

**IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF LOUISIANA**

DR. DOROTHY NAIRNE, REV. CLEE  
EARNEST LOWE, DR. ALICE  
WASHINGTON, STEVEN HARRIS, BLACK  
VOTERS MATTER CAPACITY BUILDING  
INSTITUTE, and THE LOUISIANA STATE  
CONFERENCE OF THE NAACP,

*Plaintiffs,*

v.

R. KYLE ARDOIN, in his official capacity as  
Secretary of State of Louisiana,

*Defendant.*

Civil Action No. 3:22-cv-00178  
SDD-SDJ

**PLAINTIFFS' OPPOSITION TO DEFENDANTS' MOTION IN LIMINE  
TO EXCLUDE DR. LISA HANDLEY'S TESTIMONY AND REPORTS**

Plaintiffs, Dr. Dorothy Nairne, Rev. Clee Earnest Lowe, Dr. Alice Washington, Steven Harris, Black Voters Matter Capacity Building Institute, and the Louisiana State Conference of the NAACP, by and through undersigned counsel, respectfully submit this Opposition to Defendants' Motion in Limine to Exclude Dr. Lisa Handley's Testimony and Reports.

**INTRODUCTION**

Dr. Lisa Handley was retained by Plaintiffs to provide opinions about whether voting in the areas of Louisiana where Plaintiffs bring vote dilution claims is racially polarized. An analysis of racially polarized voting ("RPV") is required to satisfy the *Gingles* II and III preconditions. *See Thornburg v. Gingles*, 478 U.S. 30, 55-56 (1986); *Allen v. Milligan*, 599 U.S. 1, 22-23 (2023).

Defendants seek to completely exclude Dr. Handley from testifying about any of the issues discussed in her reports. Def. Mem. to Exclude, Doc. 148-1, at 15. Defendants' motion raises several incorrect and baseless arguments as to why Dr. Handley should be entirely excluded as an expert in this matter, each of which is addressed below. None of these arguments raise any concerns about Dr. Handley's testimony in this matter, whether applying the new or old language from Rule 702 of the Federal Rules of Evidence. Similarly, none of these arguments raise any concerns under the standard laid out by the Supreme Court in *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993) and its progeny—that expert testimony must be qualified, reliable, and relevant. There is no question that Dr. Handley is a qualified expert,<sup>1</sup> who has provided reliable and relevant testimony in this matter.

## ARGUMENT

### **I. Dr. Handley's Allocation of the Early and Absentee Votes is Appropriate.**

While Defendants' motion to exclude Dr. Handley from testifying presents multiple different angles, almost all their points essentially boil down to one central objection: Defendants seek to exclude Dr. Handley because of concerns raised by Dr. Solanky—an expert who has never conducted an RPV analysis like this before now—about the method Dr. Handley used to allocate early and absentee votes. But these concerns are baseless and should be disregarded.

As background, to analyze whether voting in Louisiana is racially polarized in the areas of the state where Plaintiffs bring vote dilution claims, experts like Dr. Handley conduct an ecological

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<sup>1</sup> Dr. Handley has over thirty-five years of experience as a voting rights and redistricting expert. She has advised numerous clients on redistricting and has served as an expert in dozens of redistricting and voting rights cases. Dr. Handley has been actively involved in research, writing, and teaching redistricting and voting rights, publishing multiple books and appearing in several peer-reviewed journals, law reviews, and edited books. She has taught political science undergraduate and graduate courses related to these subjects at several universities, including the University of Virginia and George Washington University. See Handley Initial Report, June 30, 2023, at 2-3, attached hereto as Exhibit 1.

inference (“EI”) analysis using a version of EI called “EI RxC.” *See Terry Petteway v. Galveston County*, No. 3:22-CV-57, 2023 WL 6786025, at \*47 (S.D. Tex. Oct. 13, 2023), amended sub nom. *Petteway v. Galveston Cnty., Texas*, No. 3:22-CV-57, 2023 WL 6812289 (S.D. Tex. Oct. 15, 2023) (noting that all experts in the case agreed that “RxC ecological inference is an appropriate method for analyzing the voting patterns of different demographic groups.”). To conduct an EI analysis, it is necessary to create a database with the relevant election data, which should be constructed using election precincts as the unit of analysis. *See Handley Initial Report*, June 30, 2023, at 5, attached hereto as Exhibit 1.

The database for an EI analysis must include precinct-level election returns (*i.e.*, the total votes each candidate received at the precinct) and turnout of voters by race as reported by the Louisiana Secretary of State. *Id.* This presents a challenge in Louisiana, because while it is possible from the Secretary of State election data to know the candidate vote totals by precinct on Election Day—*i.e.*, how many actual votes each candidate received in that precinct in an election on Election Day—it is not possible to know how many votes each candidate received from early or absentee voting at the precinct level. The Secretary of State only collects and reports aggregate candidate vote totals for the early voting at the parish level. In some recent elections in Louisiana, the number of votes cast through early and absentee voting is significant, and as such, any reliable EI analysis must account for those votes. And because EI analysis is conducted with precinct-level data, this means that it is necessary to develop a methodology to allocate those early and absentee candidate votes totals reported only at the parish level down to the precinct level. (It should be noted that this challenge does not arise often in Section 2 vote dilution cases because in many states election officials report early and absentee candidate vote totals at the precinct level.)

As explained in her initial report, Dr. Handley ensured that the early and absentee votes were appropriately included in the database created for her EI analysis by allocating each candidate's vote totals from early and absentee votes reported at the parish level down to the precincts within that parish proportionally, based on the percentage of Election Day votes the candidates received from each precinct. *See* Handley Initial Report, at 6 & n.8, Ex.1. Because this allocation is done proportionally, the candidate vote total numbers for some precincts within Dr. Handley's database do not always align with the total voter turnout numbers for the precinct, and in some precincts, the proportional allocation of the early and absentee votes led to a higher number of total candidate votes than turnout. Defendants rely on the opinion of only one of their experts, Dr. Tumulesh K. S. Solanky, for the proposition that these discrepancies provide a reason to exclude Dr. Handley's testimony. But contrary to Dr Solanky's assertions Dr. Handley's EI analysis is not "biased" and "unreliable". Solanky Initial Report, July 28, 2023, at 12, attached hereto as Exhibit 2.

Indeed, Dr. Handley is confident that this allocation method does not bias the estimates provided by her EI analysis in any way that impacts her conclusions finding racially polarized voting. *See* Handley September 26, 2023 Deposition at 162:11-17, 181:22-183:19, excerpts attached hereto as Exhibit 3. As Dr. Handley explained, EI analysis is done using proportions of the vote share that each candidate received, and it is these proportions and not raw total numbers that are input into the EI algorithm. *Id.* at 176:11-176:22, 184:10-24, 188:21-189:7, Ex. 3. Because Dr. Handley conducted the EI analysis using proportions rather than raw numbers (*i.e.*, the proportion of votes cast for each of the candidates and the proportion of turnout that was Black or white), the actual number of early votes allocated to each precinct is irrelevant; what matters is the candidate breakdown of these numbers once they are allocated. Therefore, any under or over



votes at the precinct level are not a methodological problem for the EI algorithm—these discrepancies do not impact the ability of EI to generate estimates of voting patterns by race. Dr. Handley is confident that the allocation method she used is the best method for generating unbiased EI estimates and is confident in her conclusions made based on these EI estimates. *See* Handley Dep., at 161:9-162:17, 181:22-183:19, Ex. 3.

**A. Defendants’ Expert Opinions Do Not Support the Exclusion of Dr. Handley’s Testimony.**

Initially, it is very telling that *all* of Defendants’ experts who conducted EI analysis in this case used the database that Dr. Handley created incorporating her allocation method for early and absentee votes. This includes Dr. John Alford, Dr. Jeffery B. Lewis, and even Dr. Solanky. *See* Alford Initial Report, July 28, 2023, at 3; Lewis Initial Report, July 28, 2023, at 4-5; Solanky Initial Report, at 13, Ex. 2. In fact, Dr. Alford specifically stated at his deposition that he had no concerns about any of the EI analysis that Dr. Handley performed. Alford September 18, 2023 Deposition, at 82:15-85:5, attached hereto as Exhibit 4. Only Secretary of State’s expert Dr. Solanky raised any concerns about Dr. Handley’s allocation method. None of the other experts flagged any problems. And despite his concerns, Dr. Solanky also did a significant amount of EI analysis in his initial report relying completely on Dr. Handley’s database where the early and absentee votes had been allocated per her method. Solanky Initial Report, at 16-28, Ex. 2.

Moreover, while Dr. Solanky asserted in his reports and Defendants repeatedly assert in their motion that Dr. Handley’s method for allocation of early and absentee votes is “biased,” at no point do Defendants articulate *what* bias this allocation method is producing with regard to the EI analysis. Def. Mem. to Exclude, Doc. 148-1, at 11-12. Defendants never attempt to explain what impact this allocation method has on the percentages generated by the EI analysis done by all experts in this case. In order to credibly argue that this allocation method was sufficiently

biased so as to impact the accuracy of the estimates generated by the EI analyses and warrant exclusion of all Dr. Handley's opinions, Defendants need to explain what that impact is and why it makes the EI general estimate unreliable.<sup>2</sup> Defendants do not provide any such explanation.

Dr. Solanky did not suggest another method for how to allocate the early and absentee until his deposition.<sup>3</sup> Although he testified in his deposition that there is a different method he deemed to be better, he made no effort to implement any such alternative method in his report, and instead conducted a significant amount of EI analysis relying on Dr. Handley's database and the allocations of early and absentee votes within that database.

After learning about the alternative method that Dr. Solanky disclosed for the first time in his deposition, Dr. Handley further reviewed the analyses provided in her initial reports, and performed two additional evaluations, described in her supplemental rebuttal report.<sup>4</sup> *See* Handley

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<sup>2</sup> At no point did Dr. Solanky propose that the absentee and early votes should not be included in the EI analyses—he acknowledges that, in some election years included in the analyses, there were substantial early votes. *See* Solanky Initial Report, at 12, Ex. 2.

<sup>3</sup> Dr. Solanky's proposed methodology has limitations as well. While it might be possible to determine the *total number of early votes* cast by registered voters from each precinct, as explained, the data available from the Secretary of State does not include *candidate vote totals* for the early votes available at the precinct level. Dr. Solanky proposes that the proper method would be to first determine the total number of early votes cast by voters in each precinct, and then to allocate that number of early votes to the precinct candidate vote totals proportionally by the breakdown of candidate votes for the parish. *See* Solanky Dep., Sept. 22, 2023, at 231:21-25, attached hereto as Exhibit 5. He proposes that "whatever happened in the entire parish, you assume it would happen in each precinct." *Id.* at 249:4-6. But this proposal requires assuming that the votes from the early voting are homogenous throughout the parish. This is an odd proposal from an expert who has also objected to Dr. Handley's cluster analysis on the basis that she has not properly accounted for the difference among precincts within a parish. Presumably, if there are differences between the voters living in different precincts within the parish, there would be differences in the votes those voters cast during early and absentee voting. Dr. Handley's method better accounts for this as she is allocating the candidate vote totals from early voting based on the Election Day voting at the precinct level, assuming that early voters are more likely to follow the voting patterns of their neighbors living in their precinct than all the voters within their parish.

<sup>4</sup> In a footnote, Defendants make a passing assertion that Dr. Handley's Supplemental Rebuttal Report is untimely. Def. Mem. to Exclude, Doc. 148-1, at n.12. It is not appropriate to raise a discovery dispute within a Daubert Motion related to Dr. Handley's qualifications to provide expert testimony in this matter. If Defendants believe this Court should exclude Dr. Handley's Supplemental Rebuttal Report from being admitted into evidence because it was

September 29, 2023 Supplemental Rebuttal Report, attached hereto as Exhibit 6. First, Dr. Handley reviewed the political parties of early and absentee votes to determine if there are any consistent differences in the percentages of Democrats and Republicans who vote early or

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produced untimely, Defendants need to file a motion to strike that report on the basis of that alleged discovery violation. Plaintiffs reserve the right to fully address this discovery issue if Defendants file such a motion.

However, Dr. Handley's supplemental report was timely under this Court's scheduling orders and the Federal Rules of Civil Procedure. Dr. Handley's supplemental rebuttal report was timely under the Scheduling orders on this matter because it was produced before the close of expert discovery on September 29, 2023 and well before the October 27, 2023 pre-trial disclosure deadline. *See* Scheduling Order, July 17, 2023, Doc. 110 and Order Granting Consent Motion to Amend Scheduling Order, September 17, 2023, Doc. 157.

Further, Federal Rule of Civil Procedure 26(e) allows parties to supplement previous expert disclosures when they learn new information. *See also In re Complaint of C.F. Bean L.L.C.*, 841 F.3d 365, 371 (5th Cir. 2016). In his deposition, which took place on September 22, 2023 (after Dr. Handley submitted her initial rebuttal report), Dr. Solanky provided new evidence addressing the methodology for allocating early and absentee votes. While both of Dr. Solanky's reports raised concerns about Dr. Handley's allocation method for early and absentee ballots, Dr. Solanky did not provide any explanation for what allocation method for early and absentee votes might be better. During his deposition, Dr. Solanky revealed for the first time an alternative methodology to account for the early votes. *See* Solanky Dep., at 231:21-234:15; 248:10-249:6, Ex.5. In response to Dr. Solanky's testimony, Dr. Handley determined that it was necessary to further address why her methodology is the preferred approach, and that it does not have any impact on her EI analysis that could change the outcome of that analysis. While the information used by Dr. Handley was technically always available, Dr. Solanky gave no indication that he would present an alternative allocation method until his deposition. Dr. Handley could not have known that she would need to further demonstrate the reliability of her preferred allocation method when no alternative method had been presented.

A supplement to a previous expert report should particularly be allowed if it only "add[s] to a previously-served report without going beyond the opinions expressed in the report." *CEATS, Inc. v. TicketNetwork, Inc.*, No. 215CV01470JRGRSP, 2018 WL 453732, at \*3 (E.D. Tex. Jan. 17, 2018); *see also Gibson Brands, Inc. v. Armadillo Distribution Enterprises, Inc.*, No. 4:19-CV-00358, 2020 WL 6581868, at \*3 (E.D. Tex. Nov. 10, 2020) (allowing admission of a supplemental expert report when it was "consistent with the Initial Report and merely updates the same theory"). Dr. Handley's supplemental report does not employ any new theories or methodologies; it merely supplements her initial report by further explaining the allocation method used in her initial report.

Moreover, courts can allow parties to rely upon information at trial even if it was not produced consistent with the scheduling order if the additional information is "substantially justified or is harmless." Fed. R. Civ. P. 37(c)(1). Dr. Handley's supplement was produced months before the pre-trial conference in this case, and as such, Defendants "[had ample] time to review" the "relatively brief" supplemental report and cannot demonstrate that they "[will] suffer any lasting burden." *Sportspower Ltd. v. Crowntec Fitness Mfg. Ltd.*, No. 4:19-CV-66, 2021 WL 111508, at \*3 (E.D. Tex. Jan. 12, 2021). And the information in Dr. Handley's Supplemental Rebuttal Report is substantially justified because it "provides important information that relates directly to several elements of Plaintiff's ... case." *Moore v. Hernandez*, No. 2:17-CV-00531-JRG, 2018 WL 2670403, at \*3 (E.D. Tex. Mar. 6, 2018).

absentee. Dr. Handley found that in the elections she examined, the percentage of Republican and Democratic voters who cast early and absentee votes was very similar, with the exception of the 2020 elections. *See* Handley Supplemental Rebuttal Report, at 3, Ex. 5. Second, Dr. Handley conducted a racial block voting analysis of early and Election Day voters separately to determine if the degree of racial polarization varied between early voters and Election Day voters. She found that the voting patterns were very similar, and that voting was quite polarized for both early voters and Election Day voters. *See id.* This additional analysis supports Dr. Handley's original opinion that there is no bias caused by her allocation method that would create any uncertainty in the results of her EI analysis.

**B. The Fifth Circuit's Decision in *Overton* Does Not Support Excluding Dr. Handley's Testimony.**

As noted, because Dr. Handley's method of allocating the early and absentee votes reported at the parish level down to the precincts within that parish is proportionally based on the votes received by each candidate on Election Day, the vote totals for the candidates sometimes exceed the voter turnout numbers. Relying solely on *Overton v. City of Austin*, 871 F.2d 529, 539 (5th Cir. 1989) (*per curiam*), Defendants argue that this is the kind of imperfection that should not be ignored. Def. Mem. to Exclude, Doc. 148-1, at 8. But the holding in *Overton* is clearly distinguishable from this current case.

First, *Overton* was a Texas redistricting case from the 1980s that concerned limited data available at the time, including an RPV analysis using "differing measures" for "the ethnic composition of precincts," meaning the use of different data sets to determine the race and ethnicity of different groups of voters. *Id.* at 539. The expert in *Overton* used two different data sets to extrapolate the number of voters in each precinct: using census data for Black voters, and Spanish surnames on precinct voter registration lists for Hispanic voters. *Id.* The *Overton* expert also

“failed to take into account the difference in population sizes of voting precincts” and “failed to establish a confidence level for the results of his regression analysis.” *Id.* at 537. None of these criticisms apply to Dr. Handley’s allocation of early and absentee votes specifically or generally to any of Dr. Handley’s analysis in this case.

Unlike the *Overton* expert, Dr. Handley did not use different data sets to measure different groups of voters. Instead, Dr. Handley used the same data sets to measure polarization between Black and white voters. *See* Handley Initial Report, at 5-6, Ex.1. The Louisiana election officials collect race data with voter registration data, *see id.* at 5, so it is possible to use the same data source to determine the race of all voters. This criticism is thus inapplicable to the present case.

The *Overton* expert’s other deficiencies also lack any correlation to Dr. Handley’s analysis. The expert in *Overton* did not account for different precinct sizes and populations. 871 F.2d at 537. As part of their critique of Dr. Handley’s allocation of the early and absentee votes, Defendants assert that Dr. Handley made a similar mistake—asserting that Dr. Handley assumes that all precincts vote homogenously. Def. Mem. to Exclude, Doc. 148-1, at 12. Defendants provide no explanation for how Dr. Handley’s analysis assumes that all precincts vote homogenously.<sup>5</sup>

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<sup>5</sup> Defendants only note that Dr. Handley did not duplicate Dr. Solanky’s irrelevant analysis comparing the voting pattern of precincts in Caddo Parish in and out of the City of Shreveport. Def. Mem. to Exclude, Doc. 148-1, at 12. Defendants state that “the performance of districts within Caddo Parish or containing portions of Caddo Parish *could* be disproportionately impacted” because some of these precincts within and out of Shreveport show different voting patterns. *Id.* (emphasis added). But this analysis is irrelevant, because Dr. Solanky provides no evidence to show how the different precincts he evaluated in Caddo Parish relate to any actual legislative districts at issue in this case. He has not shown any geographic overlap between those precincts and any legislative districts. It is of little relevance to speculate about a hypothetical impact of different voting patterns without establishing a connection to the specific districts at issue in the case.

But more importantly, Dr. Handley’s analysis does not assume that all precincts vote homogenously. As explained, all of Dr. Handley’s EI analysis in her initial report was done with election data that has been organized at the precinct level. *See* Handley Initial Report, at 5, Ex.1. As such, the differences among precincts are inherently included as part of the estimates produced by the EI analysis. Furthermore, Dr. Handley’s allocation of the early and absentee votes proportionally based on vote totals (voting patterns) at the different precincts on Election Day actually accounts for the differences in the precincts, because it does not assume that all early and absentee voters are the same throughout the parish; rather, it assumes that early and absentee voters are more likely to vote like the other people in their neighborhood who voted on Election Day than they are to vote like other people parish-wide.

Additionally, Dr. Handley “include[d] confidence intervals” in her report produced by her ecological inference analysis of EI RxC, *see* Handley Initial Report, at App. A1 through App. B2, Ex.1, which the expert in *Overton* did not deploy. 871 F.2d at 537.<sup>6</sup> Taken collectively, Dr.

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<sup>6</sup> Defendants’ request that some of the additional analysis Dr. Handley did, the EI 2x2 and ecological regression analysis, be excluded because she did not provide confidence intervals for those additional analysis reflects a fundamental misunderstanding of the different types of analysis Dr. Handley presented. As stated above, Dr. Handley’s primary analysis is EI RxC analysis, the methodology that Courts have accepted as the best for establishing the *Gingles* II and III requirements. *See Terry Petteway*, 2023 WL 6786025. This is the methodology used by Defendant’s expert, Dr. Alford, and in his report explains why EI RxC is the preferred method of political scientists. Alford Report, July 28, 2023, at 3-4. Dr. Handley provided confidence intervals for her EI RxC. *See* Handley Initial Report, at App. A1 through App. B2, Ex.1. Dr. Handley relied primarily on her RxC estimates to conclude that voting is racially polarized. The other methods she employs, including EI 2x2 and a more basic ecological regression analysis, were essentially checks on her EI RxC to demonstrate that, regardless of the statistical analysis conducted, the areas of interest in this case are racially polarized. To exclude Dr. Handley’s EI 2x2 analysis or her ecological regression analysis would merely be excluding an additional double check—it would not have any impact on Dr. Handley’s opinions about racially polarized voting in disputed areas of Louisiana. Also, it is not currently possible to produce confidence intervals for EI 2x2 or a more basic ecological regression analysis that social science experts have found generally acceptable in the context of analyzing voting patterns by race. *See* Handley Dep. at 30:21-32:6, Ex. 3.

Handley’s analysis relied on accepted data sets for RPV analyses, voter registration data, is supported by confidence intervals and did not assume that all precincts vote homogenously.

Finally, Defendants also incorrectly assert that Dr. Handley’s early and absentee early vote allocation method has not been peer reviewed. But Dr. Handley testified at her deposition that other experts use the same methodology for allocation of early and absentee voting. Handley Dep. at 161:9-162:17, Ex. 3. For example, the Voting and Election Science Team (“VEST”)—a well-respected source for election data, based out of the University of Florida and Wichita State University—uses this allocation methodology for the Louisiana election data. *See* Voting and Election Science Team, “Documentation.txt,” *Harvard Dataverse*, available at <https://dataverse.harvard.edu/file.xhtml?fileId=5206372&version=21.0> (last accessed Oct. 26, 2023) (explaining how VEST compiled Louisiana election data), attached hereto as Exhibit 7. Moreover, VEST election data, including from Louisiana elections with early and absentee votes allocated using the same method as Dr. Handley, has been used in many peer-reviewed articles.<sup>7</sup> VEST election data with this same allocation method for the Louisiana early and absentee votes, is also used another well-respected source—the Redistricting Data Hub. *See* “2020 Louisiana precinct and election results shapefile,” *Redistricting Data Hub*, available at [https://redistrictingdatahub.org/wp-content/uploads/2021/06/readme\\_la\\_vest\\_20.txt](https://redistrictingdatahub.org/wp-content/uploads/2021/06/readme_la_vest_20.txt) (last accessed Oct. 26, 2023). Given that Dr. Handley’s methodology has been adopted by other experts in the field and that data implementing this same methodology has been used widely by other

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<sup>7</sup> *See, e.g.,* Charles Stewart, III et al., *American Election Results at the Precinct Level*, 9 Scientific Data 651 (Nov. 3, 2022), available at <https://www.nature.com/articles/s41597-022-01745-0>; Cory McCartan, Kosuke Imai, et al., *Simulated Redistricting Plans for the Analysis and Evaluation of Redistricting in the United States*, 9 Scientific Data 689 (Nov. 2022), available at <https://www.nature.com/articles/s41597-022-01808-2>; C. Kenny, C. McCarten, T. Simko, K. Imai, *Widespread Partisan Gerrymandering Mostly Cancel Nationally, But Reduces Electoral Competition*, 120 Proceedings of the National Academy of Sciences 25 (June 13, 2023), available at <https://doi.org/10.1073/pnas.2217322120>.



political scientist experts as part of analysis included in peer-reviewed articles, this methodology is clearly reliable. This Court should accept Dr. Handley’s expert opinion that the approach she used to allocate the early and absentee votes in Louisiana is the best approach.

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Defendants have not raised any valid concerns about Dr. Handley’s allocation method, and therefore, none of Dr. Handley’s testimony should be excluded because of her early and absentee allocation method.<sup>8</sup>

## **II. Dr. Handley’s Database is from a Known Source and Is Reliable.**

As noted, in order to conduct an ecological inference, it is necessary to create a database with relevant election data. *See* Handley Initial Report, at 5, Ex.1. Defendants assert that the database Dr. Handley had created for her EI analysis in this case—the same database used by all their own experts—came from unknown or undisclosed sources, and that her expert disclosures are somehow flawed because she did not disclose who assisted her with creating this database. Defendants claim that this alleged omission is problematic because the persons who provided her with assistance “exercise[d] some form of judgement in the assembly process” (particularly in the process for allocating the early and absentee votes). Def. Mem. to Exclude, Doc. 148-1, at 6-7.

As an initial matter, Dr. Handley revealed in her initial expert report all the sources of the election data that went into the creation of her database. *See* Handley Initial Report, at 5, Ex.1.

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<sup>8</sup> Defendants also alleged that Dr. Handley’s allocation method was not disclosed. Def. Mem. to Exclude, Doc. 148-1, at 11. This is not accurate. First, Dr. Handley explained her process for allocation of early and absentee votes in her initial report. *See* Handley Initial Report, at 6, Ex.1. Second, Dr. Handley’s database contains the early and absentee votes allocated down proportionally to the precinct level, and the impact that method had on the candidate vote totals is clearly shown by simply looking at the data in her database. Dr. Handley’s database was produced in this case in a timely manner; in fact, the database was supplied to Defendants and their experts over a year ago, as it was initially created and relied upon by Dr. Handley and other experts in *Robinson v. Ardoin*. Handley Dep. at 15:16-24, Ex. 3. The table from Dr. Solanky’s report reproduced in Defendant’s Motion reflects data taken directly from Dr. Handley’s database. Def. Mem. to Exclude, Doc. 148-1, at p.10.



This included data from reliable sources known to Defendants, because it is mostly data from the Secretary of State, who is a Defendant in this case. *See id.* Dr. Handley also identified that some data came from well-known sources for election data, such as OpenElections. *See id.* And Dr. Handley also disclosed the database itself—which Defendants’ experts reviewed and relied upon, as explained above.

Defendants incorrectly claim that, during her deposition, Dr. Handley stated that VEST “assisted” her with shapefiles. Def. Mem. to Exclude, Doc. 148-1, at 7. But at no point did Dr. Handley say that she received any “assistance” from Voting and Elections Science Team. Dr. Handley testified only that some of the data included in her database may have come from VEST. *See* Handley Dep. at 18:12-13, Ex. 3 (“It’s possible that some shape files came from VEST.”). And Dr. Handley disclosed in her initial report that VEST was a potential source of information included in her database. *See* Handley Initial Report, at 6, Ex. 1 (“The precinct shapefiles were obtained either directly from the Secretary of State website or from the Voting and Election Science TEAM (VEST) website.”).

Dr. Handley also testified during her deposition that the ACLU analytics department had helped her prepare the database she used for her EI analysis. *See* Handley Dep. at 19:3-20:18, Ex. 3. Although Dr. Handley’s report does not state that she relied upon the ACLU analytics department for assistance to prepare her database, Defendants received notice that Dr. Handley had this assistance by virtue of the deposition testimony.

It is not clear how Defendants could be prejudiced by the fact that Dr. Handley did not disclose the name or names of the people in the ACLU analytics department who assisted with pulling this data together. Defendants note that expert testimony based solely or primarily on the opinions of another expert is unreliable. *See Hunt v. McNeil Consumer Healthcare*, 297 F.R.D.

268, 275 (E.D. La. 2014). But Dr. Handley did not rely upon the opinions of any other experts in reaching any of her opinions. Her reports demonstrate that she performed the analyses herself and relied on her own analyses to reach her conclusions. *See, e.g.*, Handley Initial Report, Ex. 1. And there is no concern about the reliability of an expert's opinions simply because they relied upon others for assistance. Dr. Handley only relied on the assistance of others in compiling the election data that went into the database she used for analysis—she did not rely upon anyone else to conduct her analysis. Moreover, Dr. Handley was clear that the database in this case was created at her direction, and that she verified that all the data in the database was accurate. *See* Handley Dep. at 20:14-21:10, 90:10-13, Ex. 3.

Defendants assert that this assistance in compiling the database was problematic because the person assisting Dr. Handley allegedly was exercising some judgment. But the only case Defendants cite to support this position is *Dura Auto. Sys. Of Indiana, Inc. v. CTS Corp.*, 285 F.3d 609, 613–14 (7th Cir. 2002), which is unanalogous here (and is non-binding on this Court, in any event). The district court in *Dura* disqualified a party's sole expert witness after he admitted that he was not an expert in mathematical models of groundwater flow—the issue relevant to the litigation—and after admitting the modeling he relied on to reach his conclusions was not done by him. *Dura*, 285 F.3d at 611–12. This is not the case with Dr. Handley, a well-qualified expert in EI analysis who has repeatedly conducted and testified about this analysis, and conducted all of the analysis included in her reports. *See* Handley Initial Report, at 2-3, Ex.1. Moreover, Defendants have provided no evidence that any person at the ACLU analytics department provided any substantive expert opinions in this matter or exercised any judgment in the creation of the database. When asked about a spreadsheet that was produced as part of Dr. Handley's back-up materials, *see* Def. Mem. to Exclude, Doc. 148-1, at Defendants' Exhibit. 3, Dr. Handley testified

that she “directed it to be compiled.” Handley Dep. at 165:1-8, Ex.3. Indeed, *Dura* distinguishes this situation from the one before that court: “Analysis becomes more complicated if the assistants aren’t merely *gofers or data gathers* but exercise professional judgment.” 285 F.3d at 613 (emphasis added). The role of the ACLU analytics department was as “gofers” who pulled Dr. Handley’s data together—nothing more.

**III. Dr. Handley’s Effectiveness Analysis Is Relevant and Defendants Have No Basis for Their Assertion that Dr. Handley Should Have Provided an Additional Threshold Analysis.**

Defendants also argue that Dr. Handley’s effectiveness scores analysis should be excluded because she has not provided “corresponding analysis of the threshold level of BVAP required for when the district provides a realistic opportunity for black voters to elect their candidate of choice.” Def. Mem. to Exclude, Doc. 148-1, at 14.

First, this is not an appropriate argument for a *Daubert* motion. The purpose of a *Daubert* motion is to raise objections about whether expert testimony is coming from a qualified expert, who is presenting evidence that is reliable and relevant. *See Daubert*, 509 U.S. 579. Asserting that Dr. Handley should have done some additional analysis does not speak to the reliability or relevance of the analysis she actually did. There is no reason why a relevant part of an experts’ report or testimony should be excluded simply because they failed to provide some other additional unrelated analysis. And Defendants do not raise any objections to the reliability or relevance of the effectiveness scores analysis that Dr. Handley did in her initial report.

Dr. Handley’s effectiveness scores are clearly relevant. This analysis demonstrates that, at the actual BVAP levels in the enacted plans, the challenged districts do not provide an opportunity for Black voters to elect their candidates of choice. *See Handley Initial Report*, at 12-33, Ex.1. In contrast, the BVAP levels of districts in the illustrative plans do provide such opportunities. *Id.* While her report does not specify any exact threshold BVAP level, her analysis demonstrates that

white bloc voting prevents Black voters from electing their candidates of choice when BVAPs are as low as the districts in the enacted plans. *Id.* This analysis is clearly relevant to and useful for establishing Plaintiffs’ Section 2 vote dilution claims.

Second, there is no requirement to demonstrate a threshold level of BVAP. None of the cases the Defendants have cited support their assertion that such an analysis is required. *See Alabama Legislative Black Caucus v. Alabama*, 575 U.S. 254, 257 (2015) (criticizing the legislature’s failure to conduct any analysis to justify their “mechanical[ly] numerical view” of what would constitute retrogression under Section 5); *Bethune-Hill v. Virginia State Bd. of Elections*, 580 U.S. 178, 186, 195–96 (2017) (upholding a legislative determination that a 55% BVAP was necessary to avoid retrogression where drafter examined turnout rates, considered the district’s prison population, and voting patterns in the contested 2005 primary and general elections); *Covington v. North Carolina*, 316 F.R.D. 117, 169 (M.D.N.C. 2016) (criticizing the legislature’s failure to conduct any analysis to justify a 50% BVAP requirement under Section 2). Moreover, two of these cases concern Section 5’s retrogression standard, not the Section 2 standard before the Court.

Additionally, the court in *Bethune-Hill* found a simple analysis looking at turnout rates and personal knowledge of the area was narrowly tailored to comply with the Voting Rights Act. *Bethune-Hill*, 580 U.S. at 195–96. The court never required an analysis of exactly what BVAP level would be required to provide an opportunity for minority voters to elect their candidate of choice. And Dr. Handley’s analysis goes far beyond what the court accepted as sufficient in *Bethune-Hill*. *See* Handley Initial Report, at 12-33, at Ex.1.

In the only Section 2 case cited by Defendants, the court credits exactly the type of analysis done by Dr. Handley as the proper effectiveness analysis under Section 2. In *Covington*, legislators

did not just fail to do an effectiveness analysis; they failed to conduct any analysis at all. 316 F.R.D. at 169. In finding that the districts at issue had higher BVAPs than necessary to comply with the Voting Rights Act, the court credited Dr. Allan Lichtman “district effectiveness analysis”, *id.* at 169 and n.46, which used “actual results of elections” to calculate a “win rate” for Black candidates of choice in districts with less than 50% BVAP. Report of Dr. Allan Lichtman at 2, attached hereto as Exhibit 8. Dr. Lichtman did not provide any hypothetical BVAP thresholds, but instead provided evaluation of actual election results within relevant districts. Similarly, Dr. Handley’s effectiveness scores compare win rates for Black candidates of choice from actual elections in the enacted and illustrative plans. *See* Handley Initial Report, at. 12-33, Ex.1. Dr. Handley did exactly the same type of “effectiveness analysis” the court contemplated and accepted in *Covington*. 316 F.R.D. at 168 n.46. Unlike in *Covington*, Dr. Handley found that no “districts with less than 50% BVAP” in any of the areas of interest provided an effective opportunity for Black voters to elect their candidate of choice. Handley Report at 16, Ex. 1. Defendants’ attempts to misconstrue the relevant evidentiary requirement should be rejected.

#### **IV. Dr. Handley’s RPV Analysis Is District-Specific.**

Defendants both assert that Dr. Handley did not conduct the district-specific RPV analysis required by *Gingles*, *see* Def. Mem. to Exclude, Doc. 148-1, p.2, and critique Dr. Handley because she did not conduct more statewide EI analysis. *See* Def. Mem. to Exclude, Doc. 148-1, at p.14. Neither concern is valid.

##### **A. Plaintiffs are not challenging the statewide map.**

Defendants take issue with Dr. Handley producing EI analyses for parishes in seven regions of Louisiana, suggesting “Plaintiffs [] challenged the entire statewide legislative plan for Louisiana,” so Dr. Handley should have produced EI analyses for all regions of the state. Def. Mem. to Exclude, Doc. 148-1, at p.14. This argument misunderstands Plaintiffs’ Section 2 claims.

Plaintiffs' Amended Complaint explicitly explains "[t]he State Legislative Maps are dilutive" in part because "the Black Population in Louisiana is sufficiently large and geographically compact to constitute a majority in *six to nine* additional single-majority House districts and *three* additional single-member Senate districts." Pls. Amend. Comp., April 4, 2022, Doc. 14, at 2. As demonstrated by the reports that Bill Cooper provided in this case, those additional single-majority districts can be drawn in seven regions of the state, and this is where Dr. Handley focused her EI analyses. *See* Handley Initial Report, at 8-9, Ex.1. Dr. Handley had no reason to produce EI analyses in regions of Louisiana not subject to this suit. Nor do Defendants present any legal basis for a statewide EI analysis requirement. Because Plaintiffs challenge specific districts and not the legislative maps at large, this argument fails.

**B. Dr. Handley's cluster analysis is district-specific.**

Vote dilution claims are "district-specific," *Gingles*, 478 U.S. at 103. This means that the RVP analysis must be specific to the areas of the state where the vote dilution claims are made. And parties cannot "rely on *statewide* voting statistics to establish legally significant white bloc voting." *Magnolia Bar Ass'n, Inc. v. Lee*, 994 F.2d 1143, 1151 (5th Cir. 1993). Instead, Section 2 claims require a local appraisal of the challenged district. *Id.* Defendants argue Dr. Handley's cluster analysis is not "district-specific," which, in their view, "render[s] Dr. Handley's work irrelevant to the analysis at hand." Def. Mem. to Exclude, Doc. 148-1, at 15.

Dr. Handley relied upon data from statewide elections, but she used that data to conduct a local appraisal of the geographic areas where the challenged districts are located. Dr. Handley created seven areas of interest by looking at the new Black-majority districts created by Mr. Cooper's illustrative plans. *See* Handley Initial Report, at 8-9, Ex.1. These areas include the parishes that overlap geographically with each of the new Black-majority districts, as these are the areas where the potential voters for the new districts live. *See id.* And then she conducted EI

analysis with data from the statewide elections recompiled into the boundaries of those seven areas, so she was evaluating only election data specifically from those areas. *Id.*

While these areas of interest are not specific election districts, in *Westwego Citizens for Better Gov't v. City of Westwego*, the Fifth Circuit acknowledged that *Gingles* suggests some flexibility in the type and nature of the RPV analysis that must be provided in the face of sparse data. 872 F.2d 1201, 1209 n.11 (5th Cir. 1989) (citing *Citizens for a Better Gretna v. City of Gretna*, 834 F.2d 496, 502-3 (5th Cir. 1987)). Under Section 2's flexible standard, "a court may consider other relevant factors" when "elections from the challenged district do not provide sufficient evidence to determine if polarized voting exists." *See E. Jefferson Coal. for Leadership and Dev. v. Jefferson Par.*, 691 F. Supp. 991, 999 (E.D. La. 1988); *see also Citizens for a Better Gretna v. City of Gretna*, 834 F.2d 496, 502–03 (5th Cir. 1987). Courts have relied on this exact type of analysis from Dr. Handley in Section 2 cases. *See Alpha Phi Alpha v. Raffensperger*, 1:21-cv-05339-SCJ, 2023 WL 7037537 (N.D. Ga. Oct. 26, 2023), Opinion and Memorandum of Decision, at \*145–51, \*411–13.

Here, Dr. Handley was facing sparse data because, at the time she did her analysis and wrote her report, no state legislative elections with the new adopted districts had yet taken place for her to analyze. This is why she created seven areas of interest to evaluate for racially polarized voting. This is precisely the type of case where the flexible option envisioned by the *Gingles* Court is necessary.

Moreover, Dr. Handley did not "rely on data aggregated from all the challenged districts," *LULAC, Council No. 4434 v. Clements*, 986 F.2d 728, 776 (5th Cir. 1993). Dr. Handley used the election results from 16 different statewide elections, but she only included in her EI algorithms the election data for the voters who live within each of these seven different areas, and she looked

at each different area separately. *See* Handley Initial Report, at 8-9, Ex.1. As a method for evaluating racially polarized voting, this analysis balances the “intensely local appraisal” of the districts, *see, e.g., White v. Regester*, 412 U.S. 755, 769–70 (1973), with “the Senate Report’s [] flexible, fact-intensive test” acknowledged by the Supreme Court in *Gingles*. *Gingles*, 478 U.S. at 46. Dr. Handley performed a sufficiently local analysis of the specific districts challenged.

**C. Dr. Handley conducted additional district-specific EI analysis on multiple elections in state legislative districts.**

In addition to her analysis of voting patterns in the clusters, Dr. Handley also completed an extensive analysis of state legislative elections. Plaintiffs’ vote dilution claims are about districts within the state legislative maps—these elections are the exact same elections at issue in this case and are referred to as endogenous elections. Courts have consistently held that endogenous elections, as elections for the same office within the same area, are more probative than exogenous elections. *Magnolia Bar Ass’n v. Lee*, 994 F.2d 1143, 1149 (5th Cir. 1993), cert. denied, 510 U.S. 994 (1993). RPV analysis of past elections in the same areas for the same elected offices are more probative for determining whether racially polarized voting actually exists in those relevant areas. *See Clark v. Calhoun Cnty., Miss.*, 21 F.3d 92, 97 (5th Cir. 1994) (reversing the district court for, in part, failing to give greater weight to endogenous elections than exogenous elections). This is because actual past performance in earlier elections for the same type of districts and in the same areas are the best predictions of whether majority candidates have the opportunity to be elected in those areas without opportunity districts. *See Rangel v. Morales*, 8 F.3d 242, 245–46 (5th Cir. 1993) (explaining that the failure of a Latino candidate of choice to win the exact seat at issue was “obviously” probative).



Dr. Handley's report provided a summary of the results of the RPV analysis she did of 21 state legislative elections. She looked at all bi-racial<sup>9</sup> state house or senate contests since 2011 for state legislative districts where: (a) 60% of the district fell within Dr. Handley's identified areas of interest (*i.e.*, the areas of the state where Plaintiffs are alleging vote dilution), or (b) the district overlapped in any way with one of the new BVAP districts in the illustrative map. *See* Handley Initial Report, at 1 & n. 14, Ex.1. The results of this RVP analysis are found in Appendix B1 and B2 of Dr. Handley's report. *See id* at App. B1 & App. B2. This analysis was done using the accepted EI Rx C analysis. *See id*. And as she was evaluating elections in the same type of districts in the same geographic areas that the Plaintiffs are making vote dilution claims, the analysis of these elections provide the district-specific analysis courts have required as evidence of racially polarized voting. *See, e.g., Magnolia Bar Ass'n v. Lee*, 994 F.2d 1143. Dr. Handley's report, therefore, clearly provides analysis that helps inform the Court that there is vote dilution in state legislative elections in Louisiana in the areas of the state at issue in this case. In their motion to exclude Dr. Handley's testimony, Defendants do not even mention the analysis that Dr. Handley did of these endogenous elections, which courts have found to be the most probative when evaluating claims of racially polarized voting as part of the required *Gingles* preconditions.

**D. Dr. Handley's effectiveness scores are also a relevant form of a district-specific analysis.**

Dr. Handley's effectiveness scores are district-specific analysis that take into account voting patterns of only the voters that reside in the specific districts being evaluated. Dr. Handley

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<sup>9</sup> Courts have consistently found that bi-racial elections—those involving both white candidates and minority candidates—are the most probative as to whether voting is racially polarized. *See, e.g., Magnolia Bar Ass'n, Inc.*, 994 F.2d at 1149; *E. Jefferson Coal. for Leadership & Dev. v. Par. of Jefferson*, 926 F.2d 487, 493 (5th Cir. 1991); *Citizens for a Better Gretna*, 834 F.2d at 504; *see also Gingles*, 478 U.S. at 80–82 (relying exclusively on bi-racial legislative contests to determine whether a legislative redistricting plan diluted the Black vote).

has done an evaluation of the win rate for every enacted district in the areas of the state where Plaintiffs are asserting vote dilution is occurring. *See* Handley Initial Report, at 12-33, Ex.1. Dr. Handley looked at eight specific Senate districts that are not Black-majority districts in the Senate plan in three of her identified areas of interest and found that none of these districts would allow Black voters to elect their candidate of choice. *See id.* Similarly, Dr. Handley looked at 19 specific House districts that are not Black-majority districts in the House plan in five of her identified areas of interest and found that none of these districts would allow Black voters to elect their candidate of choice. *See id.* Reviewing the recompiled election results within those districts from 16 past elections, Dr. Handley was able to provide very probative evidence about the Black preferred candidate ability to prevail in the actual enacted districts being challenged in this case. This is clearly a district-specific analysis and, as noted, courts have endorsed relying on this exact type of analysis in other Section 2 cases. *Covington*, 316 F.R.D. at 168 n.46.

### CONCLUSION

Plaintiffs respectfully ask the Court to deny Defendants' Motion in Limine to Exclude Dr. Lisa Handley's Testimony and Reports, and allow Dr. Handley to testify in full about all the content in her initial report, rebuttal report, and supplemental rebuttal report.

Date: October 27, 2023

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**CERTIFICATE OF SERVICE**

I certify that on October 27, 2023 this document was filed electronically on the Court's electronic case filing system. Notice of the filing will be served on all counsel of record through the Court's system.

/s/ Sarah Brannon

# **Exhibit 1**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF LOUISIANA**

DR. DOROTHY NAIRNE, JARRETT  
LOFTON, REV. CLEE EARNEST LOWE, DR.  
ALICE WASHINGTON, STEVEN HARRIS,  
ALEXIS CALHOUN, BLACK VOTERS  
MATTER CAPACITY BUILDING  
INSTITUTE, and THE LOUISIANA STATE  
CONFERENCE OF THE NAACP,

*Plaintiffs,*

v.

R. KYLE ARDOIN, in his official capacity as  
Secretary of State of Louisiana

*Defendant.*

CIVIL ACTION NO. 3:22-cv-00178  
SDD-SDJ

Dr. Handley Expert Report

**Expert Report on the Enacted Louisiana State House and Senate Plans**

**Dr. Lisa Handley**

## I. Introduction

**Summary Conclusion.** Voting in the seven areas of Louisiana that I studied for this project is racially polarized. This polarization impedes the ability of Black voters to elect candidates of their choice unless districts are drawn that provide Black voters with an opportunity to elect their preferred candidates to the state legislature. As demonstrated by illustrative state house and state senate plans (Illustrative State House Plan and Illustrative State Senate Plan; collectively, Illustrative Plans), the enacted state legislative plans (Enacted State House Plan and Enacted State Senate Plan; collectively, Enacted Plans) fail to offer Black voters an opportunity to elect their preferred candidates in areas of the state where voting is racially polarized and where a majority Black district or additional majority Black districts could have been created. The failure of the Enacted Plans to provide more Black opportunity districts dilutes the opportunity of Black voters to participate in the electoral process and to elect candidates of their choice to the Louisiana State House of Representatives and State Senate.

**Scope of Project.** I was retained by plaintiffs in this case as an expert to conduct an analysis of voting patterns by race in several areas in the State of Louisiana to determine whether voting in these areas is racially polarized.<sup>1</sup> In addition, I was asked to assess the ability of Black voters to elect their candidates of choice in legislative districts in those same areas in the Enacted Plans compared to the Illustrative Plans drawn by plaintiffs' expert demographer, Bill Cooper, in this litigation. Much of this report is the same content as provided in the initial report I filed in this case last year before the stay in the proceeding. (*Preliminary Report on the Newly Enacted Louisiana State House and Senate Plans*, July 2022).<sup>2</sup>

## II. Professional Background and Experience

I have over thirty-five years of experience as a voting rights and redistricting expert. I have advised scores of jurisdictions and other clients on minority voting rights and redistricting-related issues. I have served as an expert in dozens of voting rights cases. My clients have included state and local jurisdictions, independent redistricting commissions (Arizona, Colorado,

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<sup>1</sup> I am being compensated at a rate of \$300 an hour for work on this project.

<sup>2</sup> A large portion of the data for this project was compiled for *Press Robinson v. Kyle Ardoyn*, and the description of the data and methodology in this report (and my earlier report, *Preliminary Report on the Newly Enacted Louisiana State House and Senate Plans*) derives from the expert report I filed in that case.

Michigan), the U.S. Department of Justice, national civil rights organizations, and such international organizations as the United Nations.

I have been actively involved in researching, writing, and teaching on subjects relating to voting rights, including minority representation, electoral system design, and redistricting. I co-authored a book, *Minority Representation and the Quest for Voting Equality* (Cambridge University Press, 1992), and co-edited a volume, *Redistricting in Comparative Perspective* (Oxford University Press, 2008), on these subjects. In addition, my research on these topics has appeared in peer-reviewed journals such as *Journal of Politics*, *Legislative Studies Quarterly*, *American Politics Quarterly*, *Journal of Law and Politics*, and *Law and Policy*, as well as law reviews (e.g., *North Carolina Law Review*) and a number of edited books. I hold a Ph.D. in political science from The George Washington University.

I have been a principal of Frontier International Electoral Consulting since co-founding the company in 1998. Frontier IEC specializes in providing electoral assistance in transitional democracies and post-conflict countries. In addition, I am a Visiting Research Academic at Oxford Brookes University in Oxford, United Kingdom. Attached to the end of this report is a copy of my curriculum vitae.

### **III. Analyzing Voting Patterns by Race**

An analysis of voting patterns by race serves as the foundation of two of the three 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 because individual level data is not available. The aggregate data relied on is usually election precinct data. Information relating to the demographic composition and election results in the precincts is collected, merged, 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.



***Standard Statistical Techniques.*** Three standard statistical techniques have been developed over time to estimate vote choices by race: homogeneous precinct analysis, ecological regression, and ecological inference.<sup>3</sup> Two of these analytic procedures—homogeneous precinct analysis and ecological regression—were employed by the plaintiffs’ expert in *Thornburg v. Gingles*, have the benefit of the Supreme Court’s approval in that case, and have been used in most subsequent voting rights cases. The third technique, ecological inference, was developed after the *Gingles* decision and was designed, in part, to address some of the disadvantages associated with ecological regression analysis. Ecological inference analysis has been introduced and accepted in numerous district court proceedings.

*Homogeneous precinct* (HP) analysis is the simplest technique. It involves comparing the percentage of votes received by each of the candidates in precincts that are racially or ethnically homogeneous. The general practice is to label a precinct as homogeneous if at least 90 percent of the voters or voting age population is composed of a single race. (In Louisiana, where turnout data by race is available, a homogenous precinct is defined as a precinct in which 90 percent or more of the voters were Black or White.) In fact, the homogeneous results reported are not estimates—they are the actual precinct results. However, most voters in Louisiana do not reside in homogeneous precincts, and voters who reside in homogeneous precincts may not be representative of voters who live in more racially diverse precincts. For this reason, I refer to these percentages as estimates.

The second statistical technique employed, *ecological regression* (ER), uses information from all precincts, not simply the homogeneous ones, to derive estimates of the voting behavior of minorities and whites. If there is a strong linear relationship across precincts between the percentage of minorities and the percentage of votes cast for a given candidate, this relationship can be used to estimate the percent of minority and white voters supporting the candidate.

The third technique, *ecological inference* (EI), was developed by Professor Gary King. This approach also uses information from all precincts but, unlike ecological regression, it does not rely on an assumption of linearity. Instead, it incorporates maximum likelihood statistics to

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<sup>3</sup> For a detailed explanation of homogeneous precinct analysis and ecological regression, see Bernard Grofman, Lisa Handley, and Richard Niemi, *Minority Representation and the Quest for Voting Equality* (Cambridge University Press, 1992). See Gary King, *A Solution to the Ecological Inference Problem* (Princeton University Press, 1997) for a more detailed explanation of ecological inference.

produce estimates of voting patterns by race. In addition, it utilizes the method of bounds, which uses more of the available information from the precinct returns than ecological regression.<sup>4</sup> Unlike ecological regression, which can produce percentage estimates of less than 0 or more than 100 percent, ecological inference was designed to produce only estimates that fall within the possible limits. However, EI does not guarantee that the estimates for all of the candidates add to 100 percent for each of the racial groups examined.

In conducting my analysis of voting patterns by race in recent elections in Louisiana, I also used a more recently developed version of ecological inference, which I have labeled “EI RxC” in the summary tables. One advantage of EI RxC is that it produces generally accepted confidence intervals for the estimates of minority and white voters supporting each of the candidates. I have included these confidence intervals in the summary tables in the *Appendices*.

