVoteB/100
dat$pBlackVAP <- dat$pBlackVAP/100
dat$pWhiteVAP <- dat$pWhiteVAP/100
dat$pOtherVAP <- dat$pOtherVAP/100

# Iterative EI (King's EI) ------------------------------------------
iter <- ei_iter(
  data = dat,
  #cand_cols = c("pVoteA", "pVoteB"),
  cand_cols = c("pVoteA", "pVoteB"),
  race_cols = c("pBlackVAP", "pWhiteVAP", "pOtherVAP"),
  #race_cols = c("pBlackVAP", "pWhiteVAP" , "pOtherVAP"),
  totals_col = "total_votes",
  name = "Iterative EI"
)
```

```
# Rows by Columns (RxC) ----------------------------------------------
rxc <- ei_rxc(
  data = dat,
  cand_cols = c("pVoteA", "pVoteB"),
  race_cols = c("pBlackVAP", "pWhiteVAP", "pOtherVAP"),
  totals_col = "total_votes",
  name = "RxC EI",
)
# Summary Table ------------------------------------------------------
summary(iter, rxc)


# Plot out Results ---------------------------------------------------
plot(iter, rxc)
```

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., Plaintiffs, vs. STATE BOARD OF ELECTION COMMISSIONERS, et al., Defendants.	No. 4:22cv62-MPM-JMV

DECLARATION OF BYRON D'ANDRA OREY

I, Byron D'Andra Orey, make the following declaration based on personal knowledge:

1. I have been retained by the Plaintiffs in the above referenced matter as expert.

2. I submit that the foregoing report from me dated October 3, 2022 is a true and accurate copy of the report I provided to Plaintiffs in this matter. I declare that the information and opinions contained in the report are true and correct to the best of my knowledge.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

October 3, 2022

Byron D'Andra Orey
BYRON D'ANDRA OREY

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., Plaintiffs, vs. STATE BOARD OF ELECTION COMMISSIONERS, et al., Defendants.	No. 4:22cv62-SA-JMV

RESPONSIVE DECLARATION OF WILLIAM S. COOPER

WILLIAM S. COOPER, acting in accordance with 28 U.S.C. § 1746, Federal Rule of Civil Procedure 26(a) (2) (B), and Federal Rules of Evidence 702 and 703, does hereby declare and say:

1. My name is William S. Cooper. I filed a declaration in this lawsuit on Oct. 3, 2022. I file this declaration in response to the Declaration of Dr. David Swanson dated January 6, 2023. I respond to Dr. Swanson's concerns in the order he has raised them: **(A)** Citizen voting age population ("CVAP"), **(B)** Core Retention **(C)** Compactness, **(D)** Polling place proximity, and **(E)** Diversity. In short, I find all of his concerns to be baseless.

A. Citizen Voting Age Population

2. Dr. Swanson's discussion of the voting-age-population (VAP) versus CVAP metrics only confirms my conclusion that the Black population in Mississippi is sufficiently numerous and compact to form a majority-Black district in a three-district system, thereby satisfying the first *Gingles* factor.

3. To start: Dr. Swanson claims that I rely on the use of the VAP metric to "argue that MS SCOMS District 1 is a *minority* Black district at 49.3% [VAP]," citing page 19 of my initial report. Swanson Report at 9 (emphasis in original); *see also id.* at 21, 23. That is not what my report says. As I explain on the cited page, under the current lines, Supreme Court District 1 is "a 4 percentage-point plurality BVAP district."

4. Dr. Swanson does not disagree with my demographic analysis. Rather, Dr. Swanson's main opinion is that Enacted 1987 Supreme Court District 1 currently contains a Black CVAP ("BCVAP") majority, and that the various illustrative and least-change plans are also BCVAP-majority (ranging from 57.0% to 53.8%).[1] Based on the 5-Year 2016-2020 ACS Supplemental Tabulation, from

[1] Dr. Swanson mistakenly reports NH DOJ BCVAP as AP BCVAP. The "NH DOJ Black CVAP" category includes voting age citizens who are either non-Hispanic single-race Black or NH Black and White. An "Any Part Black CVAP" category cannot be calculated from the 5-Year ACS Census Bureau Special Tabulation. The most current 5-year ACS data available

which CVAP figures are derived, that is true, *but it only confirms my ultimate conclusion*. The fact that the Black population in the current district is large enough to constitute a BCVAP majority, and that all of the alternative, whole-county Supreme Court plans that I have drawn are also BCVAP majority, only cements the fact that Plaintiffs have satisfied the *Gingles* 1 precondition, which asks whether the Black population in Mississippi is sufficiently numerous and geographically compact to allow for the creation of at least one majority-Black district. It undoubtedly is.[2]

5. Whether Supreme District 1 is ultimately "in need of remediation" (as Dr. Swanson puts it on page 21 of his report) is a larger question. It is my understanding that other experts in this case have concluded that Supreme Court District 1 also fails the racial bloc voting tests of *Gingles* 2 and *Gingles* 3, in that Black-preferred candidates are typically defeated by high levels of bloc voting by white voters. That is not the subject of my report and it is not covered in Dr.

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is from the 2016-2020 ACS Special Tabulation, with a survey midpoint of July 1, 2018. It is available at: https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html.

[2] There is certainly no rule that I am aware of that *Gingles* 1 is not satisfied where the existing district is already majority-Black. To the contrary, in the *Thomas v. Bryant* Section 2 case where I was also the plaintiffs' map-drawing expert, the challenged state senate district in the Mississippi Delta was already over 50% BVAP (50.77%). Nevertheless, the Court found that *Gingles* 1 was met, and ultimately found in the plaintiffs' favor on liability.

Swanson's either. *Gingles* 1 is one piece of the puzzle, and on that score Dr. Swanson's CVAP analysis doesn't change anything.