**Database** 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 if this information is available. Where this is not available, voting age population or citizen voting age population is used. Louisiana collects voter registration data by race (registering voters self-identify their race), and tallies and provides precinct turnout by race data. The 2015–2022 election results and turnout by race data, for all precincts and election cycles, are publicly available on the Louisiana Secretary of State’s website.

To build the Louisiana dataset for the purpose of the racial bloc voting analysis, precinct-level election returns and turnout counts by race from the Louisiana Secretary of State’s office were collected.<sup>5</sup> In addition, in order to associate this data with census population data, precinct-

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<sup>4</sup> The following is an example of how the method of bounds works: if a given precinct has 100 voters, of whom 75 are Black and 25 are White, and the Black candidate received 80 votes, then at least 55 of the Black voters voted for the Black candidate and at most all 75 did. (The method of bounds is less useful for calculating estimates for White voters, as anywhere between none of the Whites and all of the Whites could have voted for the candidate.)

<sup>5</sup> Election returns were obtained either directly from the Secretary of State website or from OpenElections, an organization that collects election returns and formats them in a consistent manner across all states.

level shapefiles for the relevant years were acquired.<sup>6</sup> The 2020 census-block shapefiles, and total and voting age populations by race and ethnicity, were obtained from the Census FTP portal.<sup>7</sup>

Early and absentee votes are reported only at the parish level in Louisiana—they are not allocated back to the precinct where the voter resides. Rather than simply ignore these votes, they have been allocated to the parish precincts proportionally based on the votes received by each of the candidates on Election Day.<sup>8</sup>

***Elections analyzed*** All recent statewide election contests that included Black candidates were analyzed.<sup>9</sup> These elections are listed in Table 1, below.<sup>10</sup>

**Table 1: Louisiana Statewide Elections Analyzed**

<b>Election Cycle</b>	<b>Office</b>	<b>Black Candidate(s)</b>
November 2022	U.S. Senator	Gary Chambers, Jr.
November 2020	U.S. President/Vice President	Kamala Harris
	U.S. Senator	Adrian Perkins
		Derrick Edwards
November 2019	Secretary of State	Gwen Collins-Greenup
October 2019	Lieutenant Governor	Willie Jones

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<sup>6</sup> The precinct shapefiles were obtained either directly from the Secretary of State website or from the Voting and Election Science Team (VEST) website.

<sup>7</sup> To conduct the effectiveness analysis, the election returns for the 2015–2022 election cycles were disaggregated down to the level of the 2020 census block on the basis of the proportion of the voting age population that each block comprised of the precinct. This necessitated associating block-level census data with the precincts. This was accomplished using the precinct shapefiles.

<sup>8</sup> An example of the allocation process is as follows: Candidate X received 80% of her Election Day parish-wide vote in two-precinct Parish Z from Precinct A and 20% from Precinct B. Therefore, 80% of her early and absentee votes are allocated to Precinct A and 20% to Precinct B.

<sup>9</sup> Courts consider election contests that include minority candidates more probative than contests that include only white candidates for determining if voting is racially polarized. This is because it is not sufficient for minority voters to be able to elect their candidates of choice only if these candidates are white. On the other hand, it is important to recognize that not all minority candidates are the preferred candidates of minority voters.

<sup>10</sup> In one of the elections analyzed—the November 2020 election for U.S. President—it was the running mate, Kamala Harris, who is Black.

Election Cycle	Office	Black Candidate(s)
	Attorney General	Ike Jackson
	Treasurer	Derrick Edwards
	Secretary of State	Gwen Collins-Greenup
December 2018	Secretary of State	Gwen Collins-Greenup
November 2018	Secretary of State	Gwen Collins-Greenup
November 2017	Treasurer	Derrick Edwards
October 2017	Treasurer	Derrick Edwards
November 2015	Lieutenant Governor	Kip Holden
October 2015	Lieutenant Governor	Kip Holden
	Attorney General	Ike Jackson
		Geri Broussard Baloney
	Secretary of State	Chris Tyson

In addition to these 16 statewide contests, recent (2015-2022) bi-racial state legislative election contests in state house and senate districts that fell within the areas of interest were also analyzed.

***Geographic areas analyzed*** I examined voting patterns and the opportunities for Black voters to elect their candidates of choice in seven geographic areas (“areas of interest”) in the State of Louisiana. These areas of interest are the seven areas of the State where the Illustrative Plans create more majority Black voting age population (BVAP) districts than the Enacted Plans. As my analysis demonstrates, these additional majority BVAP districts offer Black voters opportunities to elect their candidates of choice that the Enacted Plans fail to provide.<sup>11</sup>

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<sup>11</sup> I have used the approach of creating specific geographic areas of interest to evaluate voting patterns and the opportunities for Black voters to elect their candidates of choice in another recent redistricting case, and my analysis was relied upon and accepted by the Court. *See Alpha Phi Alpha Fraternity, Inc. v. Raffensperger*, No. 1:21-cv-05337-SCJ, 587 F. Supp. 3d 1222 (N.D. Ga. Feb. 28, 2022).

The areas of interest are defined as the parishes in which the additional majority BVAP districts drawn in the Illustrative Plan are located.<sup>12</sup> For example, the Illustrative State Senate Plan creates a majority BVAP district, District 19, in Southeast Louisiana, and the Enacted State Senate Plan does not include a majority BVAP district in this area. Illustrative State Senate District 19 falls in Jefferson Parish and St. Charles Parish, and therefore I have designated these two parishes as Area of Interest 2. Table 2 lists the areas of interest, the parishes within each area of interest, and the additional majority BVAP illustrative state house and senate districts that are located within the area. In addition, because one area of interest includes both additional state senate and state house districts, I have provided state senate and house cluster names for these areas to facilitate the consideration of the state house and state senate plans separately.

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<sup>12</sup> The Enacted State House Plan included a majority BVAP state house district that is not a majority BVAP district in the Illustrative State House Plan: District 62. Enacted District 62 is located in East Baton Rouge and East Feliciana. Therefore, although there are no new Illustrative Districts that fall in East Feliciana, I have included East Feliciana in Area of Interest 7.

**Table 2: Areas of Interest and the Additional Illustrative Majority BVAP Districts**

Area of Interest	Parishes	Additional Illustrative State Senate District	Additional Illustrative State House District
Area 1: Northwest Louisiana	Bossier Caddo	38 (State Senate Cluster 1)	1 (State House Cluster 3)
Area 2: Southeast Louisiana	Jefferson St. Charles	19 (State Senate Cluster 2)	
Area 3: East Central Louisiana	East Baton Rouge West Baton Rouge Iberville Point Coupee	17 (State Senate Cluster 3)	
Area 4: Western Louisiana	De Soto Natchitoches Red River		23 (State House Cluster 1)
Area 5: Southwest Louisiana	Calcasieu		38 (State House Cluster 2)
Area 6: South Central Louisiana	Ascension Iberville		60 (State House Cluster 4)
Area 7: East Central Louisiana	East Baton Rouge East Feliciana		68 69 (State House Cluster 5)

#### IV. Voting Is Racially Polarized in the Areas of Interest

*Voting Patterns in the Areas of Interest* Voting is consistently racially polarized in the seven areas of interest that I examined. Summary tables reporting estimates of Black and White voters supporting each of the candidates in the 16 statewide elections examined can be found in *Appendix A (A1–A7)*. In the seven areas, Black and White voters supported different candidates in nearly every election contest analyzed, with Black voters cohesive in support of their preferred candidates and the White voters bloc voting against these candidates. Table 3 provides summary averages of the percentage of Black and White support for the Black-preferred candidates in all 16 elections and in the eight elections with only two major candidates. This average is reported for each geographic area and for all seven of the areas together.

**Table 3: Average Black and White Support for Candidates Preferred by Black Voters**

Area	All statewide election contests (16)		Two-candidate contests (8)	
	Black vote for Black-preferred candidate	White vote for Black-preferred candidate	Black vote for Black-preferred candidate	White vote for Black-preferred candidate
1	82.3	9.6	91.9	12.2
2	83.0	11.8	93.6	15.2
3	82.3	15.4	92.5	19.6
4	82.3	9.7	94.0	12.6
5	84.2	11.3	94.7	15.0
6	82.3	11.4	92.8	14.3
7	82.5	16.2	92.5	20.1
<b>Average</b>	<b>82.7</b>	<b>12.2</b>	<b>93.2</b>	<b>15.6</b>

The average percentage of Black voter support for their preferred candidates (“Black-preferred candidates”) was 82.7% across all 16 contests in the seven areas combined.<sup>13</sup> When contests with only two candidates are considered, the level of cohesion was even higher, with Black voters’ support averaging 93.2% for the Black-preferred candidates across these eight two-candidate contests. The average percentage of White voter support for the Black-preferred candidate, on the other hand, was 12.2% across the 16 contests and rose to only 15.6% when contests with only two candidates are considered.

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<sup>13</sup> In all 16 of the contests analyzed, the Black candidate or, if there was more than one Black candidate, one of the Black candidates, was the candidate of choice of Black voters. This means that in the two-candidate contests the candidate of choice of Black voters received more than 50% of the vote. However, in the eight (out of the 16 elections) where more than two candidates competed, the candidate of choice of Black voters may have received only a plurality of the Black vote. I averaged the percentage of the vote received by the candidate of choice of Black voters in all 16 contests and in the eight contests with only two candidates. Although the Black-preferred candidate was always a Black candidate in the statewide elections, not all Black candidates who ran statewide were the candidates of choice and hence have not been included in the averages.

*Voting Patterns in State Legislative Elections in the Areas of Interest* In addition to examining recent statewide elections in the areas of interest, I also analyzed recent (2015-2022) state legislative elections, including special state legislative elections, in these areas. These election contests are “endogenous” in that they are for the office at issue (seats in the state legislature), but they do not necessarily cover the same geographic area as the proposed districts—the state legislative contests analyzed were held in the districts as they were drawn in 2011. I analyzed all bi-racial state house and senate contests in which the 2011 districts were wholly or partially contained in the areas of interest.<sup>14</sup>

My examination of voting patterns in recent bi-racial state legislative elections yielded similar results to the area of interest analyses. The estimates of Black and White voting patterns for these state legislative contests can be found in *Appendix B*. Ten of the 11 state senate elections (90.9%) analyzed were racially polarized (*Appendix B1*).<sup>15</sup> The candidate preferred by Black voters won in all of the election contests in the majority BVAP district contests examined (either in the primary or a subsequent runoff election) but lost two of the three contests in non-majority BVAP districts analyzed. The only Black-preferred candidate that was successful in a non-majority BVAP district in the contests examined was a White candidate, John Milkovich, in State Senate District 38 in 2015. (In the 2019 election contest in this district, the Black candidate supported by Black voters was defeated.)

The ten bi-racial state house contests analyzed were all racially polarized (*Appendix B2*). Black candidates were successful in the three contests in the majority BVAP districts examined. The candidates preferred by Black voters lost, either in the primary or the runoff, in all of non-majority BVAP districts except one. The exception was the October 2019 contest in District 62, in which the winner of the runoff, Roy Daryl Adams, was the candidate of choice of Black voters.

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<sup>14</sup> More specifically, any recent bi-racial contest in a 2011 state legislative district in which at least 60% of the district fell within the area of interest was analyzed. In addition, recent bi-racial contests in any 2011 state legislative district that overlaps with one of the additional illustrative BVAP districts (listed in Table 2) were analyzed. This approach provided me with a sufficient number of elections to enable me to draw reliable conclusions, and is sufficiently limited to the geographic areas where the Illustrative plan creates new opportunity districts.

<sup>15</sup> The election contest that was not polarized was the October 2015 election in State Senate District 2 (a majority BVAP district), in which then-incumbent Troy Brown, was supported by a majority of Black and White voters.



## **V. The Enacted Plans Provide Fewer Opportunity Districts than the Illustrative Plans**

Because voting is consistently and markedly racially polarized in the Louisiana areas of interest I examined, Black voters should be offered opportunities to elect their candidates of choice in these areas. The Illustrative Plans provide more opportunities for Black voters to participate in the electoral process and elect their preferred candidates than the Enacted Plans in these areas. I have concluded this on the basis of a district-specific, functional analysis of the two sets of plans in the seven areas of interest. To make this determination, I relied not only upon the demographic composition of the proposed districts but on the voting patterns in the area and whether the candidates preferred by Black voters are likely to usually win in the proposed districts—this is what is meant by “functional.”

Because no state legislative elections have occurred since the new districts were adopted, an alternative method must be used to assess the opportunity of Black voters to elect their preferred candidates in these areas. Election results recompiled to conform to the boundaries of the proposed districts can be used to ascertain whether the candidates preferred by Black voters (as determined by the racial bloc voting analysis) would win in these districts. The best election contests to use for a functional analysis are recent elections that included a Black candidate supported by Black voters, but not by White voters. In this case, all 16 of the statewide election contests I analyzed met these criteria.<sup>16</sup>

The election results for all 16 recent statewide elections that included Black candidates were recompiled to conform to the state legislative district boundaries in the Enacted and Illustrative Plans. These recompiled results were then used to construct two indices, or “effectiveness scores.” The first score (Effectiveness Score #1) indicates the percentage of election contests (out of the total 16 statewide contests) that the Black-preferred candidate would have won or advanced to a runoff in the district. The second score (Effectiveness Score #2) reports the percentage of two-candidate elections (out of the eight two-candidate contests) that the Black-preferred candidate would have won in the district.<sup>17</sup> The difference between the two

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<sup>16</sup> State legislative contests cannot be used for the purpose of recompiling election results because these elections occurred in districts that do not encompass an area large enough to cover the newly enacted or proposed districts in their entirety.

<sup>17</sup> The eight contests included in Effectiveness Score #2 are: the November 2020 presidential race, the October 2019 elections for Lieutenant Governor and Attorney General, the November 2018 and 2019

scores makes it clear that, while the Black-preferred candidate may advance to the runoff in some instances, winning the runoff is much more challenging.

***Comparing Districts in the Illustrative and Enacted Plans*** There are 11 majority BVAP state senate districts in the Enacted State Senate Plan and 14 in the Illustrative State Senate Plan. In the State House Plan, there are 29 BVAP districts in the Enacted Plan and 35 in the Illustrative Plan. Each of the areas of interest includes at least one additional majority BVAP illustrative district when compared to the number of majority BVAP enacted districts. I created eight different clusters within the areas of interest to evaluate the relevant differences between the Enacted State Senate and State House Plans and the Illustrative State Senate and State House Plans. Each of the three state senate clusters contain an additional state senate BVAP district in the Illustrative Plan. The five state house clusters also include one additional majority BVAP district, except State House Cluster 5, which has two additional majority BVAP districts in the Illustrative Plan than in the Enacted Plan. (See Table 2 for a list of the additional districts in the Illustrative Plans.)

In order to analyze the opportunities of Black voters to elect their candidates of choice in these clusters, I identified all of the proposed illustrative and enacted districts that were wholly or partially contained within the clusters. More specifically, for an enacted or illustrative district to be included in a state house or senate parish cluster, at least 60% of the district had to overlap with the parishes in the cluster. The 60% threshold was arrived at simply to ensure approximately the same number of enacted and illustrative districts in the areas of interest. The only exception to the 60% requirement is State House Cluster 1. In this cluster, a majority Black district centered in the city of Natchitoches in the 2011 State House Plan was cracked across several districts (primarily Districts 7, 22, and 25) in the Enacted Plan—with none of the succeeding districts falling more than 60% within the parish cluster—and no majority Black district was drawn to replace it in this area. The Illustrative State House Plan, however, maintains this majority Black district (Illustrative State House District 23). The eight state senate and house clusters, the parishes in which these districts are encompassed, and illustrative and enacted state legislative districts included in each cluster, are

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runoffs for Secretary of State, the November 2017 runoff for State Treasurer, the October 2015 election for Secretary of State, and the November 2015 election for Lieutenant Governor. Although the 2020 presidential election included a number of minor candidates, one of the two major party candidates received at least 50% of the vote in all of the illustrative and enacted districts examined.

listed in Tables 4a (State Senate Clusters) and 4b (State House Clusters). The majority BVAP districts in each cluster are bolded.

**Table 4a: State Senate Clusters**

<b>Area of Interest</b>	<b>Parishes</b>	<b>Illustrative Districts</b>	<b>Enacted Districts</b>
State Senate Cluster 1	Bossier Caddo	36 <b>38</b> <b>39</b>	36 38 <b>39</b>
State Senate Cluster 2	Jefferson St. Charles	8 9 10 <b>19</b>	8 9 10 19
State Senate Cluster 3	East Baton Rouge West Baton Rouge Iberville Point Coupee	<b>14</b> <b>15</b> 16 <b>17</b>	6 <b>14</b> <b>15</b> 16

**Table 4b: State House Clusters**

<b>Area of Interest</b>	<b>Parishes</b>	<b>Illustrative Districts</b>	<b>Enacted Districts</b>
State House Cluster 1	De Soto Natchitoches Red River	<b>23</b>	7 22 25
State House Cluster 2	Calcasieu	33 <b>34</b> 35 36 <b>38</b>	33 <b>34</b> 35 36
State House Cluster 3	Bossier Caddo	<b>1</b> <b>2</b> <b>3</b> <b>4</b> 6 8 9 22	1 <b>2</b> <b>3</b> <b>4</b> 5 6 8 9
State House Cluster 4	Ascension Iberville	59 <b>60</b> 88	59 60 88
State House Cluster 5	East Baton Rouge East Feliciana	<b>61</b> 62 <b>63</b> <b>65</b> 66 <b>67</b> <b>68</b> <b>69</b> 70 <b>101</b>	<b>61</b> <b>62</b> <b>63</b> 65 66 <b>67</b> 68 69 70 <b>101</b>

I produced effectiveness scores for all of the districts listed in Tables 4a and 4b. All of the majority BVAP districts in these clusters—in both the Illustrative and Enacted Plans—produced effectiveness scores indicating that the proposed districts would offer Black voters an opportunity to elect their candidates of choice to the state legislature. None of the districts with less than 50% BVAP, on the other hand, had scores sufficiently high to merit being classified as effective districts.<sup>18</sup>

***Analysis of Individual Clusters*** In all eight clusters (encompassing the seven areas of interest), voting is racially polarized, and the Enacted Plans offered fewer effective Black opportunity districts than the Illustrative Plans. The following provides a brief summary of the voting patterns in each specific area, the effectiveness scores of the illustrative and enacted districts in the cluster(s) in the area (see Tables 4a and 4b for a list of the districts analyzed in each cluster), and maps of the illustrative and enacted districts in the area.

***State Senate Cluster 1: Bossier and Caddo Parishes*** Voting is racially polarized in this cluster (area of interest 1). In all 16 of the statewide elections analyzed, Black and White voters supported different candidates. The Enacted State Senate Plan provides one effective majority BVAP district in this area (District 39). The Illustrative Plan offers two majority Black BVAP districts: District 38, which has effectiveness scores equal to those of Enacted District 39, and a second majority BVAP district, District 39, which also offers Black voters an opportunity to elect their candidates of choice as the Black-preferred Black candidate wins more than 50% of the contests examined and is therefore what I define as an effective district.

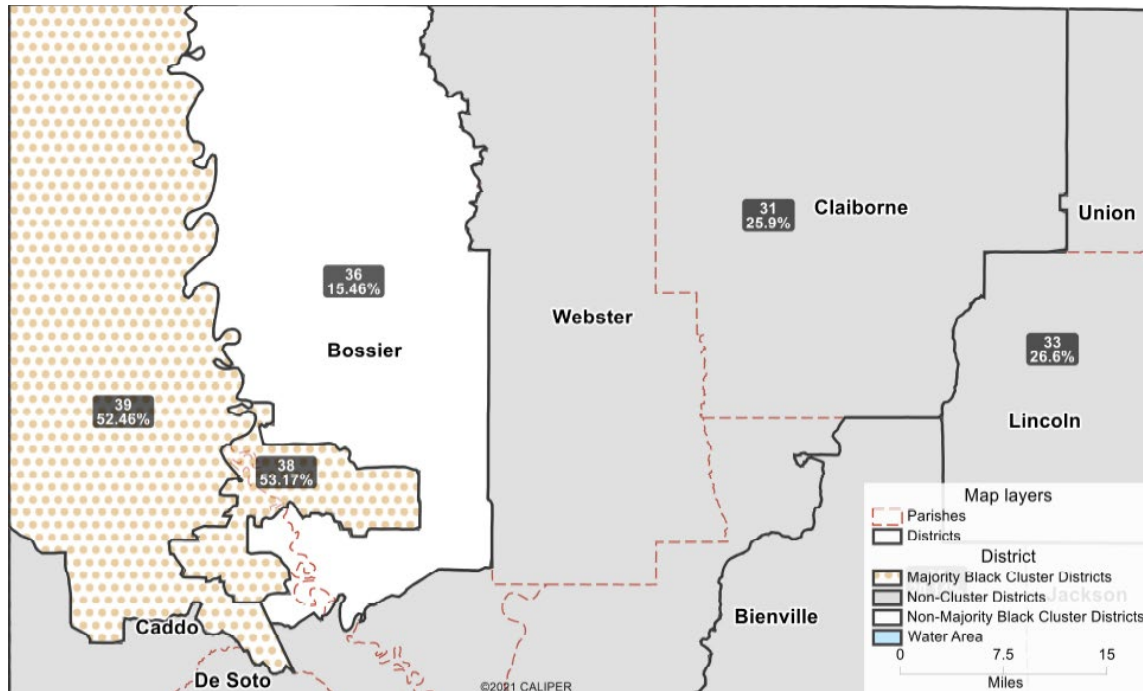
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<sup>18</sup> There are an equal number of majority BVAP districts in the Enacted and Illustrative State House Plans (20) and the State Senate Plans (8) that have not been included in these clusters and therefore were not analyzed. However, I did examine all state house and senate districts with BVAPs between 35% and 49.9% in the Enacted and Illustrative Plans and found only one effective Black opportunity district in this range in the two plans. Proposed State House District 91 in both the Illustrative and Enacted State House Plans (the district boundaries are identical in the two plans) is not majority BVAP in composition but has a sizeable BVAP (40.7%) and is an effective Black opportunity district according to the effectiveness scores. While not a majority Black district, this district is a majority minority district, with a Hispanic VAP of 8.1% and an Asian VAP of 3.0%. The non-Hispanic White VAP is 47.5%.

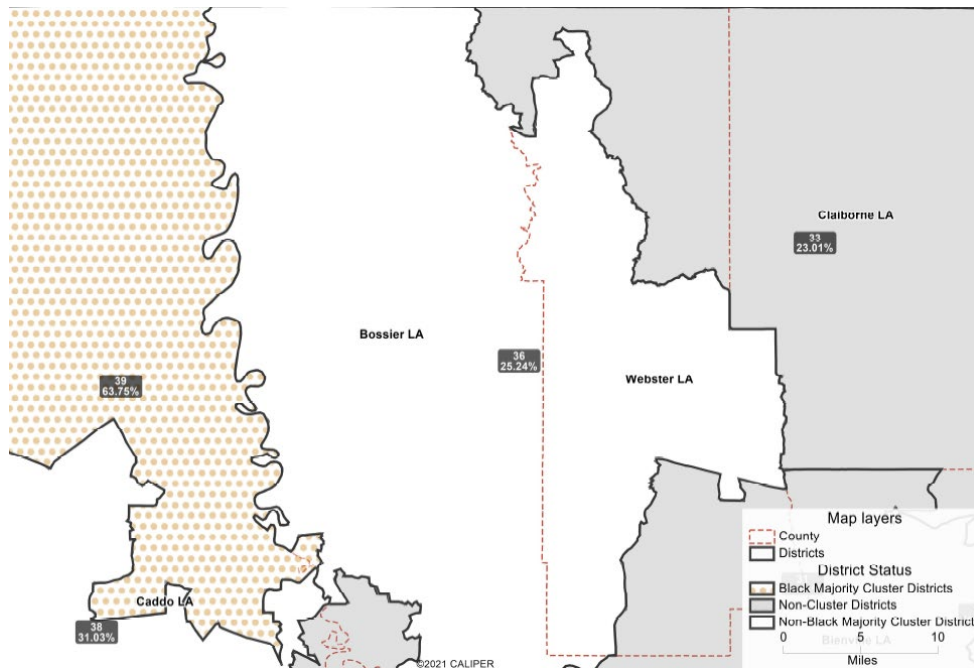
**Comparison Table: State Senate Cluster 1**

<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
36	0.0%	0.0%	36	0.0%	0.0%
<b>38</b>	100.0%	100.0%	38	18.8%	0.0%
<b>39</b>	81.3%	62.5%	<b>39</b>	100.0%	100.0%

### State Senate Cluster 1



### Illustrative District Map



### Enacted District Map

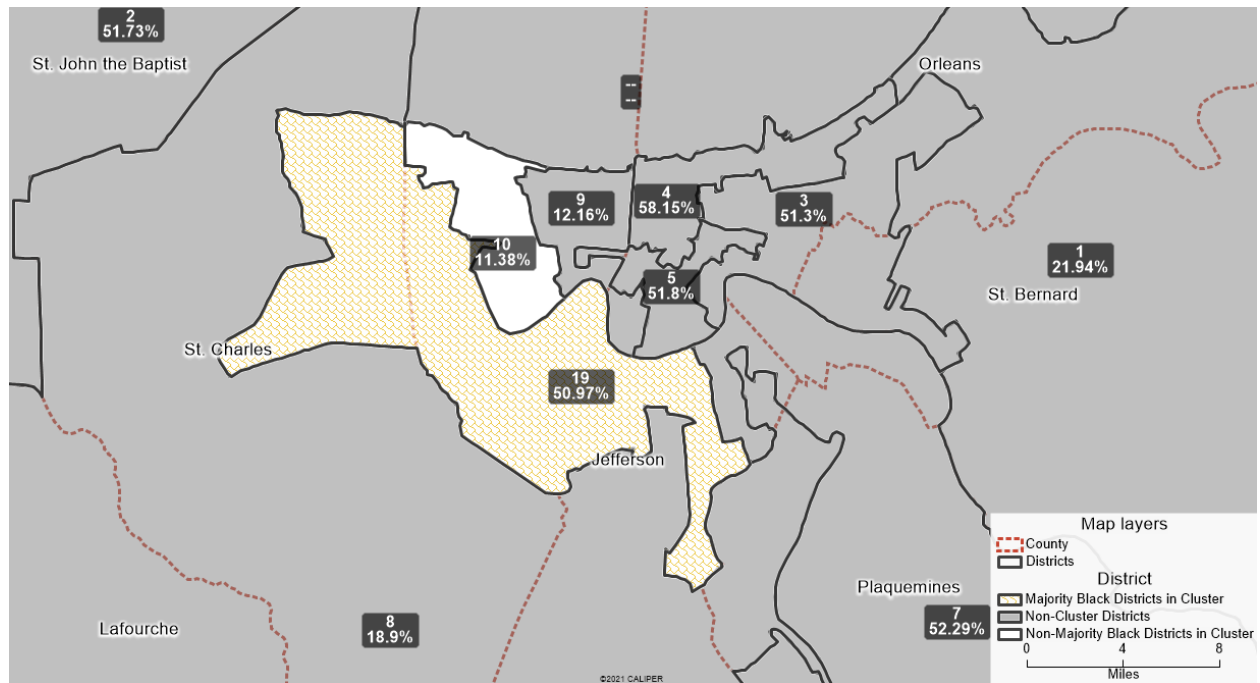
***State Senate Cluster 2: Jefferson and St. Charles Parishes*** Voting is racially polarized in this cluster (area of interest 2)—in all 16 of the statewide elections analyzed, Black and White voters supported different candidates. The Enacted State Senate Plan offers no majority BVAP districts in this area. The Illustrative Plan offers one majority BVAP district: District 19, which has effectiveness scores of 100%—the Black-preferred candidate carried the district in all of the elections examined. (If the Black-preferred candidate did not win outright, the Black-preferred candidate ultimately prevailed in the runoff.)

**Comparison Table: State Senate Cluster 2**

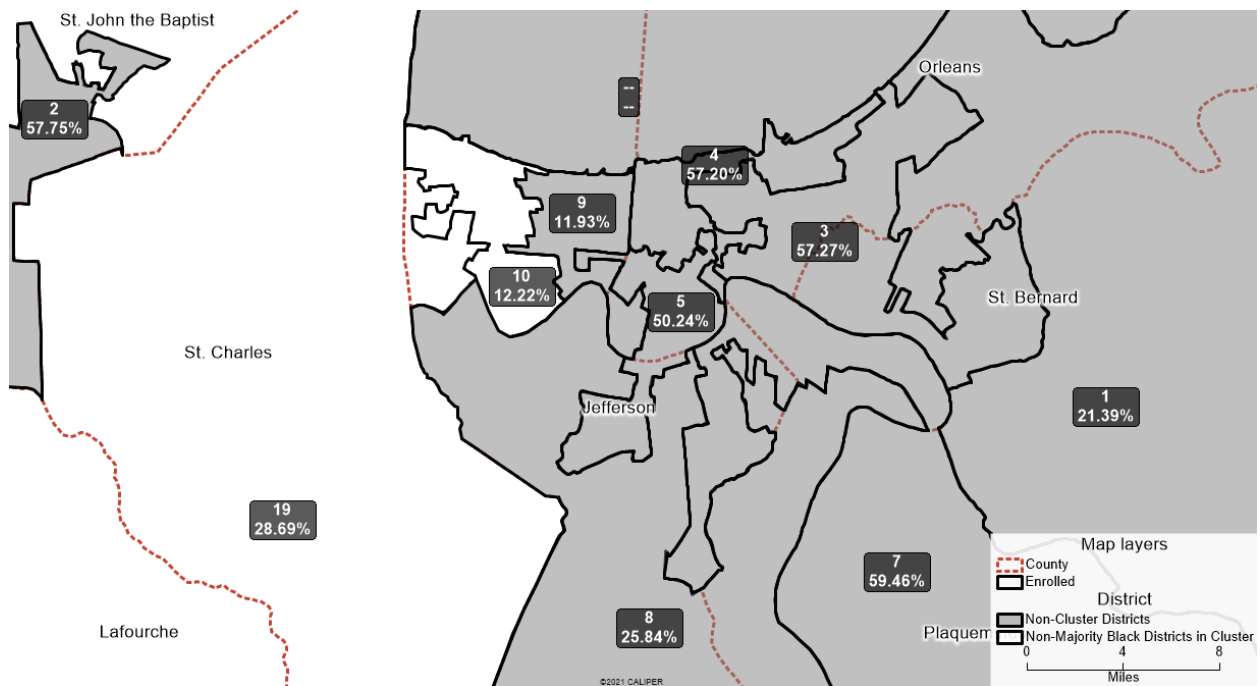
<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
8	6.3%	0.0%	8	18.8%	0.0%
9	12.5%	0.0%	9	12.5%	0.0%
10	0.0%	0.0%	10	0.0%	0.0%
<b>19</b>	100.0%	100.0%	19	18.8%	0.0%



### State Senate Cluster 2



### Illustrative District Map



### Enacted District Map

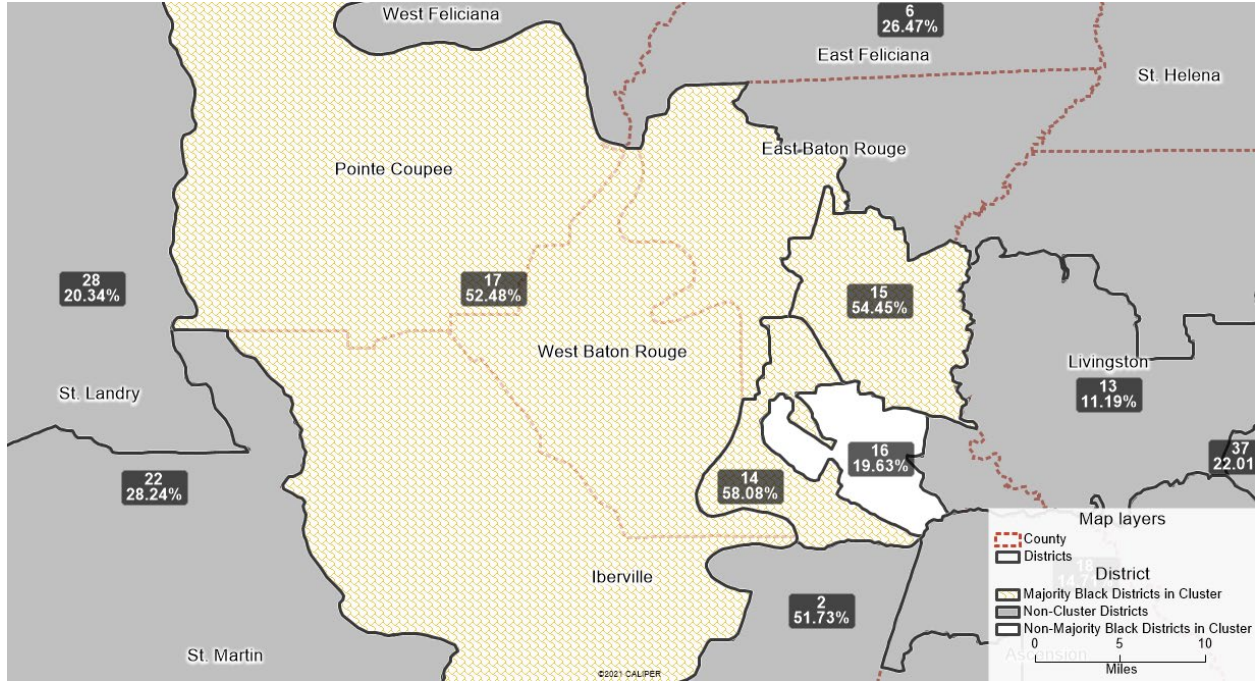
***State Senate Cluster 3: East and West Baton Rouge, Iberville, and Point Coupee***

**Parishes** Voting is racially polarized in this cluster (area of interest 3)—in 15 of the 16 of the statewide elections analyzed, Black and White voters clearly supported different candidates. Only in the October 2015 primary election for Lieutenant Governor did a plurality, or close to a plurality of White voters, support Kip Holder, the Black-preferred candidate. However, in the runoff, a majority of the White voters supported the single White candidate running, while Black voter support for Holden remained extremely high. The Enacted State Senate Plan provides two effective majority BVAP district in this area (Districts 14 and 15). The Illustrative Plan offers three majority BVAP districts: Districts 14, 15, and 17. The effectiveness scores of District 14 in both plans are equivalent – the Black-preferred candidate won all the examined elections. Districts 15 and 17 in the Illustrative Plan have lower effectiveness scores but still are effective.

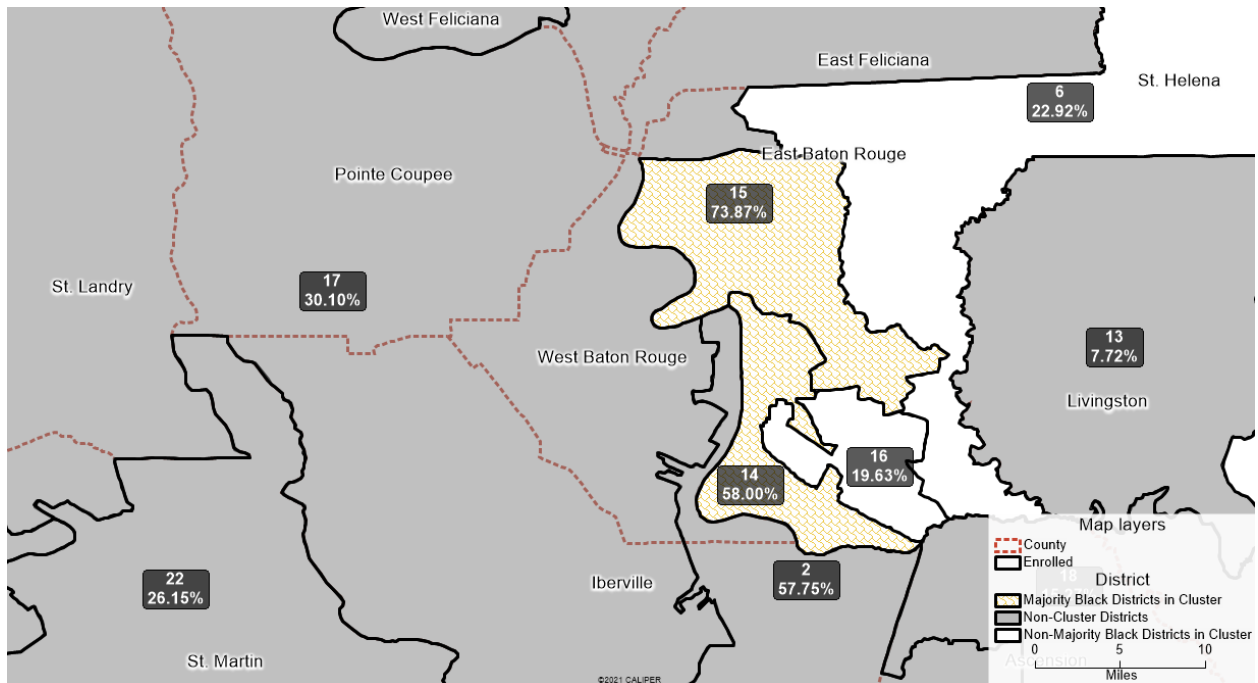
**Comparison Table: State Senate Cluster 3**

<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
<b>14</b>	100.0%	100.0%	<b>6</b>	6.3%	0.0%
<b>15</b>	93.8%	87.5%	<b>14</b>	100.0%	100.0%
<b>16</b>	12.5%	12.5%	<b>15</b>	100.0%	100.0%
<b>17</b>	81.3%	75.0%	<b>16</b>	12.5%	12.5%

### State Senate Cluster 3



### Illustrative District Map



### Enacted District Map

***State House Cluster 1: DeSoto, Natchitoches, and Red River Parishes*** Voting is racially polarized in this cluster (area of interest 4). In all 16 of the statewide elections analyzed, Black and White voters supported different candidates. The Enacted State House Plan does away with the 2011 majority BVAP district in this area (District 23) and does not replace it with another majority BVAP district in this area.<sup>19</sup> The Illustrative Plan maintains the majority BVAP district, District 23, in this area. This district provides Black voters with an opportunity to elect their candidates of choice, with effectiveness scores of 87.5% for both Score #1 and Score #2.

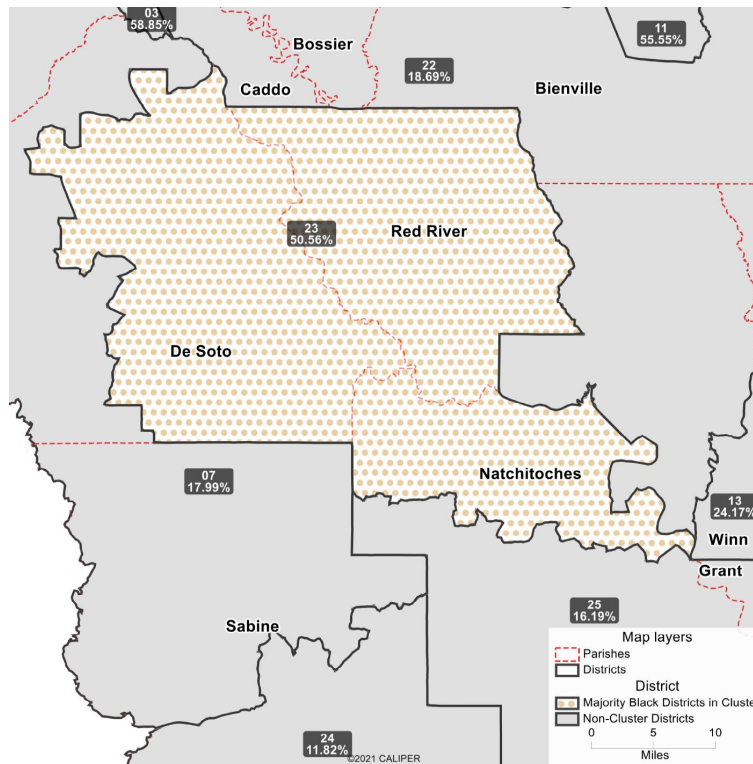
**Comparison Table: State House Cluster 1**

<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
<b>23</b>	87.5%	87.5%	7	18.8%	0.0%
			22	0.0%	0.0%
			25	0.0%	0.0%

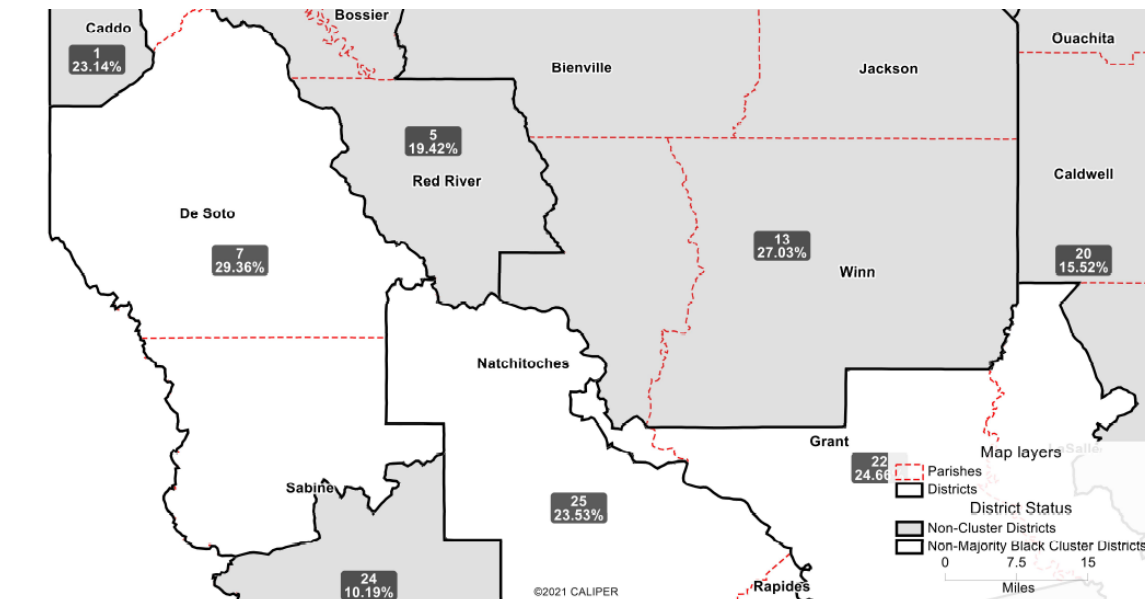
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<sup>19</sup> House District 23 in the Enacted Plan has been relocated in Orleans Parish and is a majority BVAP district. (The Illustrative Plan offers a comparable majority BVAP district in Orleans but labels it with a different district number.)

### State House Cluster 1



### Illustrative District Map



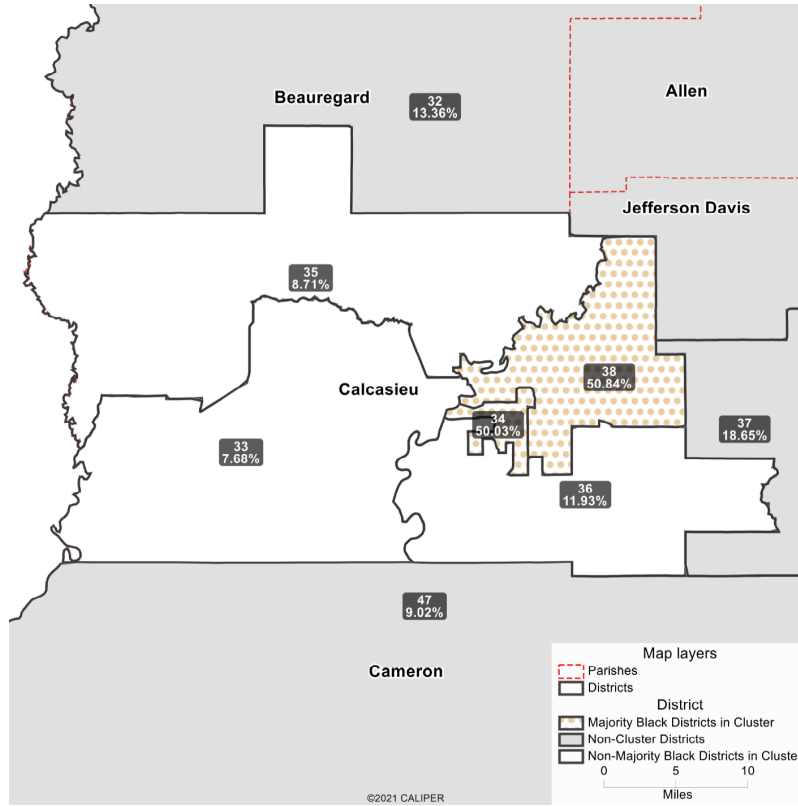
### Enacted District Map

***State House Cluster 2: Calcasieu Parish*** Voting is racially polarized in this cluster (area of interest 5)—in all 16 of the statewide elections analyzed, Black and White voters supported different candidates. The Enacted State Senate Plan provides one effective majority BVAP district in this area (District 34) and the Illustrative Plan offers two majority BVAP districts: Districts 34 and 38. Effectiveness Score #2 in the majority BVAP district in the Enacted Plan and the two majority BVAP districts in the Illustrative Plan are 100% in all instances.

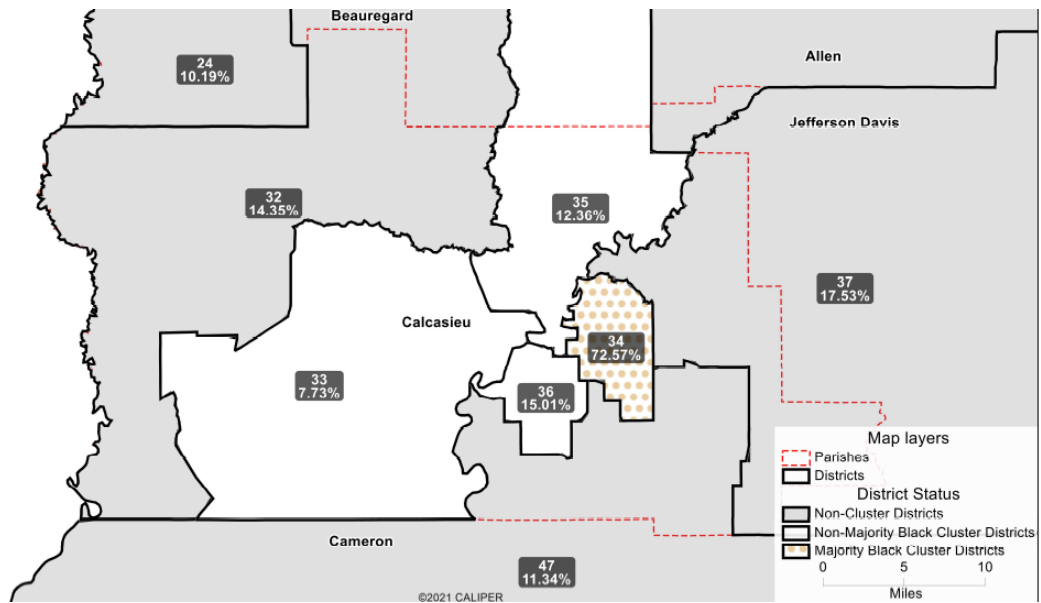
**Comparison Table: State House Cluster 2**

<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
33	0.0%	0.0%	33	0.0%	0.0%
<b>34</b>	93.8%	100.0%	<b>34</b>	100.0%	100.0%
35	0.0%	0.0%	35	0.0%	0.0%
36	0.0%	0.0%	36	0.0%	0.0%
<b>38</b>	93.8%	100.0%			

## State House Cluster 2



## Illustrative District Map



## Enacted District Map

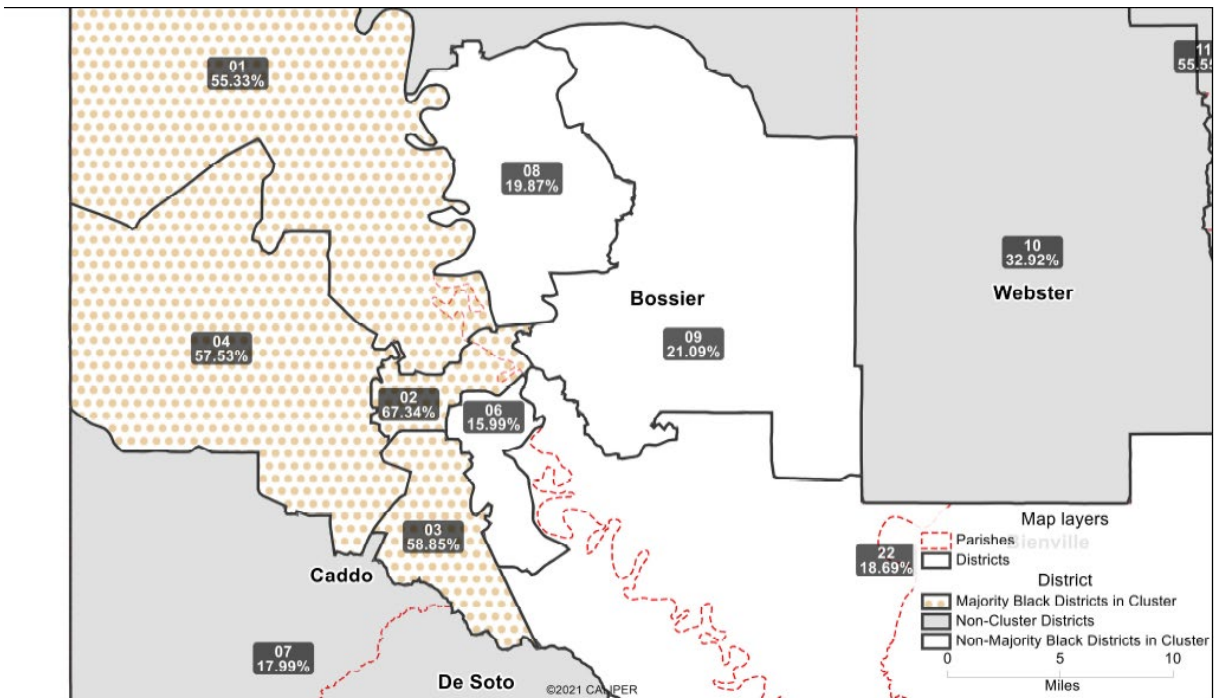
***State House Cluster 3: Bossier and Caddo Parishes*** Voting is racially polarized in this cluster (area of interest 1). In all 16 of the statewide elections analyzed, Black and White voters supported different candidates. The Enacted State House Plan provides three effective majority BVAP district in this area (Districts 2, 3, and 4). The Illustrative Plan offers one additional majority BVAP district for a total of four BVAP districts (Districts 1, 2, 3, and 4). Illustrative Districts 2 and 4, like Enacted Districts 2, 3, and 4, score 100% on Scores #1 and #2. Illustrative District 1 and 3 score less than 100% but still offer Black voters an opportunity to elect their candidates of choice.

**Comparison Table: State House Cluster 3**

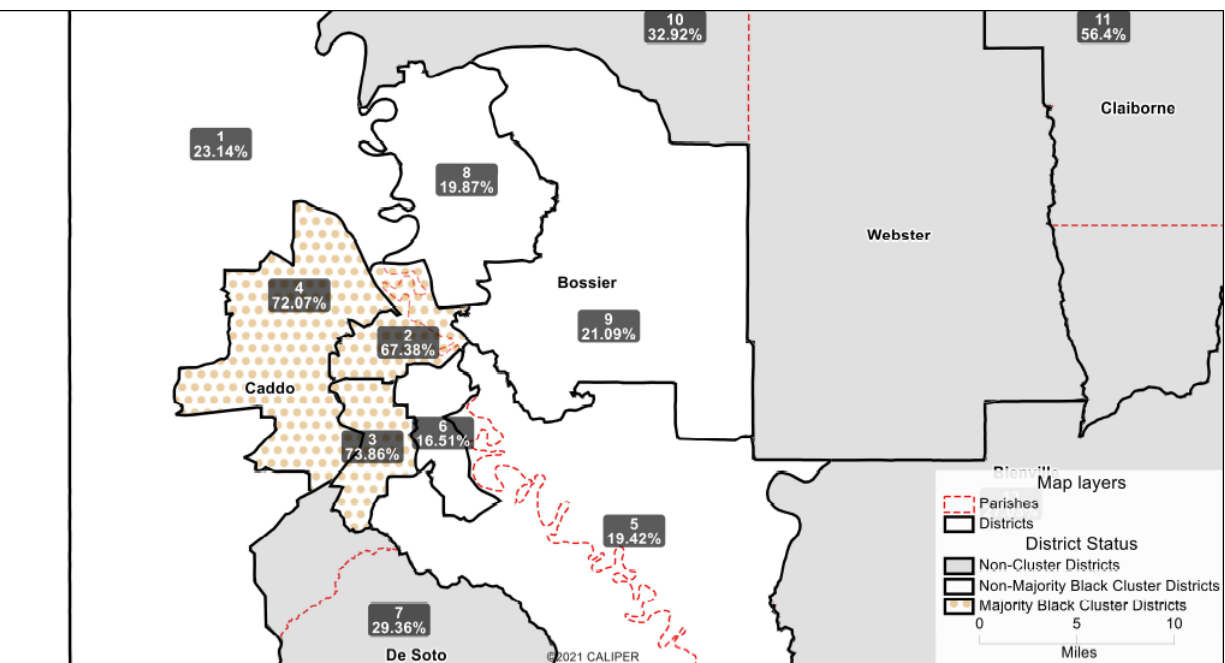
<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
<b>1</b>	81.3%	62.5%	<b>1</b>	6.3%	0.0%
<b>2</b>	100.0%	100.0%	<b>2</b>	100.0%	100.0%
<b>3</b>	87.5%	75.0%	<b>3</b>	100.0%	100.0%
<b>4</b>	100.0%	100.0%	<b>4</b>	100.0%	100.0%
<b>6</b>	6.3%	0.0%	<b>5</b>	0.0%	0.0%
<b>8</b>	0.0%	0.0%	<b>6</b>	6.3%	0.0%
<b>9</b>	0.0%	0.0%	<b>8</b>	0.0%	0.0%
<b>22</b>	0.0%	0.0%	<b>9</b>	0.0%	0.0%



### State House Cluster 3



### Illustrative District Map



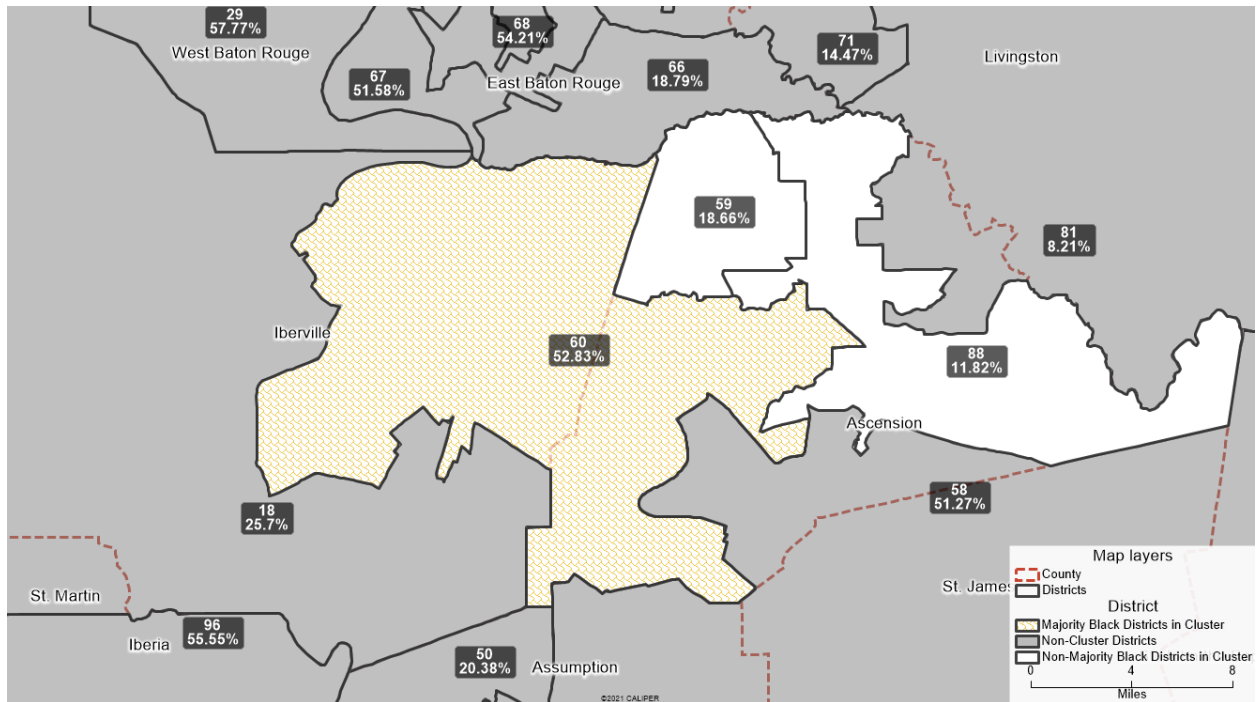
### Enacted District Map

***State House Cluster 4: Ascension and Iberville Parishes*** Voting is racially polarized in this cluster (area of interest 6). In all 16 statewide elections analyzed, Black and White voters supported different candidates. The Enacted State House Plan offers no majority BVAP districts in this area. The Illustrative Plan offers one majority BVAP district, District 60, which has effectiveness scores of 100%.

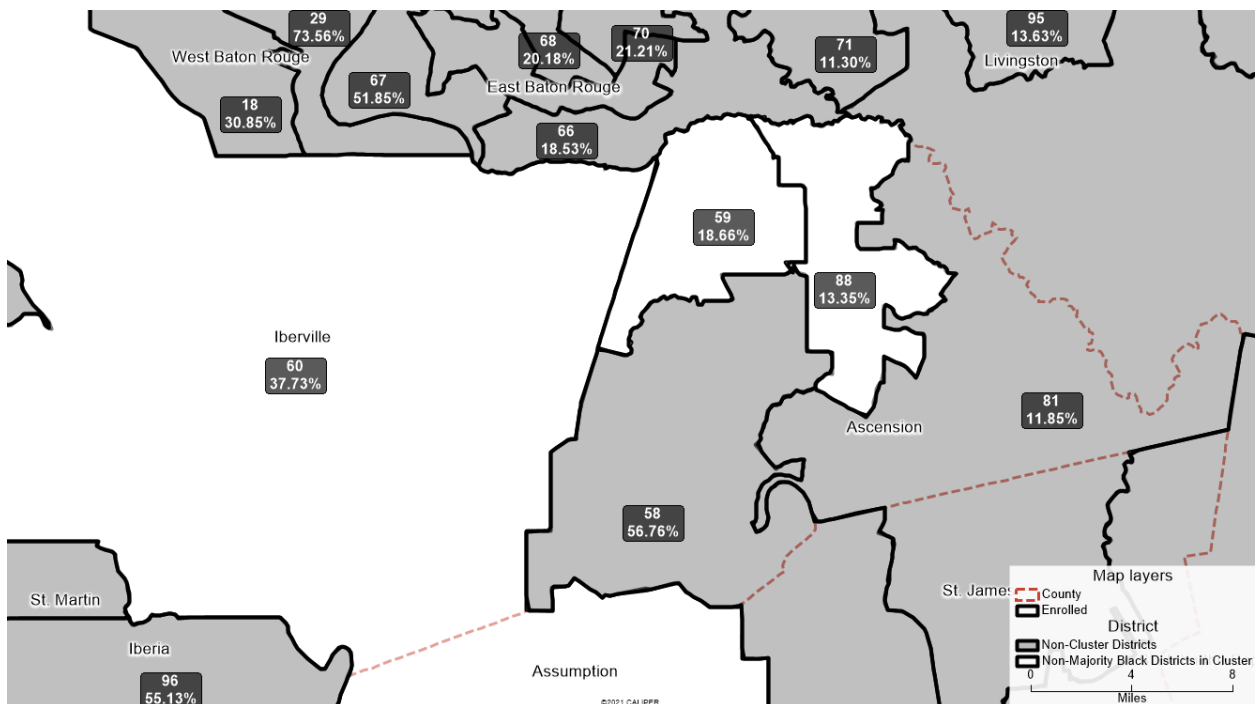
**Comparison Table: State House Cluster 4**

<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
59	0.0%	0.0%	59	6.3%	0.0%
<b>60</b>	100.0%	100.0%	60	43.8%	25.0%
88	6.3%	0.0%	88	6.3%	0.0%

### State House Cluster 4



### Illustrative District Map



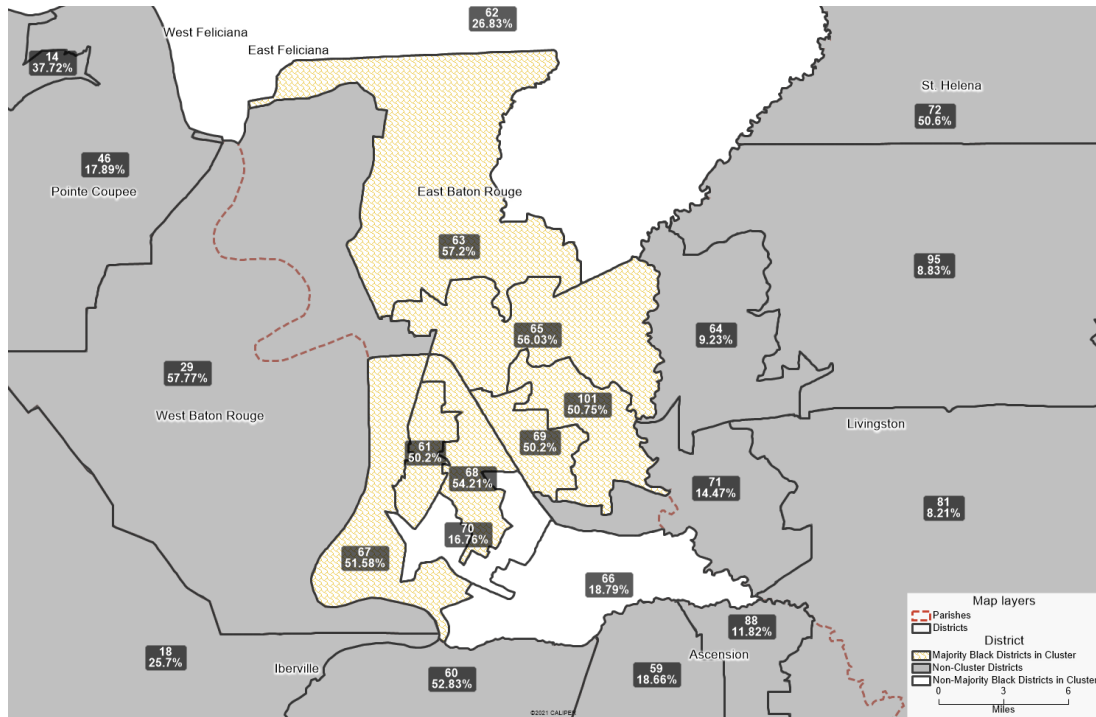
### Enacted District Map

***State House Cluster 5: East Baton Rouge and East Feliciana Parishes*** Voting is racially polarized in this cluster (area of interest 7). In 15 of the 16 statewide elections analyzed, Black and White voters supported different candidates. Only in the October 2015 primary election for Lieutenant Governor did a plurality, or close to a plurality of White voters, support Kip Holder, the Black-preferred candidate. However, in the runoff, White voters coalesced around the single White candidate running, while Black voter support for Holden remained extremely high. The Enacted State House Plan offers five majority BVAP districts in this area; the Illustrative Plan offers seven majority BVAP districts. All of the majority BVAP districts in both plans provide Black voters with an opportunity to elect their candidates of choice.

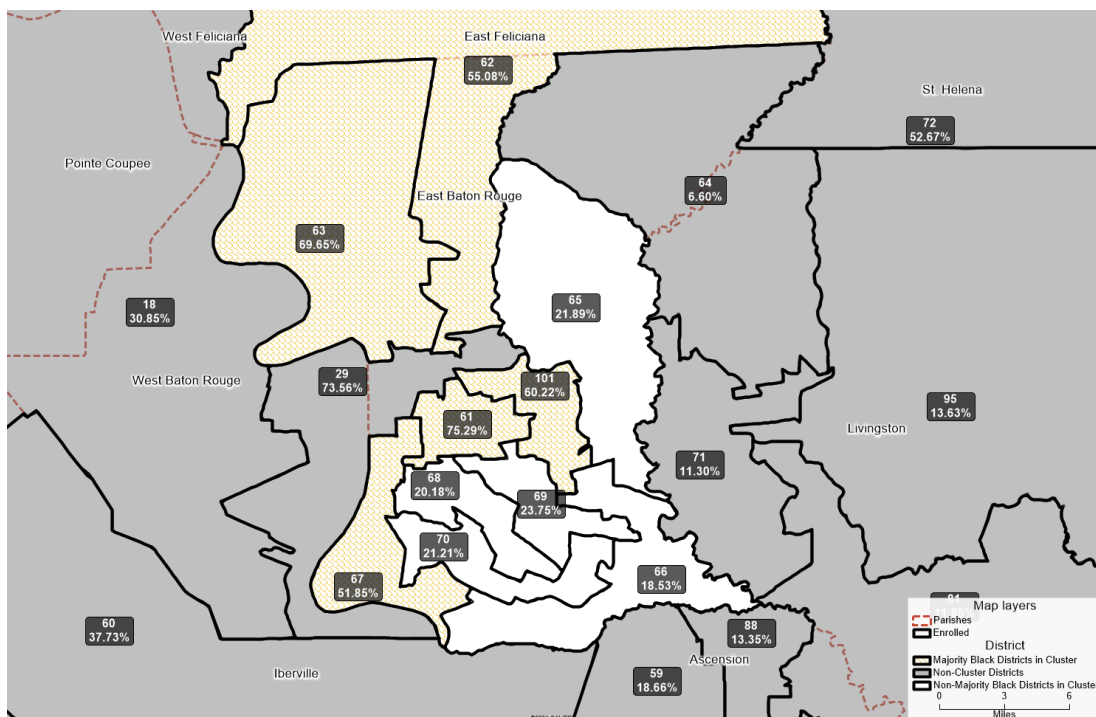
**Comparison Table: State House Cluster 5**

<b>Illustrative District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>	<b>Enacted District</b>	<b>Effectiveness Score #1</b>	<b>Effectiveness Score #2</b>
<b>61</b>	100.0%	100.0%	<b>61</b>	100.0%	100.0%
<b>62</b>	31.3%	12.5%	<b>62</b>	93.8%	87.5%
<b>63</b>	93.8%	87.5%	<b>63</b>	100.0%	100.0%
<b>65</b>	93.8%	87.5%	<b>65</b>	6.3%	0.0%
<b>66</b>	6.3%	0.0%	<b>66</b>	6.3%	0.0%
<b>67</b>	100.0%	100.0%	<b>67</b>	100.0%	100.0%
<b>68</b>	93.8%	87.5%	<b>68</b>	18.8%	12.5%
<b>69</b>	75.0%	62.5%	<b>69</b>	6.3%	0.0%
<b>70</b>	12.5%	12.5%	<b>70</b>	18.8%	12.5%
<b>101</b>	100.0%	100.0%	<b>101</b>	100.0%	100.0%

### State House Cluster 5



### Illustrative District Map



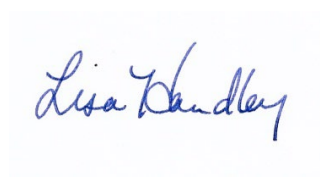
### Enacted District Map

## VII. Conclusion

My analysis of voting patterns by race found that the Black community in the seven areas of Louisiana that I examined is cohesive in supporting their preferred candidates and that White voters consistently bloc vote to defeat these candidates. Racially polarized voting substantially impedes the ability of Black voters to elect candidates of their choice to the Louisiana state legislature in these areas unless districts are drawn to provide Black voters with this opportunity. The Enacted State Senate and House Plans dilute the voting strength of Black voters in Louisiana by failing to create additional districts in these areas that offer Black voters an opportunity to elect their candidates of choice to the state legislature.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed June 30, 2022.

A handwritten signature in blue ink that reads "Lisa Handley". The signature is written in a cursive, flowing style.

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Lisa Handley, Ph.D.

**Appendix A1**Area of Interest 1  
Bossier, Caddo**Estimates for Black Voters****Estimates for White Voters**

Area of Interest 1 Bossier, Caddo			95% confidence interval					95% confidence interval						
	Party	Race	EI RxC			EI 2x2	ER	HP	EI RxC			EI 2x2	ER	HP
2022 November														
U.S. Senator														
John Kennedy	R	W	6.3	5.5, 7.1		4.5	4.0	8.9	86.4	85.8, 87.0		86.8	86.6	77.6
Gary Chambers, Jr	D	B	51.1	50.0, 52.3		52.0	51.8	47.6	5.0	4.3, 5.7		3.5	3.9	7.7
Luke Mixon	D	W	26.3	25.3, 27.3		26.7	26.6	27.2	7.0	6.4, 7.7		6.5	6.0	10.2
Others			16.3	15.4, 17.3		17.7	17.7	16.4	1.5	1.1, 2.0		3.1	3.5	4.5
2020 November														
U.S. President														
Biden/Harris	D	W/B	82.5	69.3, 91.4		97.5	100.4	94.8	22.6	17.2, 30.5		9.8	9.3	19.2
Trump/Pence	R	W/W	16.6	7.6, 29.6		2.2	-2.0	3.7	76.9	69.0, 82.4		88.2	88.9	78.9
Others			0.9	0.7, 11.9		1.5	1.5	1.5	0.5	0.4, 0.7		1.6	1.8	1.9
U.S. Senator														
Adrian Perkins	D	B	71.6	70.6, 72.5		73.0	72.6	68.8	6.7	5.9, 7.3		4.2	3.9	11.1
Derrick Edwards	D	B	16.1	15.3, 16.8		17.3	17.1	16.0	1.2	0.8, 1.6		1.2	1.3	2.8
Bill Cassidy	R	W	2.2	1.7, 2.7		2.5	-1.2	4.7	89.7	89.0, 90.3		89.6	90.1	80.6
Others			10.2	9.4, 11.0		11.3	11.5	10.5	2.4	1.9, 3.1		4.6	4.6	5.5
2019 October														
Lieutenant Governor														
Willie Jones	D	B	88.3	87.1, 89.4		90.1	89.7	85.5	5.9	5.2, 6.9		5.7	6.3	13.0
Billy Nungesser	R	W	11.7	10.6, 12.9		10.1	10.2	14.5	94.1	93.1, 94.8		94.3	93.8	87.0
Attorney General														
Ike Jackson	D	B	84.4	83.1, 85.6		86.3	85.6	81.8	7.1	6.2, 8.3		7.0	7.5	14.4
Jeff Landry	R	W	15.6	14.4, 16.9		13.7	14.4	18.2	92.9	91.7, 93.8		93.0	92.4	85.6
Secretary of State														
Gwen Collins-Greenup	D	B	93.6	92.6, 94.4		94.3	94.8	91.2	9.6	8.8, 10.4		6.8	6.8	14.4
Kyle Ardoin	R	W	1.5	1.1, 2.0		2.3	-0.8	2.8	55.8	55.1, 56.4		55.6	56.1	53.5
Thomas Kennedy III	R	W	3.7	2.9, 4.5		3.1	3.9	4.0	28.4	27.6, 29.1		29.3	29.1	25.3
Amanda Smith	R	W	1.2	0.9, 1.7		1.6	2.0	2.0	6.2	5.6, 6.8		8.1	8.1	6.9

**Appendix A1****Area of Interest 1  
Bossier, Caddo****Estimates for Black Voters****Estimates for White Voters**

Area of Interest 1 Bossier, Caddo	Party	Race	95% confidence					95% confidence				
			El Rx	C interval	El 2x2	ER	HP	El Rx	C interval	El 2x2	ER	HP
Treasurer												
Derrick Edwards	D	B	94.7	86.2, 95.9	94.9	95.6	92.5	9.2	8.3, 14.4	6.2	6.0	13.9
John Schroder	R	W	2.6	1.6, 11.1	1.6	0.8	4.1	88.9	84.0, 89.6	89.2	89.1	81.5
Teresa Kenny		W	2.7	2.2, 3.3	3.7	4.2	3.4	1.9	1.5, 2.5	4.7	5.0	4.6
2019 November												
Secretary of State												
Gwen Collins-Greenup	D	B	96.9	96.0, 97.8	97.4	98.8	94.5	10.1	8.8, 11.9	9.3	9.4	17.1
Kyle Ardoin	R	W	3.1	2.2, 4.0	2.6	1.2	5.5	89.9	88.1, 91.2	90.7	90.6	82.9
2018 November												
Secretary of State												
Gwen Collins-Greenup	D	B	55.8	54.9, 56.8	57.4	57.2	54.5	3.0	2.3, 3.8	1.7	2.0	5.9
Renee Fontenot Free	D	W	35.6	34.7, 36.5	36.6	36.3	34.3	8.6	7.9, 9.3	7.4	7.6	11.0
Julie Stokes	R	W	0.8	0.6, 1.0	0.7	0.6	1.0	6.7	6.2, 7.0	7.1	7.1	7.0
Kyle Ardoin	R	W	1.4	1.0, 1.8	1.1	0.5	2.2	25.3	24.7, 25.7	25.8	26.1	23.8
Rick Edmonds	R	W	0.9	0.6, 1.3	0.5	0.0	1.7	31.8	31.2, 32.3	32.2	31.1	28.4
Thomas Kennedy III	R	W	1.9	1.5, 2.3	1.8	1.6	2.3	14.0	13.4, 14.5	14.5	14.5	13.6
Others			3.6	3.0, 2.1	3.5	3.8	4.0	10.7	10.0, 11.3	11.2	11.5	10.3
2018 December												
Secretary of State												
Gwen Collins-Greenup	D	B	96.3	95.5, 97.1	96.4	98.5	93.3	13.9	12.8, 15.1	13.4	11.4	19.4
Kyle Ardoin	R	W	3.7	2.9, 4.5	3.6	1.5	6.7	86.1	84.9, 87.2	86.6	88.6	80.6
2017 October												
Treasurer												
Derrick Edwards	D	B	89.0	87.2, 90.5	89.2	90.1	86.2	7.8	7.0, 8.6	7.2	7.0	10.6
Angele Davis	R	W	4.2	3.1, 5.4	4.1	3.2	5.2	28.2	27.2, 29.0	28.4	28.5	27.2
Neil Riser	R	W	3.3	2.4, 4.4	3.8	3.5	4.6	26.6	25.8, 27.4	26.6	25.6	26.5
John Schroder	R	W	1.6	1.1, 2.3	1.4	1.0	2.3	31.8	31.0, 32.6	32.3	33.0	29.9
Others			1.9	1.3, 2.6	1.8	2.1	1.6	5.7	5.1, 6.2	6.2	5.9	5.7



**Appendix A1****Area of Interest 1  
Bossier, Caddo****Estimates for Black Voters****Estimates for White Voters**

	Party	Race	El Rx	95% confidence interval	El 2x2	ER	HP	El Rx	95% confidence interval	El 2x2	ER	HP
<b>2017 November</b>												
<b>Treasurer</b>												
Derrick Edwards	D	B	97.4	96.4, 98.3	95.5	101.4	97.1	10.8	9.8, 11.8	11.6	9.9	14.3
John Schroder	R	W	2.6	1.7, 3.6	4.5	-1.4	2.9	89.2	88.2, 90.2	88.5	90.1	85.7
<b>2015 October</b>												
<b>Lieutenant Governor</b>												
Kip Holden	D	B	80.9	79.8, 81.9	81.6	81.5	77.5	10.0	9.3, 10.8	8.0	8.8	13.5
Billy Nungesser	R	W	2.5	1.9, 3.2	2.2	1.7	3.5	36.9	36.2, 37.6	37.5	37.1	36.2
John Young	R	W	14.7	13.7, 15.6	14.5	14.4	16.3	42.9	42.2, 43.6	42.7	42.7	40.3
Elbert Guillory	R	B	1.9	1.4, 2.5	2.1	2.4	2.7	10.1	0.9, 10.8	11.3	11.5	9.9
<b>Attorney General</b>												
Ike Jackson	D	B	31.4	30.4, 32.3	31.7	32.1	30.1	1.5	1.0, 2.2	1.5	1.7	3.3
Geri Broussard Baloney	D	B	44.8	39.9, 46.2	46.7	45.7	44.0	5.1	4.4, 6.9	4.1	4.3	7.3
Buddy Caldwell	R	W	21.2	20.1, 23.6	20.5	20.6	22.1	45.7	44.5, 46.5	45.5	45.7	44.2
Jeff Landry	R	W	1.9	1.4, 4.5	1.4	1.1	3.1	45.6	44.7, 46.3	46.1	45.4	42.6
Marty Maley	R	W	0.6	0.4, 0.8	0.5	0.5	0.7	2.1	1.7, 2.9	2.8	2.9	2.6
<b>Secretary of State</b>												
Chris Tyson	D	B	88.6	87.4, 89.8	89.6	89.5	85.3	11.9	11.1, 12.8	11.4	12.1	16.4
Tom Schedler	R	W	11.4	10.2, 12.7	10.3	10.4	14.7	88.1	87.3, 88.9	88.6	87.8	83.6
<b>2015 November</b>												
<b>Lieutenant Governor</b>												
Kip Holden	D	B	98.1	97.4, 98.6	98.6	99.7	95.4	15.6	14.6, 16.7	14.0	14.8	21.7
Billy Nungesser	R	W	1.9	1.4, 2.6	1.2	0.4	4.6	84.4	83.3, 85.4	86.0	85.2	78.3

Appendix A2 Area of Interest 2 Jefferson, St Charles			Estimates for Black Voters					Estimates for White Voters				
			Party	Race	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2
2022 November												
U.S. Senator												
John Kennedy	R	W	4.0	2.8, 5.2	1.4	0.3	3.9	78.9	77.9, 79.7	80.8	79.6	74.4
Gary Chambers, Jr	D	B	50.6	49.2, 52.1	52.8	51.9	48.0	4.9	4.2, 5.7	3.8	3.8	6.6
Luke Mixon	D	W	22.1	20.7, 23.4	21.5	21.4	21.0	12.9	12.1, 13.6	12.6	13.1	13.8
Others			23.3	22.1, 24.6	25.4	26.4	27.2	3.4	2.8, 4.0	3.7	3.5	5.1
2020 November												
U.S. President												
Biden/Harris	D	W/B	89.5	70.6, 95.6	98.7	101.1	96.1	22.0	19.1, 31.9	15.4	16.3	21.5
Trump/Pence	R	W/W	9.4	3.5, 27.4	1.1	-2.1	2.7	77.2	67.1, 80.0	82.7	81.7	76.6
Others			1.1	0.8, 1.9	1.1	1.1	1.2	0.8	0.7, 1.1	2.0	2.0	1.9
U.S. Senator												
Adrian Perkins	D	B	50.4	49.0, 51.8	50.3	51.8	57.4	9.8	9.0, 10.5	7.4	6.1	10.9
Derrick Edwards	D	B	32.6	31.2, 34.0	37.0	34.9	27.8	2.7	2.1, 3.6	2.7	3.3	4.2
Bill Cassidy	R	W	3.1	2.0, 4.3	1.2	-2.5	3.4	83.4	82.5, 84.2	85.5	84.7	80.1
Others			13.9	12.8, 15.1	16.2	15.8	11.3	4.1	3.4, 4.7	5.3	6.0	4.9
2019 October												
Lieutenant Governor												
Willie Jones	D	B	87.0	85.3, 88.6	90.3	90.7	86.9	8.5	7.5, 9.6	7.4	7.4	13.0
Billy Nungesser	R	W	13.0	11.4, 14.7	9.6	9.2	13.1	91.5	90.4, 92.5	92.6	92.7	87.0
Attorney General												
Ike Jackson	D	B	91.3	89.8, 92.7	94.6	94.9	91.6	12.0	11.2, 13.0	11.0	11.7	17.0
Jeff Landry	R	W	8.7	7.3, 10.2	5.4	5.1	8.4	88.0	87.0, 88.8	89.0	88.3	83.0
Secretary of State												
Gwen Collins-Greenup	D	B	92.2	91.0, 93.2	95.2	95.7	91.5	12.4	11.6, 13.2	9.8	10.3	15.4
Kyle Ardoin	R	W	2.5	1.8, 3.2	1.3	-1.4	3.2	51.4	50.7, 52.0	51.9	51.6	50.0
Thomas Kennedy III	R	W	3.0	2.2, 4.0	2.5	2.9	3.1	28.9	28.1, 29.7	30.3	30.1	27.3
Amanda Smith	R	W	2.4	1.7, 3.1	2.7	2.7	2.2	7.3	6.8, 7.8	7.9	8.0	7.2

Appendix A2 Area of Interest 2 Jefferson, St Charles			Estimates for Black Voters					Estimates for White Voters				
			Party	Race	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2
Treasurer												
Derrick Edwards	D	B	94.7	93.6, 95.7	97.0	98.2	93.7	12.6	11.7, 13.8	10.3	10.8	15.8
John Schroder	R	W	1.8	1.1, 2.5	1.3	-2.7	2.7	82.2	81.2, 83.1	83.6	82.8	78.7
Teresa Kenny		W	3.6	2.7, 4.5	4.1	4.5	3.7	5.1	4.4, 5.8	6.2	6.4	5.5
2019 November												
Secretary of State												
Gwen Collins-Greenup	D	B	95.9	94.5, 97.1	98.3	99.6	95.3	18.2	17.0, 19.5	16.6	17.4	21.7
Kyle Ardoin	R	W	4.1	2.9, 5.5	1.8	0.4	4.7	81.8	80.5, 83.0	83.4	82.6	78.3
2018 November												
Secretary of State												
Gwen Collins-Greenup	D	B	62.3	61.3, 63.4	65.8	65.3	61.4	4.9	4.4, 5.5	3.1	2.9	6.5
Renee Fontenot Free	D	W	25.0	23.9, 26.1	27.1	26.8	22.0	8.2	7.6, 8.9	8.3	8.5	8.9
Julie Stokes	R	W	3.7	3.2, 4.3	3.2	-0.6	8.5	35.9	35.3, 36.5	36.4	36.8	37.3
Kyle Ardoin	R	W	2.7	2.1, 3.3	1.7	2.8	2.2	17.0	16.5, 17.4	17.5	16.9	15.0
Rick Edmonds	R	W	1.3	1.0, 1.7	1.0	0.6	1.5	8.7	8.3, 9.1	9.2	9.0	9.0
Thomas Kennedy III	R	W	1.5	1.0, 2.1	1.3	2.0	1.5	11.3	10.8, 11.7	12.1	11.9	10.4
Others			3.4	2.8, 4.1	2.7	3.2	3.0	14.0	13.5, 14.4	14.3	14.2	12.8
2018 December												
Secretary of State												
Gwen Collins-Greenup	D	B	97.3	96.5, 98.0	98.4	102.7	95.2	16.0	15.2, 16.9	15.7	15.7	18.7
Kyle Ardoin	R	W	2.7	2.0, 3.5	1.6	-2.8	4.8	84.0	83.2, 84.8	84.3	84.3	81.3
2017 October												
Treasurer												
Derrick Edwards	D	B	90.0	87.2, 91.9	92.7	92.2	85.0	11.1	10.4, 11.9	8.3	9.3	12.8
Angele Davis	R	W	4.2	3.0, 5.6	5.3	4.8	7.6	19.7	18.8, 20.4	20.1	20.1	19.3
Neil Riser	R	W	1.5	1.0, 2.2	0.8	-0.4	1.2	13.6	13.0, 14.1	14.0	14.3	14.4
John Schroder	R	W	2.7	1.8, 3.8	3.6	1.0	4.5	50.7	49.9, 51.5	50.9	50.0	48.0
Others			1.7	1.1, 2.5	1.7	2.4	1.6	4.9	4.3, 5.5	6.3	6.2	5.5

Appendix A2 Area of Interest 2 Jefferson, St Charles			Estimates for Black Voters					Estimates for White Voters						
			Party	Race	EI RxC	95% confidence interval	EI 2x2	ER	HP	EI RxC	95% confidence interval	EI 2x2	ER	HP
2017 November														
Treasurer														
Derrick Edwards	D	B	97.2	96.1, 98.1	98.3	102.8	96.5	17.3	16.3, 18.3	15.9	16.1	20.0		
John Schroder	R	W	2.8	1.9, 3.9	1.7	-2.9	3.5	82.8	81.7, 83.7	84.1	83.9	80.0		
2015 October														
Lieutenant Governor														
Kip Holden	D	B	77.0	75.4, 78.3	78.5	78.9	76.2	5.4	4.7, 6.3	3.6	3.0	7.6		
Billy Nungesser	R	W	7.4	6.0, 8.9	4.8	8.7	5.0	39.0	38.0, 39.8	40.3	38.7	33.9		
John Young	R	W	14.1	12.7, 15.4	11.8	10.4	17.4	53.0	52.1, 54.0	54.3	54.6	54.9		
Elbert Guillory	R	B	1.6	1.2, 2.1	2.1	2.1	1.5	2.6	2.3, 3.0	3.7	3.6	3.6		
Attorney General														
Ike Jackson	D	B	27.3	26.3, 28.5	28.6	27.3	22.0	1.4	0.9, 1.8	1.3	1.5	2.7		
Geri Broussard Baloney	D	B	61.3	56.0, 62.9	63.1	64.0	66.2	5.8	5.0, 6.4	3.9	3.6	7.1		
Buddy Caldwell	R	W	7.5	6.2, 10.4	6.8	7.0	7.0	45.6	44.8, 46.3	46.9	46.9	44.2		
Jeff Landry	R	W	3.0	2.2, 4.2	1.6	0.8	3.5	43.8	43.1, 44.4	44.7	44.0	42.1		
Marty Maley	R	W	0.8	0.6, 1.1	0.9	0.9	1.0	3.4	3.0, 3.8	4.1	4.0	3.9		
Secretary of State														
Chris Tyson	D	B	96.9	95.9, 97.8	98.0	100.5	94.6	13.2	12.2, 14.2	11.5	11.9	16.0		
Tom Schedler	R	W	3.1	2.2, 4.1	2.4	-0.4	5.4	86.8	85.8, 87.8	88.6	88.1	84.0		
2015 November														
Lieutenant Governor														
Kip Holden	D	B	94.0	92.3, 95.8	95.6	95.5	93.6	14.7	13.6, 16.0	12.3	12.4	17.9		
Billy Nungesser	R	W	6.0	4.2, 7.8	4.5	4.5	6.4	85.3	84.0, 86.4	87.8	87.6	82.1		

Appendix A3			Estimates for Black Voters						Estimates for White Voters				
Area of Interest 3													
East Baton Rouge, West													
Baton Rouge, Iberville,													
Pointe Coupee													
2022 November													
U.S. Senator													
Party	Race	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2	ER	HP		
John Kennedy	R	W	4.2	3.6, 4.7	2.6	2.4	5.2	79.4	78.9, 79.9	79.6	79.2	74.3	
Gary Chambers, Jr	D	B	65.0	64.1, 65.9	66.1	66.5	61.7	5.6	4.9, 6.4	3.9	4.4	6.8	
Luke Mixon	D	W	22.2	21.4, 23.0	22.4	21.6	24.5	13.1	12.4, 13.7	12.7	12.2	15.0	
Others			8.6	8.1, 9.2	9.3	9.5	8.6	1.9	1.5, 2.4	3.9	4.3	3.9	
2020 November													
U.S. President													
Biden/Harris	D	W/B	88.8	76.9, 94.1	97.3	98.6	94.2	24.8	19.7, 33.6	14.5	13.8	18.7	
Trump/Pence	R	W/W	10.2	5.0, 22.0	1.4	-0.2	4.3	74.5	65.6, 79.6	83.1	84.2	79.5	
Others			1.0	0.8, 1.2	1.3	1.6	1.5	0.6	0.5, 0.8	2.3	2.0	1.8	
U.S. Senator													
Adrian Perkins	D	B	49.1	48.3, 49.9	50.4	49.8	48.7	9.3	8.6, 10.8	8.2	7.5	10.9	
Derrick Edwards	D	B	29.7	29.1, 30.4	30.5	30.8	28.3	2.0	1.6, 2.5	1.4	1.5	2.9	
Bill Cassidy	R	W	5.8	5.4, 6.4	3.9	2.9	7.0	86.2	85.1, 86.7	86.6	86.9	81.7	
Others			15.3	14.7, 15.9	16.2	16.5	16.0	2.5	2.0, 3.1	3.7	4.0	4.5	
2019 October													
Lieutenant Governor													
Willie Jones	D	B	83.2	82.3, 84.0	84.9	85.6	81.3	10.5	9.7, 11.3	10.2	10.8	16.2	
Billy Nungesser	R	W	16.8	16.0, 17.7	15.1	14.5	18.7	89.6	88.7, 90.3	89.8	89.3	83.8	
Attorney General													
Ike Jackson	D	B	89.4	88.6, 90.2	91.0	91.7	87.7	13.4	12.8, 14.3	12.9	13.1	19.2	
Jeff Landry	R	W	10.6	9.8, 11.4	8.9	8.3	12.3	86.6	85.7, 87.2	87.0	86.9	80.8	
Secretary of State													
Gwen Collins-Greenup	D	B	90.1	88.4, 90.9	91.5	91.8	88.3	13.1	12.3, 14.9	11.2	11.2	16.9	
Kyle Ardoin	R	W	4.7	4.1, 6.1	3.4	2.6	6.2	69.0	68.1, 69.6	69.4	69.4	65.5	
Thomas Kennedy III	R	W	3.5	3.0, 4.0	3.0	3.4	3.3	14.1	13.5, 14.5	14.4	14.4	12.9	
Amanda Smith	R	W	1.7	1.4, 2.1	2.1	2.2	2.2	3.8	3.2, 4.4	5.3	5.0	4.7	

Appendix A3			Estimates for Black Voters					Estimates for White Voters					
Area of Interest 3													
East Baton Rouge, West Baton Rouge, Iberville, Pointe Coupee			95% confidence interval					95% confidence interval					
Party	Race	El	RxC		El 2x2	ER	HP	El	RxC		El 2x2	ER	HP
Treasurer													
Derrick Edwards	D	B	93.7	90.7, 94.5	94.1	94.8	91.7	14.2	13.4, 16.4	10.4	11.0	17.3	
John Schroder	R	W	3.6	2.8, 6.7	2.0	0.9	4.4	83.1	81.1, 83.8	84.0	83.2	77.3	
Teresa Kenny		W	2.7	2.3, 3.1	3.9	4.2	3.8	2.7	2.3, 3.1	5.8	5.8	5.4	
2019 November													
Secretary of State													
Gwen Collins-Greenup	D	B	95.5	94.8, 96.1	96.6	97.8	94.5	16.3	15.6, 17.1	15.8	15.0	23.2	
Kyle Ardoin	R	W	4.5	3.9, 5.2	3.4	2.2	5.5	83.7	82.9, 84.4	84.3	85.1	76.8	
2018 November													
Secretary of State													
Gwen Collins-Greenup	D	B	59.1	58.3, 59.9	61.2	60.2	56.9	3.5	2.7, 4.3	2.6	2.9	5.7	
Renee Fontenot Free	D	W	29.7	29.0, 30.4	30.2	30.6	30.7	13.4	12.6, 13.9	11.9	13.5	13.2	
Julie Stokes	R	W	1.4	1.1, 1.7	1.2	1.1	1.6	14.6	14.0, 15.0	14.9	14.1	13.6	
Kyle Ardoin	R	W	3.5	3.1, 3.9	2.9	2.9	4.1	31.7	31.3, 32.2	32.1	33.6	31.3	
Rick Edmonds	R	W	1.7	1.4, 2.0	1.4	0.4	2.1	23.3	22.8, 23.7	23.8	21.8	22.3	
Thomas Kennedy III	R	W	1.5	1.2, 1.8	1.2	1.5	1.3	6.1	5.8, 6.4	6.5	6.8	6.4	
Others			3.1	2.7, 3.5	3.2	3.5	3.2	7.4	6.8, 8.0	7.8	7.3	7.6	
2018 December													
Secretary of State													
Gwen Collins-Greenup	D	B	96.2	95.4, 96.8	96.7	98.1	94.3	18.5	17.7, 19.3	17.7	17.3	23.3	
Kyle Ardoin	R	W	3.8	3.2, 4.6	3.3	1.9	5.7	81.5	80.7, 82.3	82.3	82.8	76.7	
2017 October													
Treasurer													
Derrick Edwards	D	B	86.1	84.7, 87.4	87.4	89.7	85.6	11.0	10.4, 11.9	9.6	9.7	14.7	
Angele Davis	R	W	5.8	4.6, 6.8	4.9	4.2	6.6	44.5	43.7, 45.2	44.9	42.4	43.5	
Neil Riser	R	W	3.1	2.3, 3.9	2.1	2.5	3.4	14.7	14.1, 15.2	15.5	13.8	14.4	
John Schroder	R	W	2.7	2.0, 3.5	2.5	1.3	2.2	24.9	24.3, 25.4	25.0	28.5	22.6	
Others			2.4	1.9, 3.0	1.5	2.4	2.2	4.8	4.3, 5.3	5.1	5.5	4.8	

<b>Appendix A3</b>			<b>Estimates for Black Voters</b>					<b>Estimates for White Voters</b>				
<b>Area of Interest 3</b>												
<b>East Baton Rouge, West</b>												
<b>Baton Rouge, Iberville,</b>												
<b>Pointe Coupee</b>												
<b>2017 November</b>												
<b>Treasurer</b>												
Derrick Edwards	D	B	97.7	96.9, 98.4	97.7	100.5	96.2	18.4	17.6, 19.2	18.1	16.4	22.9
John Schroder	R	W	2.3	1.7, 3.1	2.2	-0.5	3.8	81.6	80.8, 82.4	81.9	83.7	77.1
<b>2015 October</b>												
<b>Lieutenant Governor</b>												
Kip Holden	D	B	93.9	93.2, 94.4	94.5	95.0	92.3	31.4	30.8, 32.2	29.3	29.9	35.1
Billy Nungesser	R	W	2.0	1.6, 2.4	1.6	1.6	2.6	31.0	30.5, 31.5	31.7	31.8	28.1
John Young	R	W	2.0	1.6, 2.4	1.6	1.0	2.5	30.5	29.9, 31.0	31.1	30.4	29.0
Elbert Guillory	R	B	2.1	1.8, 2.5	2.3	2.4	2.5	7.1	6.6, 7.6	8.1	7.8	7.8
<b>Attorney General</b>												
Ike Jackson	D	B	39.5	38.8, 40.2	40.5	41.0	36.8	2.4	1.9, 2.9	1.5	2.3	4.0
Geri Broussard Baloney	D	B	35.2	34.5, 36.0	35.8	34.7	34.5	6.1	5.3, 7.0	6.0	6.5	8.1
Buddy Caldwell	R	W	20.0	19.3, 20.9	19.4	19.3	22.8	54.4	53.7, 55.1	54.6	53.7	53.2
Jeff Landry	R	W	2.5	2.1, 3.0	2.2	2.3	3.0	30.7	30.0, 31.3	31.3	30.3	28.3
Marty Maley	R	W	2.7	2.3, 3.1	2.8	2.8	2.9	6.3	5.9, 6.8	6.7	7.2	6.5
<b>Secretary of State</b>												
Chris Tyson	D	B	93.2	92.3, 93.9	94.4	94.3	92.2	14.0	13.2, 14.9	13.1	15.9	20.0
Tom Schedler	R	W	6.9	6.1, 7.6	5.6	5.7	7.8	86.0	85.1, 86.8	86.9	84.1	80.0
<b>2015 November</b>												
<b>Lieutenant Governor</b>												
Kip Holden	D	B	96.3	95.5, 97.1	96.5	97.1	94.6	40.5	39.4, 41.8	38.3	40.3	45.6
Billy Nungesser	R	W	3.7	2.9, 4.5	3.5	2.9	5.4	59.5	58.2, 60.6	61.7	59.7	54.4

Appendix A4 Area of Interest 4 De Soto, Natchitoches, Red River			Estimates for Black Voters					Estimates for White Voters						
			Party	Race	EI RxC	95% confidence interval	EI 2x2	ER	HP	EI RxC	95% confidence interval	EI 2x2	ER	HP
2022 November														
U.S. Senator														
John Kennedy	R	W	4.1	2.8, 5.9	6.1	0.2	8.1	91.4	90.4, 92.3	90.8	94.2	89.1		
Gary Chambers, Jr	D	B	43.8	41.2, 46.2	43.2	46.8	40.5	3.2	2.2, 4.2	3.7	1.4	3.7		
Luke Mixon	D	W	29.1	26.7, 31.5	32.4	27.6	33.9	3.4	2.5, 4.5	3.0	3.0	3.8		
Others			23.0	21.1, 24.8	22.6	25.5	17.5	2.0	1.3, 2.7	1.9	1.5	3.4		
2020 November														
U.S. President														
Biden/Harris	D	W/B	87.7	73.4, 93.0	95.0	102.4	92.2	15.4	11.2, 24.9	8.9	5.6	9.1		
Trump/Pence	R	W/W	10.6	5.4, 24.9	1.8	-4.9	5.5	83.7	74.3, 88.0	90.1	93.5	90.0		
Others			1.7	1.2, 2.4	2.2	2.4	2.3	0.8	0.1, 1.2	1.0	1.0	0.9		
U.S. Senator														
Adrian Perkins	D	B	66.3	64.0, 68.4	68.9	69.9	60.1	4.0	2.7, 5.3	3.2	2.9	4.5		
Derrick Edwards	D	B	15.5	13.7, 17.2	18.6	16.1	15.8	1.9	1.1, 2.8	0.7	1.6	1.9		
Bill Cassidy	R	W	3.3	2.1, 4.6	3.2	-2.7	7.5	90.1	89.1, 91.1	90.2	91.7	88.9		
Others			15.0	13.2, 16.9	17.1	16.8	16.6	4.0	2.9, 5.2	3.6	3.7	4.7		
2019 October														
Lieutenant Governor														
Willie Jones	D	B	95.9	94.1, 97.2	95.0	100.4	90.6	7.6	6.3, 9.0	7.7	7.0	9.6		
Billy Nungesser	R	W	4.1	2.8, 5.9	5.0	-0.5	9.4	92.4	91.0, 93.7	92.3	93.1	90.4		
Attorney General														
Ike Jackson	D	B	91.0	88.7, 93.1	90.8	93.4	85.3	7.4	6.0, 9.0	7.4	7.2	8.8		
Jeff Landry	R	W	9.0	6.9, 11.3	9.1	6.6	14.7	92.6	91.0, 94.0	92.6	92.8	91.2		
Secretary of State														
Gwen Collins-Greenup	D	B	91.5	89.6, 93.1	91.7	94.9	85.8	8.1	6.8, 9.6	7.3	7.0	8.8		
Kyle Ardoin	R	W	1.9	1.0, 3.0	1.4	-0.6	3.9	52.0	50.7, 53.1	52.8	50.3	50.9		
Thomas Kennedy III	R	W	4.3	3.1, 6.2	4.4	3.5	6.4	31.9	30.6, 33.2	32.6	33.7	31.5		
Amanda Smith	R	W	2.3	1.6, 3.3	2.3	2.0	3.9	8.0	7.1, 8.8	8.6	8.9	8.8		



Appendix A4 Area of Interest 4 De Soto, Natchitoches, Red River			Estimates for Black Voters					Estimates for White Voters					
			Party	Race	El Rx	95% confidence interval	El 2x2	ER	HP	El Rx	95% confidence interval	El 2x2	ER
Treasurer													
Derrick Edwards	D	B	93.6	91.5, 95.3	94.1	98.3	89.8	9.9	8.5, 11.6	7.8	7.6	10.0	
John Schroder	R	W	2.1	1.1, 3.4	2.0	-3.7	5.7	87.0	85.6, 88.2	87.7	87.9	85.9	
Teresa Kenny		W	4.3	3.1, 5.8	5.1	5.5	4.5	3.1	2.2, 4.1	4.2	4.4	4.1	
2019 November													
Secretary of State													
Gwen Collins-Greenup	D	B	96.7	95.2, 97.8	95.5	103.8	92.6	11.7	10.3, 13.2	11.3	7.8	12.0	
Kyle Ardoin	R	W	3.3	2.2, 4.8	4.6	-3.9	7.4	88.3	86.8, 89.7	88.6	92.1	88.0	
2018 November													
Secretary of State													
Gwen Collins-Greenup	D	B	52.2	50.0, 54.4	55.3	52.3	43.7	4.6	3.4, 5.8	2.3	3.8	4.3	
Renee Fontenot Free	D	W	34.0	31.8, 36.1	37.7	37.3	32.6	5.4	4.1, 6.6	3.7	4.6	5.4	
Julie Stokes	R	W	4.2	3.2, 5.4	5.6	5.0	8.6	7.3	6.5, 8.1	6.8	6.4	6.8	
Kyle Ardoin	R	W	3.0	2.1, 4.1	3.1	1.5	5.0	29.1	28.1, 30.1	29.1	30.7	28.9	
Rick Edmonds	R	W	1.4	0.9, 2.0	0.8	-1.5	2.6	23.8	23.1, 24.6	24.8	23.8	26.6	
Thomas Kennedy III	R	W	2.3	1.5, 3.2	2.4	2.2	3.7	17.7	16.8, 18.4	17.7	18.0	16.3	
Others			2.9	1.9, 3.9	3.2	3.7	3.7	12.1	11.3, 13.0	12.4	12.8	11.9	
2018 December													
Secretary of State													
Gwen Collins-Greenup	D	B	96.0	93.8, 97.6	93.8	102.9	91.8	11.0	9.4, 12.7	12.4	9.2	10.4	
Kyle Ardoin	R	W	4.1	2.4, 6.2	6.1	-2.9	8.2	89.0	87.3, 90.6	87.7	90.8	89.6	
2017 October													
Treasurer													
Derrick Edwards	D	B	89.6	86.4, 92.1	89.7	98.0	88.7	9.0	7.4, 10.7	9.8	5.4	8.8	
Angele Davis	R	W	3.1	1.8, 4.9	1.7	-0.3	3.7	29.2	27.7, 30.7	30.0	30.7	28.1	
Neil Riser	R	W	2.9	1.7, 4.6	1.2	0.8	3.3	23.6	22.1, 25.0	24.5	24.8	22.2	
John Schroder	R	W	2.3	1.3, 3.7	1.6	1.4	2.0	32.7	31.1, 34.2	33.4	32.8	34.1	
Others			2.1	1.2, 3.1	0.5	0.2	2.2	5.6	4.7, 6.4	6.3	6.4	6.8	