6. Dr. Swanson questions why I used the VAP rather than CVAP metric here. Notably, VAP is based on Census data, whereas CVAP is an estimate based on the ACS survey. For that reason, VAP is the traditional standard. I often use both in my Voting Rights Act work, but CVAP is typically more useful to consider where there may be larger non-citizen populations, or later in decennial Census cycle. As Dr. Swanson's own analysis shows, Mississippi does not have a large non-citizen population, and it is not late in the Census cycle. In a state like Mississippi, where the population is almost all either Black or white, the two metrics do not yield particularly different results, as Dr. Swanson's own analysis shows.

7. Dr. Swanson's prison-adjusted eligible voter would not change the bottom-line conclusion on *Gingles* 1 even if it were sound. However, the analysis is in any case deeply flawed. As I explained in my opening report (at pages 19 and 20) Black Mississippians are disproportionately disenfranchised on the basis of a felony conviction. Dr. Swanson does not contest that disproportionality. Rather, he minimizes it, adjusting his CVAP estimates to account for people who are rendered unable to vote because they are currently incarcerated, but omitting all of the thousands of people who have entered and left prison over the decades but remain

disenfranchised. *See* Swanson Report at 23 ("While it is widely recognized that Mississippi has numerous felons ineligible to vote who are not currently incarcerated, there is no practical way to measure or locate these demographically by district in a meaningful way.").

8. This omission results in a miscalculation that is an order of magnitude off the mark. Using current prison population statistics, Dr. Swanson's prison-adjusted eligible voter analysis subtracts a total of 7,003 people from the total citizen voting age population of the state because they are currently incarcerated. Swanson Report at 26-28.

9. A 2018 analysis of records from the State Administrative Office of Courts showed that the total number of persons ineligible to vote due to a felony conviction that occurred between 1994 and 2017 (i.e., a 23-year subset of the actual total population that excludes anyone convicted prior to 1994 and since 2017) is *over 56,000*, with Black Mississippians accounting for over 60% of that number.[3] Dr. Swanson's conclusion that accounting for felon disenfranchisement does not affect voting eligible CVAP in the Supreme Court districts is not the product of any credible analysis.

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[3] Alex Rozier, *Racial disparity conspicuous among Mississippians banned from voting*, Mississippi Today (Feb. 22, 2018), https://mississippitoday.org/2018/02/22/racial-disparity-conspicuous-among-mississippians-banned-voting/.

10. It is clearly within the realm of possibility that, after factoring in felony convictions going back to 1948 (two additional 23-year periods), the adjusted eligible Black CVAP for voters in Supreme Court District 1 may drop below 50%.

B. Core Retention

11. Dr. Swanson claims that I do not analyze the Supreme Court districts using the principle of "core retention." His assertions on that score are irrelevant.

12. First, and as a general matter, the very nature of a Section 2 lawsuit means that if the plaintiffs prevail, district boundaries will change from their existing lines. This often means that core-retention scores are lower for the proposed illustrative plans in Section 2 litigation. In my experience, core-retention is a non-issue in Section 2 litigation because if there is a finding of liability, the State has the opportunity to offer a remedial plan that would maximize core-retention within the constraints of the court's ruling.

13. Moreover, core retention, when it is considered at all, usually involves comparing both a newly enacted districting plan *and* an alternate illustrative plan to the prior benchmark plan, to see which plan retains more of the district cores from the prior benchmark. This might happen in the context of post-Census legislative redistricting. But here, the State has not redrawn the districts at issue since 1987, and there is no newly enacted plan to consider, so the core retention analysis is especially inapposite.

14. Core retention is also inapposite because Mississippi does not appear to consider it as a traditional districting consideration. According to the review of redistricting criteria for legislative redistricting by the National Conference of State Legislators that Dr. Swanson himself credits, core retention is mentioned in just 17 states—and Mississippi is not one of the 17.[4]

15. And if it mattered, Dr. Swanson's own analysis shows that Illustrative Plans 1 and 2 result in 74.3% and 66.8% voters remaining in their same Supreme Court districts, respectively—substantial majorities. Swanson Report at 37. Meanwhile, "Least Change" plans 1 and 2, which were offered *precisely to demonstrate* that whole-county Black-majority districts could be drawn while making more minimal changes to the existing lines, maintain 92.4% and 95.8% of voters in their existing Supreme Court districts, respectively. Swanson Report at 37.

16. I did not focus solely on core retention because, as I explained in my initial report, I drew the illustrative districts to follow whole counties and (to the extent possible) Mississippi Planning and Development district boundaries. These planning regions reflect county-level communities of interest that have been

[4] National Conference of State Legislatures, "Redistricting criteria," https://www.ncsl.org/redistricting-and-census/redistricting-criteria

expressly acknowledged and drawn into ten planning districts by the State of Mississippi.

17. Both Illustrative Plan 1 and Illustrative Plan 2 split fewer state-drawn Planning District boundaries than the 1987 Supreme Court Plan. Under the 1987 Plan (**Exhibit A-1**) five planning districts are whole, with ten planning district splits. Under Illustrative Plan 1 (**Exhibit A-2**) eight planning districts are whole, with four planning district splits. Under Illustrative Plan 2 (**Exhibit A-3**) seven planning districts are whole, with six planning district splits.

C. Compactness

18. Dr. Swanson also attempts to argue that the Illustrative Plans I have drawn are not compact. Swanson Report at 37-43. I reviewed compactness scores for the Illustrative Plans prior to filing my report. The scores are clearly within the norm. The plans are drawn at the county level, making it easy for candidates to run an election campaign and for voters to know the boundaries of the district they are in.

19. Apart from the use of compactness scores, redistricting experts and map-drawers commonly employ an eyeball test to assess whether a plan is reasonably compact. Under that approach, there is no serious dispute that the illustrative plans and least change plans I have drawn are reasonably compact. Even in terms of

compactness scores, the plans are superior to many congressional redistricting plans drawn in the past decade.[5]

20. Compactness is typically balanced with other factors, and an illustrative district need not be *the most* compact to demonstrate *Gingles* 1. *See Georgia State Conference of NAACP v. Fayette County Board of Commissioners*, No. 3:11-cv-123-TCB (N.D. Ga), May, 21, 2013 at pp. 31-36).[6] In my experience, the issue is whether the district drawn is reasonably compact. I am certain that these whole-county districts are.