Appendix A4 Area of Interest 4 De Soto, Natchitoches, Red River			Estimates for Black Voters						Estimates for White Voters					
			Party	Race	EI RxC	95% confidence interval	EI 2x2	ER	HP	EI RxC	95% confidence interval	EI 2x2	ER	HP
2017 November														
Treasurer														
Derrick Edwards	D	B	96.2	93.8, 98.0	91.1	105.9	95.9	13.7	11.7, 15.7	16.5	10.4	12.7		
John Schroder	R	W	3.8	2.0, 6.2	8.7	-6.1	4.1	86.3	84.3, 88.3	83.4	89.6	87.3		
2015 October														
Lieutenant Governor														
Kip Holden	D	B	90.7	88.9, 92.4	92.7	93.1	89.1	10.6	9.3, 11.9	8.2	10.6	13.9		
Billy Nungesser	R	W	2.6	1.7, 3.9	2.4	1.9	3.9	33.2	32.0, 34.3	34.1	33.6	32.0		
John Young	R	W	4.2	2.9, 5.7	3.1	3.2	4.4	43.3	42.0, 44.5	44.5	42.4	42.1		
Elbert Guillory	R	B	2.5	1.6, 3.5	3.7	2.0	2.5	12.9	12.0, 13.8	13.6	13.3	12.0		
Attorney General														
Ike Jackson	D	B	32.3	30.6, 34.0	33.1	32.3	28.0	1.9	1.2, 2.9	1.0	1.9	3.2		
Geri Broussard Baloney	D	B	36.7	33.5, 39.0	37.8	36.7	31.0	5.0	3.8, 6.7	4.8	6.1	6.5		
Buddy Caldwell	R	W	25.6	23.0, 28.2	26.7	27.8	33.5	45.7	44.1, 47.2	45.2	44.1	44.9		
Jeff Landry	R	W	2.5	1.4, 4.2	1.7	1.2	3.5	35.1	33.7, 36.2	36.3	35.5	32.8		
Marty Maley	R	W	3.0	2.0, 4.1	2.4	2.0	3.9	12.3	11.4, 13.2	12.8	12.4	12.6		
Secretary of State														
Chris Tyson	D	B	91.5	89.0, 93.6	92.5	92.5	91.0	14.1	12.5, 15.9	13.1	16.0	18.9		
Tom Schedler	R	W	8.5	6.4, 11.0	7.6	7.6	9.0	85.9	84.1, 87.5	87.0	84.1	81.1		
2015 November														
Lieutenant Governor														
Kip Holden	D	B	97.2	95.5, 98.4	98.1	98.1	94.7	19.7	18.1, 21.4	17.8	17.7	21.1		
Billy Nungesser	R	W	2.8	1.6, 4.5	2.0	2.0	5.3	80.3	78.6, 81.9	82.2	82.3	78.9		

**Appendix A5****Area of Interest 5  
Calcasieu****Estimates for Black Voters****Estimates for White Voters**

Area of Interest 5 Calcasieu	Party	Race	95% confidence					95% confidence				
			EI RxC	interval	EI 2x2	ER	HP	EI RxC	interval	EI 2x2	ER	HP
2022 November												
U.S. Senator												
John Kennedy	R	W	4.4	3.2, 5.7	2.5	-0.3	7.8	86.4	85.8, 86.9	86.8	86.2	82.4
Gary Chambers, Jr	D	B	56.4	54.5, 58.2	59.3	59.3	54.4	2.5	1.8, 3.3	1.7	2.0	5.2
Luke Mixon	D	W	22.2	20.5, 23.9	22.6	22.7	20.8	6.3	5.6, 6.9	6.1	6.3	6.7
Others			17.0	15.4, 18.7	17.9	18.3	17.0	4.8	4.0, 5.5	5.1	5.5	5.7
2020 November												
U.S. President												
Biden/Harris	D	W/B	90.9	73.0, 96.5	98.4	102.7	93.8	15.5	13.4, 21.7	9.6	9.8	13.0
Trump/Pence	R	W/W	7.7	2.4, 24.9	0.8	-5.0	4.5	84.0	77.8, 86.0	88.4	88.3	85.3
Others			1.5	0.9, 2.2	2.3	2.3	1.7	0.5	0.4, 0.7	1.8	1.9	1.7
U.S. Senator												
Adrian Perkins	D	B	23.1	21.6, 24.6	25.4	24.5	23.3	2.5	1.7, 3.3	2.1	2.7	3.4
Derrick Edwards	D	B	50.7	49.0, 52.4	52.4	53.0	47.5	3.7	2.8, 4.4	2.7	2.8	5.3
Bill Cassidy	R	W	5.4	4.2, 6.6	3.3	0.6	8.0	86.3	85.6, 86.8	87.1	86.4	83.1
Others			20.8	19.2, 22.4	22.3	22.1	21.2	7.6	6.8, 8.3	7.4	8.0	8.2
2019 October												
Lieutenant Governor												
Willie Jones	D	B	91.9	90.1, 93.5	93.1	95.4	88.2	8.7	7.8, 9.8	7.5	7.7	12.1
Billy Nungesser	R	W	8.1	6.5, 9.9	6.8	4.6	11.8	91.3	90.2, 92.2	92.5	92.3	87.9
Attorney General												
Ike Jackson	D	B	92.6	90.9, 94.1	94.0	96.5	88.7	9.8	9.0, 10.8	8.7	8.7	13.1
Jeff Landry	R	W	7.4	5.9, 9.1	5.9	3.5	11.3	90.2	89.2, 91.0	91.3	91.3	86.9
Secretary of State												
Gwen Collins-Greenup	D	B	93.2	91.8, 94.4	94.7	97.1	89.3	10.3	9.6, 11.0	8.1	8.0	12.5
Kyle Ardoin	R	W	2.7	2.0, 3.7	1.7	-1.0	4.7	57.7	57.0, 58.4	58.3	57.6	55.2
Thomas Kennedy III	R	W	2.8	2.0, 3.8	2.6	2.1	4.1	26.5	25.7, 27.1	27.1	27.5	25.9
Amanda Smith	R	W	1.3	0.8, 1.9	1.7	1.8	1.9	5.5	4.9, 6.0	6.5	6.9	6.4

**Appendix A5****Area of Interest 5  
Calcasieu****Estimates for Black Voters****Estimates for White Voters**

Area of Interest 5 Calcasieu	Party	Race	95% confidence interval					95% confidence interval					
			EI RxC			EI 2x2	ER	HP	EI RxC			EI 2x2	ER
Treasurer													
Derrick Edwards	D	B	94.3	92.7, 95.6	95.4	98.7	90.6	11.3	10.5, 12.1	9.1	9.3	13.5	
John Schroder	R	W	2.4	1.6, 3.8	1.0	-3.3	4.9	84.0	83.3, 84.6	84.3	84.5	80.7	
Teresa Kenny		W	3.2	2.3, 4.3	4.7	4.5	4.6	4.6	4.0, 5.3	6.1	6.3	5.8	
2019 November													
Secretary of State													
Gwen Collins-Greenup	D	B	95.4	94.0, 96.6	96.9	100.2	92.1	12.6	11.8, 13.7	11.8	11.6	16.1	
Kyle Ardoin	R	W	4.6	3.4, 6.0	3.0	-0.3	7.9	87.4	86.3, 88.2	88.2	88.5	83.9	
2018 November													
Secretary of State													
Gwen Collins-Greenup	D	B	56.8	55.5, 58.4	59.4	59.3	55.2	4.2	3.6, 4.7	2.7	3.1	5.9	
Renee Fontenot Free	D	W	35.3	33.8, 36.6	37.4	36.9	33.0	9.6	9.0, 10.2	8.6	8.4	9.4	
Julie Stokes	R	W	0.9	0.6, 1.4	1.2	0.5	1.3	13.3	12.8, 13.7	13.5	13.2	13.0	
Kyle Ardoin	R	W	1.3	0.8, 1.9	1.1	-0.6	2.5	29.0	28.4, 29.5	29.3	29.9	28.4	
Rick Edmonds	R	W	1.1	0.6, 1.6	1.2	-0.2	1.8	19.1	18.5, 19.6	19.4	18.9	18.4	
Thomas Kennedy III	R	W	1.4	0.9, 1.9	1.3	0.8	2.0	12.4	11.9, 12.9	12.7	13.4	12.6	
Others			3.2	2.5, 4.0	3.2	3.3	4.2	12.5	11.9, 13.0	12.7	13.1	12.3	
2018 December													
Secretary of State													
Gwen Collins-Greenup	D	B	96.5	95.1, 97.7	96.8	100.2	94.1	13.1	12.0, 14.4	12.6	11.9	15.4	
Kyle Ardoin	R	W	3.5	2.3, 4.9	3.2	-0.2	5.9	86.9	85.6, 88.0	87.4	88.1	84.6	
2017 October													
Treasurer													
Derrick Edwards	D	B	89.4	87.2, 91.4	92.3	94.3	89.9	11.2	10.3, 12.1	10.6	10.7	12.5	
Angele Davis	R	W	5.2	3.5, 7.1	5.1	4.5	5.5	39.8	38.7, 40.8	39.9	37.4	38.6	
Neil Riser	R	W	1.8	1.0, 2.8	1.1	0.1	1.5	23.5	22.6, 24.4	23.7	24.2	23.4	
John Schroder	R	W	1.7	1.0, 2.6	0.9	0.0	1.3	18.7	17.8, 19.6	19.0	19.4	18.4	
Others			2.0	1.2, 2.9	0.6	1.1	1.9	6.9	6.3, 7.5	7.2	8.2	7.1	

**Appendix A5****Area of Interest 5  
Calcasieu****Estimates for Black Voters****Estimates for White Voters**

	Party	Race	El Rx	95% confidence interval	El 2x2	ER	HP	El Rx	95% confidence interval	El 2x2	ER	HP
<b>2017 November</b>												
<b>Treasurer</b>												
Derrick Edwards	D	B	97.5	96.1, 98.6	98.9	103.0	97.0	17.0	16.0, 18.1	15.9	17.5	19.0
John Schroder	R	W	2.5	1.4, 3.9	0.9	-3.0	3.0	83.0	81.9, 84.0	84.1	82.5	81.0
<b>2015 October</b>												
<b>Lieutenant Governor</b>												
Kip Holden	D	B	87.2	85.7, 88.6	88.6	89.9	84.8	12.1	11.4, 12.8	10.6	11.3	14.2
Billy Nungesser	R	W	2.7	1.9, 3.6	2.2	1.5	3.5	36.8	36.1, 37.5	37.4	37.1	35.4
John Young	R	W	4.3	3.2, 5.4	4.0	2.9	5.4	41.9	41.1, 42.6	42.1	41.5	40.9
Elbert Guillory	R	B	5.9	4.9, 6.9	5.9	5.8	6.2	9.2	8.6, 9.8	9.7	10.1	9.4
<b>Attorney General</b>												
Ike Jackson	D	B	26.7	25.2, 28.2	27.4	27.4	23.5	2.8	2.3, 3.3	2.5	3.3	3.7
Geri Broussard Baloney	D	B	61.2	55.8, 63.3	63.4	63.2	62.7	6.0	5.3, 7.3	4.8	5.0	7.8
Buddy Caldwell	R	W	7.1	5.9, 9.2	7.1	7.4	7.3	38.9	38.1, 39.7	39.0	38.5	37.4
Jeff Landry	R	W	4.1	2.9, 6.0	2.9	1.0	5.0	50.2	49.1, 51.0	50.6	50.6	48.4
Marty Maley	R	W	1.0	0.6, 1.4	1.1	0.9	1.4	2.1	1.7, 2.5	2.6	2.6	2.6
<b>Secretary of State</b>												
Chris Tyson	D	B	95.9	94.5, 97.0	96.8	98.8	92.9	19.8	18.8, 20.7	18.6	19.6	21.4
Tom Schedler	R	W	4.1	3.0, 5.5	3.2	1.2	7.1	80.2	79.3, 81.2	81.4	80.3	78.6
<b>2015 November</b>												
<b>Lieutenant Governor</b>												
Kip Holden	D	B	97.0	95.7, 98.0	98.0	100.2	94.3	23.5	22.4, 24.5	22.5	23.7	25.8
Billy Nungesser	R	W	3.0	2.0, 4.3	2.1	-0.3	5.7	76.5	75.5, 77.6	77.7	76.4	74.2

Appendix A6 Area of Interest 6 Ascension, Iberville			Estimates for Black Voters						Estimates for White Voters					
			Party	Race	EI RxC	95% confidence interval	EI 2x2	ER	HP	EI RxC	95% confidence interval	EI 2x2	ER	HP
2022 November														
U.S. Senator														
John Kennedy	R	W	5.0	3.6, 6.6	4.8	2.3	9.8	85.8	85.0, 86.6	86.3	87.3	84.8		
Gary Chambers, Jr	D	B	63.2	60.9, 65.4	65.7	65.1	60.7	2.9	1.9, 3.9	1.4	1.3	4.1		
Luke Mixon	D	W	19.3	17.2, 21.4	23.0	19.0	16.6	6.5	5.3, 7.6	5.9	6.4	5.9		
Others			12.6	10.9, 14.3	13.9	13.7	12.9	4.7	3.8, 5.7	4.9	5.0	5.2		
2020 November														
U.S. President														
Biden/Harris	D	W/B	86.6	84.4, 94.7	97.1	100.0	90.9	15.5	12.0, 26.4	8.3	7.4	11.6		
Trump/Pence	R	W/W	11.6	3.6, 33.3	1.1	-2.8	6.1	83.9	72.8, 87.4	89.5	91.2	86.9		
Others			1.8	1.3, 2.4	3.4	2.7	2.9	0.6	0.4, 0.9	1.1	1.3	1.5		
U.S. Senator														
Adrian Perkins	D	B	44.9	42.9, 46.9	46.7	44.3	36.5	3.3	2.3, 4.4	2.7	3.2	5.0		
Derrick Edwards	D	B	32.8	30.8, 34.5	34.8	34.6	32.2	2.3	1.6, 3.1	1.4	1.5	3.2		
Bill Cassidy	R	W	5.8	4.4, 7.3	4.8	2.7	12.4	89.7	88.6, 90.6	90.4	90.6	85.5		
Others			16.6	14.9, 18.3	17.9	18.3	18.9	4.7	3.8, 5.7	4.9	4.7	6.3		
2019 October														
Lieutenant Governor														
Willie Jones	D	B	88.2	85.9, 90.11	88.5	89.0	84.5	5.5	4.4, 6.9	5.0	5.3	9.3		
Billy Nungesser	R	W	11.8	9.9, 14.1	11.4	11.0	15.5	94.5	93.1, 95.6	95.1	94.7	90.7		
Attorney General														
Ike Jackson	D	B	92.1	90.0, 93.7	91.5	94.4	88.5	7.2	6.0, 8.8	6.5	5.9	9.6		
Jeff Landry	R	W	7.9	6.3, 10.0	8.5	5.7	11.5	92.8	91.2, 94.0	93.5	94.1	90.4		
Secretary of State														
Gwen Collins-Greenup	D	B	88.1	86.3, 89.8	89.9	89.9	85.0	9.5	8.4, 10.6	6.7	6.8	10.6		
Kyle Ardoin	R	W	3.9	2.7, 5.2	2.7	1.6	5.7	65.8	64.9, 66.6	66.6	68.2	61.7		
Thomas Kennedy III	R	W	5.7	4.4, 7.2	5.3	6.3	6.2	19.0	18.1, 19.8	19.5	18.5	20.7		
Amanda Smith	R	W	2.4	1.6, 3.3	2.5	2.2	3.1	5.7	4.9, 6.7	7.1	6.6	7.1		

Appendix A6 Area of Interest 6 Ascension, Iberville			Estimates for Black Voters					Estimates for White Voters				
			Party	Race	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2
Treasurer												
Derrick Edwards	D	B	91.8	89.0, 93.6	92.2	94.7	88.9	10.3	9.2, 11.8	7.2	7.3	12.6
John Schroder	R	W	4.8	3.3, 7.4	3.4	1.3	6.7	85.3	83.7, 86.4	86.4	86.5	80.9
Teresa Kenny		W	3.3	2.4, 4.5	3.9	3.9	4.4	4.3	3.4, 5.4	6.3	6.2	6.5
2019 November												
Secretary of State												
Gwen Collins-Greenup	D	B	95.4	93.4, 96.7	95.6	97.4	91.0	11.6	10.2, 13.2	10.4	10.4	15.6
Kyle Ardoin	R	W	4.7	3.3, 6.6	4.3	2.6	9.0	88.4	86.8, 89.8	89.7	89.6	84.4
2018 November												
Secretary of State												
Gwen Collins-Greenup	D	B	56.7	57.7, 58.5	59.7	56.6	51.7	3.8	2.8, 4.7	2.1	2.6	4.4
Renee Fontenot Free	D	W	31.6	29.8, 33.5	35.2	33.6	30.9	8.0	7.1, 8.8	5.8	7.0	8.6
Julie Stokes	R	W	1.4	0.8, 2.1	1.2	1.4	1.6	11.9	11.2, 12.6	12.6	12.3	10.2
Kyle Ardoin	R	W	3.2	2.3, 4.3	2.7	3.4	5.6	36.5	35.7, 37.2	37.0	37.4	37.1
Rick Edmonds	R	W	1.6	1.0, 2.2	1.0	-0.9	3.2	21.8	21.0, 22.5	22.4	23.3	20.9
Thomas Kennedy III	R	W	2.3	1.6, 3.1	2.3	2.4	2.9	9.1	8.5, 9.6	9.4	9.0	9.7
Others			3.3	2.5, 4.2	3.6	3.7	4.1	8.9	8.1, 9.6	9.5	8.4	9.1
2018 December												
Secretary of State												
Gwen Collins-Greenup	D	B	94.0	92.1, 95.5	94.8	97.7	87.9	12.7	11.2, 14.6	11.9	10.4	14.0
Kyle Ardoin	R	W	6.0	4.5, 7.9	5.2	2.2	12.1	87.3	85.4, 88.8	88.2	89.5	86.0
2017 October												
Treasurer												
Derrick Edwards	D	B	83.9	81.3, 86.4	85.8	90.3	81.7	10.4	9.0, 11.9	8.5	8.0	11.2
Angele Davis	R	W	8.4	6.3, 10.5	7.5	6.7	11.0	37.0	35.5, 38.5	37.5	36.3	36.4
Neil Riser	R	W	2.0	1.2, 3.0	0.0	0.1	0.8	7.9	6.9, 8.8	9.3	8.6	8.2
John Schroder	R	W	3.2	2.1, 4.7	2.4	1.5	3.4	39.4	38.0, 40.8	40.3	41.5	38.7
Others			2.5	1.6, 3.6	0.7	1.4	3.1	5.3	4.4, 6.2	7.0	5.7	5.4

Appendix A6 Area of Interest 6 Ascension, Iberville		Estimates for Black Voters							Estimates for White Voters				
		Party	Race	EI RxC	95% confidence interval	EI 2x2	ER	HP	EI RxC	95% confidence interval	EI 2x2	ER	HP
2017 November													
Treasurer													
Derrick Edwards	D	B	97.0	95.0, 98.5	98.5	102.8	97.6	12.9	11.2, 14.6	11.7	11.4	14.2	
John Schroder	R	W	3.0	1.5, 5.0	1.5	-2.9	2.4	87.1	85.4, 88.8	88.3	88.6	85.8	
2015 October													
Lieutenant Governor													
Kip Holden	D	B	93.7	91.0, 95.3	95.8	96.1	93.0	26.6	25.5, 27.9	23.4	23.5	27.8	
Billy Nungesser	R	W	2.2	1.2, 3.4	1.6	1.4	2.7	38.9	37.9, 39.8	39.9	39.5	38.1	
John Young	R	W	2.2	1.2, 4.0	1.2	0.4	2.4	27.9	26.8, 28.8	29.1	29.7	26.7	
Elbert Guillory	R	B	2.0	1.3, 2.9	1.9	2.1	1.9	6.6	5.8, 7.4	7.6	7.2	7.4	
Attorney General													
Ike Jackson	D	B	51.5	49.9, 53.0	52.1	55.5	60.3	1.6	1.0, 2.2	1.1	-0.5	2.9	
Geri Broussard Baloney	D	B	25.7	23.6, 27.5	25.6	24.4	19.5	5.8	4.9, 6.7	5.8	6.3	7.1	
Buddy Caldwell	R	W	13.4	11.5, 15.4	12.2	11.8	10.1	51.3	50.1, 52.4	52.0	52.5	49.5	
Jeff Landry	R	W	3.0	1.9, 4.3	2.1	2.4	3.5	34.6	33.5, 35.6	35.7	35.1	34.5	
Marty Maley	R	W	6.5	5.1, 7.9	6.8	6.0	6.6	6.7	5.9, 7.5	7.2	6.7	6.0	
Secretary of State													
Chris Tyson	D	B	91.9	89.5, 94.0	92.4	91.9	90.1	15.2	13.7, 16.7	13.4	16.2	20.0	
Tom Schedler	R	W	8.1	6.0, 10.5	7.7	8.1	9.9	84.8	83.3, 86.3	86.5	83.8	80.0	
2015 November													
Lieutenant Governor													
Kip Holden	D	B	97.5	95.9, 98.6	99.0	100.7	97.6	33.7	32.4, 35.3	31.2	33.1	35.4	
Billy Nungesser	R	W	2.5	1.4, 4.1	0.8	-0.7	2.4	66.3	64.7, 67.6	68.8	66.9	64.6	



Appendix A7			Estimates for Black Voters					Estimates for White Voters				
Area of Interest 7												
East Baton Rouge, East Feliciana												
	Party	Race	EI RxC	95% confidence interval	EI 2x2	ER	HP	EI RxC	95% confidence interval	EI 2x2	ER	HP
2022 November												
U.S. Senator												
John Kennedy	R	W	3.8	3.2, 4.4	2.0	1.7	4.8	78.2	77.6, 78.8	78.5	77.2	72.4
Gary Chambers, Jr	D	B	65.2	64.2, 66.1	66.2	66.3	61.6	6.6	5.8, 7.4	4.4	4.8	7.2
Luke Mixon	D	W	23.5	22.6, 24.3	23.6	23.1	25.4	13.8	13.1, 14.5	13.3	13.4	16.7
Others			7.6	7.0, 8.2	8.8	9.0	8.2	1.3	1.0, 1.7	4.0	4.5	3.7
2020 November												
U.S. President												
Biden/Harris	D	W/B	89.5	75.8, 95.7	97.4	98.6	94.4	25.4	20.3, 36.2	15.9	15.8	20.6
Trump/Pence	R	W/W	9.6	3.5, 23.2	1.4	0.0	4.1	74.0	63.1, 79.1	81.6	81.9	77.3
Others			0.9	.7, 1.1	1.4	1.4	1.4	0.7	.5, .8	2.5	2.4	2.1
U.S. Senator												
Adrian Perkins	D	B	50.3	49.5, 51.2	51.2	51.3	49.7	10.9	10.0, 12.3	9.2	9.0	12.4
Derrick Edwards	D	B	29.4	28.6, 30.1	30.5	30.5	27.8	1.7	1.3, 2.3	0.7	1.3	2.6
Bill Cassidy	R	W	5.6	5.0, 6.2	3.5	2.4	6.6	85.1	83.8, 85.9	85.7	85.2	80.4
Others			14.7	14.0, 15.3	15.8	15.8	15.9	2.3	1.7, 2.8	3.8	4.6	4.5
2019 October												
Lieutenant Governor												
Willie Jones	D	B	82.2	81.2, 83.2	83.8	84.6	80.5	11.0	10.2, 12.0	11.2	13.2	17.0
Billy Nungesser	R	W	17.8	16.8, 18.8	16.1	15.4	19.5	89.0	88.0, 89.8	88.8	86.7	83.0
Attorney General												
Ike Jackson	D	B	89.0	88.1, 90.2	90.6	91.1	87.5	14.6	13.6, 16.7	14.2	16.2	20.8
Jeff Landry	R	W	11.0	9.8, 11.9	9.4	8.9	12.5	85.4	83.3, 86.4	85.8	83.8	79.2
Secretary of State												
Gwen Collins-Greenup	D	B	90.9	84.3, 92.1	92.1	92.6	88.6	15.8	14.6, 21.2	12.2	14.2	18.0
Kyle Ardoin	R	W	5.1	4.1, 10.8	3.3	2.4	6.3	68.3	63.9, 69.2	69.0	66.8	65.8
Thomas Kennedy III	R	W	2.9	2.3, 3.9	2.5	2.8	3.0	12.9	12.0, 13.5	13.9	14.0	11.6
Amanda Smith	R	W	1.2	.9, 1.6	1.5	2.0	2.1	3.0	2.3, 3.6	5.2	5.1	4.6

Appendix A7			Estimates for Black Voters					Estimates for White Voters				
Area of Interest 7												
East Baton Rouge, East Feliciana												
	Party	Race	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2	ER	HP
Treasurer												
Derrick Edwards	D	B	94.0	88.3, 95.0	94.9	95.2	91.9	14.9	14.0, 19.0	10.3	12.2	17.7
John Schroder	R	W	3.6	2.6, 9.5	1.6	0.8	4.3	83.0	78.8, 83.8	84.0	81.7	77.1
Teresa Kenny		W	2.4	2.0, 2.9	3.7	4.0	3.8	2.2	1.8, 2.6	6.0	6.1	5.3
2019 November												
Secretary of State												
Gwen Collins-Greenup	D	B	95.8	94.9, 96.5	97.7	98.3	94.7	17.6	16.5, 19.0	16.9	17.3	23.9
Kyle Ardoin	R	W	4.2	3.5, 5.1	3.0	1.7	5.3	82.4	81.0, 83.5	83.2	82.7	76.1
2018 November												
Secretary of State												
Gwen Collins-Greenup	D	B	61.3	60.5, 62.2	62.2	62.5	57.5	4.7	4.0, 5.6	2.7	4.3	5.9
Renee Fontenot Free	D	W	28.6	27.8, 29.4	29.5	29.6	30.7	12.5	11.8, 13.2	11.0	11.1	12.1
Julie Stokes	R	W	1.3	1.0, 1.7	1.2	0.8	1.7	15.0	14.3, 15.6	15.5	15.0	14.4
Kyle Ardoin	R	W	3.6	3.1, 4.0	3.0	3.2	4.0	30.1	29.5, 30.6	30.5	29.7	29.9
Rick Edmonds	R	W	1.5	1.2, 1.8	1.2	0.2	2.0	24.8	24.3, 25.2	25.2	23.3	24.2
Thomas Kennedy III	R	W	1.0	.6, 1.4	1.0	0.7	1.1	5.2	4.7, 5.7	6.2	8.0	5.5
Others			2.7	2.2, 3.2	2.8	3.0	3.0	7.7	6.9, 8.4	8.5	8.5	8.0
2018 December												
Secretary of State												
Gwen Collins-Greenup	D	B	96.8	95.9, 97.6	97.4	98.6	95.0	19.5	18.4, 20.7	18.0	19.9	23.8
Kyle Ardoin	R	W	3.2	2.4, 4.1	2.6	1.4	5.0	80.5	79.3, 81.6	82.0	80.1	76.2
2017 October												
Treasurer												
Derrick Edwards	D	B	87.4	85.7, 88.9	89.2	90.0	85.7	11.4	10.6, 12.2	9.3	9.6	14.7
Angele Davis	R	W	5.4	4.3, 6.7	4.6	3.6	6.5	46.9	46.0, 47.7	47.3	48.9	44.9
Neil Riser	R	W	3.4	2.7, 4.3	3.1	3.2	3.9	15.8	15.1, 16.3	16.3	15.3	15.5
John Schroder	R	W	1.9	1.3, 2.7	1.6	0.8	2.1	22.0	21.4, 22.6	22.4	21.1	20.7
Others			1.9	1.3, 2.5	2.2	2.4	1.8	3.9	3.4, 4.5	5.2	5.0	4.2

Appendix A7			Estimates for Black Voters					Estimates for White Voters				
Area of Interest 7												
East Baton Rouge, East Feliciana												
	Party	Race	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2	ER	HP
2017 November												
Treasurer												
Derrick Edwards	D	B	97.4	96.5, 98.2	98.2	100.0	96.0	19.6	18.6, 20.6	18.7	18.9	23.6
John Schroder	R	W	2.6	1.8, 3.5	1.9	0.0	4.0	80.4	79.4, 81.4	81.3	81.1	76.4
2015 October												
Lieutenant Governor												
Kip Holden	D	B	93.7	92.9, 94.5	94.4	94.7	92.0	32.0	30.9, 32.9	28.9	30.6	35.6
Billy Nungesser	R	W	2.2	1.7, 2.7	1.7	1.6	2.8	30.0	29.3, 30.6	30.9	30.6	27.1
John Young	R	W	1.9	1.5, 2.4	1.6	1.2	2.6	31.1	30.3, 31.7	31.9	30.6	29.5
Elbert Guillory	R	B	2.2	1.7, 2.8	2.4	2.5	2.6	6.9	6.2, 7.8	8.2	8.2	7.8
Attorney General												
Ike Jackson	D	B	36.8	36.0, 37.6	37.5	37.6	34.7	2.1	1.6, 2.7	1.6	2.1	3.9
Geri Broussard Baloney	D	B	36.5	35.7, 37.3	37.1	36.0	35.1	6.7	5.9, 7.5	6.2	7.4	8.3
Buddy Caldwell	R	W	22.1	21.2, 22.9	21.2	21.8	24.5	54.5	53.7, 55.2	54.6	53.7	53.7
Jeff Landry	R	W	2.4	2.0, 3.0	2.1	2.3	3.1	31.4	30.8, 32.1	31.9	31.1	28.1
Marty Maley	R	W	2.2	1.8, 2.6	2.3	2.4	2.7	5.2	4.6, 5.7	6.0	5.8	6.0
Secretary of State												
Chris Tyson	D	B	94.1	93.2, 95.0	95.4	96.0	92.7	13.3	12.4, 14.3	12.1	14.4	19.6
Tom Schedler	R	W	5.9	5.0, 6.8	4.5	3.9	7.3	86.7	85.7, 87.6	87.9	85.6	80.4
2015 November												
Lieutenant Governor												
Kip Holden	D	B	95.3	94.3, 96.2	96.0	96.4	94.1	39.9	38.6, 41.2	37.9	39.1	46.1
Billy Nungesser	R	W	4.7	3.8, 5.7	4.0	3.5	5.9	60.1	58.8, 61.4	62.1	61.0	53.9

**Appendix B1**  
**Louisiana State Senate**  
**Elections**

**Estimates for Black Voters**

**Estimates for White Voters**

	Party	Race	Vote	El RxC	95% confidence interval	El 2x2	ER	HP	El RxC	95% confidence interval	El 2x2	ER	HP
<b>2015 October</b>													
<b>St Senate District 2</b>													
Troy Brown	D	B	72.0	87.6	85.9, 89.1	88.6	88.3	86.7	53.2	51.2, 55.4	51.2	50.7	56.2
Eric Weil	no	W	15.7	2.0	1.3, 3.0	1.0	1.2	2.2	33.0	31.6, 34.3	34.6	34.3	27.6
Chris Delpit	D	B	12.3	10.4	9.0, 11.9	10.6	10.6	11.0	13.8	11.9, 15.5	14.1	15.1	16.2
<b>St Senate District 7</b>													
Troy Carter	D	B	37.4	59.1	56.8, 61.2	60.2	59.7	55.1	13.7	11.6, 15.9	11.2	11.5	13.8
Jeffrey Arnold	D	W	33.3	9.4	7.7, 11.2	7.1	6.7	11.4	62.8	60.5, 64.8	66.0	63.4	61.8
Leslie Ellison	D	B	15.0	20.5	18.6, 22.3	21.1	22.2	22.6	8.1	6.4, 9.8	8.3	7.2	9.5
Roy Glapion	D	B	14.3	11.1	9.2, 13.0	11.5	11.4	10.9	15.5	13.3, 17.7	16.4	17.9	14.9
<b>St Senate District 38</b>													
Richard Burford	R	W	35.2	6.0	3.9, 8.9	4.8	2.3	na	49.3	47.9, 50.9	51.0	53.6	48.1
John Milkovich	D	W	33.3	63.5	60.5, 66.4	68.2	63.7		17.8	15.9, 19.7	15.8	15.1	14.2
Cloyce Clark	R	W	21.6	3.1	1.7, 4.9	0.5	0.8		31.7	30.2, 32.8	32.5	32.1	35.7
Jemayel Warren	D	B	9.9	27.4	25.6, 29.1	29.1	33.4		1.2	.7, 1.9	0.4	0.0	2.0
<b>2015 November</b>													
<b>St Senate District 7</b>													
Troy Carter	D	B	56.8	87.1	84.5, 89.4	88.5	87.8	82.8	17.6	14.1, 21.6	14.9	15.6	17.1
Jeffrey Arnold	D	W	43.2	12.9	10.6, 15.5	11.4	12.1	17.2	82.4	78.4, 85.9	85.0	84.2	82.9
<b>2017 April</b>													
<b>St Senate District 2</b>													
Warren Harang	D	W	26.5	3.0	1.8, 4.7	1.6	3.2	3.9	56.3	53.9, 58.2	58.0	54.0	52.8
Edward Price	D	B	22.1	34.3	32.0, 36.5	34.0	34.1	28.9	6.6	4.0, 9.2	8.4	7.0	5.3
Elton Aubert	D	B	15.1	23.2	21.3, 25.0	24.4	24.3	27.5	5.8	3.8, 7.9	3.3	3.5	2.7
Wayne Brigalia	R	W	7.0	2.1	1.3, 3.2	0.4	0.0	1.4	13.0	11.4, 14.3	15.5	15.3	15.1
Albert Burl	D	B	6.4	9.6	8.6, 10.5	10.8	12.5	17.4	1.9	1.0, 3.0	0.5	0.0	1.3
Others			22.9	27.9	25.6, 30.0	22.7	28.9	21.2	16.5	13.8, 19.2	16.9	20.7	22.9

**Appendix B1****Louisiana State Senate  
Elections****Estimates for Black Voters****Estimates for White Voters****95%  
confidence****95%  
confidence****2017 May  
St Senate District 2**

	Party	Race	Vote	El RxC	interval	El 2x2	ER	HP	El RxC	interval	El 2x2	ER	HP
Edward Price	D	B	62.6	96.0	94.7, 97.1	94.3	96.7	92.1	9.9	7.8, 12.1	12.3	11.3	10.7
Warren Harang	D	W	37.4	4.0	2.9, .4	5.8	3.4	7.9	90.1	87.9, 92.2	87.7	88.7	89.3

**2019 October  
St Senate District 3**

Joseph Bouie	D	B	44.3	56.8	55.4, 58.2	57.0	58.9	54.1	24.1	21.6, 26.6	21.3	19.0	13.4
John Bagneris	D	B	29.1	36.0	34.5, 37.3	36.4	35.7	36.1	18.8	16.4, 21.3	17.4	17.7	14.5
Kathleen Doody	R	W	18.6	1.6	1.1, .3	1.5	-1.1	3.1	48.8	47.1, 50.5	48.3	52.7	63.1
Brandon Gregoire	D	W	8.0	5.6	4.7, .5	6.4	6.4	6.7	8.3	6.1, 10.3	10.6	10.9	9.0

**St Senate District 36**

Robert Mills	R	W	47.7	3.2	1.7, .3	na	-2.5	3.3	59.5	58.5, 60.4	60.4	61.6	55.5
Ryan Gatti	R	W	37.7	41.4	37.3, 45.8		52.6	49.9	37.3	35.9, 38.6	34.2	33.9	37.9
Mattie Preston	D	B	14.6	55.3	51.0, 59.3		49.9	46.8	3.3	2.0, .6	3.2	4.5	6.6

**St Senate District 38**

Barry Milligan	R	W	50.7	2.0	1.1, .2	0.8	-5.8	na	78.7	77.3, 79.8	80.0	79.2	76.6
John Milkovich	D	W	26.3	42.1	39.5, 45.1	48.7	50.0		18.1	16.1, 19.8	13.8	17.4	17.0
Katrina Early	D	B	23.0	55.9	53.0, 58.5	58.1	55.8		3.2	1.7, .3	2.7	3.3	6.4

**St Senate District 39**

Gregory Tarver	D	B	69.0	96.7	95.7, 97.6	97.0	97.0	93.8	21.8	19.9, 23.8	19.4	21.7	21.3
James Slagle	R	W	31.0	3.3	2.5, .3	3.0	3.0	6.2	78.3	76.2, 80.1	80.6	78.3	78.7

**2021 June, Special  
St Senate District 7**

Gary Carter	D	B	60.2	94.6	93.2, 96.4	95.6	100.9	94.1	21.1	18.1, 24.2	18.8	18.5	10.4
Patricka McCarty	R	W	17.2	1.4	.7, .4	0.6	-1.3	1.2	35.4	32.6, 37.9	38.1	40.8	32.6
Joanna Capiello-Leopold	D	W	13.8	1.9	1.1, .0	1.7	-0.3	2.3	27.2	24.8, 29.4	28.7	24.8	38.1
Mack Cormier	D	W	8.8	1.8	.9, .9	1.6	0.9	2.4	16.4	14.3, 18.5	17.7	16.0	18.8

**Appendix B2**  
**Louisiana State House**  
**Elections**

**2015 October**  
**St House District 34**

Wilford Carter	D	B	38.4	48.6	46.7, 50.3	49.1	50.0	48.3	6.2	2.6, 10.9	4.2	3.4	na
A.B. Franklin	D	B	35.2	40.8	38.8, 42.8	41.6	41.4	41.0	17.5	12.8, 22.7	15.5	16.8	
Thomas Quirk	R	W	18.3	2.8	1.4, 4.4	1.2	0.7	3.7	68.4	63.1, 72.9	74.0	71.0	
Alvin Joseph	D	B	8.1	7.8	6.5, 9.1	8.1	7.9	6.9	7.9	4.4, 11.9	8.4	9.0	
St House District 63													
Ulysses Addison	D	B	32.8	36.9	33.9, 39.8	38.2	37.2	37.4	15.9	4.9, 27.4	11.4	11.0	na
Barbara West Carpenter	D	B	29.7	30.9	27.9, 33.9	28.9	30.3	29.0	25.1	13.2, 36.7	32.0	33.8	
Joyce Plummer	D	B	22.2	23.5	20.9, 26.0	24.1	24.5	24.2	16.7	7.0, 26.8	13.8	11.9	
Dean Vicknair	D	W	7.8	2.6	1.4, 4.3	2.0	1.3	2.5	29.7	23.1, 35.0	32.8	30.8	
James Slaughter	D	B	7.6	6.2	4.6, 7.8	6.2	6.5	5.9	12.7	6.2, 18.9	13.0	12.9	
St House District 66													
Darrell Ourso	R	W	37.7	6.5	1.5, 16.9	0.5	na	na	43.2	40.9, 44.8	44.9	51.2	43.3
Rick Edmonds	R	W	23.2	6.3	1.2, 15.3	1.4			25.7	23.5, 27.2	27.3	29.5	24.9
Rick Bond	R	W	15.6	9.0	2.2, 25.1	39.8			16.0	12.8, 17.8	11.8	17.1	16.8
Antoine Pierce	D	B	15.3	71.3	48.1, 84.9	85.8			7.7	4.6, 12.5	4.8	-8.7	5.4
Rusty Secrist	R	W	8.2	7.0	1.9, 14.5	0.1			7.4	5.7, 8.8	9.9	11.2	9.5
St House District 68													
Steve Carter	R	W	54.7	20.2	7.3, 34.2	9.7	10.9	na	62.6	59.4, 65.6	na	62.6	59.8
Patty Merrick	D	B	26.5	72.5	58.5, 85.4	88.9	87.6		17.0	13.9, 20.1		14.4	18.0
Robert Cipriano	R	W	18.8	7.3	1.3, 16.4	1.6	1.1		20.4	18.2, 22.3		22.9	22.2
St House District 70													
Franklin Foil	R	W	74.4	22.1	13.0, 34.6	16.2	14.4	na	88.6	84.5, 91.4	90.6	90.3	85.9
Shamaka Schumake	D	B	25.6	77.9	65.4, 87.0	84.0	85.6		11.4	8.6, 15.1	9.2	9.7	14.1

**Appendix B2****Louisiana State House  
Elections****Estimates for Black Voters****Estimates for White Voters****95%  
confidence****95%  
confidence****2019 February****St House District 62**

Dennis Aucoin	R	W	45.5	9.7	4.3, 17.0	11.9	1.8	na	60.4	57.0, 63.0	61.0	62.6	57.8
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	Party	Race	Vote	El RxC	interval	El 2x2	ER	HP	El RxC	interval	El 2x2	ER	HP
Roy Daryl Adams	Ind	W	30.8	33.3	26.7, 39.4	28.4	31.1		29.1	26.5, 32.0	31.0	32.4	31.4
Tarries Greenup	D	B	11.9	36.9	30.9, 41.6	40.7	43.9		2.4	1.0, 4.6	0.6	0.3	2.2
Jonathan Loveall	D	W	7.3	12.5	7.8, 17.0	18.9	11.5		4.8	3.0, 6.7	2.7	2.7	4.3
Jerel Giarrusso	D	W	4.6	7.7	4.8, 10.8	9.5	11.3		3.2	2.1, 4.5	2.3	1.9	4.2

**2019 October****St House District 62**

Roy Daryl Adams	Ind	W	38.0	59.1	53.0, 64.5	65.5	67.4	70.9	25.5	22.1, 29.2	21.3	27.3	23.5
Johnny Arceneaux	R	W	30.6	14.4	9.9, 19.5	14.3	11.5	17.1	40.6	37.6, 43.4	41.0	44.3	50.8
Bradley Behrnes	R	W	21.2	5.1	2.2, 9.3	6.2	4.8	3.3	30.7	28.0, 32.8	29.9	25.9	24.0
Derald Spears	no	B	10.2	21.4	17.4, 24.8	26.8	16.2	8.8	3.2	1.4, 5.6	0.6	2.4	1.7

**St House District 68**

Scott McKnight	R	W	33.3	6.8	1.6, 14.7	0.0	1.1	na	40.1	38.0, 41.8	41.7	40.9	40.7
Taryn Branson	D	B	23.7	60.2	49.3, 69.9	64.6	75.8		15.7	13.3, 18.2	10.2	11.2	15.8
Laura White Adams	R	W	19.8	6.8	2.2, 12.9	3.0	0.7		22.9	21.2, 24.4	24.5	24.0	20.7
Tommy Dewey	R	W	12.4	7.8	2.6, 14.1	1.8	3.4		13.0	11.3, 14.6	14.9	14.1	13.4
Joshua Hajiakbarifini	D		10.8	18.4	11.3, 25.6	21.4	18.9		8.4	6.6, 10.2	9.1	9.6	9.4

**2019 November****St House District 68**

Scott McKnight	R	W	57.7	15.2	4.1, 31.4	0.7	2.8	na	69.6	35.2, 73.1	71.5	72.6	66.3
Taryn Branson	D	B	42.3	84.8	68.6, 95.9	99.4	96.8		30.4	26.9, 34.9	28.5	27.3	33.7

**March 2022, Special****St House District 101**

Dawn Chanet Collins	D	B	28.9	31.8	29.0, 34.4	34.5	36.7	34.6	11.4	3.6, 22.0	3.1	-2.4	na
Terry Hebert	I	W	9.7	2.6	1.2, 4.5	2.1	0.6	3.0	45.0	34.1, 54.2	53.3	61.9	
Vanessa Caston LeFluer	D	B	61.5	65.6	62.6, 68.6	63.7	62.5	62.4	43.6	30.9, 56.3	43.5	41.0	

**Lisa R. Handley**  
CURRICULUM VITAE

## **Professional Experience**

Dr. Handley has over thirty years of experience in the areas of redistricting and voting rights, both as a practitioner and an academician, and is recognized nationally and internationally as an expert on these subjects. She has advised numerous clients on redistricting and has served as an expert in dozens of redistricting and voting rights court cases. Her clients have included the U.S. Department of Justice, civil rights organizations, independent redistricting commissions (Arizona, Colorado, Michigan) and scores of state and local jurisdictions. Internationally, Dr. Handley has provided electoral assistance in more than a dozen countries, serving as a consultant on electoral system design and redistricting for the United Nations, UNDP, IFES, and International IDEA. In addition, Dr. Handley served as Chairman of the Electoral Boundaries Commission in the Cayman Islands.

Dr. Handley has been actively involved in research, writing and teaching on the subjects of redistricting and voting rights. She has co-written a book, Minority Representation and the Quest for Voting Equality (Cambridge University Press, 1992) and co-edited a volume (Redistricting in Comparative Perspective, Oxford University Press, 2008) on these subjects. Her research has also appeared in peer-reviewed journals such as *Journal of Politics*, *Legislative Studies Quarterly*, *American Politics Quarterly*, *Journal of Law and Politics*, and *Law and Policy*, as well as law reviews and edited books. She has taught political science undergraduate and graduate courses related to these subjects at several universities including the University of Virginia and George Washington University. Dr. Handley is a Visiting Research Academic at Oxford Brookes University in the United Kingdom.

Dr. Handley is the President of Frontier International Consulting, a consulting firm that specializes in providing electoral assistance in transitional and post-conflict democracies. She also works as an independent election consultant both in the United States and internationally.

## **Education**

Ph.D. The George Washington University, Political Science, 1991

## **Present Employment**

**President**, Frontier International Electoral Consulting LLC (since co-founding company in 1998).

**Senior International Electoral Consultant**, Technical assistance for clients such as the UN, UNDP and IFES on electoral system design and boundary delimitation

**Visiting Research Academic**, Centre for Development and Emergency Practice (CENDEP), Oxford Brookes University



## **U.S. Clients since 2010**

American Civil Liberties Union – expert testimony in Voting Right Act challenges in Arkansas, Georgia and Louisiana, expert testimony in Ohio partisan gerrymander challenge and expert testimony in challenge to Commerce Department inclusion of citizenship question on 2020 census form

Lawyers Committee for Civil Rights Under Law – expert testimony in challenges to statewide judicial elections in Texas and Alabama

US Department of Justice – expert witness testimony in several Section 2 and Section 5 cases (City of Euclid, Euclid School Board, City of Port Chester, City of Eastpoint, two Texas challenges)

Alaska: Redistricting Board (2001 and 2011) – redistricting consultation, expert witness testimony

Albany County, NY (2021) – redistricting consultation

Arizona: Independent Redistricting Board (2001 and 2021) – redistricting consultation

Boston (2022) – redistricting consultation

Colorado: Redistricting Commission (2021), Redistricting Board (2001 and 2011) – redistricting consultation

Connecticut: State Senate and State House of Representatives (2001 and 2011) – redistricting consultation

Kansas: State Legislative Research Department (2001, 2011, 2021) – redistricting consultation

Massachusetts: State Senate (2001 and 2011) – redistricting consultation

Michigan: Michigan Independent Citizens Redistricting Commission (2021) – redistricting consultation

Miami-Dade County, Florida: County Attorney (2001 and 2011) – redistricting consultation

Monroe County, NY (2022) – redistricting consultation

New Mexico: State House (2001) – redistricting consultation, expert witness testimony

New York: State Assembly (2001), State Senate (2021) – redistricting consultation

New York City: Redistricting Commission and Charter Commission (2001, 2011, 2021 and 2022) – redistricting consultation

Pima County, AZ (2022) – redistricting consultation

Rhode Island: State Senate and State House (2001 and 2021) – redistricting consultation

Virginia (2015-2017) – redistricting consultant for Governor during redistricting litigation

## International Clients

### United Nations

- Afghanistan – electoral system design and district delimitation expert
- Bangladesh (UNDP) – redistricting expert
- Sierra Leone (UNDP) – redistricting expert
- Liberia (UNMIL, UN peacekeeping mission) – redistricting expert
- Democratic Republic of the Congo (MONUC, UN peacekeeping mission) – election feasibility mission, electoral system design and redistricting expert
- Kenya (UN) – electoral system design and redistricting expert
- Haiti (UN) – election feasibility mission, electoral system design and redistricting expert
- Zimbabwe (UNDP) – redistricting expert
- Lead Writer on the topic of boundary delimitation (redistricting) for ACE (Joint UN, IFES and IDEA project on the Administration and Cost of Elections Project)

### International Foundation for Election Systems (IFES)

- Afghanistan – district delimitation expert
- Sudan – redistricting expert
- Kosovo – electoral system design and redistricting expert
- Nigeria – redistricting expert
- Nepal – redistricting expert
- Georgia – electoral system design and district delimitation expert
- Yemen – redistricting expert
- Lebanon – electoral system design and redistricting expert
- Malaysia – electoral system design and redistricting expert
- Myanmar – electoral system design and redistricting expert
- Ukraine – electoral system design and redistricting expert
- Pakistan – consultant for developing redistricting software
- Principal consultant for the Delimitation Equity Project – conducted research, wrote reference manual and developed training curriculum
- Writer on electoral boundary delimitation (redistricting), Elections Standards Project
- Training – developed training curriculum and conducted training workshops on electoral boundary delimitation (redistricting ) in Azerbaijan and Jamaica

### International Institute for Democracy and Electoral Assistance (International IDEA):

- Consultant on electoral dispute resolution systems
- Technology consultant on use of GIS for electoral district delimitation
- Training – developed training material and conducted training workshop on electoral boundary delimitation (redistricting ) for African election officials (Mauritius)
- Curriculum development – boundary delimitation curriculum for the BRIDGE Project

Other international clients have included The Cayman Islands; the Australian Election Commission; the Boundary Commission of British Columbia, Canada; and the Global Justice Project for Iraq.

## **Publications**

### ***Books:***

Does Torture Prevention Work? Liverpool University Press, 2016 (served as editor and author, with Richard Carver)

Comparative Redistricting in Perspective, Oxford University Press, 2008 (first editor, with Bernard Grofman).

Delimitation Equity Project: Resource Guide, Center for Transitional and Post-Conflict Governance at IFES and USAID publication, 2006 (lead author).

Minority Representation and the Quest for Voting Equality, Cambridge University Press, 1992 (with Bernard Grofman and Richard Niemi).

### ***Academic Journal Articles:***

"Drawing Electoral Districts to Promote Minority Representation, Representation, Volume 58 (3), 2022, pp. 373-389.

"Evaluating national preventive mechanisms: a conceptual model," Journal of Human Rights Practice, Volume 12 (2), July 2020 (with Richard Carver).

"Minority Success in Non-Majority Minority Districts: Finding the 'Sweet Spot'," Journal of Race, Ethnicity and Politics, Volume 5 (2), July 2020, pp. 275-298 (with David Lublin, Thomas Brunell and Bernard Grofman).

"Has the Voting Rights Act Outlived its Usefulness: In a Word, "No," Legislative Studies Quarterly, Volume 34 (4), November 2009 (with David Lublin, Thomas Brunell and Bernard Grofman).

"Delimitation Consulting in the US and Elsewhere," Zeitschrift für Politikberatung, volume 1 (3/4), 2008 (with Peter Schrott).