21. And if a head-to-head numeric analysis were required, Illustrative Plan 1 (which, as noted in my original report, is based on the State's own congressional lines) is just as compact as the current map. As shown in **Figure 1**, there is virtually no difference between the 1987 Supreme Court Plan and Illustrative Plan 1 overall.

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[5] *See* Azavea White Paper, "Redrawing the Map on Redistricting," (2012), https://redistricting.azavea.com/assets/pdfs/Azavea_Redistricting-White-Paper-Addendum-2012_sm.pdf.

[6] I served as the *Gingles* 1 expert for the Plaintiffs in the Fayette County, Georgia lawsuit.

Figure 1: Compactness Scores (1987 Plan vs. Illustrative Plan 1)

	Higher is better			Lower is better
	Polsby-Popper	Reock	Convex Hull	Original Schwartzberg[7]
1987 Supreme Court Plan	0.29	0.51	0.77	1.74
Illustrative Plan 1	0.28	0.36	0.78	1.74

22. Moreover, and as shown in **Figure 2**, there is no meaningful difference between the compactness scores for District 1 in the 1987 Supreme Court Plan versus Illustrative Plan 1.

Figure 2: Compactness Scores for District 1 (1987 Plan vs. Illustrative Plan 1)

	Higher is better			Lower is better
	Polsby-Popper	Reock	Convex Hull	Original Schwartzberg
1987 Supreme Court Plan	0.15	0.42	0.65	2.22
Illustrative Plan 1	0.15	0.32	0.74	2.15

---

[7] Based on the original Schwartzberg compactness score. The original Schwartzberg measure is appropriate because it simplifies the complicated shorelines of the Mississippi River. Dr. Swanson uses the Alternative Schwartzberg measure, which ignores the simplification step.

From the *Maptitude for Redistricting* documentation:

"The Schwartzberg test is a perimeter-based measure that compares a simplified version of each district to a circle, which is considered to be the most compact shape possible. This test requires the base layer that was used to create the districts. The base layer is used to simplify each district to exclude complicated coastlines.

The alternate version of the Schwartzberg test is a perimeter-based measure that compares each district to a circle, ignoring the district simplification step used by the original test."

D. Polling Place Proximity

23. Dr. Swanson employs a flawed methodology to estimate voter proximity to polling places. *See* Swanson Report at 42-46. The number of active registered voters who live within a half mile of their polling place is much smaller than Dr. Swanson suggests.

24. As shown in **Figure 3** and described in more detail *infra*, I estimate that 26.3% of active registered Black voters live within a half mile of *their* polling place – not 52% as Dr. Swanson asserts.

Figure 3: Estimated Voters Living within a Half-Mile of their Polling Place

Radii	Registered	% of Statewide Registered	Black Registered	% Black Registered	% of Statewide Black Registered
½ mile or less	372,518	19.2%	177,263	47.6%	26.3%
>1/2 mile	1,572,622	80.8%	497,511	31.6%	73.7%
Statewide	1,945,140	100.0%	674,774	34.7%	100.0%

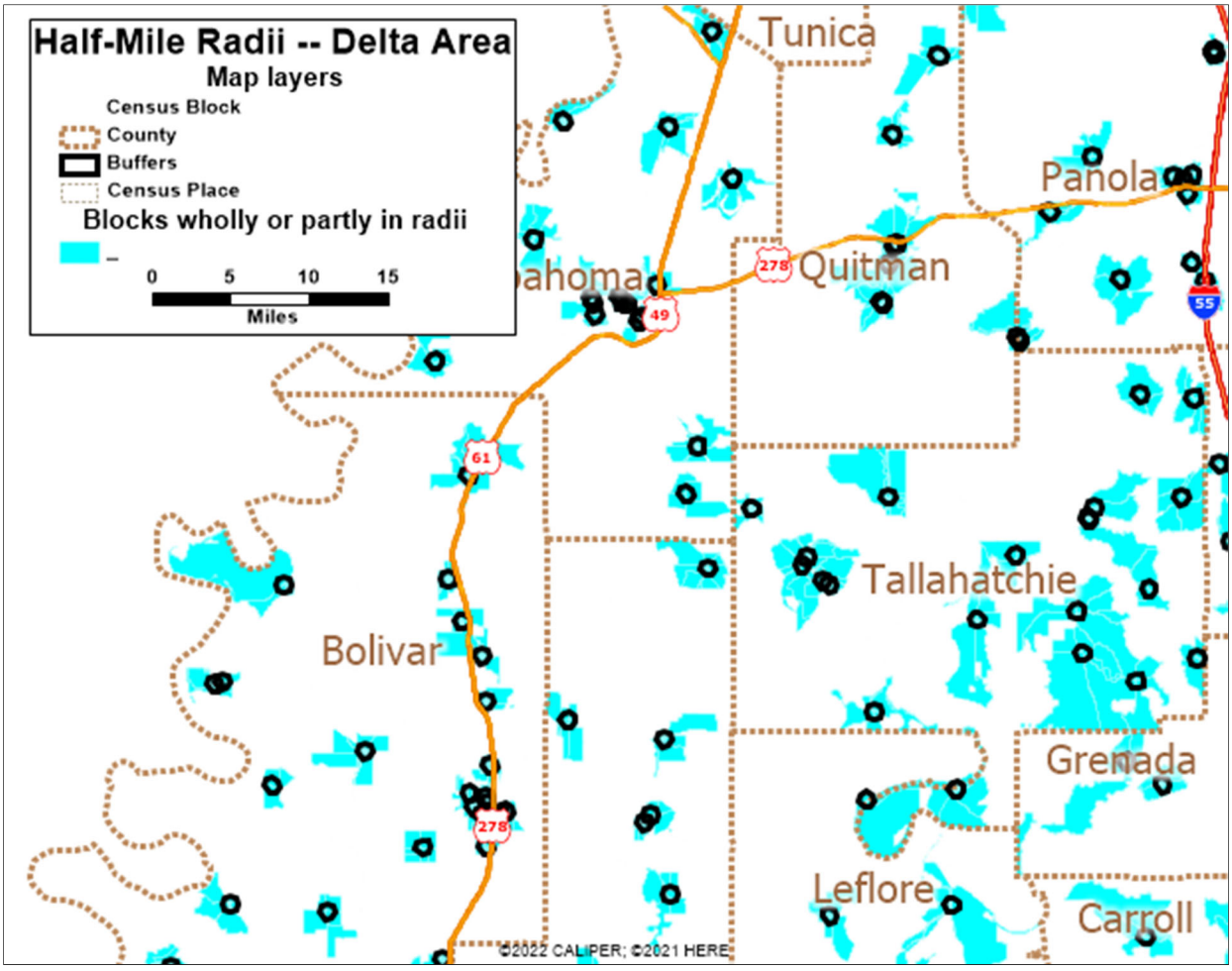
25. Apparently, Dr. Swanson has erroneously counted the entire VAP living in any census block that is wholly or partly within a half mile radius of *any* polling place in his total of persons within the half-mile radius. That seems to be the only way to generate a VAP half-mile proximity number as high as 972,324. *See* Swanson Report at 45, Table III.G.1.