"Drawing Effective Minority Districts: A Conceptual Framework and Some Empirical Evidence," North Carolina Law Review, volume 79 (5), June 2001 (with Bernard Grofman and David Lublin).

"A Guide to 2000 Redistricting Tools and Technology" in The Real Y2K Problem: Census 2000 Data and Redistricting Technology, edited by Nathaniel Persily, New York: Brennan Center, 2000.

"1990s Issues in Voting Rights," Mississippi Law Journal, 65 (2), Winter 1995 (with Bernard Grofman).

"Minority Turnout and the Creation of Majority-Minority Districts," American Politics Quarterly, 23 (2), April 1995 (with Kimball Brace, Richard Niemi and Harold Stanley).

"Identifying and Remedying Racial Gerrymandering," Journal of Law and Politics, 8 (2), Winter 1992 (with Bernard Grofman).

"The Impact of the Voting Rights Act on Minority Representation in Southern State Legislatures," Legislative Studies Quarterly, 16 (1), February 1991 (with Bernard Grofman).

"Minority Population Proportion and Black and Hispanic Congressional Success in the 1970s and 1980s," American Politics Quarterly, 17 (4), October 1989 (with Bernard Grofman).

"Black Representation: Making Sense of Electoral Geography at Different Levels of Government," Legislative Studies Quarterly, 14 (2), May 1989 (with Bernard Grofman).

"Minority Voting Equality: The 65 Percent Rule in Theory and Practice," Law and Policy, 10 (1), January 1988 (with Kimball Brace, Bernard Grofman and Richard Niemi).

"Does Redistricting Aimed to Help Blacks Necessarily Help Republicans?" Journal of Politics, 49 (1), February 1987 (with Kimball Brace and Bernard Grofman).

***Chapters in Edited Volumes:***

"Political representation of small minorities and the international normative framework in districted electoral systems," Addis Ababa University Law School series, 2021 (with Richard Carver and Sam Ponniah).

"Effective torture prevention," Research Handbook on Torture, Sir Malcolm Evans and Jens Modvig (eds), Cheltenham: Edward Elgar, 2020 (with Richard Carver).

"Redistricting" in Oxford Handbook of Electoral Systems, Erik Herron Robert Pekkanen and Matthew Shugart (eds), Oxford: Oxford University Press, 2018.

"Role of the Courts in the Electoral Boundary Delimitation Process," in International Election Remedies, John Hardin Young (ed.), Chicago: American Bar Association Press, 2017.

"One Person, One Vote, Different Values: Comparing Delimitation Practices in India, Canada, the United Kingdom, and the United States," in Fixing Electoral Boundaries in India, edited by Mohd. Sanjeer Alam and K.C. Sivaramakrishnan, New Delhi: Oxford University Press, 2015.

"Delimiting Electoral Boundaries in Post-Conflict Settings," in Comparative Redistricting in Perspective, edited by Lisa Handley and Bernard Grofman, Oxford: Oxford University Press, 2008.

"A Comparative Survey of Structures and Criteria for Boundary Delimitation," in Comparative Redistricting in Perspective, edited by Lisa Handley and Bernard Grofman, Oxford: Oxford University Press, 2008.

"Drawing Effective Minority Districts: A Conceptual Model," in Voting Rights and Minority Representation, edited by David Bositis, published by the Joint Center for Political and Economic Studies, Washington DC, and University Press of America, New York, 2006.

"Electing Minority-Preferred Candidates to Legislative Office: The Relationship Between Minority Percentages in Districts and the Election of Minority-Preferred Candidates," in Race and Redistricting in the 1990s, edited by Bernard Grofman; New York: Agathon Press, 1998 (with Bernard Grofman and Wayne Arden).

"Estimating the Impact of Voting-Rights-Related Districting on Democratic Strength in the U.S. House of Representatives," in Race and Redistricting in the 1990s, edited by Bernard Grofman; New York: Agathon Press, 1998 (with Bernard Grofman).

"Voting Rights in the 1990s: An Overview," in Race and Redistricting in the 1990s, edited by Bernard Grofman; New York: Agathon Press, 1998 (with Bernard Grofman and Wayne Arden).

"Racial Context, the 1968 Wallace Vote and Southern Presidential Dealignment: Evidence from North Carolina and Elsewhere," in Spatial and Contextual Models in Political Research, edited by Munroe Eagles; Taylor and Francis Publishing Co., 1995 (with Bernard Grofman).

"The Impact of the Voting Rights Act on Minority Representation: Black Officeholding in Southern State Legislatures and Congressional Delegations," in The Quiet Revolution: The Impact of the Voting Rights Act in the South, 1965-1990, eds. Chandler Davidson and Bernard Grofman, Princeton University Press, 1994 (with Bernard Grofman).

"Preconditions for Black and Hispanic Congressional Success," in United States Electoral Systems: Their Impact on Women and Minorities, eds. Wilma Rule and Joseph Zimmerman, Greenwood Press, 1992 (with Bernard Grofman).

***Additional Writings of Note:***

"Boundary Delimitation" Topic Area for the Administration and Cost of Elections (ACE) Project, 1998. Published by the ACE Project on the ACE website (electronic publication at [www.aceproject.org](http://www.aceproject.org)).

Amicus brief presented to the US Supreme Court in Gill v. Whitford, Brief of Political Science Professors as Amici Curiae, 2017 (one of many social scientists to sign brief)

Amicus brief presented to the US Supreme Court in Shelby County v. Holder, Brief of Historians and Social Scientists as Amici Curiae, 2013 (one of several dozen historians and social scientists to sign brief)

Amicus brief presented to the US Supreme Court in Bartlett v. Strickland, 2008 (with Nathaniel Persily, Bernard Grofman, Bruce Cain, and Theodore Arrington).

## Recent Court Cases

Pending cases:

- Michigan: *Agee v. Benson* (Case No. 1:22-CV-00272-PLM-RMK-JTN) (U.S. District Court, Western District of Michigan, Southern Division)
- Louisiana: *Robinson v. Ardoin* (Civil Action No. 3:22-cv-00211-SDD-RLB) (U.S. District Court, Middle District of Louisiana)
- Georgia: *Alpha Phi Alpha Fraternity et al. v. Raffensperger et al.* (Docket Number: 121-CV-05337-SCJ) (Northern District of Georgia)
- Arkansas: *Arkansas State Conference NAACP et al. v. Arkansas Board of Apportionment et al.* (Case Number: 4:21-cv-01239-LPR) (Eastern District of Arkansas)
- Ohio: *League of Women Voters of Ohio et al. v. Ohio Redistricting Commission et al.* (Case Number: 2021-1193) (Supreme Court of Ohio); *League of Women Voters of Ohio et al. v. Governor DeWine* (Case Number: 2021-1449) (Supreme Court of Ohio)

*Ohio Philip Randolph Institute v. Larry Householder* (2019) – partisan gerrymander challenge to Ohio congressional districts; testifying expert for ACLU on minority voting patterns

*State of New York v. U.S. Department of Commerce* (2018-2019) – challenge to inclusion of citizenship question on 2020 census form; testifying expert on behalf of ACLU

*U.S. v. City of Eastpointe* (settled 2019) – minority vote dilution challenge to City of Eastpointe, Michigan, at-large city council election system; testifying expert on behalf of U.S. Department of Justice

*Alabama NAACP v. State of Alabama* (decided 2020) – minority vote dilution challenge to Alabama statewide judicial election system; testifying expert on behalf of Lawyers Committee for Civil Rights Under Law

*Lopez v. Abbott* (2017-2018) – minority vote dilution challenge to Texas statewide judicial election system; testifying expert on behalf of Lawyers Committee for Civil Rights Under Law

*Personhuballuah v. Alcorn* (2015-2017) – racial gerrymandering challenge to Virginia congressional districts; expert for the Attorney General and Governor of the State of Virginia

# **Exhibit 2**

IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF LOUISIANA

DR. DOROTHY NAIRNE, JARRETT  
LOFTON, REV. CLEE EARNEST LOWE,  
DR. ALICE WASHINGTON, STEVEN  
HARRIS, ALEXIS CALHOUN, BLACK  
VOTERS MATTER CAPACITY  
BUILDING INSTITUTE, and THE  
LOUISIANA STATE CONFERENCE OF  
THE NAACP,

Plaintiffs,

v.

KYLE ARDOIN, in his official capacity as  
Secretary of State for Louisiana,

Defendant.

CIVIL ACTION NO. 3:22-cv-00178 SDD-  
SDJ

**Expert Report of Tumulesh K.S. Solanky, Ph.D**



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## I: Introduction

1. I was requested by counsel for Defendant Secretary of State Ardoin to statistically study the voting patterns and the composition of the enacted state house (H.B. 14) and senate (S.B. 1) plans in Louisiana. I was also asked to opine on the statistical results presented in the plaintiffs' expert reports of Dr. Lisa Handley and Mr. Bill Cooper. My credentials are set forth in my *curriculum vitae* (CV), which includes a recitation of prior legal assignments in both federal and state courts. My CV is attached as Appendix 1 to this Expert Report/Declaration.

2. I am over 18 years of age and am competent to make this declaration. I have personal knowledge of the statements contained in this declaration. I am a professor and chair of the mathematics department at the University of New Orleans (UNO). I have a Ph.D. in statistics from the University of Connecticut. I have been teaching statistics and mathematics at UNO since August 1990. I have taught a number of graduate classes on statistics, such as Sampling Theory, Applied Statistics, Regression Analysis, Linear Models, Design of Experiments, Biostatistics, Statistical Consulting, Nonparametric Statistics, Data Analytics, Multivariate Analysis, and Time Series Analysis. At present, I serve as an associate editor of four scholarly journals, including *Sequential Analysis: Design Methods and Applications*, the flagship journal in my research area. My research focuses primarily on data collection/sampling strategies, especially the development of new sampling designs to collect and analyze data. I have authored/co-authored a research level book, two book chapters, and over 25 research articles in scholarly peer-reviewed journals, all in the field of statistics. I have also served as the guest editor of a special issue of the *American Journal of Mathematical and Management Sciences* in my research area. I have presented my research at over 50 national and international conferences/meetings of peers. I have provided my statistical expertise to the National Aeronautics and Space Administration (NASA), the United States Department of Agriculture (USDA), banks, hospitals, school boards, polling firms, Attorneys General Offices, District Attorney's Offices, and others, designing surveys and authoring over 150 internal/expert reports. Details of the above-mentioned items and others are available in my CV attached in Appendix 1.

3. List the documents reviewed:

- i. Individual voter-level data for all registered voters in Louisiana identifying the registered voters' parish, precinct, congressional district, party affiliation, gender, and whether or not the individual voted in statewide elections<sup>1</sup>. This data is provided with the report.
- ii. Cooper Reports (July 22, 2022 and June 29, 2023)
- iii. Handley Reports (July 22, 2022 and June 30, 2023)
- iv. Handley Backups (July 22, 2022 and June 30, 2023)

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<sup>1</sup> The election dates included in the data are 2012-11-06, 2014-12-06, 2015-10-24, 2015-11-21, 2016-11-08, 2016-12-10, 2017-11-18, 2018-12-08, 2019-10-12, 2019-11-16, 2020-11-03, and 2022-11-08.

v. Cooper Backups (July 22, 2022 and June 29, 2023)

vi. Census Data

4. The statistical analysis reported below is based on my preliminary review of the documents and data listed above and other publicly available data sets described below in the report. I did not have adequate time to review in detail the files/datasets/programs listed above because materially different reports were provided less than 30 days before this report was due.

## II: Recent Trends in Voters Party Affiliation

### II.a. Registered Voters Party Affiliation in Statewide Elections:

5. I reviewed the party affiliation of registered voters in Louisiana for the dates on which 12 statewide elections were held from 2012 to 2022. The election dates and the number of registered democrats, republicans and others as of the date of each election are summarized in Table 1.

**Table 1: Summary of Registered Voters in Louisiana by Party Affiliation  
12 Statewide Elections from 2012 to 2022**

<b>Election Number</b>	<b>Election Date</b>	<b>Reg DEM Voters (Total)</b>	<b>Reg REP Voters (Total)</b>	<b>Reg OTHER Voters (Total)</b>	<b>Reg DEM Minus REP Voters (Total)</b>	<b>Reg DEM Voters (Pct)</b>	<b>Reg REP Voters (Pct)</b>	<b>Reg OTHER Voters (Pct)</b>	<b>Reg DEM Minus REP Voters (Pct)</b>
1	11/6/2012	1430750	814299	720699	616451	48.2	27.5	24.3	20.8
2	12/6/2014	1375027	816593	754109	558434	46.7	27.7	25.6	19.0
3	10/24/2015	1331433	813253	749781	518180	46.0	28.1	25.9	17.9
4	11/21/2015	1331874	816059	752562	515815	45.9	28.1	25.9	17.8
5	11/08/2016	1346979	895295	780963	451684	44.6	29.6	25.8	14.9
6	12/10/2016	1346132	903032	782922	443100	44.4	29.8	25.8	14.6
7	11/18/2017	1306157	896889	772610	409268	43.9	30.1	26.0	13.8
8	12/8/2018	1289852	916998	792879	372854	43.0	30.6	26.4	12.4
9	10/12/2019	1257774	917492	787746	340282	42.4	31.0	26.6	11.5
10	11/16/2019	1258772	924493	791941	334279	42.3	31.1	26.6	11.2
11	11/3/2020	1262597	1013581	816826	249016	40.8	32.8	26.4	8.1
12	11/08/2022	1192802	1006704	819309	186098	39.5	33.3	27.1	6.2

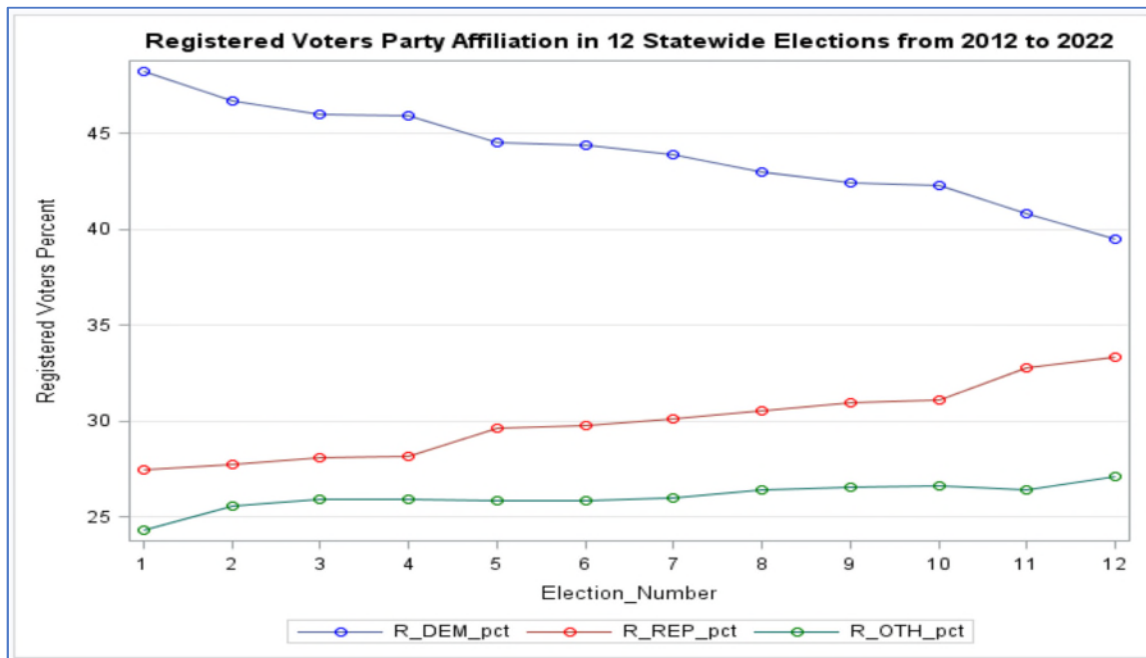
6. Note that for the 11/6/2012 elections, there were 1,430,750 registered democrats, and 814,299 registered republicans. The percentage of registered democrats was 48.2% in 2012 and the percentage of registered republicans was 27.5%. That is, there were 20.8% more registered democrats than republicans for 2012 elections. Whereas, in 2022, there were 1,192,802 registered democrats, 1,006,704 registered republicans. The percentage of registered democrats was 39.5% in 2022 and the percentage of registered republicans was 35.5%. That is, there were 6.2% more registered democrats than registered republicans in 2022. From the **Table 1**, the following trends are evident:

(a). There were 20.8% more registered democrats than registered republicans in 2012, and this excess has steadily reduced from 2012 to 2022 to 6.2% more registered democrats than registered republicans.

(b). The number of registered democrats has steadily decreased from 2012 to 2022. Whereas, the number of registered republicans has steadily increased from 2012 to 2022. The number of “Others” as party affiliation has remained somewhat constant over the years from 2012 to 2022.

7. **Figure 1** below depicts the observed trends in the percentage of voters who are registered as democrats (“R\_DEM\_pct”), republicans (“R\_REP\_pct”), others (“R\_OTH\_pct”) from 2012 to 2022 in the 12 statewide elections in Louisiana. Election number 1 was on 11/6/2012 and election number 12 was on 11/08/2022. The complete details are reported in **Table 1** above.

**Figure 1: Louisiana Registered Voters Trend  
12 Statewide Elections from 2012 to 2022**



**II.b. Trends in Party Affiliation of Voters Who Voted in Statewide Elections:**

8. In the 2012 statewide elections, 997,987 registered democrats, 622,392 registered republicans, and 394,135 registered others voted during the statewide elections on November 6, 2012. That is, among the registered voters who actually voted, the percentage of voters registered as democrats was 49.5%. And, the percentage of voters registered as republicans was 30.9%. A difference of 18.6%.

9. In the 2022 statewide elections, 548,747 registered democrats and 590,865 registered republicans voted during the statewide elections on November 8, 2022. That is, among the registered voters who voted on November 8, 2022, the percentage of voters registered as democrats was 38.9%. And, the percentage of voters registered as republicans was 41.9%. A difference of -3.0%.

10. To express the trend differently, in 2012 there were 375,595 more registered democrats than registered republicans who voted during the elections. However, in 2022 there were 42,118 fewer democrats than republicans who voted during the elections. This is a drop of 111.2 % in excess democrats from 2012 to 2022. The details are provided in **Table 2**.

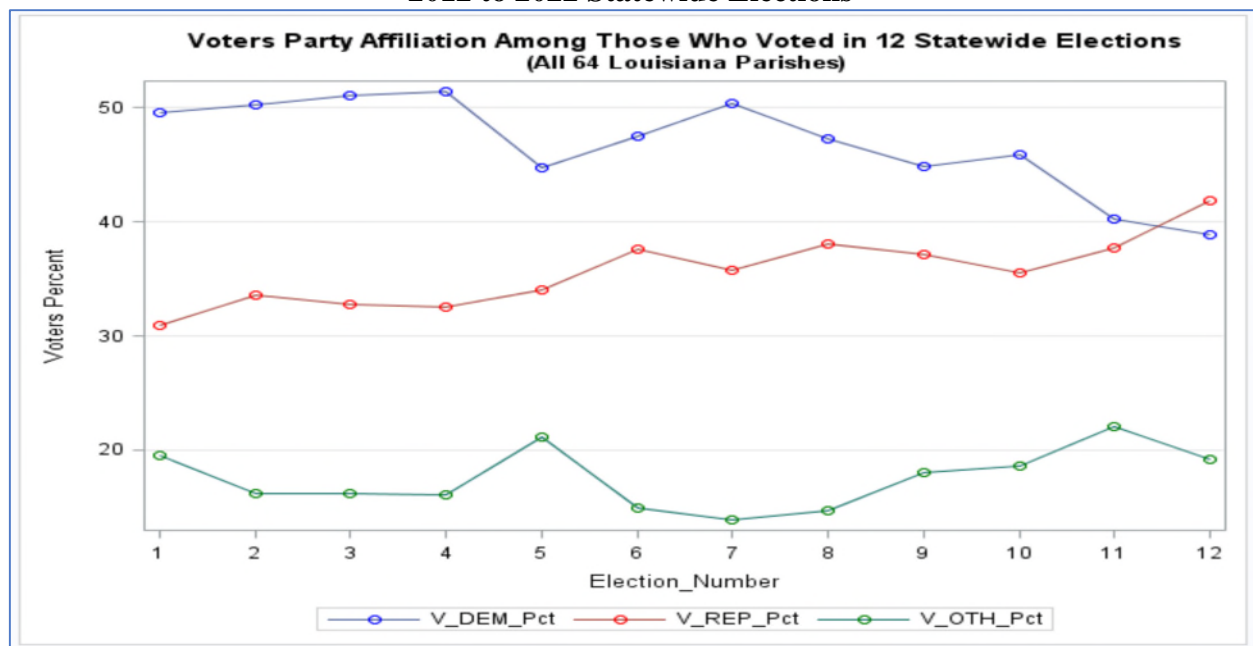
**Table 2: Summary of Voters who Voted by Party Affiliation  
12 Statewide Elections from 2012 to 2022**

<b>Election Number</b>	<b>Election Date</b>	<b>DEM Who Voted (Total)</b>	<b>REP Who Voted (Total)</b>	<b>OTHER Who Voted (Total)</b>	<b>DEM Minus REP Who Voted (Total)</b>	<b>DEM Who Voted (Pct)</b>	<b>REP Who Voted (Pct)</b>	<b>OTHER Who Voted (Pct)</b>	<b>DEM Minus REP Who Voted (Pct)</b>
1	11/6/2012	997987	622392	394135	375595	49.5	30.9	19.6	18.6
2	12/6/2014	646168	431195	208317	214973	50.3	33.5	16.2	16.7
3	10/24/2015	579328	371734	183725	207594	51.1	32.8	16.2	18.3
4	11/21/2015	599381	378857	187634	220524	51.4	32.5	16.1	18.9
5	11/08/2016	916703	698447	434459	218256	44.7	34.1	21.2	10.6
6	12/10/2016	424168	335632	133509	88536	47.5	37.6	14.9	9.9
7	11/18/2017	194466	138137	53580	56329	50.4	35.8	13.9	14.6
8	12/8/2018	250591	202009	77866	48582	47.2	38.1	14.7	9.2
9	10/12/2019	610415	504993	244574	105422	44.9	37.1	18.0	7.8
10	11/16/2019	696021	539909	282836	156112	45.8	35.5	18.6	10.3
11	11/3/2020	874163	817431	477820	56732	40.3	37.7	22.0	2.6

Election Number	Election Date	DEM Who Voted (Total)	REP Who Voted (Total)	OTHER Who Voted (Total)	DEM Minus REP Who Voted (Total)	DEM Who Voted (Pct)	REP Who Voted (Pct)	OTHER Who Voted (Pct)	DEM Minus REP Who Voted (Pct)
12	11/08/2022	548747	590865	270984	-42118	38.9	41.9	19.2	-3.0

11. **Figure 2** below summarizes the registered voters who voted in statewide elections from 2012 to 2022 by their party affiliation. The trend over time shows a steady decrease in democrats who voted and steady increase in republicans who voted.

**Figure 2: Registered Voters Who Voted Trend  
2012 to 2022 Statewide Elections**



### II.c. Race and Party Affiliation Among Registered Voters in Louisiana:

12. As noted above, the percentage of registered democrats voting in statewide elections in Louisiana has decreased over the years while the percentage of registered republicans voting has increased. In order to further understand this trend, next I have broken this down by the race and party affiliation of the registered voters. In **Table 3**, the total number and percentage of white and black voters that were registered as democrats or republicans is summarized for the 12 statewide elections.

13. From **Table 3**, the following observations can be noted about registered voters statewide in Louisiana:

(i). The white voters registered as democrats have steadily decreased from year 2012 to 2022. In 2012, there were 22.2% of voters who were white democrats, whereas in 2022, this decreased to 14.0%. This equals a drop of 36.9 percentage points in white voters registered as democrats from 2012 to 2022.

(ii). The white voters registered as republicans have steadily increased from year 2012 to 2022. In 2012, there were 25.6% of voters who were white republicans, whereas in 2022, this increased to 31.3%. This equals an increase of 22.3 percentage points in white voters registered as republicans from 2012 to 2022.

(iii). The black voters registered as democrats have remained constant around 24% from 2012 to 2022. The black voters registered as republicans have steadily remained constant around less than 1% from 2012 to 2022.

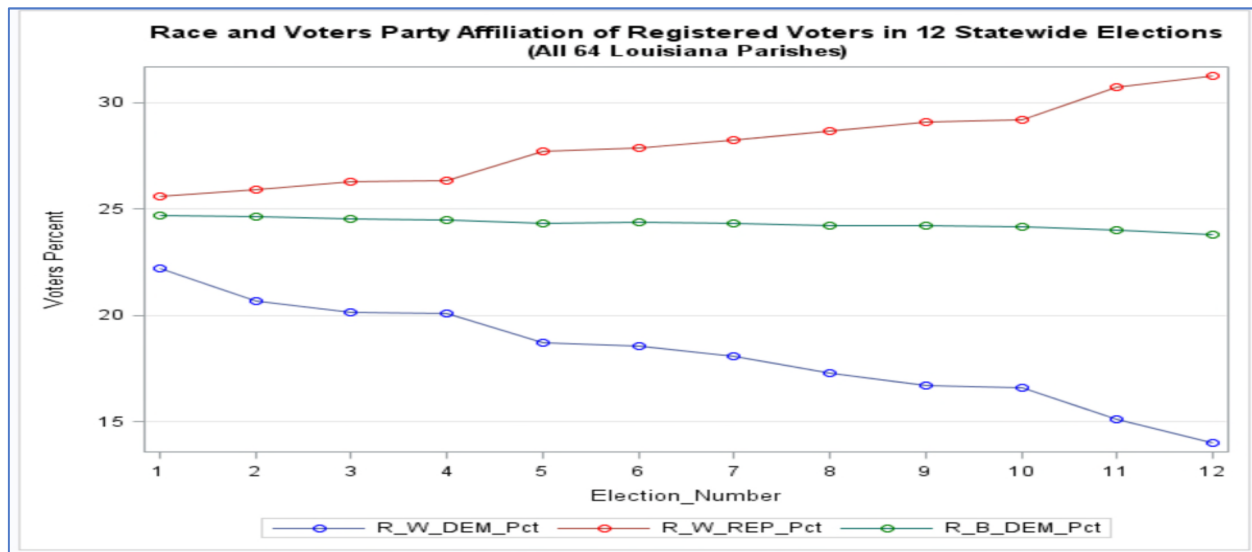
**Table 3: Summary of Registered Voters by Party Affiliation and Race  
2012 to 2022 Statewide Elections**

<b>Election Number</b>	<b>Election Date</b>	<b>Reg White DEM Voters (Total)</b>	<b>Reg Black DEM Voters (Total)</b>	<b>Reg White REP Voters (Total)</b>	<b>Reg Black REP Voters (Total)</b>	<b>Reg White DEM Voters (Pct)</b>	<b>Reg Black DEM Voters (Pct)</b>	<b>Reg White REP Voters (Pct)</b>	<b>Reg Black REP Voters (Pct)</b>
1	11/6/2012	658172	731743	759269	23867	22.2	24.7	25.6	0.8
2	12/6/2014	609004	725948	762579	22662	20.7	24.6	25.9	0.8
3	10/24/2015	582945	709710	760555	22166	20.1	24.5	26.3	0.8
4	11/21/2015	582354	710571	763191	22243	20.1	24.5	26.3	0.8
5	11/08/2016	566397	735852	838190	22855	18.7	24.3	27.7	0.8
6	12/10/2016	562478	738410	845556	22809	18.6	24.4	27.9	0.8
7	11/18/2017	537990	723949	840511	22478	18.1	24.3	28.2	0.8
8	12/8/2018	517643	726383	859758	22532	17.3	24.2	28.7	0.8
9	10/12/2019	495303	716780	861025	22022	16.7	24.2	29.1	0.7
10	11/16/2019	493466	719091	867618	22073	16.6	24.2	29.2	0.7
11	11/3/2020	467831	742391	950549	22496	15.1	24.0	30.7	0.7
12	11/08/2022	422337	718965	943600	21895	14.0	23.8	31.3	0.7

14. **Figure 3** below depicts the registered voters trend in statewide elections from 2012 to 2022 by party affiliation and race. As observed in **Table 3**, the following observations can be noted about registered voters in Louisiana:

- (i). The percentage of registered white democrats (R\_W\_DEM\_Pct) has somewhat steadily decreased from 2012 to 2022.
- (ii). The percentage of registered white republicans (R\_W\_REP\_Pct) has steadily increased from 2012 to 2022.
- (iii). The percentage of registered black democrats (R\_B\_DEM\_Pct) has somewhat remained constant from 2012 to 2022.

**Figure 3: Summary of Registered Voters by Party Affiliation and Race  
2012 to 2022 Statewide Elections**



#### II.d. Race and Party Affiliation of Those Who Voted in Louisiana

15. As remarked earlier, the percentage of registered white democrats (R\_W\_DEM\_Pct) has somewhat steadily decreased from 2012 to 2022. Whereas, the percentage of registered white republicans (R\_W\_REP\_Pct) has steadily increased from 2012 to 2022. **Table 4** summarizes the results by race and party affiliations for registered voters who actually voted in the 12 statewide elections.



**Table 4: Summary of Voters who Voted by Race And Party Affiliation  
12 Statewide Elections from 2012 to 2022**

<b>Election Number</b>	<b>Election Date</b>	<b>White DEM Voters (Total)</b>	<b>Black DEM Voters (Total)</b>	<b>White REP Voters (Total)</b>	<b>Black REP Voters (Total)</b>	<b>White DEM Voters (Pct)</b>	<b>Black DEM Voters (Pct)</b>	<b>White REP Voters (Pct)</b>	<b>Black REP Voters (Pct)</b>
1	11/6/2012	456162	519075	589420	12951	22.6	25.8	29.3	0.6
2	12/6/2014	292400	341589	412259	6868	22.7	26.6	32.1	0.5
3	10/24/2015	286731	282473	357056	5544	25.3	24.9	31.5	0.5
4	11/21/2015	276286	311856	362846	6061	23.7	26.7	31.1	0.5
5	11/08/2016	399916	490291	663847	11657	19.5	23.9	32.4	0.6
6	12/10/2016	196059	218417	323173	3646	21.9	24.5	36.2	0.4
7	11/18/2017	84839	104745	133071	1507	22.0	27.1	34.5	0.4
8	12/8/2018	102466	142590	194973	2384	19.3	26.9	36.8	0.4
9	10/12/2019	268649	326964	484753	6506	19.8	24.0	35.6	0.5
10	11/16/2019	277941	399600	516173	8290	18.3	26.3	34.0	0.5
11	11/3/2020	337044	504354	776754	11535	15.5	23.2	35.8	0.5
12	11/08/2022	223075	308864	566952	6099	15.8	21.9	40.2	0.4

16. From **Table 4**, the following observations can be noted about registered voters who voted in Louisiana in 12 statewide elections from 2012 to 2022:

(i). The number of white voters registered as democrats who voted has steadily decreased from year 2012 to 2022. In 2012, there were 22.6% of voters who voted were white democrats, whereas in 2022, this decreased to 15.8%. This equals a drop of 30.1 percentage points from 2012 to 2022.

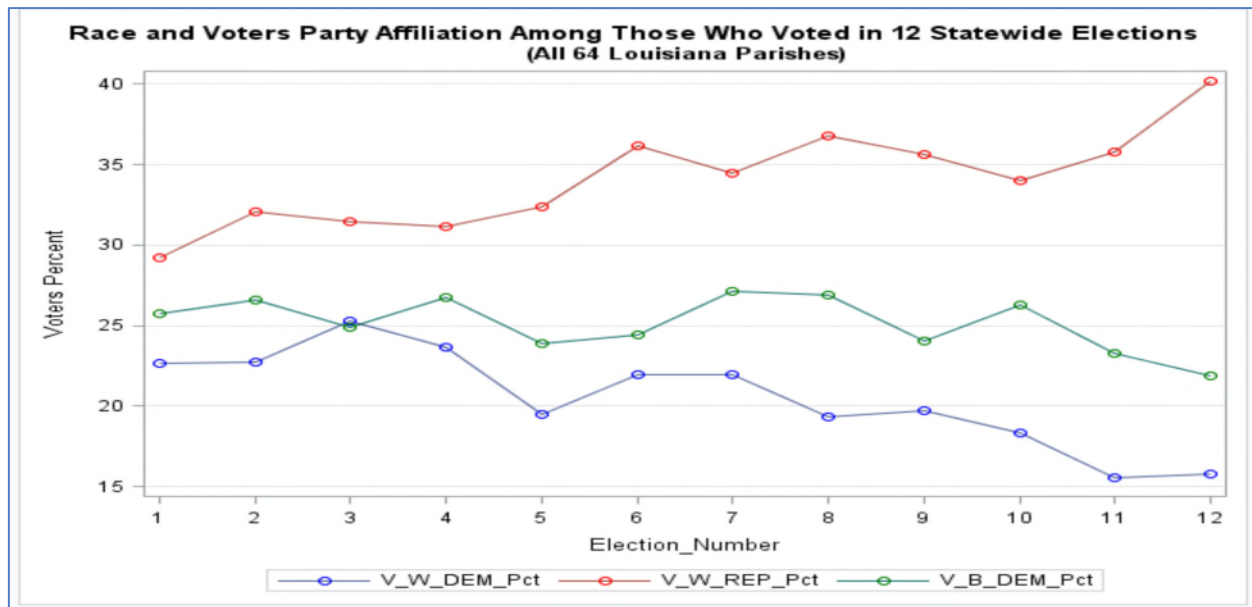
(ii). The number of white voters registered as republicans who voted has steadily increased from year 2012 to 2022. In 2012, there were 29.3% of voters who voted were white republicans, whereas in 2022, this increased to 40.2%. This equals an increase of 37.2 percentage points from 2012 to 2022.

(iii). The number of black voters registered as democrats has steadily remained constant around mid-twenties percent from year 2012 to 2022. The number of black voters registered as republicans have steadily remained constant around less than 1% from year 2012 to 2022.

17. **Figure 4** below depicts the registered voters trend for registered voters who actually voted in statewide elections from 2012 to 2022 by party affiliation and race. As tabulated in **Table 4**, the following observations can be noted about registered voters in Louisiana:

- (i). The percentage of registered white democrats who voted (V\_W\_DEM\_Pct) has somewhat steadily decreased from 2012 to 2022.
- (ii). The percentage of registered white republicans who voted (V\_W\_REP\_Pct) has steadily increased from 2012 to 2022.
- (iii). The percentage of registered black democrats who voted (V\_B\_DEM\_Pct) has somewhat remained constant from 2012 to 2022.

**Figure 4: Summary of Voters who Voted by Party Affiliation and Race  
Statewide Elections from 2012 to 2022**



### III: Analyzing Voting Patterns by Race Using Ecological Inference (EI) Modeling For Selected Parishes

18. Next, I have carried out statistical analysis to analyze the voting patterns by race using the ecological inference (EI) package “ei.MD.bayes” which implements a hierarchical Multinomial-Dirichlet model for ecological inference in RxC tables suggested by Rosen et al. (2001)<sup>2</sup>. In a recent study, Plescia and De Sio (2018) compared the performance and suitability

<sup>2</sup> Ori Rosen, Wenxin Jiang, Gary King, and Martin A. Tanner. 2001. “Bayesian and Frequentist Inference for Ecological Inference: The RxC Case.” *Statistica Neerlandica* 55: 134-156.

of several R×C methods for ecological inference and reported that when using root mean square error (RMSE) metric, the EI-MD model performs relatively better when comparing estimates of the quantities of interest with the true values<sup>3</sup>.

19. In order to obtain the precinct level data, I relied on the Louisiana Secretary of State (SOS) website<sup>4</sup> which reports the precinct level total votes received by each candidate excluding the early and absentee votes. The race of the voters who voted in each precinct was obtained using the voters level data provided by the SOS office.

20. It is important to note that the SOS website reports the early and absentee votes only at the parish-wide level. For example, in 2020 presidential elections, 979,742 out of 2,148,062, or 45.6% of the total votes cast were by early or absentee voting and, therefore, the votes by precincts is not available. Additionally, 41.5% of the votes President Trump received in Louisiana were early and absentee votes, whereas, President Biden received 52.2% of his votes as early and absentee votes.

21. Dr. Handley's expert report has bypassed the issue of not knowing the precincts of a large percentage of votes by allocating the early and absentee votes not coded to a precinct to the parish precincts proportionally based on the votes received by each of the candidates on Election Day. Dr. Handley has not addressed what bias her proposed equitable distribution solution creates in the EI results she has presented due to the fact that a large proportion of the data is missing the precincts. Put another way, Dr. Handley does not address that she is missing precinct-level data for 30.6% of voters. This is especially problematic given that Dr. Handley analyzes Cooper's Illustrative house and senate plans which, as shown in Mr. Cooper's report, have numerous parish splits, with some parishes split more than once, but assumes that all portions of the parishes vote the same way regardless of the way it is split. Table 5 reports the percentages of the early and absentee votes with missing precincts for the 12 statewide elections studied further in this report<sup>5</sup>.

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<sup>3</sup> Plescia C, De Sio L. An evaluation of the performance and suitability of R×C methods for ecological inference with known true values. Qual Quant. 2018;52(2):669-683.

<sup>4</sup> The website address is <https://voterportal.sos.la.gov/static/>

<sup>5</sup> Note that in **Section II** of this report (Recent Trends in Voters Party Affiliation) I presented voters race and party affiliations for 12 election dates as reported in **Table 1**. In the **Section III** (Analyzing Voting Patterns by Race Using Ecological Inference (EI) Modeling) we will focus on 12 selected election contests for certain offices in Louisiana. The details of those 12 specific election contests are provided in **Table 6**.

**Table 5: Summary of Early And Absentee Votes With Missing Precincts  
For 12 Statewide Elections**

<b>Election Number</b>	<b>Election Date</b>	<b>Election For</b>	<b>Total Early And Absentee Votes</b>	<b>Total Votes</b>	<b>Percentage with Missing Precincts</b>
1	11/6/2012	US President	359779	1994065	18.0
2	11/21/2015	Governor of LA	266948	1152864	23.2
3	11/21/2015	Lt Governor of LA	264881	1135516	23.3
4	11/8/2016	US President	527180	2029032	26.0
5	11/18/2017	Treasurer of LA	91845	373415	24.6
6	12/8/2018	LA Secretary of State	126928	516653	24.6
7	10/12/2019	Lt Governor of LA	377138	1297865	29.1
8	10/12/2019	Attorney General of LA	375862	1291868	29.1
9	11/16/2019	LA Secretary of State	494713	1468733	33.7
10	11/16/2019	Governor of LA	500296	1508784	33.2
11	11/3/2020	US President	979742	2148062	45.6
12	11/08/2022	US Senator	371967	1383290	26.9
		<b>TOTAL</b>	<b>4737279</b>	<b>14306082</b>	<b>30.6</b>

22. Even though I disagree with her methodology, in order to verify the EI results presented in Dr. Handley's report, I have followed Dr. Handley's proportional allocation of early and absentee votes with missing precincts. In this report, I have analyzed 12 statewide election contests as reported in **Table 6** below<sup>6</sup>. Of these 12 elections, nine statewide election contests included a black candidate and eight of these have been included by Dr. Handley in her expert report<sup>7</sup>. Dr. Handley only analyzes statewide election contests with one or more black candidates in her report. Including a mixture of statewide elections with and without a black candidate in the contest will allow a much deeper statistical analysis to see if voting trends by black and white voters change if there is a black candidate in the contest.

<sup>6</sup> Election numbers 1-11 had only one democrat and one republican candidate in the election. Election number 12 (2022 Senate election) had several democrat and republican candidates in the election. In the analysis below, the votes of all democrat and republican candidates have been totaled for Election number 12 to obtain the votes cast for a democrat or republican candidates.

<sup>7</sup> The statewide election with a black candidate included in my expert report and not included in Dr. Handley's report is the 2012 presidential election. The eight elections with a black candidate included in my expert report and also in Dr. Handley's report are Election Numbers 3, 5-9, 11-12 as identified in **Table 6**.

**Table 6: Summary of 12 Statewide Elections For EI Analysis**

<b>Election Number</b>	<b>Election Date</b>	<b>Election For</b>	<b>Democrat Candidates</b>	<b>Republican Candidates</b>	<b>Other Candidates</b>
1	11/6/2012	US President	Barack Obama	Mitt Romney	Several Candidates
2	11/21/2015	Governor of LA	John Bel Edwards	David Vitter	--
3	11/21/2015	Lt Governor of LA	Melvin Holden	William "Billy" Nungesser	--
4	11/8/2016	US President	Hillary Clinton	Donald Trump	Several Candidates
5	11/18/2017	Treasurer of LA	Derrick Edwards	John Schroder	--
6	12/8/2018	LA Secretary of State	"Gwen" Collins-Greenup	Kyle Ardoin	--
7	10/12/2019	Lt Governor of LA	Willie Jones	William "Billy" Nungesser	--
8	10/12/2019	Attorney General of LA	"Ike" Jackson, Jr.	"Jeff" Landry	--
9	11/16/2019	LA Secretary of State	"Gwen" Collins-Greenup	Kyle Ardoin	--
10	11/16/2019	Governor of LA	John Bel Edwards	"Eddie" Rispone	--
11	11/3/2020	US President	Joseph Biden	Donald Trump	Several Candidates
12	11/08/2022	US Senator	Gary Chambers, Jr. MV "Vinny" Mendoza "Luke" Mixon Salvador P. Rodriguez Syrita Steib	John Kennedy Devin Lance Graham	Several Candidates

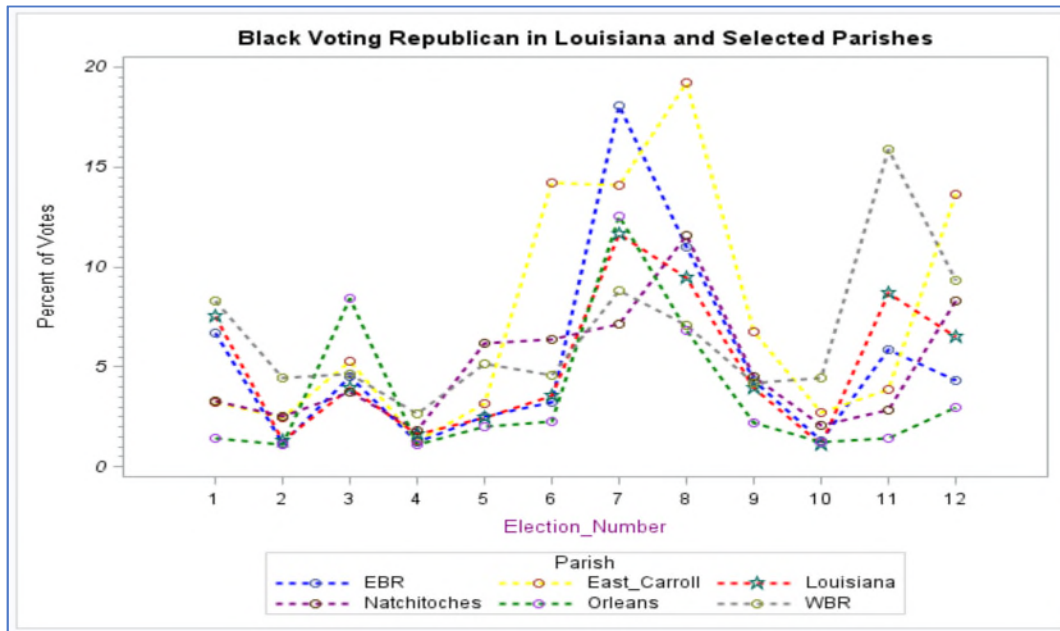
### **III.a. Estimates For Black Voters Voting for a Republican Candidate in Statewide Elections**

23. In **Figure 5**, I have reported the EI estimates for black voters who voted for a republican candidate in the selected 12 statewide elections for selected parishes<sup>8</sup> and also for the entire state of Louisiana.

24. From **Figure 5**, it is evident that while the majority of black voters do not vote for a republican candidate, there are a few exceptions. In three of the twelve election contests, election numbers 7, 8 and 11, there was a significant increase in the percentage of black voters voting for a republican candidate. These three elections had a black democrat candidate in the contest. Also, three parishes which have significantly larger percent of black voters voting for a republican candidate are East Baton Rouge, West Baton Rouge, and East Carroll parish. The complete EI estimates along with a confidence interval for the estimates is provided in Appendix 2.

<sup>8</sup> The Parish "WBR" refers to West Baton Rouge parish and "EBR" refers to East Baton Rouge parish.

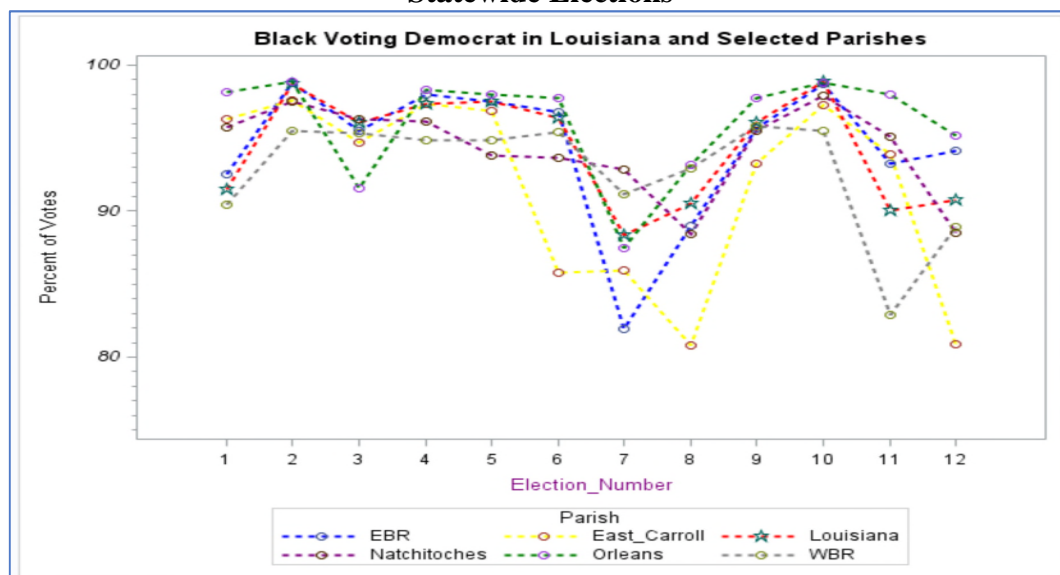
**Figure 5: Black Voting Republican in Louisiana and Selected Parishes in 12 Statewide Elections**



### III.b. Estimates For Black Voters Voting for a Democrat Candidate in Statewide Elections

25. In **Figure 6**, I have reported the EI estimates for black voters who voted for a democrat candidate in the selected 12 statewide election contests for selected parishes and also for the entire state of Louisiana.

**Figure 6: Black Voters Voting Democrat in Louisiana and Selected Parishes in 12 Statewide Elections**

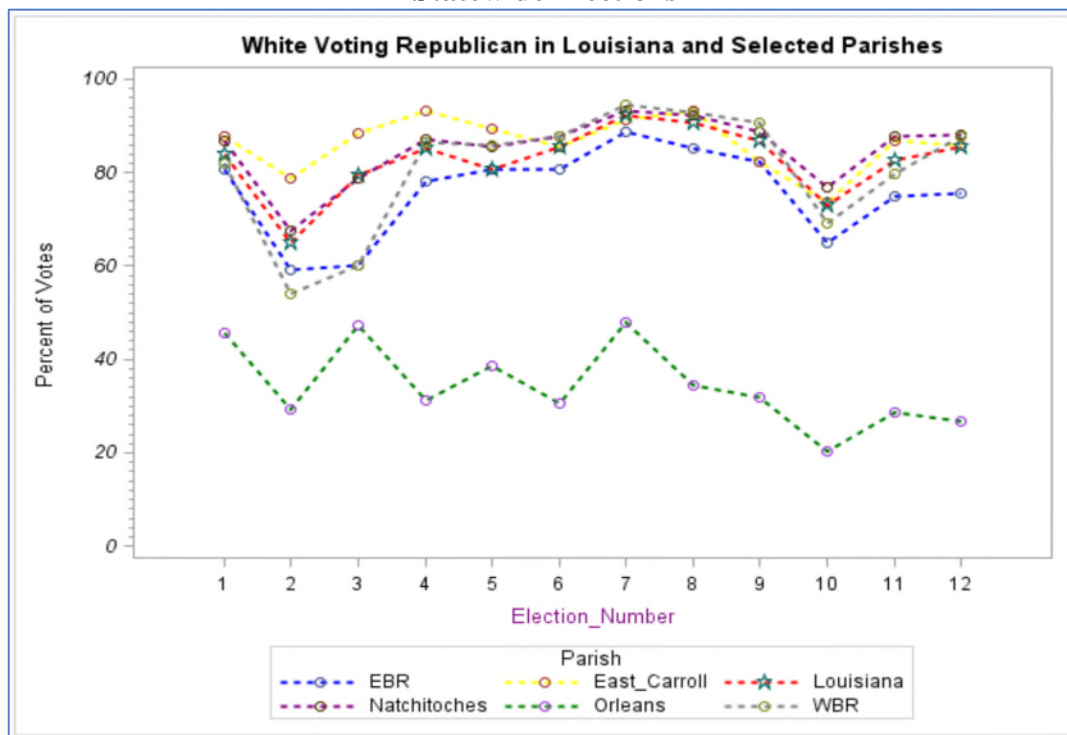


26. From **Figure 6**, it is evident that while the majority of black voters vote for a democrat candidate, there are exceptions such as election numbers 7, 8 and 11 for which there is a significant decrease in the percentage of black voters voting for a democratic candidate. These three elections had a black democrat candidate in the contest. Also, three parishes which have significantly lower percent of black voters voting for a democratic candidate are East Baton Rouge, West Baton Rouge, and East Carroll parish. The complete EI estimates along with a confidence interval for the estimates is provided in Appendix 3.

### III.c. Estimates For White Voters Voting for a Republican Candidate in Statewide Elections

27. In **Figure 7**, I have reported the EI estimates for white voters who voted for a republican candidate in the selected 12 statewide elections for selected parishes and also for all of Louisiana.

**Figure 7: White Voters Voting Republican in Louisiana and Selected Parishes in 12 Statewide Elections**



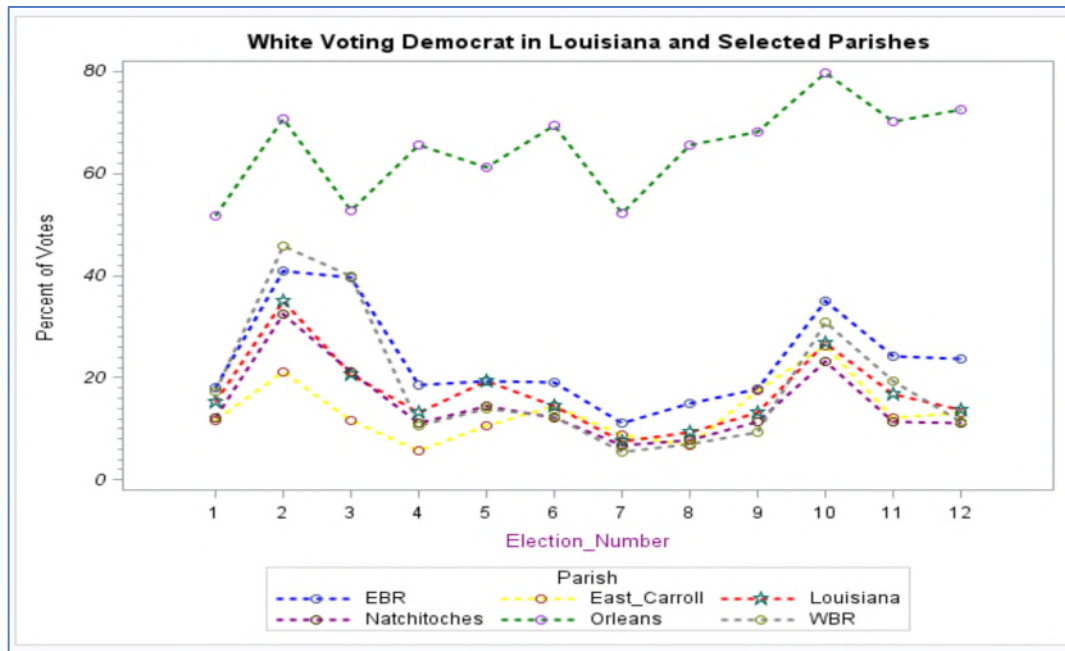
28. From **Figure 7**, it is evident that there is significant variation in the percentage of white voters voting for a republican candidate. Note that for Orleans parish, the percentage of white voters voting republican is consistently below 50% for all 12 statewide elections. For election number 10 (2019 Governors election) the percentage of white voters voting for the republican candidate was 20.2%. White voters in two other parishes, East Baton Rouge and West Baton Rouge, also seem to vote less for the republican candidates. The complete EI estimates along with a confidence interval for the estimates is provided in Appendix 4.



### III.d. Estimates For White Voters Voting for a Democrat Candidate in Statewide Elections

29. In **Figure 8**, I have reported the EI estimates for white voters who voted for a democrat candidate in the selected 12 statewide elections for selected parishes and also for all of Louisiana.

**Figure 8: White Voters Voting Democrat in Louisiana and Selected Parishes in 12 Statewide Elections**



30. From **Figure 8**, it is evident that there is significant variation in the percentage of white voters voting for a democrat candidate. Note that for Orleans parish, the percentage of white voters voting democrat is consistently above 50% for all 12 statewide elections. White voters in two other parishes, East Baton Rouge and West Baton Rouge, also seem to vote significantly more for the democrat candidates. The complete EI estimates along with a confidence interval for the estimates is provided in Appendix 5.

## IV: Analyzing Voting Patterns by Race Using Ecological Inference (EI) Modeling Within Selected Parishes

31. From **Figures 5-8**, one can note that there is significant variation from parish to parish in the percentage of white and black voters voting for a democrat or republican candidate. In fact, there is statistically significant negative voting polarization in Orleans parish under which the white voters have voted in favor of the democratic candidate regardless of whether or not there is a black candidate in the contest among the 12 statewide elections.

As noted above, white voters in two other parishes, East Baton Rouge and West Baton Rouge, also seem to vote significantly more for the democrat candidates. Next, in order to

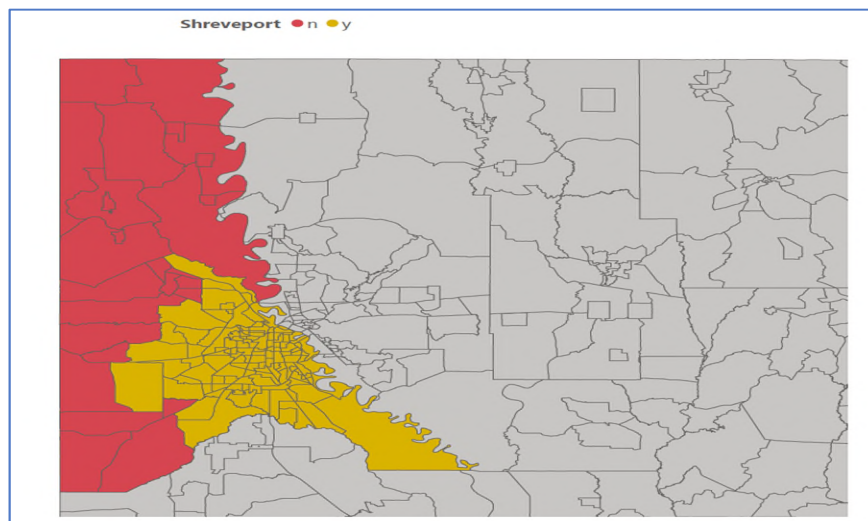


understand the difference in voting patterns within the parishes and the potential impact of urbanization on how white and black voters vote, I have studied Caddo parish and several other parishes in this section.

#### IV.a.: Analyzing Voting Patterns by Race Using Ecological Inference (EI) Modeling in Caddo Parish

32. The precincts that are fully or partially identified as part of the city of Shreveport in the Caddo parish are marked as “y” below (and colored yellow)<sup>9</sup>. Next, I have used EI estimation techniques to study if the precincts that are part of the city of Shreveport vote differently in the 12 statewide elections outlined in **Table 6**.

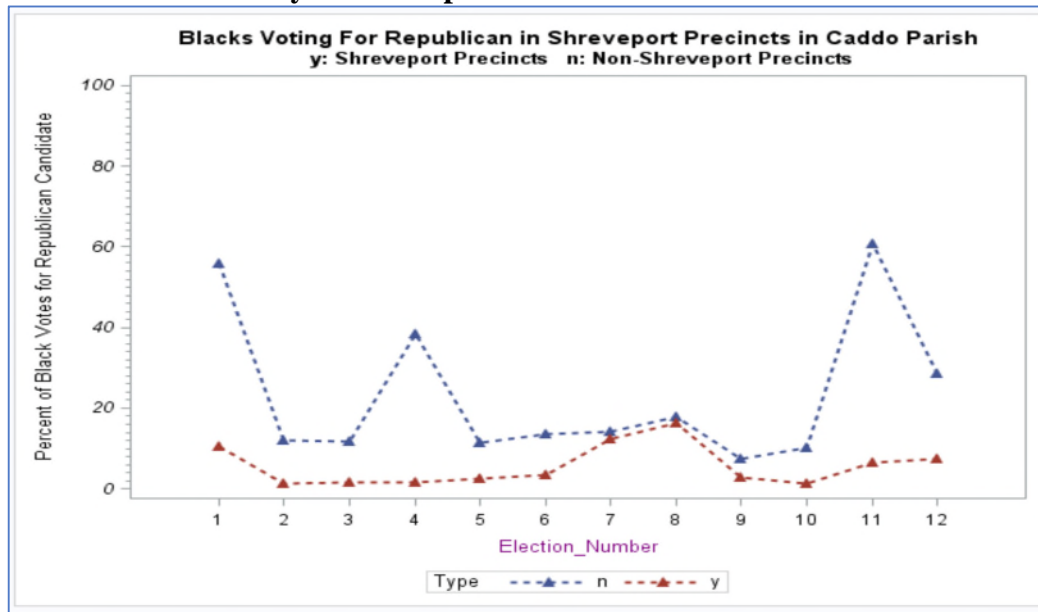
**Figure 9: Precincts Map of Caddo Parish Depicting precincts in City of Shreveport**



33. As seen below in **Figure 10**, black voters vote for republican candidates in much larger percentages for non-Shreveport precincts compared to Shreveport city-limit precincts in Caddo parish. Note that the majority of black voters in non-Shreveport precincts voted for a republican candidate in the presidential elections in 2012 and 2020, even though there was a black candidate in the contest. The EI estimates and associated confidence intervals are reported in Appendix 6.

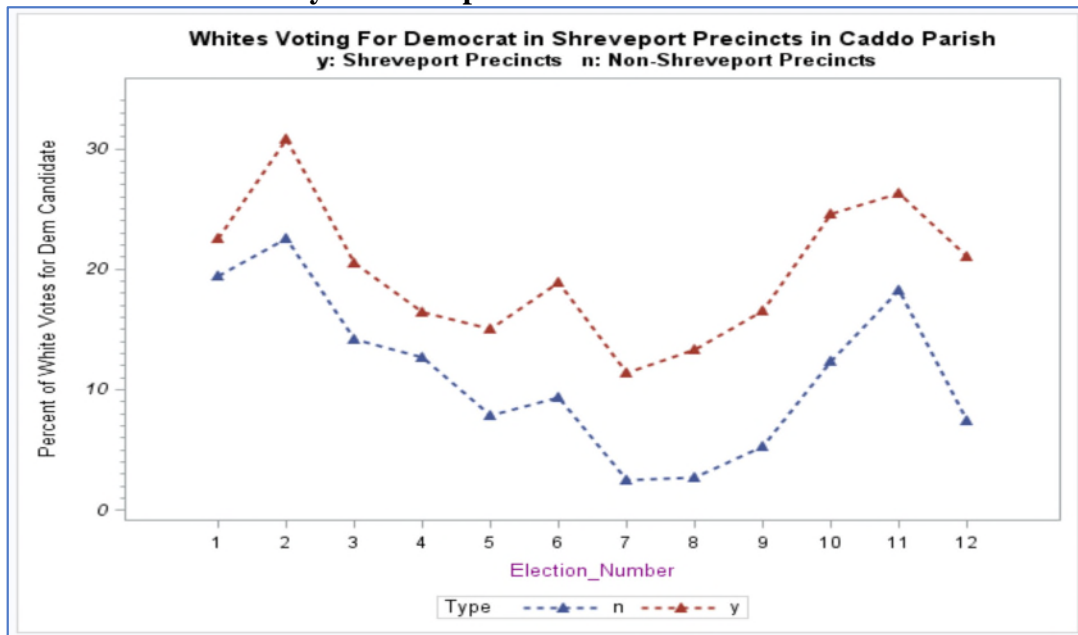
<sup>9</sup> The website source that lists the city of Shreveport precincts and their addresses is <http://www.caddovoter.org/wp-content/uploads/2015/12/Precincts-SHV.pdf>

**Figure 10: Estimates of blacks voting Republican in 12 statewide Elections in City of Shreveport Precincts and Outside**



34. As depicted in **Figure 11**, white voters vote for a democrat candidate in significantly larger percentages for Shreveport city-limit precincts compared to non-Shreveport precincts in Caddo parish. The EI estimates and associated confidence intervals are reported in Appendix 6.

**Figure 11: Estimates of White Voters Voting Democrat in 12 statewide Elections in City of Shreveport Precincts and Outside**



This depicts the flaw in Dr. Handley's parish-wide equitable distribution analysis where she assumes all absentee and early voters are homogenous. In reality the voting patterns vary

significantly based on precinct location, which due to the number of districts Caddo is split into, in turn can impact the performance of the districts.

#### **IV.b.: Analyzing Voting Patterns by Race Using Ecological Inference (EI) Modeling in Selected Parishes based on Population Density in Voting Districts (VTDs)**

35. In this section, I have further investigated the issue of potential voter polarization in selected parishes based on the population density. This investigation was preliminarily supported by the parish wide EI estimates that have been reported earlier. Next, the EI estimates for white and black voters voting trends are reported based on the population density in the voting districts<sup>10</sup>.

##### **IV.b.1: Potential Voter Polarization in EBR Parish**

36. **Figure 12** depicts the percentage of white voters voting for a Republican candidate in two recent statewide elections in 2020 and 2022. The figure presents the percentage of voters by the minimum population density in the VTDs. For example, the percentages displayed for zero density includes all the VTDs in the parish regardless of population, and the percentages displayed for VTD of 300 includes all of the VTDs in the parish with a population density of 300 or more, and so on. In other words, the entry for minimum VTD zero is the baseline estimate for white voters voting for republican candidates in the two reported elections. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 7.

37. From **Figure 12** and Appendix 7, the following conclusions can be drawn:

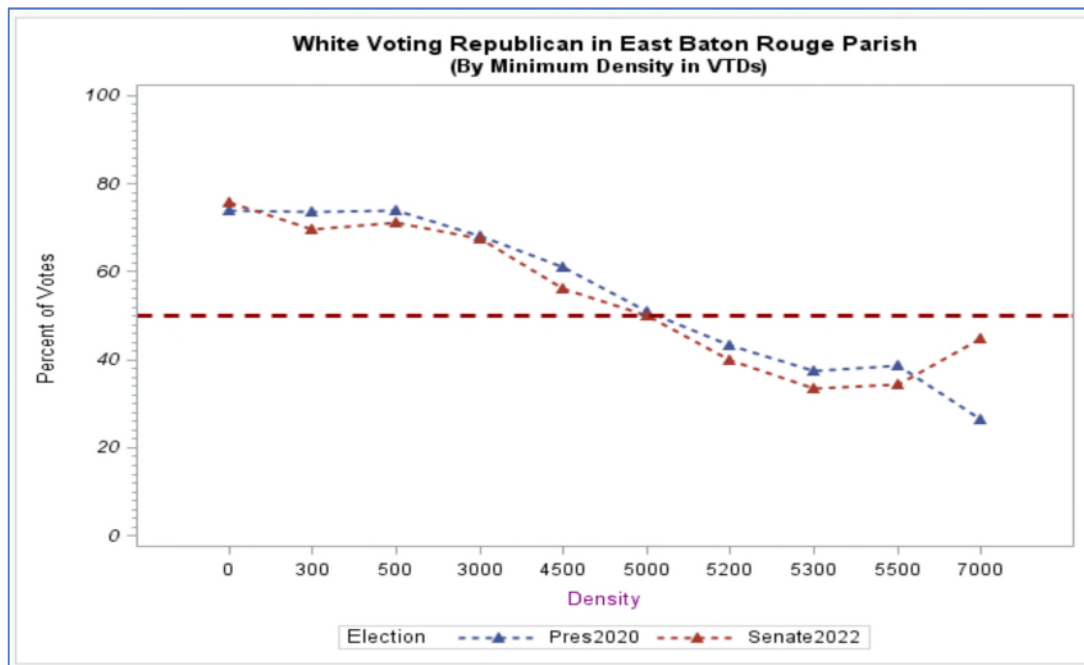
(i). For the entire parish of East Baton Rouge, 73.9% of white voters voted for a republican candidate in the 2020 presidential election and 75.7% of white voters voted for a republican candidate in the 2022 senate elections.

(ii). The percentage of white voters who voted for a republican candidate in the 2020 presidential election and in 2022 senate elections steadily decreases when restricted to the VTDs that are more densely populated. For both the 2020 and 2022 statewide elections, when restricted to VTDs with a minimum density of 5000, the white voters voted for a republican candidate less than 50 percent. In other words, as the VTDs density crosses 5000, the estimates reflect a negative polarization by the white voters to defeat the republican candidates.

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<sup>10</sup> Since the voter level data for the elections on the SOS website is available for precincts, the EI estimates reported below required matching VTDs to precincts and totaling of the candidate votes by VTDs in order to match the population density data. For Caddo parish's 2022 senate elections, precinct 159 was absorbed by precincts 122, 163, and 165. In order, to match the VTDs for the 2020 and 2022 elections in Caddo parish, the precinct-level votes for the 2020 election have been equally divided into these three precincts. There were a total of 900 votes cast on election day in precinct 159 in 2020 presidential elections.

**Figure 12: Estimates for White Voters Voting for a Republican Candidates in Statewide Elections in East Baton Rouge Parish in 2020 and 2022**



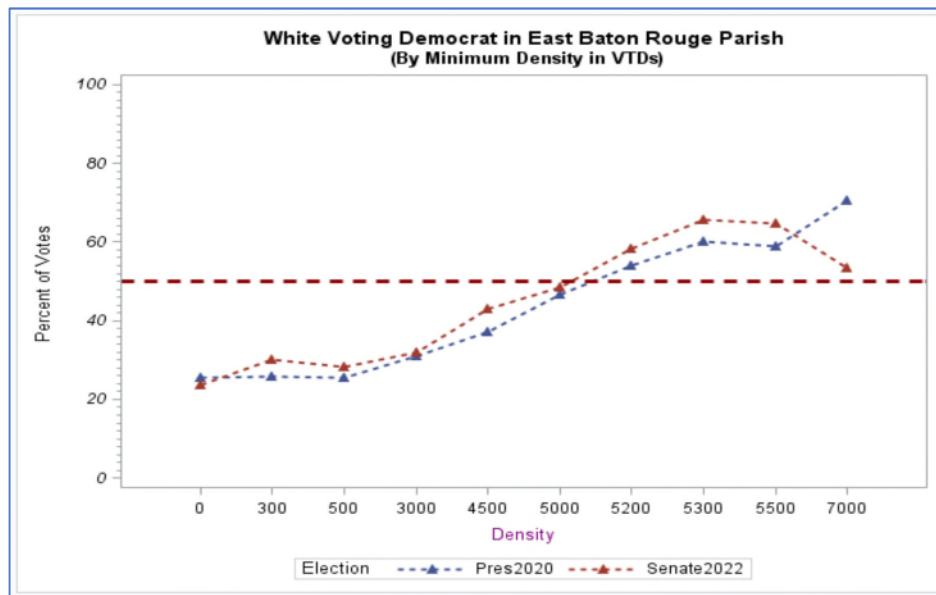
38. **Figure 13** depicts the percentage of white voters voting for democrat candidates in two recent statewide elections in 2020 and 2022. As above, the figure presents the percentage of voters by the minimum population density in the VTDs with the percentages displayed for zero density including all of the VTDs in the parish, regardless of density, and the percentages displayed for VTDs of 300 includes all the VTDs in the parish with a density of 300 or more, and so on. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 7.

39. From **Figure 13** and Appendix 7, the following conclusions can be drawn:

(i). For the entire parish of East Baton Rouge, 25.4% of white voters voted for a democrat candidate in the 2020 presidential election and 23.7% of white voters voted for a democrat candidate in the 2022 senate elections.

(ii). The percentage of whites who voted for a democrat candidate in the 2020 presidential election and in the 2022 senate elections steadily increases when restricted to the VTDs that are more densely populated. For both the statewide elections, when restricted to VTDs with a minimum density of 5000, the white voters vote for a democrat candidate more than 50 percent. In other words, as the VTDs' densities cross 5000, the EI estimates reflect a negative polarization by white voters to defeat the republican candidates and instead support the democrat candidates.

**Figure 13: Estimates for White Voters Voting for a Democrat Candidates in Statewide Elections in East Baton Rouge Parish in 2020 and 2022**



#### IV.b.2: Potential Voter Polarization in Caddo Parish

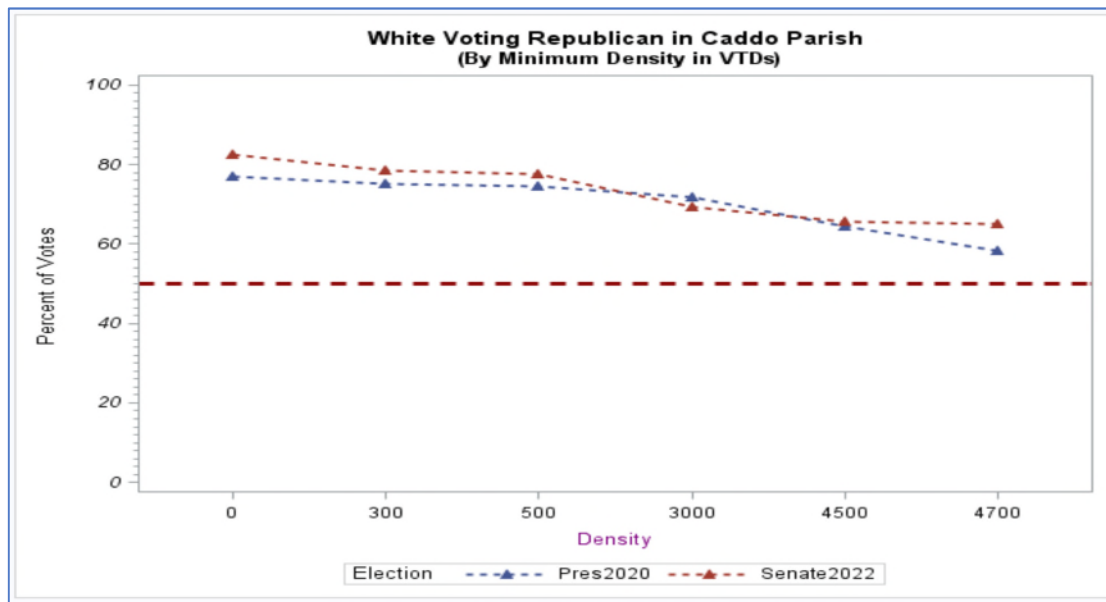
40. **Figure 14** depicts the percentage of white voters voting for a republican candidate in two recent statewide elections in 2020 and 2022 in Caddo parish. The figure presents the percentage of voters by the minimum population density in the VTDs with the percentages displayed for zero density including all of the white voters who voted for a republican candidate in the two reported elections in all of the VTDs in the parish, regardless of density, and the percentages displayed for VTDs of 300 includes all the VTDs in the parish with a density of 300 or more, and so on. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 8.

41. From **Figure 14** and Appendix 8, the following conclusions can be drawn:

(i). For the entire Caddo parish, 76.9% of white voters voted for a republican candidate in the 2020 presidential election and 82.5% of white voters voted for a Republican in the 2022 senate elections.

(ii). The percentage of whites voted for a republican candidate in the 2020 presidential election and in the 2022 senate elections steadily decreases when restricted to the VTDs that are more densely populated. For both the 2020 and 2022 statewide elections, when restricted to VTDs with a minimum density of 4700, the white voters voted for a republication candidate just more than 50 percent, that is, 58.4% in 2020 and 64.9% in the 2022 elections.

**Figure 14: Estimates for White Voters Voting for a Republican Candidates in Statewide Elections in Caddo Parish in 2020 and 2022**



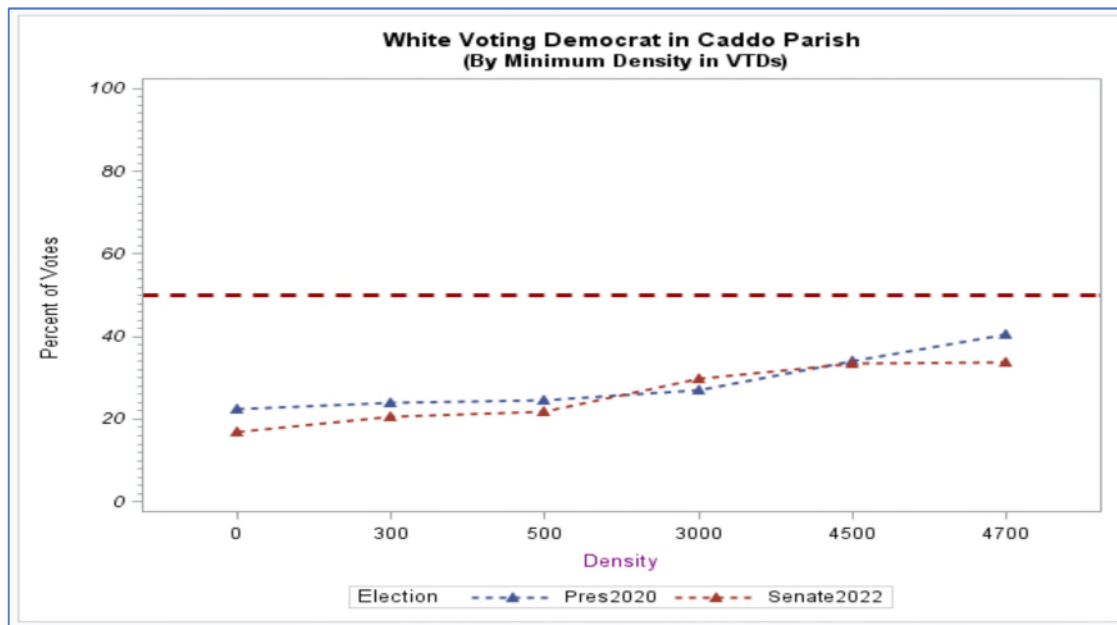
42. **Figure 15** depicts the percentage of white voters voting for a democrat candidate in two recent statewide elections in 2020 and 2022 in Caddo parish. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 8.

43. From **Figure 15** and Appendix 8, the following conclusions can be drawn:

(i). For the entire Caddo parish, 22.5% of white voters voted for a democrat candidate in the 2020 presidential elections and 16.9% of white voters voted for a democrat candidate in the 2022 senate elections.

(ii). The percentage of white voters who voted for a democrat candidate in the 2020 presidential election and in the 2022 senate elections steadily increases when restricted to the VTDs that are more densely populated. For both the 2020 and 2022 statewide elections, when restricted to VTDs with a minimum density of 4700, the white voters voted for a democrat candidate just below the 50%, that is, 40.6% in 2020 and 33.9% in 2022 elections.

**Figure 15: Estimates for White Voters Voting for a Democrat Candidates in Statewide Elections in Caddo Parish in 2020 and 2022**



#### IV.b.3: Potential Voter Polarization in Iberville Parish

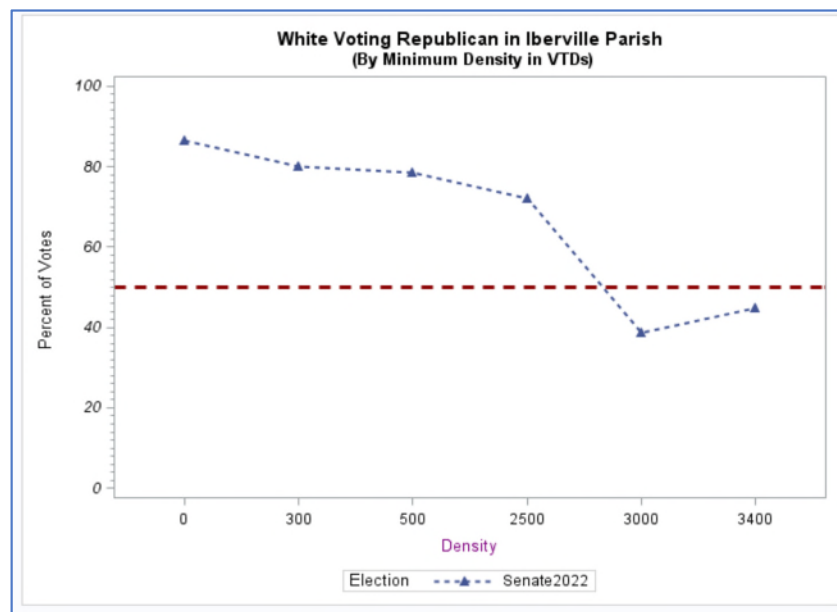
44. **Figure 16** depicts the percentage of white voters voting for a republican candidate in recent statewide elections in 2022 in Iberville parish. As before, with the percentages displayed for zero density including all of the white voters who voted for a republican candidate in all of the VTDs in Iberville parish, regardless of density, and the percentages displayed for VTDs of 300 includes all the VTDs in the parish with a density of 300 or more, and so on. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 9.

45. From **Figure 16** and Appendix 9, the following conclusions can be drawn:

(i). For the entire Iberville parish, 86.6% of white voters voted for a republican candidate in the 2022 senate election.

(ii). The percentage of white voters who voted for a republican candidate in the 2022 senate election steadily decreases when restricted to the VTDs that are more densely populated. In particular, when restricted to VTDs with a minimum density of 3300, the white voters voted for a republican candidate less than 50%, that is, 38.8% in 2022.

**Figure 16: Estimates for White Voters Voting for a Republican Candidates in Statewide Elections in Iberville Parish in 2022**



46. **Figure 17** depicts the percentage of white voters voting for a democrat candidate in a recent statewide election in 2022 in Iberville parish. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 9.

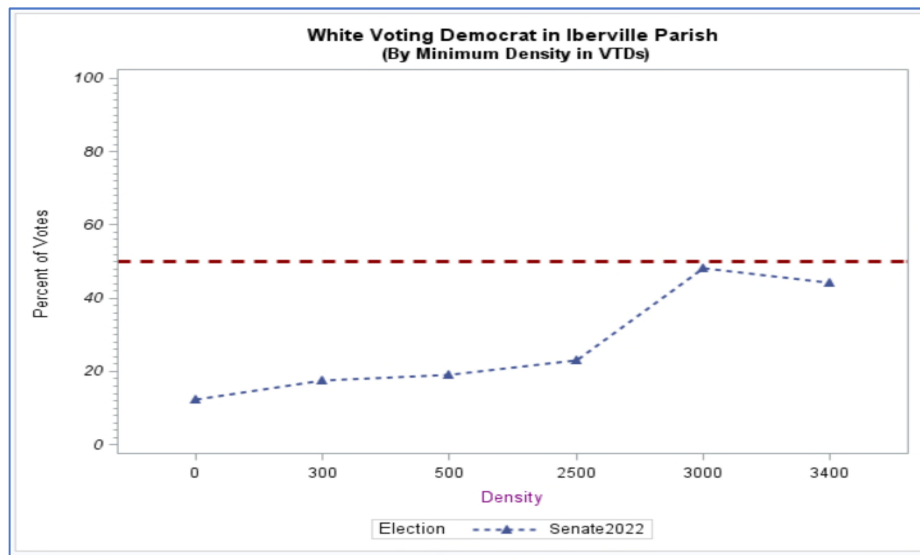
47. From **Figure 17** and Appendix 9, the following conclusions can be drawn:

(i). For the entire Iberville parish, 12.3% of white voters voted for a democrat candidate in 2022 senate election.

(ii). The percentage of white voters who voted for a democrat candidate in the 2022 senate election steadily increases when restricted to the VTDs that are more densely populated. In particular, when restricted to VTDs with a minimum density of 3300, the white voters voted for a democrat candidate just under 50 percent, that is, 48.1% in 2022.



**Figure 17: Estimates for White Voters Voting for a Democrat Candidates in Statewide Elections in Iberville Parish in 2022**



#### IV.b.4: Potential Voter Polarization in Pointe Coupee Parish

48. **Figure 18** depicts the percentage of white voters voting for a republican candidate in a recent statewide election in 2022 in Pointe Coupee parish. As before, with the percentages displayed for zero density including all of the white voters who voted for a republican candidate in all of the VTDs in Pointe Coupee parish, regardless of density, and the percentages displayed for VTDs of 300 includes all the VTDs in the parish with a density of 300 or more, and so on. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 10.

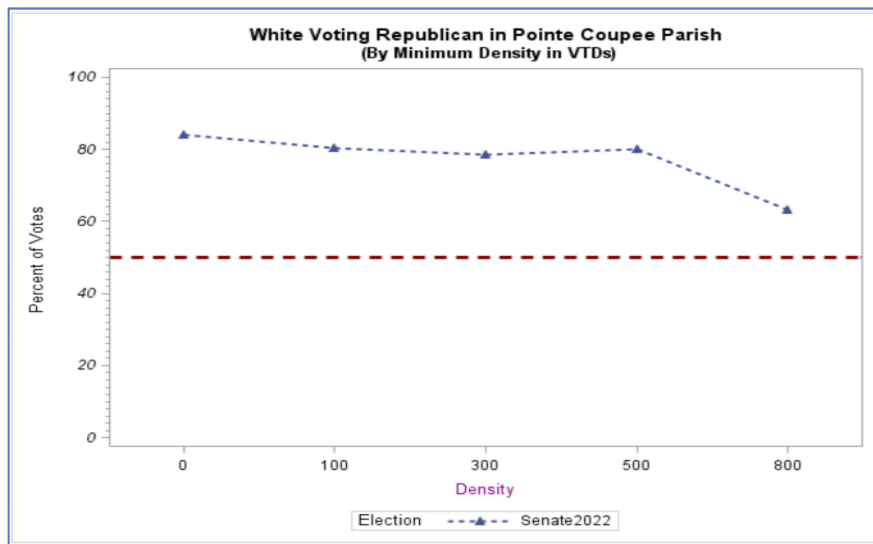
49. From **Figure 18** and Appendix 10, the following conclusions can be drawn:

(i). For the entire Pointe Coupee parish, 84.1% of white voters voted for a republican candidate in the 2022 senate election.

(ii). The percentage of white voters who voted for a republican candidate in the 2022 senate election steadily decreases when restricted to the VTDs that are more densely populated. In particular, when restricted to VTDs with a minimum density of 800<sup>11</sup>, white voters vote for a republican candidate 63.2% in 2022.

<sup>11</sup> In Pointe Coupee parish there are only two VTDs with a density of over 800.

**Figure 18: Estimates for White Voters Voting for a Republican Candidate in Statewide Elections in Pointe Coupee Parish in 2022**

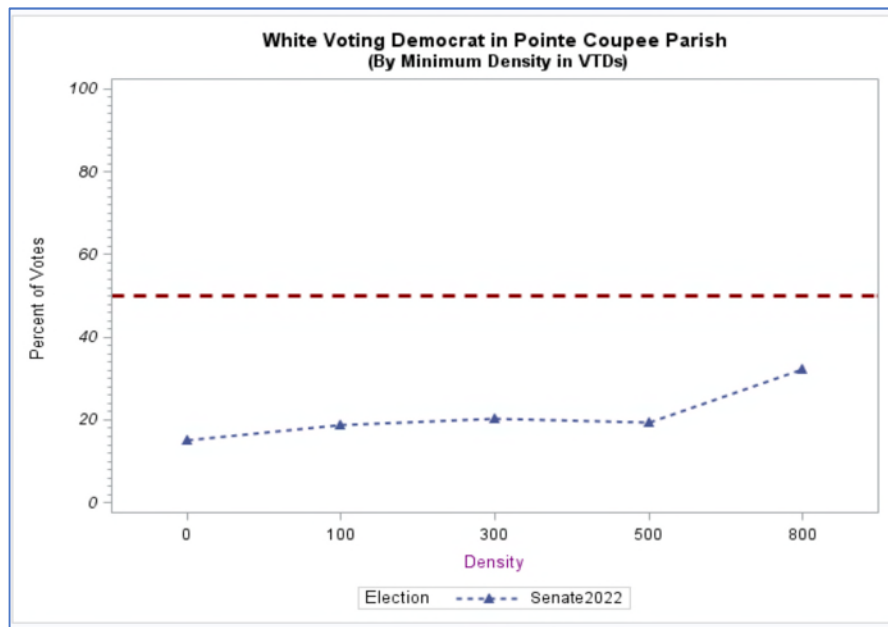


50. **Figure 19** depicts the percentage of white voters voting for a democrat candidate in recent statewide elections in 2022 in Pointe Coupee parish. The EI estimates for all reported values of minimum VTDs and associated confidence intervals are reported in Appendix 10.

51. From **Figure 19** and Appendix 10, the following conclusions can be drawn:

- (i). For the entire Pointe Coupee parish, 15.1% of white voters voted for a democrat candidate in the 2022 senate election.
- (ii). The percentage of white voters who voted for a democrat candidate in 2022 senate election steadily increases when restricted to the VTDs that are more densely populated. In particular, when restricted to VTDs with a minimum density of 800, white voters vote for a democrat candidate 32.1% in 2022.

**Figure 19: Estimates for White Voters Voting for Democrat Candidates in Statewide Elections in Pointe Coupee Parish in 2022**



## V: Summary of Conclusions

52. After reviewing the voting data for Louisiana, in my opinion, the following conclusions can be drawn:

1. After reviewing the registered voters for the 12 statewide election dates from 2012 to 2022, the following trends are noted:

i. There were 20.8% more registered democrats than registered republicans in 2012, and this excess has steadily reduced from 2012 to 2022. In 2022, there were only 6.2% more registered democrats than registered republicans.

ii. In 2012 there were 375,595 more registered democrats than registered republicans who voted during the elections. However, in 2022 there were 42,118 fewer democrats than republicans who voted during the elections. A drop of 111.2 % in excess democrats from 2012 to 2022.

iii. The number of white voters registered as democrats has steadily decreased from 2012 to 2022. In 2012, 22.2% of all registered voters were white democrats, whereas in 2022, the number of white voters registered as democrats decreased to 14.0%. This equals a drop of 36.9 percentage points in white voters registered as democrats from 2012 to 2022.

iv. The number of white voters registered as republicans has steadily increased from 2012 to 2022. In 2012, 25.6% of all registered voters were white republicans, whereas in 2022, this increased to 31.3%. This equals an increase of 22.3 percentage points in white voters registered as republicans from 2012 to 2022.

v. The number of white voters registered as democrats who actually voted has steadily decreased from 2012 to 2022. In 2012, 22.6% of voters who voted were white democrats, whereas in 2022, this decreased to 15.8%. This equals a drop of 30.1 percentage points from 2012 to 2022.

vi. The number of white voters registered as republicans who actually voted has steadily increased from 2012 to 2022. In 2012, 29.3% of voters who voted were white registered republicans, whereas in 2022, this increased to 40.2%. This equals an increase of 37.2 percentage points from 2012 to 2022.

2. Based on the EI analysis of voting patterns, it is evident that there is significant variation in the percentage of white voters voting for a democrat candidate from parish to parish. In particular, for the Orleans parish, the percentage of white voters voting democrat is consistently above 50% for all the 12 statewide elections. White voters in two other parishes, East Baton Rouge and West Baton Rouge, also seem to vote significantly more for the democratic candidates.

3. The EI estimates in Dr. Handley's report providing voter polarization estimates in parishes and regions (combining several parishes) provide an incomplete and misleading conclusion of voter polarizations. This is so because assuming white or black voters across an entire parish or a region vote as a block to defeat democrat candidates is an incorrect assumption. Dr. Handley has made no attempt in her report to investigate this assumption. For example, Dr. Handley's EI estimates for voter polarization considers the parishes of East Baton Rouge, West Baton Rouge, Iberville, and Pointe Coupee together (referred to as the Area of Interest 3). As we have seen, these Parishes, have different voting patterns, and sometimes different areas within the same parish vote differently.

As explained in this report, the EI estimates for the entire parish are presented by minimum density in VTD of zero in this report and different areas within the same parish are studied as well by pooling VTDs with certain minimum population density values.

4. The EI estimates reported for the two recent statewide elections, the presidential election in 2020 and the senate election in 2022, show a rather drastic difference in voting patterns of white voters in voting for a republican or a democrat candidate as the population density in the VTD increases. In particular the following comments summarize the key findings:

- i. East Baton Rouge Parish: While for the entire parish of East Baton Rouge 73.9% percent of white voters voted for a republican candidate in the 2020 presidential election and 75.7% of white voters voted for a republican candidate in the 2022 senate elections, the percentage of white voters voting for a republican candidate in the 2020 presidential

election and in the 2022 senate elections steadily decreases when restricted to the VTDs that are more densely populated. For both the statewide elections, when restricted to VTDs with a minimum density of 5000, the white voters voted for a republican candidate less than 50%. In other words, as the VTDs' population densities cross 5000, the estimates reflect a negative polarization by the white voters to defeat the republican candidates and instead vote for democrat candidates.

ii. Caddo Parish: While for the entire Caddo parish, 22.5% of white voters voted for a democrat candidate in the 2020 presidential elections and 16.9% of white voters voted for a democrat candidate in the 2022 senate elections, the percentage of white voters who voted for a democrat candidate in the 2020 presidential election and in the 2022 senate elections steadily increases when restricted to the VTDs that are more densely populated. For both the statewide elections, when restricted to VTDs with a minimum density of 4700, the white voters voted for a democrat candidate just below 50%, that is, 40.6% in 2020 and 33.9% in the 2022 elections.

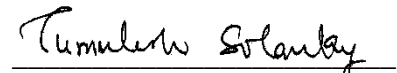
iii. Iberville Parish: While for the entire Iberville parish, 12.3% of white voters voted for a democrat candidate in the 2022 senate election, the percentage of white voters who voted for a democrat candidate steadily increases when restricted to the VTDs that are more densely populated. In particular, when restricted to VTDs with a minimum density of 3300, the white voters voted for a democrat candidate just under 50%, that is, 48.1%. This represents an increase of 291 percentage points.

iv. Pointe Coupee Parish: While for the entire Pointe Coupee parish, 15.1% of white voters voted for a democrat candidate in the 2022 senate election, the percentage of whites who voted for a democrat candidate in 2022 senate election steadily increases when restricted to the VTDs that are more densely populated. In particular, when restricted to VTDs with a minimum density of 800, the white voters voted for a democrat candidate 32.1 percent. This represents an increase of 113 percentage points.

5. The trend of increase in white voters voting for a democratic candidate as the population density increases is also evident in Caddo parish as the precincts that are part of the city of Shreveport exhibit significant increases in white voters voting for a democrat candidate compared to non city of Shreveport precincts. This trend was observed for all the 12 statewide elections. Additionally, black voters exhibit a trend of voting for republican candidates in non city of Shreveport parishes.

6. Due to the time constraints, I did not have adequate time to complete a detailed review of Plaintiffs' files/datasets/programs. With more time, I would have completed the review and would have included statistical analysis for more statewide elections in Louisiana and associated voter polarization studies in additional parishes based on population density composition of the parishes.

53. Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed on this 28th day of July 2023, in Innsbruck, Austria.

  
Tumulesh K. S. Solanky, PhD

## APPENDIX 1

### (CV OF TUMULESH K. S. SOLANKY)

#### ADDRESS:

**Home:** 4717 Rue Laurent, Metairie, LA 70002.

**Cell Phone:** (504) 427-0188

**Email:** tsolanky@gmail.com

**Citizenship:** USA

#### EDUCATION:

Ph.D. in Statistics University of Connecticut, 1990

M.Sc. in Mathematics Indian Institute Of Technology, New Delhi, India, 1987

B.Sc. in Mathematics (Honors) University of Delhi, India, 1985

#### EMPLOYMENT AND POSITIONS:

August 2008-present	Professor and Chair of the Mathematics Department
2021- present	The University of Louisiana System Foundation and Michael and Judith Russell Professor in Data/Computational Sciences
2001- 2008	Professor of Mathematics, University of New Orleans
1995-2001	Associate Professor of Mathematics, University of New Orleans
1996-1997	Visiting Associate Professor, University of Toronto (On Sabbatical Leave)
1990-1995	Assistant Professor of Mathematics, University of New Orleans
1989-1990	Lecturer of Statistics, University of Connecticut

#### MAJOR AWARDS

(i). Seraphia D. Leyda University Teaching Fellow, Awarded in year 2009.

(ii). Cooper R. Macklin Medallion, Awarded in year 2018. Cooper R. Macklin Medallion is awarded to a faculty or staff member who has made outstanding contributions in support of the University's mission. The recipient is an individual who has demonstrated excellent, sustained, and selfless service to the university.

#### MAJOR STATISTICAL CONSULTING EXPERIENCE:

41. Louisiana Organ Procurement Agency (LOPA) and Mid-America Transplant Services (MOMA), St Louis, MO; Assisted LOPA and MOMA with statistical analysis related to organ procurement data in Louisiana and Missouri.

Duration: August 2021— present.

Extent of Involvement: Submitted several internal reports.

40. PRESS ROBINSON, et al., v. KYLE ARDOIN, in his official capacity as Secretary of State for Louisiana, consolidated with EDWARD GALMON, SR., et al.; CIVIL ACTION NO. 3:22-CV-00211-SDD-SDJ consolidated with NO. 3:22-CV-00214-SDD-SDJ;

Duration: May 2022— June 2022.

Extent of Involvement: Submitted two expert reports; Testified in Court.

39. Robert Mark Turner v. Go Auto Insurance Company, Suit Number: 678,933; Division: "25"; Assisted Go Auto Insurance Company with statistical analysis of claims data.

Duration: May 2021— October 2021.

Extent of Involvement: Submitted expert report; Deposed.

38. UNITED STATES OF AMERICA v. LOUIS AGE, JR., et al., NO. 2:16-CR-00032; Assisted the Clerk of Court for the Eastern District of Louisiana (EDLA) by reviewing and analyzing the jury selection process from the 13 parishes in EDLA.

Duration: April 2020—June 2021.

Extent of Involvement: Submitted expert report.

37. Jackson Women's Health Organization v. Dobbs, No. 3:18-cv-00171 (S.D. Mississippi);

Duration: April 2020--.

Extent of Involvement: Submitted expert report; Deposed.

36. Planned Parenthood Arizona Incorporated, et al., v. Mark Brnovich, et al., Case No. CV-19-00207-TUC-JGZ (U.S. District Court for the District of Arizona);

Duration: May 2020- August 2020.

Extent of Involvement: Submitted expert report.

35. STATE OF LOUISIANA v. MELVIN CARTEZ MAXIE (NUMBER: 13-CR-072522), IITH JUDICIAL DISTRICT COURT, SABINE PARISH, LOUISIANA;

Duration: June 2019- November 2019.

Extent of Involvement: Statistical Work; Submitted Trial Exhibits.

34. LITTLE ROCK FAMILY PLANNING SERVICES, et al., v. LESLIE RUTLEDGE, et al.;

Duration: June 2019- August 2019.

Extent of Involvement: Submitted two expert reports; Testified in Court.

33. 19<sup>th</sup> Judicial District Court, Parish of East Baton Rouge, State of Louisiana; City of Walker, et al. versus State of Louisiana through the Department of Transportation and Development, et al.;

Duration: March 2018- March 2019.

Extent of Involvement: Submitted one expert report; Testified in Court.

32. PLANNED PARENTHOOD OF ARKANSAS & EASTERN OKLAHOMA, d/b/a PLANNED PARENTHOOD GREAT PLAINS and STEPHANIE HO, M.D., on behalf of themselves and their patients, v LARRY JEGLEY, Prosecuting Attorney for Pulaski County, in his official capacity, his agents and successors; MATT DURRETT, Prosecuting Attorney for Washington County, in his official capacity, his agents and successors;

Duration: June 2018- December 2018.

Extent of Involvement: Submitted one expert report; Testified in Court.

31. UNITED STATES DISTRICT COURT, WESTERN DISTRICT OF MISSOURI, CENTRAL DIVISION, COMPREHENSIVE HEALTH OF PLANNED PARENTHOOD GREAT PLAINS, et al. v. RANDALL W. WILLIAMS, MD, in his official capacity as Director of the Missouri Department of Health and Senior Services, et al.;

Duration: January 2018- November 2019.

Extent of Involvement: Submitted two expert reports; Deposed.

30. UNITED STATES DISTRICT COURT, SOUTHERN DISTRICT OF TEXAS, HOUSTON DIVISION, REBA CARTER, et. al., v. HOUSTON INDEPENDENT SCHOOL DISTRICT;

Duration: June 2017- April 2018.

Extent of Involvement: Submitted expert report.

29. CIVIL DISTRICT COURT FOR THE PARISH OF ORLEANS, STATE OF LOUISIANA, HG NEW ORLEANS RETAILERS JOINT VENTURE vs. THE CITY OF NEW ORLEANS by and through THE NEW ORLEANS AVIATION BOARD;

Duration: July 2017- August 2017.

Extent of Involvement: Submitted expert report.

28. UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA, UNITED STATES of AMERICA v. HENRY EVANS, M.D., MICHAEL JONES, M.D., SHELTON BARNES, M.D., GREGORY MOLDEN, M.D., PAULA JONES, JONATHON NORA;

Duration: September 2016- May 2017.

Extent of Involvement: Testified in Court.



27. UNITED STATES DISTRICT COURT, WESTERN DISTRICT OF MISSOURI, CENTRAL DIVISION, COMPREHENSIVE HEALTH OF PLANNED PARENTHOOD GREAT PLAINS, et al. v. PETER LYSKOWSKI, in his official capacity as Director of the Missouri Department of Health and Senior Services, et al.;  
Duration: January 2017- August 2017.  
Extent of Involvement: Submitted two expert reports.

26. UNITED STATES of AMERICA v. RODNEY HESSON, ET AL, DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA;  
Duration: August 2016- January 2017.  
Extent of Involvement: Submitted reports/Trail Exhibits.

25. UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF ARKANSAS WESTERN DIVISION PLANNED PARENTHOOD ARKANSAS & EASTERN OKLAHOMA, d/b/a PLANNED PARENTHOOD OF THE HEARTLAND; and STEPHANIE HO, M.D. v. LARRY JEGLEY, Prosecuting Attorney for Pulaski County, in his official capacity and MATT DURRETT, Prosecuting Attorney for Washington County;  
Duration: December 2015- February 2016.  
Extent of Involvement: Submitted expert report.

24. UNITED STATES DISTRICT COURT, MIDDLE DISTRICT OF LOUISIANA, JUNE MEDICAL SERVICES, LLC, ET AL., KATHY KLIEBERT, ET AL;  
Duration: October 2014- August 2016.  
Extent of Involvement: Submitted expert report; Deposed; Testified in Court.

23. United States District Court, Middle District of Louisiana, Albert Woodfox v. BURL CAIN, *Warden of the Louisiana State Penitentiary*, ET AL., Civil Action; Assisted the Office of the Attorney General of Louisiana related to a jury selection matter.  
Duration: September 2011- August 2013.  
Extent of Involvement: Submitted two expert reports; Deposed; Testified in Court.

22. United States District Court EDLA, U.S. v. Khlgatian, et al, Criminal Docket Number 11-105 "I"; Assisted a federal agency and the Office of the AUSA; sampling of the patient charts; statistical comparisons with peers.  
Duration: February 2012- December 2012.  
Extent of Involvement: Submitted two expert reports.

21. United States District Court, Eastern District of Louisiana, Diamond Young, et al. v. United States of America, C.A. No. 11-2438, Section "H" (5); Civil Action;  
Duration: April 2012- December 2012.  
Extent of Involvement: Submitted an expert report.

20. Statistical Consultant: Textron Marine & Land Systems; Provided statistical expertise related to product reliability/testing/sampling and quality control;  
Duration: September 2010- January 2011.  
Extent of Involvement: Submitted an expert report.

19. United States District Court, St. Tammany Parish Hospital. vs. Ace American Ins. Co. and Trinity Marine Products, Inc. (and several other related cases); Civil Action;  
Duration: March 2010- March 2012.  
Extent of Involvement: Submitted over ten expert reports; Deposed.

18. United States District Court, Eastern District of Louisiana, Malcolm Louis LeBlanc, et al. vs. Chevron USA Inc., et al.; Civil Action;  
Duration: October 2008- July 2010.  
Extent of Involvement: Submitted an expert report; Deposed.

17. United States District Court, 27<sup>th</sup> Judicial District, Opelousas, Charles C. Foti, Jr., et al. vs. Janssen Pharmaceutica, et al.; Civil Action; Served as the *court appointed Statistical Expert* to assist the court in a complex litigation matter.

Duration: August 2008- July 2010.

16. GCR, New Orleans and Barrios, Kingsdorf & Casteix, L.L.P.; *Statistical Consultant*; Provided statistical expertise to GCR in statistical analysis of CDW related matter;

Duration: January 2010- March 2010.

Extent of Involvement: Submitted expert report.

15. United States District Court, 24<sup>th</sup> Judicial District, Parish of Jefferson, Warren Lester, et al. vs. Exxon Mobil Corporation, et al.; Civil Action;

Duration: March 2008- May 2010;

Extent of Involvement: Assisted the attorneys and other experts; Submitted expert reports; Deposed twice.

14. Medicare Matter. Contact persons: Charles Taylor and Jacqueline Griffith (Chehardy, Sherman, Ellis, Murray, Recile, Griffith, Stakelum & Hayes, L.L.P.

Duration: October 2009- December 2009.

Extent of Involvement: Submitted an expert report; Testified in Court (via Video Conference).

13. United States District Court, St. Bernard Parish, Mumphrey v. Chalmette Medical Center; Civil Action;

Duration: October 2008- November 2008.