26. In order to demonstrate the flaws in Dr. Swanson's analysis, I overlaid a statewide census block shapefile with Census 2020 data and created half-mile radii

around 1,762 polling place locations, the geocoded locations of which were provided by the Defendants.

27. **Figure 4** shows that many of the census blocks (the light blue blotches) that are wholly or partly within the half-mile radii around the polling place (the small black circles) also extend well into outlying populations far outside the half-mile radii.

Figure 4: Half-mile Radii and Adjacent Blocks



28. By my count, the statewide VAP in the blue areas adds up to 970,535, almost matching Dr. Swanson's statewide count of 972,324. Statewide, the light blue areas (partially depicted in **Figure 4**) cover a land area of 8,312 square miles – about six times the land area encompassed by the 1,384 square miles taken up by 1,762 half-mile radii.

29. To properly estimate the number of active registered voters by race living within a half-mile of their polling place, I employed a 3-step methodology. **Step 1**: I geocoded a statewide voter file (dated June 6. 2022) with the *Maptitude for Redistricting* software. Of the 1,915,005 active voters listed in the voter file, the Maptitude software geocoded with precision 1,845,035 active voters (96.3%). **Step 2**: To estimate active Black voters, I assigned a weight to each voter based on the 2020 BVAP percentage of the census block where they reside. **Step 3**: To avoid over-counting voters who live within a half-mile of one or more polling places other than their own (a fairly common occurrence in urbanized areas), I assigned voters in each radius only to the VTD where they actually vote.

30. The bottom line estimate shown in **Figure 3** *supra* is that 47.6% of active voters living within a half mile of their polling place are Black, which is a minority of voters living within a half-mile of their polling place. These half-mile radii Black voters represent just 26.3% of active Black voters.

31. Stepping back, the presumption that polling place proximity translates into greater participation is in any case flawed, because numerous socio-economic factors contribute to the ease of access of one's polling place.

32. For example, a number of voters (of all races) have a disability and may not be able to walk to their polling place at all. *See* Exhibit L-1– p.23**,** Cooper Declaration October 3, 2022.

33. Other voters may have responsibilities that make it impossible to walk (e.g., 51.4% of Black female-headed households with children live below poverty compared to 37.4% of their white counterparts). *See* Exhibit L-1– p.4**,** Cooper Declaration October 3, 2022.

34. More to the point, for voters who cannot walk to a polling place (whatever their geographic proximity as the crow flies), it helps to have a car. And that is where the small half-mile proximity advantage Black voters may hold in Mississippi evaporates. Statewide 10% of Black households do not have a car vs. 4.3% of white households. *See* Exhibit L-1– p.17, Cooper Declaration October 3, 2022. And the racial disparity expands to 12% vs. 4.5% in the Delta region of the state (largely encompassed by Congressional District 2 in the 2010s).[8] *See* Exhibit

[8] Corresponding statistics for the 2022 Enacted Congressional District 2 will not be available until the release of the 1-Year 2022 ACS in September 2023.

M-1– p.17, Cooper Declaration October 3, 2022.

E. Diversity

35. Dr. Swanson's cluster analysis of county-level "diversity" has no place in the Section 2 context.[9] *See* Swanson Report at 46-66. One necessary requirement in a Section 2 redistricting lawsuit is to be able to *create* a majority-minority district by including minority populations in a single district in a manner that satisfies the first prong of *Gingles*. But Dr. Swanson's cluster analysis necessarily prioritizes spreading (also known as "cracking") Black voters across three majority-white Supreme Court districts, ostensibly in the name of optimizing "diversity." That analysis is incompatible with the *Gingles* test. Indeed, optimizing for Dr. Swanson's diversity cluster analysis score would run counter to a key, non-negotiable traditional redistricting principle – avoiding the dilution of minority voting strength. In fact, I have never seen anyone attempt to analyze a districting map in this way in my decades of Voting Rights Act work.

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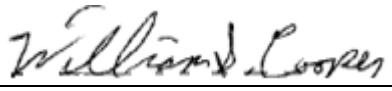
[9] Dr. Swanson's cluster analysis is based on an outdated version of the *Mississippi Health and Hunger Atlas (2017),* which relies on ACS 2011-2015 ACS data. He does not explain why he chose to use old information rather than the more current 2021 *Mississippi Health and Hunger Atlas* available at: https://cps.olemiss.edu/wp-content/uploads/sites/183/2021/11/Mississippi-Health-and-Hunger-Atlas-2021.pdf/.

The 2021 version relies *on* ACS 2015-2019 – the last ACS release unaffected by the COVID-19 pandemic years of 2020 and 2021.

For socio-economic contrast charts (Black, Latino, and NH White) that I prepared by county and municipality, based on the 5-Year 2015-2019 ACS see: http://www.fairdata2000.com/ACS_2015_19/Mississippi/.