Extent of Involvement: Submitted an expert report; Deposed; Testified in Court.

12. GCR, New Orleans; *Statistical Consultant*; Provided statistical expertise to GCR in designing polls & analyzing the poll results for the state elections in 2007;

Duration: May 2007- October 2007.

11. United States District Court, 19<sup>th</sup> Judicial District, Parish of East Baton Rouge, Patrick J. Cunningham, et al. vs. IBM Corp.; Civil Action;

Duration: December 2006- August 2007;

Extent of Involvement: Assisted the attorneys and other experts; wrote over 25 internal reports related to statistical computations and interpretation of results.

10. UNITED STATES DISTRICT COURT, EASTERN DISTRICT OF LOUISIANA; Provided statistical expertise in a jury selection matter; Wrote an expert report/Affidavit; Attorney, Eastern District of Louisiana.

Duration: May 2006- August 2006;

9. United States District Court, Eastern District of Texas, June Pryor Avance, et al. vs. Kerr-McGee Chemical LLC; Civil Action; *Statistical Expert*; Wrote three expert reports/Affidavits on statistical projections;

Duration: January 2005- July 2007;

Extent of Involvement: Deposed.

8. United States District Court, Down South Entertainment versus SMG; Civil Action; *Statistical estimation of crowd for Easter Jam*; Wrote three expert reports on statistical projections and the reliability of projections;

Duration: December 2003- May 2005;

Extent of Involvement: Deposed twice and testified in court.

7. Naval Oceanographic Center (US Navy), Mississippi; *statistical guidance to update their methods of data collection and data storage, statistical algorithms to discard the noise and save only the relevant data*. Duration: May 1998- March 2002.

6. United States District Court, Bank of Louisiana versus Kenwin Shops Inc.; Civil Action; *Wrote two expert reports on statistical analysis related to Bankruptcy of a BOL's client*;

Duration: May 1999- December 1999; Extent of Involvement: Deposed.

5. Jefferson Parish Public Schools; *As the statistician for the court appointed expert witness*: designed a survey of schools under Jefferson Parish Public Schools, assisted in statistical projections reported to the court.

Duration: August 1998- January 1999.

4. Lifemark Hospitals of Louisiana (Kenner Regional Medical Center); *Statistical sampling of patient charts*; Wrote three expert reports on statistical analysis/ sampling of the patient charts;  
Duration: August 1996 – August 1997; Extent of Involvement: Deposed.

3. KPMG New Orleans; *Sample size determination, Designed and Analyzed samples of patient charts/drug usage to estimate total drug cost for the Tenet group of Hospitals/Lifemark Hospitals*; Wrote two expert reports on statistical analysis;  
Duration: August 1994 – December 1995.

2. USDA, Department of Forestry, Louisiana: *Statistical assistance to USDA in data collection, designing and modeling*, Models used: Time-Series Models (for forecasting; Both Time Domain--ARIMA MODELS-- and Frequency Domain models).  
Duration: August 1991- December 1994.

1. NASA Stennis Space Center, Mississippi: *Statistical Design and Analysis of the Rocket Seal Configuration Tester*, assisted NASA with the statistical issues related to the design of experiments and performance evaluation of the rocket seals.  
Duration: August 1994-December 1995.

#### **CURRENT EDITORIAL SERVICE:**

- Associate Editor: AJMMS (American Journal of Mathematical and Management Sciences), 2012-present.
- Associate Editor: *Sequential Analysis*, 2003-present.
- Associate Editor: Journal of Combinatorics, Information and System Sciences, 2003-present.
- Associate Editor: Journal of the Indian Society of Agricultural Statistics, 2009-present.

#### **SCHOLARLY/PROFESSIONAL ACTIVITIES:**

- President, Louisiana Chapter of American Statistical Association: 1994-1995.
- Vice-President, Louisiana Chapter of American Statistical Association: 1993-1994.
- Secretary, Louisiana Chapter of American Statistical Association: 1995-1996.
- Reviewer: Journal of Statistical Planning and Inference, Sequential Analysis, Metrika, Communications in statistics, Statistics and Decisions, and others.
- Member: American Statistical Association (ASA), Life member of the Forum for Interdisciplinary Mathematics.
- Selection Committee Chair: Abraham Wald Prize in Sequential Analysis for Best Paper: Sequential Analysis Journal. The first prize was awarded at JSM, 2005. Chaired the international selection committee from 2006-2023.
- Guest Editor: Special Volume of AJMMS (American Journal of Mathematical and Management Sciences). Co- edited a special volume of AJMMS related to my research area of Selection and Ranking/MCP.
- Symposium Organizer: Co-organized “Symposium on **Ranking and Selection Methodologies – Multiple Comparison Procedures**”. The symposium was held during the *Pre-ICM International Convention on Mathematical Sciences*, University of Delhi, December, 2008.
- Symposium Organizer: Co-organized a symposium at the Auburn University (December 2005) in my research area of Selection and Ranking/MCP. I also chaired the symposium. The symposium was held during the SCMA 2005/FIM XII Conference.
- Editor (Statistical Science): AJMMS (American Journal of Mathematical and Management Sciences), 2009-2012.
- Associate Editor: Statistical Methodology, 2010-2015.

#### **RESEARCH PUBLICATIONS**

**Scholarly books:**

(i.) *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., ISBN No.: 0-8247-9078-2, (with N. Mukhopadhyay), 1994.

**Refereed Scholarly book chapters:**

(i.) On an improved accelerated sequential methodology with applications in selection and ranking, *Frontiers in Probability and Statistics*, Editors: S.P. Mukherjee, et al., 250-259, 1998, (with N. Mukhopadhyay).

(ii.) Applications of Sequential Tests to Target Tracking by Multiple Models, *Applied Sequential Methodologies*, Marcel Dekker, edited by N. Mukhopadhyay, et al., 219-247, 2004, (with X. Rong Li).

**As Guest Editor of a Journal's Special Issue:**

Co-edited a Special Volume of *AJMMS* (American Journal of Mathematical and Management Sciences) in my research area: RANKING AND SELECTION AND MULTIPLE COMPARISON PROCEDURES. American Journal of Mathematical and Management Sciences, Volume 29 (2009), Nos. 1 & 2, 294 pages.

**As Associate Editor of Conference Proceedings:**

SOME RECENT ADVANCES IN MATHEMATICS AND STATISTICS, Proceedings of Statistics 2011 Canada/IMST 2011-FIM XX, Editor: Yogendra P Chaubey, World Scientific Publishing Co. Pte. Ltd., 2013.

**REFEREED JOURNAL PUBLICATIONS**

26. Second Order Asymptotics of a Fine-Tuned Purely Sequential Procedure for the Generalized Partition Procedure, *Statistics and Applications*, Volume 19, No. 1, 401-415, 2021.

25. A Generalization of the Partition Problem, *Sequential Analysis*, **34**(04), pp. 483 – 503, 2015 (with Jie Zhou).

24. Discussion on “Sequential Estimation for Time Series Models” by T. N. Sriram and Ross Iaci, *Sequential Analysis*, **33**(02), pp. 186 – 189, 2014.

23. On Two-stage comparisons with a control under heteroscedastic normal distributions, *Methodology and Computing in Applied Probability*, Volume 14, Number 3, Pages 501-522, 2012 (with N. Mukhopadhyay).

22. Second-Order Asymptotics of a Fine-Tuned Unbalanced Purely Sequential Procedure For The Partition Problem, *Journal of Combinatorics, Information and System Sciences*, vol. 36, 233-248, 2011.

21. Discussion on “Two-Stage Procedures for High-Dimensional Data” by Makoto Aoshima and Kazuyoshi Yata, *Sequential Analysis*, **30**(04), pp. 429 – 431, 2011.

20. On Approximate Optimality of the Sample Size for the Partition Problem, *Communications in Statistics - Theory and Methods*, 38:16, 3148 — 3157, 2009 (with Y. Wu).

19. Discussion on “A Hybrid Selection and Testing Procedure with Curtailment” by Elena M. Buzaianu and Pinyuen Chen, *Sequential Analysis*, 28:1, 38-40, 2009.

18. A two-stage procedure with elimination for partitioning a set of normal populations with respect to a control, *Sequential Analysis*, 25, 297-310, 2006.

17. On unbalanced multistage methodologies for the partition problem, *Proceedings of the International Sri Lankan Statistical Conference: Visions of Futuristic Methodologies*, 447-466, 2004 (with Y. Wu).

16. *Predicting multivariate response in linear regression model*, Commun. in Statistics, Simulation & Computation, Vol. 32, No. 2, 389-409, 2003 (with M. Srivastava).
15. *Multistage methodologies for comparing several treatments with a control*, Journal of Statistical Planning and Inference, 100, No. 2, 209-220, (with N. Mukhopadhyay), 2002.
14. *A sequential procedure with elimination for partitioning a set of normal populations having a common unknown variance*, Sequential Analysis, Vol. 20 (4), 279-292, 2001.
13. *Estimation of coating time in the magnetically assisted impaction coating process*, Journal of Powder Technology I, 121, 159-167, 2001 (P. Singh, T.K.S. Solanky, R. Mudryy, R. Pfeffer, and R. Dave).
12. *Power comparison of some tests for detecting a change in the multivariate mean*, Commun. in Statistics, Simulation & Computation, Volume 30, Issue 1, 19--36 (2001) (with M. Srivastava and A.K. Sen).
11. *Convection and local acceleration dominated regimes in Lennard-Jones liquids*, Physics Letters A, 266, 11-18 (2000) (with P. Singh).
10. *A Robust Methodology for selecting the smaller variance*, Journal of Nonparametric Statistics, Vol. 11, 361-376 (1999) (with N. Mukhopadhyay and A. Padmanabhan).
9. *Multistage methodologies for fixed-width simultaneous confidence intervals for all pairwise comparisons*, Journal of Statistical planning and Inference, 73, 163-176 (1998) (with N. Mukhopadhyay).
8. *On estimating the reliability after sequentially estimating the mean: the exponential case*, Metrika, 45(3), 235-252 (1997) (with N. Mukhopadhyay and A. Padmanabhan).
7. *Accuracy of formula-derived Creatinine clearance in paraplegics subjects*, Clin. Nephrol., 47(4), 237-242 (1997) (with V. Thaakur, E. Reisin, M. Solomonow, R. Baratta, E. Anguilar, R. Best, R. D'Ambrosia).
6. *Estimation After Sequential Selection and Ranking*, Metrika, 45(2), 95-106 (1997) (with N. Mukhopadhyay).
5. *A nonparametric accelerated sequential procedure for selecting the largest center of symmetry*, Journal of Nonparametric Statistics, 3, 155-166 (1993) (with N. Mukhopadhyay).
4. *Accelerated sequential procedure for selecting the best exponential population*, Journal of Statistical planning and Inference, 32, (1992), 347-361 (with N. Mukhopadhyay).
3. *Accelerated sequential procedure for selecting the largest mean*, Sequential Analysis, vol. 11, (1992), 137-148 (with N. Mukhopadhyay).
2. *Improved sequential and accelerated sequential procedures for estimating the scale parameter in a uniform distribution*, Sequential Analysis, vol. 10, (1991), 235-245 (with L. Kuo and N. Mukhopadhyay).
1. *Second order properties of accelerated stopping times with applications in sequential estimation*, Sequential Analysis, vol. 10, (1991), 99-123 (with N. Mukhopadhyay).

## OTHER PUBLICATIONS

- (i.) Proceedings of The second International Workshop in Sequential Methodologies (IWSM 2009): Multistage Methodologies for Partitioning a Set of Exponential Populations, 4 pages, 2009.
- (ii.) Proceedings of The 56<sup>th</sup> Session of the International Statistical Institute (ISI 2007): On Optimality of the Sample Size for the Partition Problem (jointly with Yuefeng Wu), pages 2033-2037, 2007.

- (iii). *Selecting the Best Component in a Multivariate Normal Population*, (with N. Mukhopadhyay).
  - Presented at the Joint Statistical Meetings, San Francisco, August 1993.
  - Abstract in IMS Bulletin, Vol. 22, No. 3, page 333, 1993.
  - Article appears in Chapter 6, *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., 1994, page 266-280.
- (iv.) *On Asymptotic Second-Order Properties of Selecting the t-best Exponential Populations*, (with N. Mukhopadhyay).
  - Presented at the Joint Statistical Meetings, Boston, August 1992.
  - Abstract in IMS Bulletin, Vol. 23, No. 3, page 339, 1992.
  - Article appears as a separate section in *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., 1994, Section 4.9, page 198-208.
- (v.) *On Asymptotic Second-Order Properties of Selecting the t-best Normal Populations*, (with N. Mukhopadhyay).
  - Presented at the Joint Statistical Meetings, Atlanta, August 1991.
  - Abstract in IMS Bulletin, Vol. 20, No. 3, page 335, 1991.
  - Article appears as a separate section in *Multistage Selection and Ranking Procedures: Second-Order Asymptotics*, Marcel Dekker, Inc., 1994, Section 3.9, page 117-141.

## GRANTS AND CONTRACTS FUNDED AS PI/Co-PI

- {21.} L.E.Q.S.F. Enhancement Grant, \$54,112.00, 2017-2018, *Redesigning Freshman Mathematics Instruction at UNO Using Technology Based Interactive Teaching Format* [The proposal was ranked first among all the proposals in the category. With Lisa Crespo and Lori Hodges].
- {20.} Howard Hughes Medical Institute (HHMI), \$1,500,000.00, 2014-2019, *Increasing recruitment and retention of STEM students at UNO, an urban university* [as Co-PI, Dr. Wendy Schluchter is the PI].
- {19.} L.E.Q.S.F. Enhancement Grant, \$15,000.00, 2011-2013, *Continuation of Statistical Consulting Education at UNO* [Linxiong Li].
- {18.} UNO SCoRE award, \$15,000, 2011.
- {17.} L.E.Q.S.F. Enhancement Grant, \$20,000.00, 2008-2010, *Enhancement of Industry Oriented Statistical Education at UNO: Post Katrina Years* [Linxiong Li].
- {16.} L.E.Q.S.F. Enhancement Grant, \$27,500.00, 2005-2007, Continuation of: *Enhancement of Industry Oriented Statistical Education at UNO* [with Terry Watkins and Linxiong Li].
- {15.} L.E.Q.S.F. Enhancement Grant, \$35,874.00, 2002-2004, *Enhancement of Industry Oriented Statistical Education at UNO*. [The proposal was ranked first among all the proposals in the category. With Terry Watkins, Linxiong Li, and Zhide Fang].
- {14.} AFCEA Silicon Bayou Chapter Award, \$300, 2002-2003, for purchasing classroom supplies for the mathematics department.
- {13.} National Science Foundation (NSF), \$219,900, 2000-2002, *UNOMACSS: A Scholarship Program in the Mathematical and Computer Sciences* [with A. DePano of Computer Science Department]. It provided scholarship to 20 mathematics and 20 computer science students for two years.
- {12.} L.E.Q.S.F. Enhancement Grant, \$172,512, 1996-1998, *Statistics and Applied Mathematics Laboratory* [with Lew Lefton and Adam Harrison].
- {11.} {L.E.Q.S.F. Research Grant}, \$75,325, 1995-1998, *Robustness and Implementability of Various Multistage Selection and Ranking Procedures*.
- {10.} NASA, Graduate Student Research Program, \$64,000, 1994-1996, *Statistical Analysis of Rocket Seal Tester*.
- {9.} U.S.D.A. Research Grant, \$20,000, 1994-1998, Statistical Assistance to USDA in EPA Projects (with Terry A. Watkins).
- {8.} Institute of Mathematical Statistics, \$400, 1994, *Travel Award to present a paper at the annual meeting in Chapel Hill, North Carolina*.
- {7.} UNO Research Support Award, \$2,000, 1994-1995.
- {6.} U.S.D.A. Research Grant, \$10,000, 1993-1994, Statistical Assistance to USDA (with Terry A. Watkins).
- {5.} L.E.Q.S.F. Research Grant, \$14,583, 1992-1993, *Permutationally Invariant Change point Estimation*, (with Terry A. Watkins).



- {4.} Institute of Mathematical Statistics, \$800, 1990, Travel Award to present a paper at the annual meeting in Uppsala, Sweden.
- {3.} UNO faculty summer scholar award, \$3667, summer 1991.
- {2.} UNO Research Council Grant}, \$1330, 7/91--6/92.
- {1.} UNO Faculty Development Award, \$1,600, June-December 1993.

### Professional Service as Referee:

I have refereed several hundred papers as a referee for scholarly journals and over 20 books in the field of statistics/Data Science. The books reviewed in the academic year 2020-21 are:

- 1. Foundations of Statistics for Data Scientists: With R and Python, Alan Agresti, Maria Kateri; ISBN 9780367748456, October 2021, Chapman and Hall/CRC.
- 2. Gini Inequality Index Methods and Applications, Nitis Mukhopadhyay, Partha Pratim Sengupta, ISBN 9781003143642, April 2021, Chapman and Hall/CRC.

### PROFESSIONAL PRESENTATIONS

- {57.} Some issues related to implementation of the partition problem formulations for normal population, **invited talk**, 34th NESS (New England Statistics Symposium), University of Rhode Island, September 30- October 2, 2021.
- {56.} A generalization of the statistical Partition Problem for Normal Populations, **contributed talk**, International Conference on Mathematical Modelling, Applied Analysis and Computation (ICMMAAC-2019), JECRC University, Jaipur, India, August 8-10, 2019.
- {55.} A Generalized Two-stage Procedure for the Partition Problem, **invited talk**, 7th IWSM 2019, Binghamton University, June 17-21, 2019 (With Jie Zhou).
- {54.} Enhancing Student Engagement by Using Technology Based Interactive Teaching, contributed talk, Joint Mathematics Meetings (JMM 2018), San Diego, January, 2018.
- {53.} Designing Experiments for Multiple Comparisons, **plenary talk**, The Sixth International Workshop in Sequential Methodologies (IWSM 2017), University of Rouen Normandy, France, June, 2017.
- {52.} A Two-Stage Procedure for the Generalized Partition Problem, **invited talk**, 8th INTERNATIONAL WORKSHOP ON APPLIED PROBABILITY (IWAP2016) June 20-23, 2016, Toronto, Canada.
- {51.} Statistical Partition Problem: Past, Present and Future, **invited talk**, IWSM 2015, Columbia University, New York, June, 2015.
- {50.} A Generalization of the Partition Problem, Poster Session, FRONTIERS OF HIERARCHICAL MODELING IN OBSERVATIONAL STUDIES, COMPLEX SURVEYS AND BIG DATA, University of Maryland, July, 2014 (With Jie Zhou).
- {49.} A Note on Partitioning Exponential Populations, **invited talk**, IWSM 2013, University Of Georgia, Athens, Georgia, July, 2013.
- {48.} Nonparametric sequential procedure for partitioning a set of populations with respect to a standard or control **invited talk**, International Conference On Statistics and Informatics in Agricultural Research, New Delhi, India, December, 2012.
- {47.} On a generalization of the Partition Problem, **invited talk**, IMSCT 2012 -- FIM XXI, Punjab University, India, December, 2012.
- {46.} Robustness of the fine-tuned Purely Sequential procedure for the unbalanced partition problem, **invited talk**, STATISTICS 2011 CANADA and IMST 2011-FIM XX, Montreal, July, 2011.
- {45.} On a generalization of the Partition Problem, **invited talk**, International Workshop on Sequential Methods, Stanford University, June, 2011 (with Jie Zhou).
- {44.} Use and Misuse of the ANOVA methodology, *Mathematical Association of America*, Florida Chapter Meeting, University of West Florida, Pensacola, Florida, November, 2010.
- {43.} Some Issues Related to the Partition Problem, **invited talk**, *50+ Years of Research: Mini-Conference in Honor of Professor Zacks*, Binghamton, New York, December, 2009.
- {42.} Multistage Methodologies for Partitioning a Set of Exponential Populations, **invited talk**, IWSM 2009, Troyes, France, June, 2009.
- {41.} SQA Editor's Round Table, **Plenary Session**, IWSM 2009, Troyes, France, June, 2009 (with Marie Hušková, N. Mukhopadhyay, Alexander Tartakovsky, and S. Zacks).
- {40.} Multistage Methodologies for Partitioning a Set of Several Populations With Respect to a Standard or a Control, **SQA Editors Special Invited Talk**, Joint Statistical Meeting, Denver, Colorado, August, 2008.
- {39.} A Nonparametric Purely Sequential Procedure For the Partition Problem, **invited talk**, **Dudewicz Honor Conference**, Syracuse, New York, July, 2008.

- {38.} On Approximate Optimality of the Unbalanced Sequential Procedure for the Partition Problem, **invited talk**, IISA Conference, Connecticut, May, 2008 (with Y. Wu).
- {37.} The role of Statistics in Clinical Trials, Invited talk for the students in the *Honors Program*, *University of New Orleans*, **invited talk**, April, 2008.
- {36.} On Optimality of the Sample Size for the Partition Problem, ISI 2007 Conference, Lisbon, Portugal, August, 2007 (with Y. Wu).
- {35.} A Nonparametric Methodology for the Partition Problem, **invited talk**, IWSM 2007, Auburn, Alabama, July, 2007.
- {34.} SQA Editor's Round Table, **invited participant**, IWSM 2007, Auburn, Alabama, July, 2007 (with M. Aoshima, M. Carpenter, N. Mukhopadhyay, and S. Zacks).
- {33.} Multiple Comparison Procedures in Statistics: A Distribution Free Approach, Department of Electrical Engineering, University of New Orleans, April, 2007.
- {32.} The problem of selection and Ranking: An introduction and some current research, **invited talk**, Department of mathematics, IIT Delhi, January, 2007.
- {31.} An Efficient Design For Partitioning a set of Populations With Respect to a Control, *International Conference on Statistics and Informatics*, **invited talk**, Delhi, India, December, 2006.
- {30.} Efficient Designs for the Partition Problem, Department of Mathematics, Department of Mathematics, *University of Louisiana, Lafayette*, **invited talk**, September, 2005.
- {29.} A note on the Efficiency of Some Designs for the Partition Problem, *International conference on recent advances in statistics*, **invited talk**, IIT Kanpur, India, January, 2005.
- {28.} On an improved accelerated sequential methodology with applications in selection and ranking, *International Sri Lankan Statistical Conference: Visions of Futuristic Methodologies*, **invited talk**, Kandy, Sri Lanka, December, 2004.
- {27.} Implementation and other issues related to the partition problem, *Punjab University, Chandigarh*, **invited talk**, India, December, 2004.
- {26.} Robustness of methodologies for the partition problem, *University of Connecticut, Storrs*, Connecticut, **invited talk**, October, 2004.
- {25.} A two stage procedure for the partition problem, *IISA 2004 Conference*, **invited talk**, Athens, Georgia, May, 2004.
- {24.} A two stage procedure with elimination, *Department of Electrical Engineering, UNO*, September, 2003.
- {23.} On combining subset selection and indifference zone approaches, *International conference on Bayesian Statistics*, LaManga, Spain, May, 2003.
- {22.} Robustness of multistage procedures, **invited talk**, *Ninth International conference on Statistics, Combinatorics and related areas*, Allahabad, India, December, 2002.
- {21.} A sequential procedure with elimination, *International conference on statistical inference and reliability*, **invited talk**, Chandigarh, India, December, 2001.
- {20.} On generalizing the partition problem for the normal population, **invited talk**, *Joint Statistical Meeting of IISA*, etc., New Delhi, India, December, 2000.
- {19.} On Robustness of the partition problem for the normal population, *Sixth Conference of the Forum for Interdisciplinary Mathematics: International Conference on Combinatorics, Information Theory and Statistics*, University of South Alabama, Mobile, December, 1999. Maryland, August, 1999.
- {18.} On partitioning a set of normal populations with respect to a control, **Invited Talk**, *Fifth Conference of the Forum for Interdisciplinary Mathematics: International Conference on Combinatorics, Information Theory and Statistics*, University of Mysore, India, December, 1998.
- {17.} Three-Stage and accelerated sequential methodologies for comparing several treatments with a control, **Invited Talk**, *Third Conference of the Forum for Interdisciplinary Mathematics: International Conference on Combinatorics, Information Theory and Statistics*, University of Southern Maine, Portland, Maine, July, 1997 (with N. Mukhopadhyay).
- {16.} Research in Statistics, Invited talk for the students in the *Honors Program*, *University of New Orleans*, **invited talk**, March, 1997.
- {15.} Few generalizations to the selection and Ranking Problem, *Department of Statistics, University of Toronto*, November, 1996 (with N. Mukhopadhyay).
- {14.} Multistage methodologies for fixed-width simultaneous confidence intervals for all pairwise comparisons, *Indian Science Congress Meeting*, Patiala, India, January, 1996 (with N. Mukhopadhyay).
- {13.} On estimating the reliability after sequentially estimating the mean: the exponential case, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Orlando, August, 1995 (with N. Mukhopadhyay and A. Padmanabhan).
- {12.} Multistage methodologies for fixed-width simultaneous confidence intervals for all pairwise comparisons, *Bose Memorial Conference*, *Colorado State University*, Colorado, June, 1995 (with N. Mukhopadhyay).
- {11.} On an Improved Accelerated Sequential Methodology With Applications in Selection and Ranking, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Toronto, August, 1994 (with N. Mukhopadhyay).



- {10.} Accelerated Sequential Estimation of the Largest Location Parameter in the Normal and Negative Exponential Cases, *Annual Meeting of Institute of Mathematical Statistics*, North Carolina, June, 1994 (with N. Mukhopadhyay).
- {9.} Selecting the Best Component in a Multivariate Normal Population, *Annual Joint Statistical Meetings of ASA, IMS etc.*, San Francisco, August, 1993 (with N. Mukhopadhyay).
- {8.} A Note on Sequential Selection and Ranking, *Department of Mathematics, I.I.T. Delhi*, India, June, 1993.
- {7.} On Asymptotic Second-Order Properties of Selecting the t-best Exponential Populations, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Boston, August, 1992 (with N. Mukhopadhyay).
- {6.} On Asymptotic Second-Order Properties of Selecting the t-best Normal Populations, *Annual Joint Statistical Meetings of ASA, IMS etc.*, Atlanta, August, 1991 (with N. Mukhopadhyay).
- {5.} Accelerated Sequential Procedure for Selecting the Largest Mean, *Department of Statistics, University of Southwestern Louisiana*, April, 1991 (with N. Mukhopadhyay).
- {4.} Nonparametric Accelerated Sequential Procedure for Selecting the Best Population, *2nd World Congress of The Bernoulli Society for Mathematical Statistics and Probability and Annual meeting of IMS, Uppsala, Sweden*, August, 1990 (with N. Mukhopadhyay).
- {3.} A Computational Based Approach to Selection and Ranking Problem, *22nd Symposium on the Interface: Computing Science and Statistics*, Michigan State University, May, 1990 (with N. Mukhopadhyay).
- {2.} A note on Sequential Selection and Ranking Procedures, *Department of Statistics, University of Connecticut*, April, 1990 (with N. Mukhopadhyay).
- {1.} Computationally Intensive Accelerated Sequential Procedure for Selecting the Best Exponential Population, *Fourth Annual New England Statistics Symposium*, Lowell University, March, 1990 (with N. Mukhopadhyay).

#### **UNIVERSITY SERVICE (University of New Orleans)**

##### **Selected University Service:**

President's Executive Committee: Member, 2008-09.  
 Policy Committee: Chair, 2008-09.  
 Strategic Planning Committee (The Strategic Plan 2009-2012): Committee Member.  
 Policy Committee: Represented the College of Sciences, 2006-2009.  
 University Senate: 2006-2009.  
 Provost Search Committee: Member, 2008-2009.  
 Dean Search Committee: Member, 2009-2010.  
 First Year Initiatives (FYI): Committee member, 2009-2013.  
 University Committee: Committee on University Admissions, member 2003-2006, Committee Chair 2005-2006, member 2006-2009.  
 Strategic Planning Committee (2013-2014): Committee Member.  
 Provost Search Committee: Member, 2014-2015.  
 Faculty Governance Committee: Member, 2013-2016.  
 Strategic Enrollment Management Committee (SEMC): Faculty Co-Chair, 2015-present.  
 Retention Steering Committee, Chair, 2015- Fall 2019.  
 Provost Search Committee: Member, 2016.  
 Strategic Plan 2015 – 2020: Member, 2016- 2017.  
 Charges Committee: Fall 2020—present.

##### **College Service:**

Chair, College of Sciences Retention Committee, 2013-14.  
 College of Sciences, Dean Search Committee, 2009-10.  
 Member, College of Sciences Teaching Award Committee, 2002-2008.

##### **Department Service:**

Department Chair: Fall 2008—present.  
 Member of Several Departmental Committees such as Computer Committee; Graduate Advisory;  
 Courses and Curricula, etc: 1990-present.

##### **Mathematical Service:**

Math Bootcamp for 9<sup>th</sup> and 10<sup>th</sup> Graders [Funded by *College Track*], Summer 2013.  
 Math Bootcamp for 11<sup>th</sup> and 12<sup>th</sup> Graders [Funded by *College Track*], Summer 2013.  
 ACING THE ACT: Organized ACT preparation workshop [Funded by *College Track*], Summer & Fall 2013  
 Dual Enrollment ACT Preparation: Tutoring program for about 25 Lake Area High School students to improve their ACT Math score to make them eligible for DE class at UNO  
 [Funded by *Urban League*]

**DOCTORAL THESIS SUPERVISION AS MAJOR PROFESSOR**

- i. Jie Zhou, A Generalization of The Partition Problem in Statistics; 2013.
- ii. Jin Gu, Statistical Partition Problem for Exponential Populations and Statistical Surveillance of Cancers in Louisiana; 2014.
- iii. Rui Wang, Generalizing Multistage Partition Procedures for Two-parameter Exponential Populations; 2018.

**Other Activities Related to Teaching and MS/PhD Committee Memberships**

- (i). Master's thesis supervision for 2 students.
- (ii). Major Professor for over 40 Masters Students with non-thesis Master's Degree program.
- (iii). PhD Thesis committee member for 30 plus students.

**Major Areas of Research Interest**

Statistical Consulting, Statistical Sampling, Statistical Modeling, Sequential Analysis, Selection and Ranking, Change point Problem, Statistical Computing, Biostatistics, and Biomedical applications.

**APPENDIX 2****Estimates for Black Voters Voting For a Republican Candidate in 12 Statewide Elections**

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Republican (B_v_Rep) Percent</b>	<b>95% Confidence Interval B_v_Rep Lower Limit</b>	<b>95% Confidence Interval B_v_Rep Upper Limit</b>
2012	1	President	Louisiana	7.6	4.4	12.3
2012	1	President	Orleans	1.5	0.9	2.0
2012	1	President	EBR	6.7	4.5	10.3
2012	1	President	WBR	8.3	0.6	18.8
2012	1	President	Natchitoches	3.3	1.1	9.3
2012	1	President	East_Carroll	3.2	0.4	8.9
2015	2	Governor	Louisiana	1.3	1.1	1.4
2015	2	Governor	Orleans	1.1	0.8	1.4
2015	2	Governor	EBR	1.2	0.9	1.6
2015	2	Governor	WBR	4.5	1.2	10.0
2015	2	Governor	Natchitoches	2.5	1.0	5.1
2015	2	Governor	East_Carroll	2.4	0.6	5.9
2015	3	Lt. Gov.	Louisiana	3.9	3.6	4.2
2015	3	Lt. Gov.	Orleans	8.4	7.7	9.2
2015	3	Lt. Gov.	EBR	4.5	3.8	5.3
2015	3	Lt. Gov.	WBR	4.7	1.3	10.2
2015	3	Lt. Gov.	Natchitoches	3.7	1.8	6.5
2015	3	Lt. Gov.	East_Carroll	5.3	2.7	9.3
2016	4	President	Louisiana	1.6	1.0	3.4
2016	4	President	Orleans	1.1	0.9	1.5
2016	4	President	EBR	1.2	0.9	1.8
2016	4	President	WBR	2.6	0.9	5.7
2016	4	President	Natchitoches	1.8	0.8	4.1
2016	4	President	East_Carroll	1.3	0.4	2.7
2017	5	Treasurer	Louisiana	2.5	2.2	2.7
2017	5	Treasurer	Orleans	2.0	1.6	2.4
2017	5	Treasurer	EBR	2.5	1.9	3.2
2017	5	Treasurer	WBR	5.1	1.2	11.7
2017	5	Treasurer	Natchitoches	6.2	2.7	11.0
2017	5	Treasurer	East_Carroll	3.1	0.8	7.7
2018	6	Sec. State	Louisiana	3.6	3.3	3.8
2018	6	Sec. State	Orleans	2.2	1.7	2.9
2018	6	Sec. State	EBR	3.2	2.6	3.9
2018	6	Sec. State	WBR	4.6	1.5	9.9
2018	6	Sec. State	Natchitoches	6.4	3.6	10.2
2018	6	Sec. State	East_Carroll	14.2	11.2	17.9
2019	7	Lt. Gov.	Louisiana	11.6	11.3	12.0
2019	7	Lt. Gov.	Orleans	12.6	11.7	13.4
2019	7	Lt. Gov.	EBR	18.0	17.3	18.8
2019	7	Lt. Gov.	WBR	8.8	5.1	14.2
2019	7	Lt. Gov.	Natchitoches	7.1	4.4	10.6
2019	7	Lt. Gov.	East_Carroll	14.1	10.6	18.6
2018	8	At. Gen.	Louisiana	9.5	9.2	9.8
2018	8	At. Gen.	Orleans	6.8	6.0	7.9
2018	8	At. Gen.	EBR	11.0	10.3	11.7
2018	8	At. Gen.	WBR	7.1	3.8	12.1

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Republican (B_v_Rep) Percent</b>	<b>95% Confidence Interval B_v_Rep Lower Limit</b>	<b>95% Confidence Interval B_v_Rep Upper Limit</b>
2018	8	At. Gen.	Natchitoches	11.6	8.4	15.4
2018	8	At. Gen.	East_Carroll	19.2	15.9	23.4
2019	9	Sec. State	Louisiana	4.0	3.7	4.2
2019	9	Sec. State	Orleans	2.2	1.8	2.7
2019	9	Sec. State	EBR	4.3	3.8	4.9
2019	9	Sec. State	WBR	4.2	1.9	8.0
2019	9	Sec. State	Natchitoches	4.5	2.4	7.6
2019	9	Sec. State	East_Carroll	6.7	3.7	11.3
2019	10	Governor	Louisiana	1.1	1.0	1.3
2019	10	Governor	Orleans	1.2	0.9	1.6
2019	10	Governor	EBR	1.3	0.9	1.7
2019	10	Governor	WBR	4.5	1.4	9.4
2019	10	Governor	Natchitoches	2.1	0.7	4.5
2019	10	Governor	East_Carroll	2.7	0.7	6.4
2020	11	President	Louisiana	8.7	5.7	13.2
2020	11	President	Orleans	1.4	1.2	1.7
2020	11	President	EBR	5.9	4.1	8.1
2020	11	President	WBR	15.9	4.1	26.2
2020	11	President	Natchitoches	2.8	1.3	5.1
2020	11	President	East_Carroll	3.9	2.1	6.1
2022	12	Senator	Louisiana	6.5	5.3	9.5
2022	12	Senator	Orleans	3.0	2.5	3.5
2022	12	Senator	EBR	4.3	3.3	6.4
2022	12	Senator	WBR	9.4	3.7	14.3
2022	12	Senator	Natchitoches	8.3	4.9	13.4
2022	12	Senator	East_Carroll	13.6	10.7	17.0

**APPENDIX 3****Estimates for Black Voters Voting For a Democratic Candidate in 12 Statewide Elections**

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Democrat (B_v_Dem) Percent</b>	<b>95% Confidence Interval B_v_Dem Lower Limit</b>	<b>95% Confidence Interval B_v_Dem Upper Limit</b>
2012	1	President	Louisiana	91.5	86.7	94.8
2012	1	President	Orleans	98.1	97.5	98.7
2012	1	President	EBR	92.5	88.9	94.9
2012	1	President	WBR	90.4	79.7	98.3
2012	1	President	Natchitoches	95.7	89.6	98.1
2012	1	President	East_Carroll	96.3	90.5	99.2
2015	2	Governor	Louisiana	98.7	98.6	98.9
2015	2	Governor	Orleans	98.9	98.6	99.2
2015	2	Governor	EBR	98.8	98.4	99.1
2015	2	Governor	WBR	95.5	90.0	98.8
2015	2	Governor	Natchitoches	97.5	94.9	99.0
2015	2	Governor	East_Carroll	97.6	94.1	99.4
2015	3	Lt. Gov.	Louisiana	96.1	95.8	96.4
2015	3	Lt. Gov.	Orleans	91.6	90.8	92.3
2015	3	Lt. Gov.	EBR	95.5	94.7	96.2
2015	3	Lt. Gov.	WBR	95.3	89.8	98.7
2015	3	Lt. Gov.	Natchitoches	96.3	93.5	98.2
2015	3	Lt. Gov.	East_Carroll	94.7	90.7	97.3
2016	4	President	Louisiana	97.3	95.3	98.1
2016	4	President	Orleans	98.3	97.9	98.6
2016	4	President	EBR	98.0	97.2	98.4
2016	4	President	WBR	94.9	90.9	97.5
2016	4	President	Natchitoches	96.1	93.5	97.7
2016	4	President	East_Carroll	97.3	95.7	98.6
2017	5	Treasurer	Louisiana	97.5	97.3	97.8
2017	5	Treasurer	Orleans	98.0	97.6	98.4
2017	5	Treasurer	EBR	97.5	96.8	98.1
2017	5	Treasurer	WBR	94.9	88.3	98.8
2017	5	Treasurer	Natchitoches	93.8	89.0	97.3
2017	5	Treasurer	East_Carroll	96.9	92.3	99.2
2018	6	Sec. State	Louisiana	96.4	96.2	96.7
2018	6	Sec. State	Orleans	97.8	97.1	98.3
2018	6	Sec. State	EBR	96.8	96.1	97.4
2018	6	Sec. State	WBR	95.4	90.1	98.5
2018	6	Sec. State	Natchitoches	93.6	89.8	96.4
2018	6	Sec. State	East_Carroll	85.8	82.1	88.8
2019	7	Lt. Gov.	Louisiana	88.4	88.0	88.7
2019	7	Lt. Gov.	Orleans	87.4	86.6	88.3
2019	7	Lt. Gov.	EBR	82.0	81.2	82.7
2019	7	Lt. Gov.	WBR	91.2	85.8	94.9
2019	7	Lt. Gov.	Natchitoches	92.9	89.4	95.6
2019	7	Lt. Gov.	East_Carroll	85.9	81.4	89.4
2018	8	At. Gen.	Louisiana	90.5	90.2	90.8
2018	8	At. Gen.	Orleans	93.2	92.1	94.0
2018	8	At. Gen.	EBR	89.0	88.3	89.7
2018	8	At. Gen.	WBR	92.9	87.9	96.2
2018	8	At. Gen.	Natchitoches	88.4	84.6	91.6

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Democrat (B_v_Dem) Percent</b>	<b>95% Confidence Interval B_v_Dem Lower Limit</b>	<b>95% Confidence Interval B_v_Dem Upper Limit</b>
2018	8	At. Gen.	East_Carroll	80.8	76.6	84.1
2019	9	Sec. State	Louisiana	96.0	95.8	96.3
2019	9	Sec. State	Orleans	97.8	97.3	98.2
2019	9	Sec. State	EBR	95.7	95.1	96.2
2019	9	Sec. State	WBR	95.8	92.0	98.1
2019	9	Sec. State	Natchitoches	95.5	92.4	97.6
2019	9	Sec. State	East_Carroll	93.3	88.7	96.3
2019	10	Governor	Louisiana	98.9	98.7	99.0
2019	10	Governor	Orleans	98.8	98.4	99.1
2019	10	Governor	EBR	98.7	98.3	99.1
2019	10	Governor	WBR	95.5	90.6	98.6
2019	10	Governor	Natchitoches	97.9	95.5	99.3
2019	10	Governor	East_Carroll	97.3	93.6	99.3
2020	11	President	Louisiana	90.0	85.4	93.0
2020	11	President	Orleans	98.0	97.6	98.3
2020	11	President	EBR	93.3	91.0	95.0
2020	11	President	WBR	82.9	72.5	94.6
2020	11	President	Natchitoches	95.1	92.6	96.9
2020	11	President	East_Carroll	93.9	91.5	95.8
2022	12	Senator	Louisiana	90.7	88.0	91.8
2022	12	Senator	Orleans	95.2	94.6	95.7
2022	12	Senator	EBR	94.1	92.1	95.0
2022	12	Senator	WBR	88.9	83.9	94.7
2022	12	Senator	Natchitoches	88.5	83.2	92.0
2022	12	Senator	East_Carroll	80.8	77.3	84.1

**APPENDIX 4****Estimates for White Voters Voting For a Republican Candidate in 12 Statewide Elections**

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Republican (W_v_Rep) Percent</b>	<b>95% Confidence Interval W_v_Rep Lower Limit</b>	<b>95% Confidence Interval W_v_Rep Upper Limit</b>
2012	1	President	Louisiana	83.9	81.7	85.4
2012	1	President	Orleans	45.6	44.8	46.4
2012	1	President	EBR	80.9	78.0	82.7
2012	1	President	WBR	81.9	75.4	87.2
2012	1	President	Natchitoches	86.7	82.9	88.8
2012	1	President	East_Carroll	87.8	77.5	94.2
2015	2	Governor	Louisiana	64.9	64.7	65.0
2015	2	Governor	Orleans	29.4	28.3	30.3
2015	2	Governor	EBR	59.0	58.3	59.7
2015	2	Governor	WBR	54.1	49.9	57.1
2015	2	Governor	Natchitoches	67.6	65.2	69.7
2015	2	Governor	East_Carroll	78.9	72.9	83.5
2015	3	Lt. Gov.	Louisiana	79.5	79.2	79.7
2015	3	Lt. Gov.	Orleans	47.4	45.8	49.0
2015	3	Lt. Gov.	EBR	60.3	59.2	61.5
2015	3	Lt. Gov.	WBR	60.1	56.0	63.1
2015	3	Lt. Gov.	Natchitoches	78.8	75.8	81.1
2015	3	Lt. Gov.	East_Carroll	88.3	82.4	92.9
2016	4	President	Louisiana	85.1	84.3	85.5
2016	4	President	Orleans	31.2	30.4	32.4
2016	4	President	EBR	78.0	77.3	78.6
2016	4	President	WBR	86.5	84.3	88.2
2016	4	President	Natchitoches	87.0	85.3	88.2
2016	4	President	East_Carroll	93.2	90.4	95.6
2017	5	Treasurer	Louisiana	80.8	80.5	81.0
2017	5	Treasurer	Orleans	38.7	37.2	40.2
2017	5	Treasurer	EBR	80.6	79.8	81.4
2017	5	Treasurer	WBR	86.0	80.7	90.3
2017	5	Treasurer	Natchitoches	85.4	82.5	88.2
2017	5	Treasurer	East_Carroll	89.4	80.4	96.7
2018	6	Sec. State	Louisiana	85.5	85.3	85.7
2018	6	Sec. State	Orleans	30.5	29.0	31.8
2018	6	Sec. State	EBR	80.8	79.9	81.6
2018	6	Sec. State	WBR	87.7	83.4	91.0
2018	6	Sec. State	Natchitoches	87.9	85.4	90.1
2018	6	Sec. State	East_Carroll	85.6	78.8	91.0
2019	7	Lt. Gov.	Louisiana	92.4	92.2	92.5
2019	7	Lt. Gov.	Orleans	47.8	46.0	49.5
2019	7	Lt. Gov.	EBR	88.8	88.2	89.5

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Republican (W_v_Rep) Percent</b>	<b>95% Confidence Interval W_v_Rep Lower Limit</b>	<b>95% Confidence Interval W_v_Rep Upper Limit</b>
2019	7	Lt. Gov.	WBR	94.6	91.5	96.7
2019	7	Lt. Gov.	Natchitoches	93.3	91.3	94.9
2019	7	Lt. Gov.	East_Carroll	91.3	84.9	95.7
2018	8	At. Gen.	Louisiana	90.6	90.4	90.7
2018	8	At. Gen.	Orleans	34.5	32.5	37.5
2018	8	At. Gen.	EBR	85.1	84.3	85.8
2018	8	At. Gen.	WBR	92.9	89.8	95.3
2018	8	At. Gen.	Natchitoches	92.2	90.1	94.0
2018	8	At. Gen.	East_Carroll	93.4	87.3	98.0
2019	9	Sec. State	Louisiana	86.9	86.7	87.0
2019	9	Sec. State	Orleans	31.9	30.6	33.2
2019	9	Sec. State	EBR	82.2	81.4	82.9
2019	9	Sec. State	WBR	90.8	88.0	93.0
2019	9	Sec. State	Natchitoches	88.7	86.2	90.7
2019	9	Sec. State	East_Carroll	82.4	75.5	87.8
2019	10	Governor	Louisiana	73.1	73.0	73.3
2019	10	Governor	Orleans	20.2	19.3	21.1
2019	10	Governor	EBR	64.9	64.2	65.5
2019	10	Governor	WBR	69.2	65.5	71.9
2019	10	Governor	Natchitoches	76.8	74.7	78.8
2019	10	Governor	East_Carroll	73.6	67.0	78.6
2020	11	President	Louisiana	82.5	80.0	84.3
2020	11	President	Orleans	28.6	27.9	29.5
2020	11	President	EBR	75.0	72.5	76.9
2020	11	President	WBR	79.7	73.4	87.7
2020	11	President	Natchitoches	87.7	86.3	89.0
2020	11	President	East_Carroll	86.9	83.3	89.9
2022	12	Senator	Louisiana	85.5	83.8	86.4
2022	12	Senator	Orleans	26.7	25.8	27.4
2022	12	Senator	EBR	75.7	73.3	76.8
2022	12	Senator	WBR	87.7	84.8	90.6
2022	12	Senator	Natchitoches	88.2	85.7	90.0
2022	12	Senator	East_Carroll	85.9	81.8	89.3



**APPENDIX 5****Estimates for White Voters Voting for a Democrat Candidate in 12 Statewide Elections**

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Republican (W_v_Dem) Percent</b>	<b>95% Confidence Interval W_v_Dem Lower Limit</b>	<b>95% Confidence Interval W_v_Dem Upper Limit</b>
2012	1	President	Louisiana	15.2	13.6	17.4
2012	1	President	Orleans	51.7	50.8	52.6
2012	1	President	EBR	18.0	16.0	21.0
2012	1	President	WBR	17.2	11.9	23.9
2012	1	President	Natchitoches	12.0	9.8	15.9
2012	1	President	East_Carroll	11.7	5.2	22.0
2015	2	Governor	Louisiana	35.1	35.0	35.3
2015	2	Governor	Orleans	70.6	69.7	71.7
2015	2	Governor	EBR	41.0	40.3	41.7
2015	2	Governor	WBR	45.9	42.9	50.1
2015	2	Governor	Natchitoches	32.4	30.3	34.8
2015	2	Governor	East_Carroll	21.1	16.5	27.1
2015	3	Lt. Gov.	Louisiana	20.5	20.3	20.8
2015	3	Lt. Gov.	Orleans	52.6	51.0	54.2
2015	3	Lt. Gov.	EBR	39.7	38.5	40.8
2015	3	Lt. Gov.	WBR	39.9	36.9	44.0
2015	3	Lt. Gov.	Natchitoches	21.2	18.9	24.2
2015	3	Lt. Gov.	East_Carroll	11.7	7.1	17.6
2016	4	President	Louisiana	13.1	12.7	14.0
2016	4	President	Orleans	65.7	64.5	66.7
2016	4	President	EBR	18.5	17.7	19.3
2016	4	President	WBR	10.6	8.5	13.2
2016	4	President	Natchitoches	11.1	9.6	13.1
2016	4	President	East_Carroll	5.6	3.5	8.5
2017	5	Treasurer	Louisiana	19.2	19.0	19.5
2017	5	Treasurer	Orleans	61.3	59.8	62.8
2017	5	Treasurer	EBR	19.4	18.6	20.2
2017	5	Treasurer	WBR	14.0	9.7	19.3
2017	5	Treasurer	Natchitoches	14.6	11.8	17.5
2017	5	Treasurer	East_Carroll	10.6	3.3	19.6
2018	6	Sec. State	Louisiana	14.5	14.3	14.7
2018	6	Sec. State	Orleans	69.5	68.2	71.0
2018	6	Sec. State	EBR	19.2	18.4	20.1
2018	6	Sec. State	WBR	12.3	9.0	16.6
2018	6	Sec. State	Natchitoches	12.1	9.9	14.6
2018	6	Sec. State	East_Carroll	14.4	9.0	21.2
2019	7	Lt. Gov.	Louisiana	7.6	7.5	7.8
2019	7	Lt. Gov.	Orleans	52.2	50.5	54.0
2019	7	Lt. Gov.	EBR	11.2	10.5	11.8
2019	7	Lt. Gov.	WBR	5.4	3.3	8.5
2019	7	Lt. Gov.	Natchitoches	6.7	5.1	8.7
2019	7	Lt. Gov.	East_Carroll	8.7	4.3	15.1
2018	8	At. Gen.	Louisiana	9.4	9.3	9.6

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish Name/Entire Louisiana</b>	<b>Black Voting Republican (W_v_Dem) Percent</b>	<b>95% Confidence Interval W_v_Dem Lower Limit</b>	<b>95% Confidence Interval W_v_Dem Upper Limit</b>
2018	8	At. Gen.	Orleans	65.5	62.5	67.5
2018	8	At. Gen.	EBR	14.9	14.2	15.7
2018	8	At. Gen.	WBR	7.1	4.7	10.2
2018	8	At. Gen.	Natchitoches	7.8	6.0	9.9
2018	8	At. Gen.	East_Carroll	6.6	2.0	12.7
2019	9	Sec. State	Louisiana	13.1	13.0	13.3
2019	9	Sec. State	Orleans	68.1	66.8	69.4
2019	9	Sec. State	EBR	17.8	17.1	18.6
2019	9	Sec. State	WBR	9.2	7.0	12.0
2019	9	Sec. State	Natchitoches	11.3	9.3	13.8
2019	9	Sec. State	East_Carroll	17.6	12.2	24.5
2019	10	Governor	Louisiana	26.9	26.7	27.0
2019	10	Governor	Orleans	79.8	78.9	80.7
2019	10	Governor	EBR	35.1	34.5	35.8
2019	10	Governor	WBR	30.8	28.1	34.5
2019	10	Governor	Natchitoches	23.2	21.2	25.3
2019	10	Governor	East_Carroll	26.4	21.4	33.0
2020	11	President	Louisiana	16.8	15.0	19.3
2020	11	President	Orleans	70.3	69.5	71.0
2020	11	President	EBR	24.2	22.4	26.7
2020	11	President	WBR	19.4	11.3	25.9
2020	11	President	Natchitoches	11.5	10.2	12.9
2020	11	President	East_Carroll	12.1	9.2	15.5
2022	12	Senator	Louisiana	13.8	12.9	15.5
2022	12	Senator	Orleans	72.5	71.8	73.4
2022	12	Senator	EBR	23.7	22.6	26.1
2022	12	Senator	WBR	11.5	8.6	14.5
2022	12	Senator	Natchitoches	11.1	9.4	13.5
2022	12	Senator	East_Carroll	13.3	9.9	17.5