36. Moreover, Dr. Swanson never explicitly defines his use of the term "diversity," which appears to take on different meanings at various parts of his report, some of them highly unnatural. For instance, unrelated to his diversity cluster analysis, Dr. Swanson opines that Mississippi (which is a greater percentage Black than any other state in the country) is *less diverse* than the United States as a whole because 92% of Mississippi is either Black or white. Swanson Report at 14-15. He does not address his own analysis showing that the majority ethnic group in Mississippi—the "White Alone" category"—is a smaller share of the State's population compared to the United States as a whole, and he implicitly (and severely) discounts Black Mississippians' contribution to the diversity of the State. As defined by the percentage of the state-level population that is not non-Hispanic White, Mississippi is the 12th most racially diverse state in the nation.

Executed on February 4, 2023.



WILLIAM S. COOPER

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF MISSISSIPPI
GREENVILLE DIVISION

DYAMONE WHITE, et al., Plaintiffs, vs. STATE BOARD OF ELECTION COMMISSIONERS, et al., Defendants.	No. 4:22cv62-SA-JMV

RESPONSIVE DECLARATION OF WILLIAM S. COOPER

WILLIAM S. COOPER, acting in accordance with 28 U.S.C. § 1746, Federal Rule of Civil Procedure 26(a) (2) (B), and Federal Rules of Evidence 702 and 703, does hereby declare and say:

1. My name is William S. Cooper. I filed a declaration in this lawsuit on Oct. 3, 2022. I file this declaration in response to the Declaration of Dr. David Swanson dated January 6, 2023. I respond to Dr. Swanson's concerns in the order he has raised them: **(A)** Citizen voting age population ("CVAP"), **(B)** Core Retention **(C)** Compactness, **(D)** Polling place proximity, and **(E)** Diversity. In short, I find all of his concerns to be baseless.

A. Citizen Voting Age Population

2. Dr. Swanson's discussion of the voting-age-population (VAP) versus CVAP metrics only confirms my conclusion that the Black population in Mississippi is sufficiently numerous and compact to form a majority-Black district in a three-district system, thereby satisfying the first *Gingles* factor.

3. To start: Dr. Swanson claims that I rely on the use of the VAP metric to "argue that MS SCOMS District 1 is a *minority* Black district at 49.3% [VAP]," citing page 19 of my initial report. Swanson Report at 9 (emphasis in original); *see also id.* at 21, 23. That is not what my report says. As I explain on the cited page, under the current lines, Supreme Court District 1 is "a 4 percentage-point plurality BVAP district."

4. Dr. Swanson does not disagree with my demographic analysis. Rather, Dr. Swanson's main opinion is that Enacted 1987 Supreme Court District 1 currently contains a Black CVAP ("BCVAP") majority, and that the various illustrative and least-change plans are also BCVAP-majority (ranging from 57.0% to 53.8%).[1] Based on the 5-Year 2016-2020 ACS Supplemental Tabulation, from

[1] Dr. Swanson mistakenly reports NH DOJ BCVAP as AP BCVAP. The "NH DOJ Black CVAP" category includes voting age citizens who are either non-Hispanic single-race Black or NH Black and White. An "Any Part Black CVAP" category cannot be calculated from the 5-Year ACS Census Bureau Special Tabulation. The most current 5-year ACS data available

which CVAP figures are derived, that is true, *but it only confirms my ultimate conclusion*. The fact that the Black population in the current district is large enough to constitute a BCVAP majority, and that all of the alternative, whole-county Supreme Court plans that I have drawn are also BCVAP majority, only cements the fact that Plaintiffs have satisfied the *Gingles* 1 precondition, which asks whether the Black population in Mississippi is sufficiently numerous and geographically compact to allow for the creation of at least one majority-Black district. It undoubtedly is.[2]

5. Whether Supreme District 1 is ultimately "in need of remediation" (as Dr. Swanson puts it on page 21 of his report) is a larger question. It is my understanding that other experts in this case have concluded that Supreme Court District 1 also fails the racial bloc voting tests of *Gingles* 2 and *Gingles* 3, in that Black-preferred candidates are typically defeated by high levels of bloc voting by white voters. That is not the subject of my report and it is not covered in Dr.

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is from the 2016-2020 ACS Special Tabulation, with a survey midpoint of July 1, 2018. It is available at: https://www.census.gov/programs-surveys/decennial-census/about/voting-rights/cvap.html.

[2] There is certainly no rule that I am aware of that *Gingles* 1 is not satisfied where the existing district is already majority-Black. To the contrary, in the *Thomas v. Bryant* Section 2 case where I was also the plaintiffs' map-drawing expert, the challenged state senate district in the Mississippi Delta was already over 50% BVAP (50.77%). Nevertheless, the Court found that *Gingles* 1 was met, and ultimately found in the plaintiffs' favor on liability.

Swanson's either. *Gingles* 1 is one piece of the puzzle, and on that score Dr. Swanson's CVAP analysis doesn't change anything.

6. Dr. Swanson questions why I used the VAP rather than CVAP metric here. Notably, VAP is based on Census data, whereas CVAP is an estimate based on the ACS survey. For that reason, VAP is the traditional standard. I often use both in my Voting Rights Act work, but CVAP is typically more useful to consider where there may be larger non-citizen populations, or later in decennial Census cycle. As Dr. Swanson's own analysis shows, Mississippi does not have a large non-citizen population, and it is not late in the Census cycle. In a state like Mississippi, where the population is almost all either Black or white, the two metrics do not yield particularly different results, as Dr. Swanson's own analysis shows.

7. Dr. Swanson's prison-adjusted eligible voter would not change the bottom-line conclusion on *Gingles* 1 even if it were sound. However, the analysis is in any case deeply flawed. As I explained in my opening report (at pages 19 and 20) Black Mississippians are disproportionately disenfranchised on the basis of a felony conviction. Dr. Swanson does not contest that disproportionality. Rather, he minimizes it, adjusting his CVAP estimates to account for people who are rendered unable to vote because they are currently incarcerated, but omitting all of the thousands of people who have entered and left prison over the decades but remain

disenfranchised. *See* Swanson Report at 23 ("While it is widely recognized that Mississippi has numerous felons ineligible to vote who are not currently incarcerated, there is no practical way to measure or locate these demographically by district in a meaningful way.").

8. This omission results in a miscalculation that is an order of magnitude off the mark. Using current prison population statistics, Dr. Swanson's prison-adjusted eligible voter analysis subtracts a total of 7,003 people from the total citizen voting age population of the state because they are currently incarcerated. Swanson Report at 26-28.

9. A 2018 analysis of records from the State Administrative Office of Courts showed that the total number of persons ineligible to vote due to a felony conviction that occurred between 1994 and 2017 (i.e., a 23-year subset of the actual total population that excludes anyone convicted prior to 1994 and since 2017) is *over 56,000*, with Black Mississippians accounting for over 60% of that number.[3] Dr. Swanson's conclusion that accounting for felon disenfranchisement does not affect voting eligible CVAP in the Supreme Court districts is not the product of any credible analysis.

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[3] Alex Rozier, *Racial disparity conspicuous among Mississippians banned from voting*, Mississippi Today (Feb. 22, 2018), https://mississippitoday.org/2018/02/22/racial-disparity-conspicuous-among-mississippians-banned-voting/.

10. It is clearly within the realm of possibility that, after factoring in felony convictions going back to 1948 (two additional 23-year periods), the adjusted eligible Black CVAP for voters in Supreme Court District 1 may drop below 50%.

B. Core Retention

11. Dr. Swanson claims that I do not analyze the Supreme Court districts using the principle of "core retention." His assertions on that score are irrelevant.

12. First, and as a general matter, the very nature of a Section 2 lawsuit means that if the plaintiffs prevail, district boundaries will change from their existing lines. This often means that core-retention scores are lower for the proposed illustrative plans in Section 2 litigation. In my experience, core-retention is a non-issue in Section 2 litigation because if there is a finding of liability, the State has the opportunity to offer a remedial plan that would maximize core-retention within the constraints of the court's ruling.

13. Moreover, core retention, when it is considered at all, usually involves comparing both a newly enacted districting plan *and* an alternate illustrative plan to the prior benchmark plan, to see which plan retains more of the district cores from the prior benchmark. This might happen in the context of post-Census legislative redistricting. But here, the State has not redrawn the districts at issue since 1987, and there is no newly enacted plan to consider, so the core retention analysis is especially inapposite.

14. Core retention is also inapposite because Mississippi does not appear to consider it as a traditional districting consideration. According to the review of redistricting criteria for legislative redistricting by the National Conference of State Legislators that Dr. Swanson himself credits, core retention is mentioned in just 17 states—and Mississippi is not one of the 17.[4]

15. And if it mattered, Dr. Swanson's own analysis shows that Illustrative Plans 1 and 2 result in 74.3% and 66.8% voters remaining in their same Supreme Court districts, respectively—substantial majorities. Swanson Report at 37. Meanwhile, "Least Change" plans 1 and 2, which were offered *precisely to demonstrate* that whole-county Black-majority districts could be drawn while making more minimal changes to the existing lines, maintain 92.4% and 95.8% of voters in their existing Supreme Court districts, respectively. Swanson Report at 37.

16. I did not focus solely on core retention because, as I explained in my initial report, I drew the illustrative districts to follow whole counties and (to the extent possible) Mississippi Planning and Development district boundaries. These planning regions reflect county-level communities of interest that have been

[4] National Conference of State Legislatures, "Redistricting criteria," https://www.ncsl.org/redistricting-and-census/redistricting-criteria

expressly acknowledged and drawn into ten planning districts by the State of Mississippi.

17. Both Illustrative Plan 1 and Illustrative Plan 2 split fewer state-drawn Planning District boundaries than the 1987 Supreme Court Plan. Under the 1987 Plan (**Exhibit A-1**) five planning districts are whole, with ten planning district splits. Under Illustrative Plan 1 (**Exhibit A-2**) eight planning districts are whole, with four planning district splits. Under Illustrative Plan 2 (**Exhibit A-3**) seven planning districts are whole, with six planning district splits.

C. Compactness

18. Dr. Swanson also attempts to argue that the Illustrative Plans I have drawn are not compact. Swanson Report at 37-43. I reviewed compactness scores for the Illustrative Plans prior to filing my report. The scores are clearly within the norm. The plans are drawn at the county level, making it easy for candidates to run an election campaign and for voters to know the boundaries of the district they are in.

19. Apart from the use of compactness scores, redistricting experts and map-drawers commonly employ an eyeball test to assess whether a plan is reasonably compact. Under that approach, there is no serious dispute that the illustrative plans and least change plans I have drawn are reasonably compact. Even in terms of

compactness scores, the plans are superior to many congressional redistricting plans drawn in the past decade.[5]

20. Compactness is typically balanced with other factors, and an illustrative district need not be *the most* compact to demonstrate *Gingles* 1. *See Georgia State Conference of NAACP v. Fayette County Board of Commissioners*, No. 3:11-cv-123-TCB (N.D. Ga), May, 21, 2013 at pp. 31-36).[6] In my experience, the issue is whether the district drawn is reasonably compact. I am certain that these whole-county districts are.

21. And if a head-to-head numeric analysis were required, Illustrative Plan 1 (which, as noted in my original report, is based on the State's own congressional lines) is just as compact as the current map. As shown in **Figure 1**, there is virtually no difference between the 1987 Supreme Court Plan and Illustrative Plan 1 overall.

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[5] *See* Azavea White Paper, "Redrawing the Map on Redistricting," (2012), https://redistricting.azavea.com/assets/pdfs/Azavea_Redistricting-White-Paper-Addendum-2012_sm.pdf.

[6] I served as the *Gingles* 1 expert for the Plaintiffs in the Fayette County, Georgia lawsuit.

Figure 1: Compactness Scores (1987 Plan vs. Illustrative Plan 1)

	Higher is better			Lower is better
	Polsby-Popper	Reock	Convex Hull	Original Schwartzberg[7]
1987 Supreme Court Plan	0.29	0.51	0.77	1.74
Illustrative Plan 1	0.28	0.36	0.78	1.74

22. Moreover, and as shown in **Figure 2**, there is no meaningful difference between the compactness scores for District 1 in the 1987 Supreme Court Plan versus Illustrative Plan 1.

Figure 2: Compactness Scores for District 1 (1987 Plan vs. Illustrative Plan 1)

	Higher is better			Lower is better
	Polsby-Popper	Reock	Convex Hull	Original Schwartzberg
1987 Supreme Court Plan	0.15	0.42	0.65	2.22
Illustrative Plan 1	0.15	0.32	0.74	2.15

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[7] Based on the original Schwartzberg compactness score. The original Schwartzberg measure is appropriate because it simplifies the complicated shorelines of the Mississippi River. Dr. Swanson uses the Alternative Schwartzberg measure, which ignores the simplification step.

From the *Maptitude for Redistricting* documentation:

"The Schwartzberg test is a perimeter-based measure that compares a simplified version of each district to a circle, which is considered to be the most compact shape possible. This test requires the base layer that was used to create the districts. The base layer is used to simplify each district to exclude complicated coastlines.

The alternate version of the Schwartzberg test is a perimeter-based measure that compares each district to a circle, ignoring the district simplification step used by the original test."

D. Polling Place Proximity

23. Dr. Swanson employs a flawed methodology to estimate voter proximity to polling places. *See* Swanson Report at 42-46. The number of active registered voters who live within a half mile of their polling place is much smaller than Dr. Swanson suggests.

24. As shown in **Figure 3** and described in more detail *infra*, I estimate that 26.3% of active registered Black voters live within a half mile of *their* polling place – not 52% as Dr. Swanson asserts.

Figure 3: Estimated Voters Living within a Half-Mile of their Polling Place

Radii	Registered	% of Statewide Registered	Black Registered	% Black Registered	% of Statewide Black Registered
½ mile or less	372,518	19.2%	177,263	47.6%	26.3%
>1/2 mile	1,572,622	80.8%	497,511	31.6%	73.7%
Statewide	1,945,140	100.0%	674,774	34.7%	100.0%

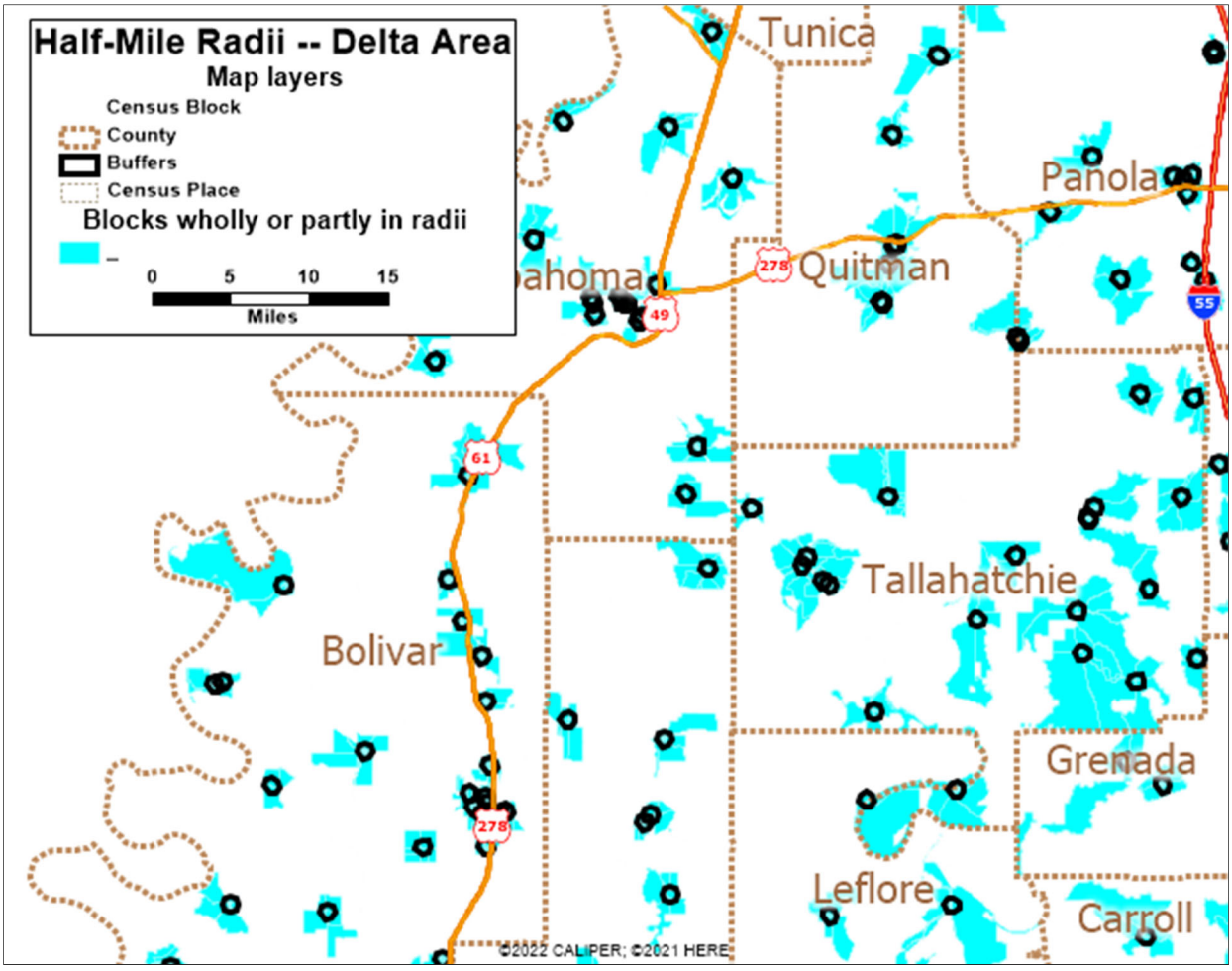
25. Apparently, Dr. Swanson has erroneously counted the entire VAP living in any census block that is wholly or partly within a half mile radius of *any* polling place in his total of persons within the half-mile radius. That seems to be the only way to generate a VAP half-mile proximity number as high as 972,324. *See* Swanson Report at 45, Table III.G.1.

26. In order to demonstrate the flaws in Dr. Swanson's analysis, I overlaid a statewide census block shapefile with Census 2020 data and created half-mile radii

around 1,762 polling place locations, the geocoded locations of which were provided by the Defendants.

27. **Figure 4** shows that many of the census blocks (the light blue blotches) that are wholly or partly within the half-mile radii around the polling place (the small black circles) also extend well into outlying populations far outside the half-mile radii.

Figure 4: Half-mile Radii and Adjacent Blocks



28. By my count, the statewide VAP in the blue areas adds up to 970,535, almost matching Dr. Swanson's statewide count of 972,324. Statewide, the light blue areas (partially depicted in **Figure 4**) cover a land area of 8,312 square miles – about six times the land area encompassed by the 1,384 square miles taken up by 1,762 half-mile radii.

29. To properly estimate the number of active registered voters by race living within a half-mile of their polling place, I employed a 3-step methodology. **Step 1**: I geocoded a statewide voter file (dated June 6. 2022) with the *Maptitude for Redistricting* software. Of the 1,915,005 active voters listed in the voter file, the Maptitude software geocoded with precision 1,845,035 active voters (96.3%). **Step 2**: To estimate active Black voters, I assigned a weight to each voter based on the 2020 BVAP percentage of the census block where they reside. **Step 3**: To avoid over-counting voters who live within a half-mile of one or more polling places other than their own (a fairly common occurrence in urbanized areas), I assigned voters in each radius only to the VTD where they actually vote.

30. The bottom line estimate shown in **Figure 3** *supra* is that 47.6% of active voters living within a half mile of their polling place are Black, which is a minority of voters living within a half-mile of their polling place. These half-mile radii Black voters represent just 26.3% of active Black voters.

31. Stepping back, the presumption that polling place proximity translates into greater participation is in any case flawed, because numerous socio-economic factors contribute to the ease of access of one's polling place.

32. For example, a number of voters (of all races) have a disability and may not be able to walk to their polling place at all. *See* Exhibit L-1– p.23**,** Cooper Declaration October 3, 2022.

33. Other voters may have responsibilities that make it impossible to walk (e.g., 51.4% of Black female-headed households with children live below poverty compared to 37.4% of their white counterparts). *See* Exhibit L-1– p.4**,** Cooper Declaration October 3, 2022.

34. More to the point, for voters who cannot walk to a polling place (whatever their geographic proximity as the crow flies), it helps to have a car. And that is where the small half-mile proximity advantage Black voters may hold in Mississippi evaporates. Statewide 10% of Black households do not have a car vs. 4.3% of white households. *See* Exhibit L-1– p.17, Cooper Declaration October 3, 2022. And the racial disparity expands to 12% vs. 4.5% in the Delta region of the state (largely encompassed by Congressional District 2 in the 2010s).[8] *See* Exhibit

[8] Corresponding statistics for the 2022 Enacted Congressional District 2 will not be available until the release of the 1-Year 2022 ACS in September 2023.

M-1– p.17, Cooper Declaration October 3, 2022.

E. Diversity

35. Dr. Swanson's cluster analysis of county-level "diversity" has no place in the Section 2 context.[9] *See* Swanson Report at 46-66. One necessary requirement in a Section 2 redistricting lawsuit is to be able to *create* a majority-minority district by including minority populations in a single district in a manner that satisfies the first prong of *Gingles*. But Dr. Swanson's cluster analysis necessarily prioritizes spreading (also known as "cracking") Black voters across three majority-white Supreme Court districts, ostensibly in the name of optimizing "diversity." That analysis is incompatible with the *Gingles* test. Indeed, optimizing for Dr. Swanson's diversity cluster analysis score would run counter to a key, non-negotiable traditional redistricting principle – avoiding the dilution of minority voting strength. In fact, I have never seen anyone attempt to analyze a districting map in this way in my decades of Voting Rights Act work.

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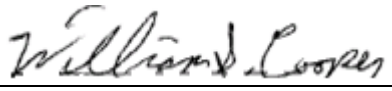
[9] Dr. Swanson's cluster analysis is based on an outdated version of the *Mississippi Health and Hunger Atlas (2017),* which relies on ACS 2011-2015 ACS data. He does not explain why he chose to use old information rather than the more current 2021 *Mississippi Health and Hunger Atlas* available at: https://cps.olemiss.edu/wp-content/uploads/sites/183/2021/11/Mississippi-Health-and-Hunger-Atlas-2021.pdf/.

The 2021 version relies *on* ACS 2015-2019 – the last ACS release unaffected by the COVID-19 pandemic years of 2020 and 2021.

For socio-economic contrast charts (Black, Latino, and NH White) that I prepared by county and municipality, based on the 5-Year 2015-2019 ACS see: http://www.fairdata2000.com/ACS_2015_19/Mississippi/.

36. Moreover, Dr. Swanson never explicitly defines his use of the term "diversity," which appears to take on different meanings at various parts of his report, some of them highly unnatural. For instance, unrelated to his diversity cluster analysis, Dr. Swanson opines that Mississippi (which is a greater percentage Black than any other state in the country) is *less diverse* than the United States as a whole because 92% of Mississippi is either Black or white. Swanson Report at 14-15. He does not address his own analysis showing that the majority ethnic group in Mississippi—the "White Alone" category"—is a smaller share of the State's population compared to the United States as a whole, and he implicitly (and severely) discounts Black Mississippians' contribution to the diversity of the State. As defined by the percentage of the state-level population that is not non-Hispanic White, Mississippi is the 12th most racially diverse state in the nation.

Executed on February 4, 2023.



WILLIAM S. COOPER