**APPENDIX 6****Estimates of Blacks Voting Republican and Whites Voting Democrat in 12 Statewide Elections****City of Shreveport Precincts v. Non City of Shreveport Precincts**

<b>Year</b>	<b>Election Number</b>	<b>Election</b>	<b>Parish</b>	<b>City of Shreveport Precinct (y or n)</b>	<b>Black Voting Rep (B_v_Rep)</b>	<b>Conf. Interval (B_v_Rep) Lower Limit</b>	<b>Conf. Interval (B_v_Rep) Upper Limit</b>	<b>White Voting Dem (W_v_Dem)</b>	<b>Conf. Interval (W_v_Dem) Lower Limit</b>	<b>Conf. Interval (W_v_Dem) Upper Limit</b>
2012	1	President	Caddo	y	10.6	7.2	14.0	22.5	18.6	26.2
2012	1	President	Caddo	n	55.9	44.7	64.7	19.4	17.1	21.7
2015	2	Governor	Caddo	n	12.1	2.6	28.4	22.5	19.3	27.0
2015	2	Governor	Caddo	y	1.2	0.7	1.9	30.8	29.8	31.9
2015	3	Lt. Gov.	Caddo	n	11.7	3.5	26.0	14.2	11.5	18.1
2015	3	Lt. Gov.	Caddo	y	1.7	1.2	2.5	20.5	19.0	21.7
2016	4	President	Caddo	y	1.7	1.1	2.8	16.5	15.2	19.0
2016	4	President	Caddo	n	38.5	25.0	51.7	12.7	9.8	15.5
2017	5	Treasurer	Caddo	y	2.4	1.5	3.4	15.0	13.6	16.5
2017	5	Treasurer	Caddo	n	11.5	3.4	26.4	7.8	5.0	11.5
2018	6	Sec. State	Caddo	y	3.4	2.6	4.3	18.9	17.5	20.2
2018	6	Sec. State	Caddo	n	13.5	4.2	29.3	9.4	6.1	13.3
2019	7	Lt. Gov.	Caddo	y	12.2	10.9	13.6	11.4	9.8	13.0
2019	7	Lt. Gov.	Caddo	n	14.1	6.7	24.6	2.5	1.1	4.5
2018	8	At. Gen.	Caddo	y	16.4	15.0	17.8	13.3	11.6	15.0
2018	8	At. Gen.	Caddo	n	17.8	9.4	30.4	2.7	1.3	5.0
2019	9	Sec. State	Caddo	y	2.8	2.0	3.7	16.5	15.0	18.1
2019	9	Sec. State	Caddo	n	7.3	2.3	16.8	5.3	3.3	8.3
2019	10	Governor	Caddo	y	1.2	0.7	1.9	24.6	23.5	25.7
2019	10	Governor	Caddo	n	10.2	2.9	25.0	12.4	10.0	15.9
2020	11	President	Caddo	y	6.4	4.2	8.5	26.4	23.8	28.2
2020	11	President	Caddo	n	60.6	51.6	71.0	18.2	16.9	19.6
2022	12	Senator	Caddo	y	7.6	6.5	8.6	21.0	19.9	22.1
2022	12	Senator	Caddo	n	28.4	12.2	52.5	7.4	4.5	11.5

**APPENDIX 7**  
**Estimates For Voting Percentages in East Baton Rouge Parish**  
**(By Minimum Density)**

<b>Election</b>	<b>Minimum Density in VTD</b>	<b>White Voting Rep (W_v Rep)</b>	<b>Conf. Interval (W_v Rep) Lower Limit</b>	<b>Conf. Interval (W_v Rep) Upper Limit</b>	<b>White Voting Dem (W_v Dem)</b>	<b>Conf. Interval (W_v Dem) Lower Limit</b>	<b>Conf. Interval (W_v Dem) Upper Limit</b>
Pres 2020	0	73.9	70.9	76.3	25.4	22.9	28.4
Pres 2020	300	73.6	69.1	77.5	25.7	21.8	30.2
Pres 2020	500	73.8	71.4	76.1	25.5	23.2	27.9
Pres 2020	3000	68.0	63.7	70.6	31.0	28.2	35.4
Pres 2020	4500	61.1	56.6	64.6	37.1	34.0	41.6
Pres 2020	5000	50.9	45.0	57.3	46.8	40.1	52.5
Pres 2020	5200	43.2	34.9	49.5	54.1	47.4	62.4
Pres 2020	5300	37.4	28.1	48.0	60.2	49.5	69.4
Pres 2020	5500	38.7	28.8	49.3	58.8	48.2	69.1
Pres 2020	7000	26.5	12.4	42.4	70.5	54.3	85.0
Senate 2022	0	75.7	73.3	76.8	23.7	22.6	26.1
Senate 2022	300	69.5	66.7	71.9	30.0	27.6	32.8
Senate 2022	500	71.2	69.5	72.9	28.4	26.7	30.0
Senate 2022	3000	67.6	65.8	69.0	31.9	30.5	33.7
Senate 2022	4500	56.2	51.9	58.8	43.0	40.3	47.3
Senate 2022	5000	50.0	44.5	55.8	48.6	43.1	53.9
Senate 2022	5200	40.0	33.8	45.2	58.4	53.4	64.6
Senate 2022	5300	33.3	26.1	41.6	65.5	57.3	72.8
Senate 2022	5500	34.3	26.5	41.7	64.6	57.3	72.7
Senate 2022	7000	44.8	18.4	60.7	53.4	37.5	80.0

**APPENDIX 8**  
**Estimates For Voting Percentages in Caddo Parish**  
**(By Minimum Density)**

<b>Election</b>	<b>Minimum Density in VTD</b>	<b>White Voting Rep (W_v Rep)</b>	<b>Conf. Interval (W_v Rep) Lower Limit</b>	<b>Conf. Interval (W_v Rep) Upper Limit</b>	<b>White Voting Dem (W_v Dem)</b>	<b>Conf. Interval (W_v Dem) Lower Limit</b>	<b>Conf. Interval (W_v Dem) Upper Limit</b>
Senate 2022	0	82.5	80.0	83.8	16.9	15.5	19.4
Senate 2022	300	78.6	77.6	79.6	20.7	19.8	21.7
Senate 2022	500	77.6	76.1	78.7	21.8	20.8	23.3
Senate 2022	3000	69.4	67.7	71.4	29.9	27.9	31.6
Senate 2022	4500	65.7	57.6	72.4	33.4	26.8	41.5
Senate 2022	4700	64.9	54.9	73.3	33.9	25.3	43.8
Pres 2020	0	76.9	73.9	78.7	22.5	20.7	25.5
Pres 2020	300	75.3	71.5	77.8	24.1	21.6	27.8
Pres 2020	500	74.7	69.8	78.3	24.6	20.8	29.5
Pres 2020	3000	71.9	69.3	73.7	27.0	25.0	29.5
Pres 2020	4500	64.5	56.6	70.5	34.2	28.1	42.1
Pres 2020	4700	58.4	48.6	67.1	40.6	32.5	50.0

**APPENDIX 9**  
**Estimates For Voting Percentages in Iberville Parish**  
**(By Minimum Density)**

<b>Election</b>	<b>Minimum Density in VTD</b>	<b>White Voting Rep (W_v Rep)</b>	<b>Conf. Interval (W_v Rep) Lower Limit</b>	<b>Conf. Interval (W_v Rep) Upper Limit</b>	<b>White Voting Dem (W_v Dem)</b>	<b>Conf. Interval (W_v Dem) Lower Limit</b>	<b>Conf. Interval (W_v Dem) Upper Limit</b>
Senate2022	0	86.6	84.3	88.6	12.3	10.4	14.5
Senate2022	300	80.1	73.8	84.4	17.5	13.2	23.3
Senate2022	500	78.5	73.1	83.3	19.0	14.3	24.3
Senate2022	2500	72.1	55.2	85.1	23.1	10.1	40.3
Senate2022	3000	38.8	4.7	72.8	48.1	11.6	83.9

**APPENDIX 10**  
**Estimates For Voting Percentages in Pointe Coupee Parish**  
**(By Minimum Density)**

<b>Election</b>	<b>Minimum Density in VTD</b>	<b>White Voting Rep (W_v Rep)</b>	<b>Conf. Interval (W_v Rep) Lower Limit</b>	<b>Conf. Interval (W_v Rep) Upper Limit</b>	<b>White Voting Dem (W_v Dem)</b>	<b>Conf. Interval (W_v Dem) Lower Limit</b>	<b>Conf. Interval (W_v Dem) Upper Limit</b>
Senate2022	0	84.1	81.0	86.9	15.1	12.2	18.4
Senate2022	100	80.3	72.3	85.9	18.7	13.0	26.7
Senate2022	300	78.5	71.9	85.4	20.4	13.5	27.1
Senate2022	500	79.9	74.8	86.5	19.4	12.1	23.6
Senate2022	800	63.2	47.0	80.4	32.1	16.0	49.3

# **Exhibit 3**

Transcript of Lisa Handley, Ph.D.  
Conducted on September 26, 2023

1 (1 to 4)

1	1	3
1	IN THE UNITED STATES DISTRICT COURT	1 A P P E A R A N C E S:
2	FOR THE MIDDLE DISTRICT OF LOUISIANA	2 ON BEHALF OF PLAINTIFFS:
3	----- x	3 SARAH BRANNON, ESQUIRE
4	DR. DOROTHY NAIRNE et al., :	4 LUIS MANUEL RICO ROMAN, ESQUIRE (via Zoom)
5	Plaintiffs :	5 DAYTON HARRIS-CAMPBELL, ESQUIRE (via Zoom)
6	vs : Civil Action No.	6 GARRETT MUSCATE, ESQUIRE (via Zoom)
7	R. KYLE ARDOIN, in his : 3:22-cv-00178-SDD-SDJ	7 AMERICAN CIVIL LIBERTIES UNION
8	official capacity as Secretary :	8 915 15th Street, NW
9	of State of Louisiana, :	9 Washington, DC 20005
10	Defendant :	10 202.675.2337
11	----- x	11 sbrannon@aclu.org
12		12
13		13 ON BEHALF OF DEFENDANT:
14	Oral deposition of	14 ALYSSA RIGGINS, ESQUIRE
15	LISA HANDLEY, Ph.D.	15 CASSIE HOLT, ESQUIRE (via Zoom)
16		16 NELSON MULLINS RILEY & SCARBOROUGH LLP
17	WASHINGTON, DC	17 301 Hillsborough Street
18	TUESDAY, SEPTEMBER 26, 2023	18 Suite 1400
19	10:16 a.m. EASTERN TIME	19 Raleigh, NC 27603
20		20 919.329.3810
21		21 alyssa.riggins@nelsonmullins.com
22		22
23	Job No.: 506246	23
24	Pages: 1 - 192	24
25	Reported by: Lisa V. Feissner, RDR, CRR, CLR	25
2	2	4
1		1 A L S O P R E S E N T:
2		2 JACKSON SCHUELER, A/V Technician
3	Oral deposition of LISA HANDLEY, Ph.D.,	3 KATE McKNIGHT, ESQUIRE - Baker Hostetler
4	held at the offices of:	4 SARA ROHANI, ESQUIRE - NAACP Legal Defense Fund
5		5 TORI WENGER, ESQUIRE - NAACP Legal Defense Fund
6	NELSON MULLINS RILEY & SCARBOROUGH LLP	6 THOMAS JONES, ESQUIRE
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11		11
12		12
13	Pursuant to Notice, before Lisa V.	13
14	Feissner, RDR, CRR, CLR, Notary Public.	14
15		15
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Transcript of Lisa Handley, Ph.D.  
Conducted on September 26, 2023

2 (5 to 8)

1	C O N T E N T S	5	1	witness, you've been deposed several times before.	7
2	EXAMINATION OF LISA HANDLEY, Ph.D.	PAGE	2	Is that right?	
3	By Ms. Riggins	6	3	<b>A Yes.</b>	
4	By Ms. Brannon	189	4	Q Well, I'm going to dispense with the	
5			5	usual formality and rules, then. I will just say	
6	E X H I B I T S		6	two things that I think are most important.	
7	(Attached to transcript)		7	This is not an endurance test. If you'd	
8	RIGGINS DEPOSITION EXHIBIT	PAGE	8	like a break at any time, please let me know.	
9	1 Expert Report on the Enacted Louisiana	7	9	Happy to take one. I just ask that if we've got a	
10	State House and Senate Plans		10	question pending, you go ahead and answer that.	
11	Dr. Lisa Handley		11	Is that fair?	
12	2 Thornburg vs Gingles	10	12	<b>A Yes.</b>	
13	3 Expert Report of John R. Alford, Ph.D.	49	13	Q And I'm going to try my best to ask	
14	July 28, 2023		14	good, clear questions. But it's been a long time	
15	4 Expert Report of	74	15	since I've been in school looking at a lot of	
16	Tumulesh K.S. Solanky, Ph.D.		16	these analyses. If I ask a bad question or I ask	
17	5 Minority Success in Non-Majority	92	17	something you don't understand, will you ask me to	
18	Minority Districts: Finding the		18	rephrase, please?	
19	"Sweet Spot"		19	<b>A Yes.</b>	
20	6 Surrebuttal Expert Report of	123	20	MS. RIGGINS: Dr. Handley, I'm going to	
21	Jeffrey B. Lewis		21	mark Exhibit 1 in this case.	
22	7 Expert Report of Jeffrey B. Lewis	132	22	(Exhibit Handley-1 marked for	
23	8 Declaration of William S. Cooper	138	23	identification and attached to the transcript.)	
24	9 caddo_precincts.xlsx	164	24	MS. RIGGINS: And this is a copy of your	
25	10 caddo_precincts metadata	165	25	expert report that was submitted in June of this	
1	P R O C E E D I N G S	6	1	year.	8
2	LISA HANDLEY, Ph.D.,		2	MS. BRANNON: Can I make a note for the	
3	having been first duly sworn, was examined and		3	record?	
4	testified as follows:		4	MS. RIGGINS: Is it the date on the	
5	EXAMINATION		5	signature?	
6	BY MS. RIGGINS:		6	MS. BRANNON: Yes.	
7	Q Good morning, Dr. Handley. I'm Alyssa		7	MS. RIGGINS: Go ahead.	
8	Riggins, and I appreciate you bearing with us with		8	MS. BRANNON: For the record, this will	
9	our technology difficulties this morning.		9	be Handley Exhibit 1, which is Dr. Handley's	
10	I'm with Nelson Mullins. We represent		10	report that was produced in this case. I'm just	
11	the Secretary of State for the State of Louisiana		11	looking at the page that's signed, and it says	
12	in the case called Nairne versus Ardoin that's		12	June 30th, 2022. In fact, that is a typo. It was	
13	pending in the Middle District of Louisiana.		13	produced on June 30th, 2023.	
14	Could you please state your full name		14	MS. RIGGINS: Perfect. Thank you,	
15	for the record.		15	Sarah.	
16	<b>A Lisa Handley.</b>		16	BY MS. RIGGINS:	
17	Q And you have a Ph.D.		17	Q So Dr. Handley, feel free to flip	
18	Is that right, Dr. Handley?		18	through it if you need a minute.	
19	<b>A I do.</b>		19	Does this appear to be a true and	
20	Q What is that degree in?		20	accurate copy of the report you submitted on	
21	<b>A Political science.</b>		21	June 30th, 2023, in this case?	
22	Q And do you routinely serve as an expert		22	<b>A Yes.</b>	
23	witness in Voting Rights Act cases?		23	Q I'd like to first turn to page III of	
24	<b>A Yes.</b>		24	your report. I'm looking at Roman numeral III,	
25	Q And in your capacity as an expert		25	Analyzing Voting Patterns By Race.	



<p>9</p> <p>1 Do you see that?</p> <p>2 <b>A I do.</b></p> <p>3 Q And in this section, you say, quote, An</p> <p>4 analysis of voting patterns by race serves as the</p> <p>5 foundation of two of the three elements of the</p> <p>6 results test as outlined in Thornburg v. Gingles.</p> <p>7 Did I read that correctly?</p> <p>8 <b>A Yes.</b></p> <p>9 Q So does this clause reference the</p> <p>10 Supreme Court case, Thornburg v. Gingles, that was</p> <p>11 decided in the 1980s?</p> <p>12 <b>A Yes.</b></p> <p>13 Q So are you generally familiar with the</p> <p>14 Gingles case?</p> <p>15 <b>A Well, it's been a long time since I've</b></p> <p>16 <b>read it.</b></p> <p>17 Q But if I refer to something as the</p> <p>18 Gingles case or the Gingles factors, will you know</p> <p>19 that I'm referring to the Supreme Court case?</p> <p>20 <b>A Yes.</b></p> <p>21 Q And then next you say that, A racial</p> <p>22 bloc voting analysis is needed to determine</p> <p>23 whether the minority group is, quote, politically</p> <p>24 cohesive; and the analysis is also required to</p> <p>25 determine if Whites are voting sufficiently as a</p>	<p>11</p> <p>1 And do you see that there's, like, a</p> <p>2 blue block 12 on the bottom right-hand column of</p> <p>3 this page?</p> <p>4 <b>A I'm sorry. A what?</b></p> <p>5 Q So are you on page 14 of --</p> <p>6 <b>A I see block 12. Did you say "blue"?</b></p> <p>7 <b>I'm sorry.</b></p> <p>8 Q I thought it was blue.</p> <p>9 <b>A No, it's not.</b></p> <p>10 Q It's blue on my copy. Okay.</p> <p>11 Do you see next to the block 12 the</p> <p>12 clause, The purpose of inquiring into the</p> <p>13 existence of racially polarized voting the</p> <p>14 twofold?</p> <p>15 <b>A Yes.</b></p> <p>16 Q Would you mind just reading this</p> <p>17 paragraph which goes on to the top of the next</p> <p>18 page, please.</p> <p>19 <b>A You don't mean out loud, do you?</b></p> <p>20 Q No, I mean to yourself. Thank you. I</p> <p>21 should have clarified that.</p> <p>22 <b>A I can stop when I've read just 12.</b></p> <p>23 <b>Is that correct?</b></p> <p>24 Q It goes on to the first sentence of the</p> <p>25 next page also. The "and in general."</p>
<p>10</p> <p>1 bloc to usually defeat the candidates preferred by</p> <p>2 minority voters.</p> <p>3 Is that right?</p> <p>4 <b>A Yes. You added an "also" in there, but</b></p> <p>5 <b>yes.</b></p> <p>6 Q Oh, sorry. That's the semicolon in my</p> <p>7 brain.</p> <p>8 All right. And is this rooted in your</p> <p>9 understanding of the Gingles case, this sentence I</p> <p>10 just read?</p> <p>11 <b>A Yes.</b></p> <p>12 MS. RIGGINS: All right. And so since</p> <p>13 you said it's been a while since you've looked at</p> <p>14 it, I'll show you a copy of Gingles, which I'd</p> <p>15 like to mark as Exhibit 2, please.</p> <p>16 (Exhibit Handley-2 marked for</p> <p>17 identification and attached to the transcript.)</p> <p>18 BY MS. RIGGINS:</p> <p>19 Q All right. Dr. Handley, this is a</p> <p>20 printout from the online legal reporting system</p> <p>21 Westlaw of Thornburg v. Gingles. And you'll see</p> <p>22 that there are numbers in the bottom right-hand</p> <p>23 corner of this document in gray.</p> <p>24 Could you please turn to page 14 of that</p> <p>25 document.</p>	<p>12</p> <p>1 <b>A No.</b></p> <p>2 Q Do you see "and in general" at the top</p> <p>3 of the next page? Oh, I'm sorry. You have a</p> <p>4 different -- sorry, your printout is different.</p> <p>5 That is correct. You've read block 12.</p> <p>6 Dr. Handley, now that you've refreshed</p> <p>7 your recollection from the Gingles case, is this</p> <p>8 the portion of the case that you are rooting your</p> <p>9 racially polarized voting analysis in, the</p> <p>10 instructions from the Court?</p> <p>11 <b>A I don't know if it's mentioned other</b></p> <p>12 <b>places as well. I've just read this paragraph.</b></p> <p>13 <b>It's certainly true that it's mentioned here, but</b></p> <p>14 <b>it might be mentioned other places as well.</b></p> <p>15 Q Okay. But this is one of the places it</p> <p>16 might be mentioned in the case, what you just</p> <p>17 read?</p> <p>18 <b>A It is true that it is mentioned in this</b></p> <p>19 <b>place in this -- yes.</b></p> <p>20 Q Okay. Did you do any analysis on the</p> <p>21 Gingles factors pertaining to compactness of</p> <p>22 minority groups in your report?</p> <p>23 <b>A No.</b></p> <p>24 Q Do you plan on offering any opinions</p> <p>25 about the compactness of minority groups in this</p>

<p>1 case? 2 <b>A No.</b> 3 Q So you are just a Gingles 2 and 3 expert 4 in this case. 5 Is that right? 6 <b>A I am an expert in Gingles 1 and 2 -- 2</b> 7 <b>and 3 in this case.</b> 8 Q Okay. Thank you. 9 And that means that you conducted a 10 racially polarized voting analysis, right? 11 <b>A Yes.</b> 12 Q If I use the term "RPV," will you know 13 what I mean? 14 <b>A Yes.</b> 15 Q Okay. In order to conduct this RPV 16 analysis, you needed to build an aggregate level 17 database. 18 Is that right? 19 <b>A Correct.</b> 20 Q Can we turn to page 5 of your report. 21 Do you see about midway through the 22 page, there's a bold and italicized section that 23 starts with the word "Database"? 24 <b>A I do.</b> 25 Q Does this section generally discuss how</p>	<p>15 1 <b>looked at some of the information I got myself off</b> 2 <b>the website, yes.</b> 3 Q Let me ask it a different way. 4 Did anyone else assist you in pulling 5 down data from the Secretary of State's website 6 for you to then analyze? 7 <b>A Yes.</b> 8 Q Who did that? 9 <b>A I don't know.</b> 10 Q Did you receive the data from counsel? 11 <b>A I received the data from ACLU, counsel</b> 12 <b>or analytics division.</b> 13 Q Anyone in particular within the 14 analytics division? 15 <b>A No.</b> 16 Q And I believe that you mentioned 17 somewhere in this report that some of the 18 underlying data that you used was compiled for the 19 predecessor congressional case, the Press Robinson 20 matter. 21 Is that right? 22 <b>A I don't know the ordering of it, but</b> 23 <b>certainly some of the data was used in that case</b> 24 <b>and in this case.</b> 25 Q And did you personally yourself or the</p>
<p>14 1 the database used in your analysis was built? 2 <b>A Yes.</b> 3 Q And I think it mentions that you 4 retrieved data for your database from the 5 Secretary of State's website. 6 Is that correct? 7 <b>A Some of it, yes.</b> 8 Q Did you personally collect that data 9 from the Secretary of State's website? 10 <b>A It depends on what data you're referring</b> 11 <b>to. Certainly, I did collect some.</b> 12 Q Sure. What data did you personally 13 collect from the Secretary of State's website? 14 <b>A I can't even remember off the top of my</b> 15 <b>head. Certainly general things like vote totals,</b> 16 <b>early voting, total turnout. I'm not going to</b> 17 <b>remember everything. Quite a number of things.</b> 18 Q Sure. Do you see in that first 19 paragraph by the Database header, the last 20 sentence that starts, The 2015 to 2022 election 21 results and turnout by race data? 22 <b>A Yes.</b> 23 Q Is that the data that you personally 24 retrieved from the Secretary of State's website? 25 <b>A It depends on what you mean. Again, I</b></p>	<p>16 1 ACL you get the data from the Secretary of State's 2 website used in the database for that case, too? 3 <b>A Yes, as far as I can recall.</b> 4 Q And I see in footnote 5, you reference 5 that election returns were also obtained from open 6 elections. 7 Is that right? 8 <b>A That's correct.</b> 9 Q What is open elections? 10 <b>A It is a conglomerate -- I believe it's</b> 11 <b>started by some newspaper reporters -- to gather</b> 12 <b>election returns and format them in a way that</b> 13 <b>could be easily obtained by anyone in the public,</b> 14 <b>including news reporters who wanted to use that</b> 15 <b>information. I think it got, I don't know, a</b> 16 <b>Knight Foundation grant to do this.</b> 17 Q Okay. Do you know where open elections 18 sources their data from? 19 <b>A Secretary of State's office for the most</b> 20 <b>part. It depends on the state.</b> 21 Q So in Louisiana, it would be the 22 Secretary of State because he's the chief election 23 officer for the state. 24 Is that right? 25 <b>A I can't speak for open elections. I</b></p>

<p>17</p> <p>1 <b>would assume so, but I don't really know.</b></p> <p>2 Q And do you know if there were any</p> <p>3 conflicts in the data that you sourced from open</p> <p>4 elections versus those retrieved directly from the</p> <p>5 Secretary of State for Louisiana?</p> <p>6 A <b>Any conflicts...</b></p> <p>7 Q So let me rephrase that.</p> <p>8 Do you know if there were any</p> <p>9 differences in the data, say if you got data for</p> <p>10 the 2020 presidential election from the Secretary</p> <p>11 of State directly and from open elections, do you</p> <p>12 recall if there was any differences in what the</p> <p>13 source -- those two sources reported?</p> <p>14 A <b>There were most likely formatting</b></p> <p>15 <b>differences.</b></p> <p>16 Q But you don't recall any substantive</p> <p>17 differences in the data?</p> <p>18 A <b>I do not.</b></p> <p>19 Q And I also believe that for the purposes</p> <p>20 of your analysis you required precinct level shape</p> <p>21 files.</p> <p>22 Is that correct?</p> <p>23 A <b>Yes.</b></p> <p>24 Q Were those downloaded from the census</p> <p>25 website?</p>	<p>19</p> <p>1 together into a unified database in order to</p> <p>2 perform your analysis?</p> <p>3 A <b>That's correct. The turnout data had to</b></p> <p>4 <b>be merged with the election returns, whether those</b></p> <p>5 <b>came from the Secretary of State. In order to use</b></p> <p>6 <b>population data, you needed the shape files to</b></p> <p>7 <b>merge with the census. So all of these things had</b></p> <p>8 <b>to go together to produce a database.</b></p> <p>9 <b>Now, you don't actually need the</b></p> <p>10 <b>population data to do the racial bloc voting</b></p> <p>11 <b>analysis.</b></p> <p>12 Q Okay. Did you personally merge all of</p> <p>13 this data together, or did somebody assist you</p> <p>14 with that?</p> <p>15 A <b>Somebody assisted me with that.</b></p> <p>16 Q And who would that be?</p> <p>17 A <b>The analytics department at ACLU.</b></p> <p>18 Q Anyone in particular?</p> <p>19 A <b>Not that I know of, no.</b></p> <p>20 Q Did you verify -- well, let me ask</p> <p>21 you -- let me back up and ask you this.</p> <p>22 Did the ACLU analytics data team merge</p> <p>23 all of it together, merge the data together for</p> <p>24 you and send it back to you for your analysis?</p> <p>25 MS. BRANNON: I'm just going to put an</p>
<p>18</p> <p>1 A <b>There are shape files on the census</b></p> <p>2 <b>website. Those are for VTDs. So I guess it would</b></p> <p>3 <b>depend on -- there are multiple sources for shape</b></p> <p>4 <b>files. I think that also precinct shape files</b></p> <p>5 <b>were received I think from the Secretary of</b></p> <p>6 <b>State's office, but I'm not sure. I don't</b></p> <p>7 <b>remember off the top of my head.</b></p> <p>8 Q Sure. Do you recall receiving shape</p> <p>9 files used in the building of your database from</p> <p>10 any other source other than the census or the</p> <p>11 Secretary of State?</p> <p>12 A <b>It's possible that some shape files came</b></p> <p>13 <b>from VEST. I'm not sure. I don't recall off the</b></p> <p>14 <b>top of my head.</b></p> <p>15 Q And you said VEST. Kind of like the</p> <p>16 article of clothing?</p> <p>17 A <b>An acronym, V-E-S-T. Voting and</b></p> <p>18 <b>Elections Science Team.</b></p> <p>19 Q Okay. Voting and Elections Science</p> <p>20 Team?</p> <p>21 A <b>Here we go. Voting and Election Science</b></p> <p>22 <b>Team.</b></p> <p>23 Q All right, great. Thank you.</p> <p>24 Dr. Handley, once you had all of this</p> <p>25 raw data, did you need to merge it or aggregate it</p>	<p>20</p> <p>1 objection on the record that Dr. Handley can</p> <p>2 answer about the steps that she took, but the</p> <p>3 interactions and the details of some of her</p> <p>4 interactions with ACLU analytics was all done</p> <p>5 under the direction of counsel, and any</p> <p>6 conversations or specifics are privileged.</p> <p>7 So you can describe the facts of the</p> <p>8 data that you received, but you should not discuss</p> <p>9 any detailed interactions that you had with</p> <p>10 counsel and analytics.</p> <p>11 Q Do you want me to rephrase my question?</p> <p>12 A <b>Remind me of the question.</b></p> <p>13 Q Sure. Absolutely, Dr. Handley.</p> <p>14 Did you receive a set of data from the</p> <p>15 ACLU analytics team that had all of the data we</p> <p>16 just discussed merged together in order for you to</p> <p>17 run your analysis?</p> <p>18 A <b>Yes.</b></p> <p>19 Q Did you take any steps to verify the</p> <p>20 data was merged properly after you received it</p> <p>21 from the ACLU analytics team?</p> <p>22 A <b>Yes.</b></p> <p>23 Q What did you do?</p> <p>24 A <b>Certainly I compared the election</b></p> <p>25 <b>results to the website election results. I did</b></p>

<p>21</p> <p>1 things like compare the population to the turnout 2 to the votes cast to see if those made sense. I'm 3 sure I did some other checks, but that's what I 4 can think of off the top of my head. 5 Q All right. Did anyone else other than 6 the ACLU data analytics team assist you with 7 merging or creating the database that you used for 8 your analysis? 9 A No. 10 Q We can move on. 11 Dr. Handley, I'd like to turn backwards, 12 actually, a page, in your report. The header 13 here, do you see that, Standard Statistical 14 Techniques? 15 A Yes. 16 Q And so you list several statistical 17 techniques that you discuss in your report in this 18 section. The ecological regression, ecological 19 inference, both 2x2 and RxC, and homogeneous 20 precinct analysis. 21 Is that right? 22 A That's correct. 23 Q Okay. And you can do this whichever way 24 you want. But what I'm going to do, because I'm 25 going to ask you some questions to help me refresh</p>	<p>23</p> <p>1 provided in these appendices? 2 A It depends on if you did it correctly 3 not. I would also have to say it's a simulation 4 procedure, and so you get slightly different 5 estimates each time you run it. The more 6 simulations you run, the less likely that is to 7 happen. But you would get slightly different 8 estimates when you're talking about EI. 9 HP you should also get exactly -- 10 homogeneous precinct, HP, you would also get 11 exactly the same. 12 Q Okay. So let's look first at this EI, 13 RxC column in Appendix 1. 14 Did you use the EI RxC method developed 15 by Drs. Rosen and King and published in a paper in 16 2001? 17 A I believe it was 2007 that the program 18 came out. I don't know when the paper came out. 19 Q But it was based on the Rosen and King 20 methodologies for RxC? 21 A Yes. 22 Q So I'd like to look at the EI RxC number 23 estimates for White voters in Appendix 1A for the 24 2020 November presidential election. 25 Do you see that President Biden and Vice</p>
<p>22</p> <p>1 my school recollection of these techniques about 2 your appendix. 3 So if you want to take your appendix, 4 you know, section 1A like off the back so that you 5 can look at them side by side, if you think that 6 would be helpful, please feel free to do that. 7 That's the only way I can do it. 8 So Dr. Handley, looking at Appendix 1A, 9 does this appendix generally report the 10 calculation methods for both methods of EI, ER, 11 and homogeneous precinct analysis for both Black 12 and White voters for Bossier and Caddo parishes? 13 A Correct. 14 Q Did you use a program to make the 15 calculations listed in these appendices? 16 A I used a statistical package called R 17 and some subpackages as well. 18 Q What are the names of those subpackages? 19 A There's a subpackage called eiCompare, 20 and there's one called eiPack. 21 Q P-A-C-K? 22 A Yes. 23 Q And if I ran the numbers in the backup 24 data produced with your report through R with the 25 same eiCompare and eiPack, would I get the results</p>	<p>24</p> <p>1 President Harris that EI RxC number for White 2 voters is 22.6? 3 A Yes. 4 Q So what does this 22.6 represent? 5 A What does it -- if I understand your 6 question correctly, it represents the percentage 7 of White voters who voted for Biden. 8 Q And is this average parish-wide for both 9 Caddo and Bossier parishes? 10 A It's not an average. I'm not really 11 sure. 12 Q Sure. So is this 22.6, I think you said 13 it was a percentage, right? 14 A Yes. 15 Q Okay. So is this the percentage of 16 White voters who voted for Biden and Harris, like 17 all the precincts averaged together in both of 18 those parishes, or, like, how did you reach this 19 22.6 number? 20 A It's not an average. EI is not an 21 averaging. It's a simulation technique that 22 produces a statistical estimate of the percentage. 23 Q For Caddo and Bossier parishes combined? 24 A That's correct. 25 Q Okay. So do you set like a parameter</p>

<p>25</p> <p>1 for the area you'd like it run on, so like for the 2 simulation technique? 3 <b>A Do I set a parameter?</b> 4 Q That's a bad question. That's like more 5 like a map simulation question. Sorry. I've got 6 Dr. Barber on the brain, apparently. 7 So when you were putting the data into 8 the R package that you were using, did you use 9 parish-wide data to plug into the R package? 10 <b>A So the database contains precinct</b> 11 <b>information for the entire state.</b> 12 Q So you plugged it in per precinct? 13 <b>A The database unit is precinct. So it</b> 14 <b>has all of the precincts in the state in the</b> 15 <b>database.</b> 16 Q Okay. And then did you instruct the 17 database to limit its results for this -- to 18 produce this 22.6 number to just the precincts in 19 Bossier and Caddo parishes? 20 <b>A Correct.</b> 21 Q And so these are estimates, right, 22 Dr. Handley? 23 <b>A The HP are not actually estimates.</b> 24 <b>Those are real percentages. But the other columns</b> 25 <b>are estimates.</b></p>	<p>27</p> <p>1 Q Okay. 2 <b>A The way that the statistic is carried</b> 3 <b>out, it -- the statistical technique is carried</b> 4 <b>out, it should equal 100 with the exception of</b> 5 <b>rounding issues. That's for EI RxC.</b> 6 Q So that would explain why some might add 7 up to 100.1. It's just a rounding error? 8 <b>A Well, not an error, but it is a rounding</b> 9 <b>issue, yes.</b> 10 Q And then this 22.6 number for EI RxC for 11 White voters for Biden/Harris, this is not the 12 estimate for the number -- or the percentage, I'm 13 sorry, of White voters in every precinct in 14 Bossier and Caddo parish, correct? 15 <b>A This is an estimate of the percentage of</b> 16 <b>White voters, given the pattern across all of the</b> 17 <b>precincts considered in the analysis.</b> 18 Q Okay. I'm sorry, Dr. Handley, it's been 19 a long time, and I can't say statistics was my 20 best class at college. 21 All right. So next to the EI RxC 22 column, there are confidence intervals, correct? 23 <b>A That's correct.</b> 24 Q And so for the Biden/Harris -- 25 continuing on that row, for the Biden/Harris</p>
<p>26</p> <p>1 Q So the EI RxC, the EI 2x2, and the ER 2 columns would not match exactly what's on the 3 Secretary of State's website, correct? 4 <b>A The Secretary of State doesn't have this</b> 5 <b>information. It wouldn't exist there.</b> 6 Q Right. But because they're estimates, 7 sometimes, you know, for example, the votes 8 might -- the EI RxC percentages might add up to 9 slightly over 100 percent or slightly under 10 100 percent? 11 MS. BRANNON: I'm going to just object 12 to the form of the question. 13 But you can answer to the best of your 14 ability. 15 <b>A I'm sorry. Repeat the question.</b> 16 Q Sure. So if you were to add up the 17 EI RxC numbers for a particular election, so for 18 2020, for Biden/Harris, for Trump/Pence, and for 19 others, you might not always get exactly 20 100 percent, correct? 21 MS. BRANNON: Again, I'm just objecting 22 to the form of the question. 23 But you can answer. 24 <b>A With EI RxC, if you don't get</b> 25 <b>100 percent, it's a rounding issue.</b></p>	<p>28</p> <p>1 estimates for White voters, it's 17.2 and 30.5. 2 Is that right? 3 <b>A That's correct.</b> 4 Q Can you explain what those numbers mean 5 in confidence intervals in general? 6 <b>A As I said, this is -- this estimate is</b> 7 <b>arrived at by doing simulations. Sometimes half a</b> 8 <b>million simulations. And the confidence intervals</b> 9 <b>are calculated looking at the distribution of the</b> 10 <b>means of that simulation process, and it's reading</b> 11 <b>the results at the 2.5 -- it's -- imagine it's</b> 12 <b>sort of a bell-shaped curve, and it's reading it</b> 13 <b>at the 2.5, the 97.5 points, those are the</b> 14 <b>estimates at those points.</b> 15 <b>What it means is that 95 percent of the</b> 16 <b>simulation means fell within that range of 17.2</b> 17 <b>and 30.5.</b> 18 Q And so -- testing my remembrance of 19 statistics here, I'm sorry -- is it true, 20 Dr. Handley, that generally the smaller the 21 confidence interval, this indicates that an 22 estimate is more precise? 23 <b>A Well, the estimates are all pretty</b> 24 <b>precise. I wonder if you mean a different</b> 25 <b>adjective.</b></p>



<p>29</p> <p>1 Q So the smaller the confidence interval, 2 I guess the better idea you have as to the true 3 estimate number, or the true number? 4 A Yes. 5 Q So after the EI RxC, there's results for 6 EI 2x2. 7 Is that right? 8 A Correct. 9 Q Can you explain to me the difference 10 between EI RxC, and EI 2x2? 11 A EI 2x2 was developed first by Gary King 12 in the 1990s, and it was developed to deal with 13 2x2 contingency tables. In other words, you would 14 have two candidates, two racial groups. And if 15 you had more than two racial groups, you would run 16 it iteratively. So you would run it, say, Black 17 versus all nonBlack voters, White versus all 18 nonWhite voters, Hispanic versus all nonHispanic 19 voters. 20 So this was the original methodology. 21 And again, it was introduced -- certainly by the 22 2000 round of redistricting, we were using EI 2x2. 23 Later, King, in conjunction with some 24 other methodologists, found a way to -- to create 25 what are actually sort of cells within a larger</p>	<p>31</p> <p>1 remember which package I used and whether that 2 particular package produced them or not. 3 Q Okay. So it's possible, depending on 4 the package you use, to produce confidence 5 intervals for EI 2x2? 6 A That's correct. 7 Q But you did not produce confidence 8 intervals for your EI 2x2 here in this report? 9 A I did not. They are generally not 10 accepted by social scientists. So I did not 11 include them here. 12 But they would have been produced most 13 likely by the package I used. 14 Q What do you mean when you said that 15 they're not generally accepted by social 16 scientists? 17 A I think that social scientists, like 18 Dr. Alford, have summarily rejected confidence 19 intervals as calculated using EI 2x2. 20 Q And do you have an understanding of why 21 that is? 22 A I think you'd have to ask him. 23 Q Do you accept that premise that 24 confidence intervals for EI 2x2 are not generally 25 accepted?</p>
<p>30</p> <p>1 than 2x2 contingency table. So you have -- this 2 is -- RxC means indefinite numbers of rows and 3 columns. Now you can use more than two 4 candidates, you can use more than two races. 5 And so that's the difference. EI 2x2, 6 you would have to run iteratively if you had more 7 than two races, and RxC, you could run it all at 8 once. 9 Q Okay. So just to make sure that I'm 10 understanding you, having flashbacks to 11 statistics, EI 2x2 is almost like a this or that 12 analysis. It's like Black voters, all other 13 voters. 14 Is that right? 15 A Yes. 16 Q Okay. But the benefit to EI RxC is that 17 you can run multiple candidates and with multiple 18 races all at the same time? 19 A Yes. 20 Q Perfect. I'm sorry. 21 Does your statistical package produce 22 confidence intervals for your EI 2x2 results? 23 A I can't -- I think so. I can't remember 24 if I ran it in eiCompare or eiPack. 25 It is possible to produce them? I don't</p>	<p>32</p> <p>1 A Yes, I would say they're not generally 2 accepted. 3 Q Why not? 4 A I don't believe that they're thought to 5 be very accurate in the way that they're 6 calculated. 7 Q So next we have ER. And does that stand 8 for ecological regression? 9 A Yes, it does. 10 Q Can you explain what ecological 11 regression is? 12 A Yes. If you imagine a scatter plot, and 13 you're putting all of your precincts on this 14 scatter plot on the basis of two variables, the 15 percentage, say, Black turnout in that precinct 16 and the votes for a particular candidate, and you 17 have a scatter plot, and the regression line is 18 the line that best fits the pattern across those 19 precincts. And then you use that regression line 20 to produce the estimates that you see here. 21 It assumes a linear pattern, which is 22 almost always the case in this kind of analysis 23 anyway, which is not assumed by EI RxC. 24 So it is a different statistical 25 approach to producing estimates.</p>

<p>89</p> <p>1 of the footnote on the page before that, page 16.</p> <p>2 Q And just turning back briefly to page 9,</p> <p>3 Dr. Handley.</p> <p>4 A <b>Page 9 of Solanky's report?</b></p> <p>5 Q Of your report.</p> <p>6 A <b>Sorry. Of my report, right. Yes.</b></p> <p>7 Q Nothing for the Orleans parish is listed</p> <p>8 on here, right?</p> <p>9 A <b>That's correct.</b></p> <p>10 Q And so you didn't conduct any analysis</p> <p>11 into voting in Orleans, did you?</p> <p>12 A <b>That's correct. That's certainly</b></p> <p>13 <b>correct here, yes.</b></p> <p>14 Q And so Dr. Handley, I have one more</p> <p>15 question, and then I think we'll be at a good spot</p> <p>16 to break for lunch.</p> <p>17 So when you were discussing how you</p> <p>18 performed the analysis for the effectiveness</p> <p>19 scores located on Table 17, you talked about how</p> <p>20 data had to be disaggregated down to the block</p> <p>21 level.</p> <p>22 Is that right?</p> <p>23 A <b>Essentially, yes.</b></p> <p>24 Q And is that because data from the</p> <p>25 Secretary of State is only reported on a precinct</p>	<p>91</p> <p>1 on the basis of the proportion that block is of</p> <p>2 the precinct.</p> <p>3 Q And Dr. Handley, are you aware that the</p> <p>4 Secretary of State reports election results based</p> <p>5 on race or election turnout, they keep</p> <p>6 registration data based on race.</p> <p>7 Is that correct?</p> <p>8 A <b>That's correct.</b></p> <p>9 Q And that can be reported down to the</p> <p>10 precinct level.</p> <p>11 Is that right?</p> <p>12 A <b>Correct.</b></p> <p>13 Q So how do you then, I guess, know the</p> <p>14 race of the voters when you disaggregate down to</p> <p>15 the census block level?</p> <p>16 A <b>I don't disaggregate turnout down to the</b></p> <p>17 <b>level of the block. I only do it for the</b></p> <p>18 <b>candidates.</b></p> <p>19 Q I see. I gotcha. Okay. We're on the</p> <p>20 same page. Thank you for that clarification.</p> <p>21 MS. RIGGINS: I think now would be a</p> <p>22 good time to break for lunch.</p> <p>23 (Recess from 12:28 p.m. until 1:23 p.m.)</p> <p>24 MS. RIGGINS: Back on the record after</p> <p>25 our lunch break.</p>
<p>90</p> <p>1 basis?</p> <p>2 A <b>Correct.</b></p> <p>3 Q So you would perform the census block</p> <p>4 disaggregation in instances of split precincts?</p> <p>5 A <b>It's done in terms of all precincts, but</b></p> <p>6 <b>it only impacts precincts that were split, because</b></p> <p>7 <b>precincts that weren't split, when you add the</b></p> <p>8 <b>blocks up, would equal what the precinct results</b></p> <p>9 <b>are.</b></p> <p>10 Q And did you perform the census block</p> <p>11 disaggregation yourself?</p> <p>12 A <b>I directed the analytics division of</b></p> <p>13 <b>ACLU to perform it.</b></p> <p>14 Q Did you provide specific instructions --</p> <p>15 well, actually --</p> <p>16 MS. BRANNON: I'm going to object.</p> <p>17 That's privileged.</p> <p>18 Q Do you have an understanding of how you</p> <p>19 disaggregate the data from the precinct level to</p> <p>20 the census block level?</p> <p>21 A <b>I have an understanding of it, yes.</b></p> <p>22 Q Sure. Could you explain that to me?</p> <p>23 A <b>Yes. So if you are taking a small area</b></p> <p>24 <b>like a precinct and disaggregating the election</b></p> <p>25 <b>results down to the block level, you're doing that</b></p>	<p>92</p> <p>1 BY MS. RIGGINS:</p> <p>2 Q So Dr. Handley, I would like to mark</p> <p>3 this as Exhibit 5, if we can. It's an article</p> <p>4 that you co-authored with several folks.</p> <p>5 (Exhibit Handley-5 marked for</p> <p>6 identification and attached to the transcript.)</p> <p>7 BY MS. RIGGINS:</p> <p>8 Q Do you recognize this, Dr. Handley?</p> <p>9 A <b>I do.</b></p> <p>10 Q And you were a co-author on this</p> <p>11 article.</p> <p>12 Is that right?</p> <p>13 A <b>Correct.</b></p> <p>14 Q Okay. And when we're discussing this</p> <p>15 article, can I understand that anything in this</p> <p>16 article was something that either you wrote or</p> <p>17 that you supported and agreed with if it was</p> <p>18 written by one of your co-authors?</p> <p>19 A <b>I believe so.</b></p> <p>20 Q And is it fair to say -- and this is a</p> <p>21 very long scholarly article, but is it fair to say</p> <p>22 that this article generally discusses success of</p> <p>23 Black candidates in various state legislatures and</p> <p>24 the U.S. House of Representatives?</p> <p>25 A <b>Yes.</b></p>

<p>161</p> <p>1 and maybe some political scientists have looked at 2 that. 3 Q And is it generally accepted that urban 4 areas tend to be more heavily Democratic? 5 A I believe that that has been studied, 6 and yes, that is true. 7 Q So I think we can set aside Dr. Lewis's 8 stuff. 9 I'd like to turn back to your report. 10 Can we look at page 6, please. 11 A Page 6. Okay. 12 Q Do you see Footnote 8 on page 6? 13 A Yes. 14 Q Does this footnote accurately explain 15 how you allocated early votes to precincts in your 16 analysis? 17 A It does. 18 Q And did you follow this methodology for 19 every area of interest and election that you 20 analyzed? 21 A Yes. 22 Q Is this method a peer-reviewed method of 23 allocating early votes? 24 A It's certainly a method other experts 25 use. I don't know that anyone has written it up,</p>	<p>163</p> <p>1 Q Do you recall producing a 2 precinct-specific spreadsheet in your backup data 3 for Caddo parish with your rebuttal report? 4 A I'm going to repeat what I just said. 5 So all of this analysis is done at the precinct 6 level, right? So it's not precinct-specific. 7 Q Do you recall producing an Excel 8 spreadsheet that reflected voter data and 9 estimations at the precinct level with your 10 rebuttal report? 11 A I most likely did, yes. 12 Q Okay. All right. So we're kind of at a 13 crossroads, Dr. Handley, because you've seen these 14 Excel spreadsheets. They're massive. They don't 15 print well. I'd like to ask you some questions 16 about this spreadsheet. 17 So we can do this a couple of different 18 ways. I can put it up on the screen, but I 19 understand that's far away. 20 A I absolutely cannot see that. 21 Q Yeah. So if I pull it up on Alex's 22 laptop and put it in front of you, would that be 23 easier for you to view? 24 A Compared to that, absolutely. 25 Q Yeah. So I'm going to ask if we can</p>
<p>162</p> <p>1 if that's what you mean by peer-reviewed. But 2 other experts certainly use this. It's generally 3 accepted as the best way to do this. 4 Q Okay. What other experts have generally 5 used this process? 6 A Well, I know that Max Palmer, for 7 example, uses this method. 8 Q Anyone else? 9 A I believe so, but I can't think of 10 anyone off the top of my head. 11 Q Did you look at any precinct-specific 12 election results from other sources to verify your 13 allocation method to make sure that it was 14 accurate? 15 A I certainly carried out some exercises 16 to determine if I was likely to be introducing 17 bias. I didn't look at precinct results for that. 18 Q Okay. Dr. Handley, do you recall that 19 you did a precinct-specific analysis of Caddo 20 parish and produced that with your rebuttal report 21 in this case? 22 A I don't think you're using the correct 23 terminology. I did an analysis of Caddo. All of 24 these analysis are based on precincts as a unit. 25 But to say precinct-specific would be incorrect.</p>	<p>164</p> <p>1 pull up the spreadsheet that was labeled "Caddo 2 precincts"? 3 MS. BRANNON: And can you just email me 4 what exactly you're pulling up for her -- 5 MS. RIGGINS: Yeah. 6 MS. BRANNON: -- so I can look at it 7 today, too? And then can we -- 8 MS. RIGGINS: Yeah. It's from her 9 backup data. And we can -- do you want to go off 10 the record while we pull this up and I email it to 11 you? 12 MS. BRANNON: Yeah. 13 (A discussion was held off the record.) 14 MS. RIGGINS: So we're going to mark 15 this as Exhibit 9. 16 (Exhibit Handley-9 marked for 17 identification and attached to the transcript.) 18 BY MS. RIGGINS: 19 Q Dr. Handley, do you see on the laptop in 20 front of you an Excel spreadsheet called 21 Caddo_precincts? 22 A I do. 23 Q Do you understand that this came out of 24 the backup data that you produced with your 25 rebuttal report?</p>

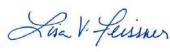


<p>165</p> <p>1 A Yes, I believe that's correct.</p> <p>2 Q Okay. Did you compile or create this</p> <p>3 Excel spreadsheet, Dr. Handley?</p> <p>4 A I directed it to be compiled.</p> <p>5 Q You directed it to be compiled to -- to</p> <p>6 whom did you issue that direction?</p> <p>7 A To the analytics department that created</p> <p>8 what I asked for.</p> <p>9 Q Okay. Do you know who Devin McCarthy</p> <p>10 is?</p> <p>11 A Yes.</p> <p>12 Q Would it surprise you that he is the</p> <p>13 creating of this spreadsheet as shown in the</p> <p>14 metadata?</p> <p>15 A It wouldn't surprise me, but I don't</p> <p>16 know that that's true.</p> <p>17 Q Sure.</p> <p>18 MS. RIGGINS: We're going to mark this</p> <p>19 as Exhibit 10.</p> <p>20 (Exhibit Handley-10 marked for</p> <p>21 identification and attached to the transcript.)</p> <p>22 BY MS. RIGGINS:</p> <p>23 Q So do you see on the top middle of</p> <p>24 Exhibit 10, Dr. Handley, it says</p> <p>25 Caddo_precinctsreadonly-Excel?</p>	<p>167</p> <p>1 question, but you can't close disclose the details</p> <p>2 of your conversation with Mr. McCarthy</p> <p>3 specifically.</p> <p>4 A Okay. And the question was?</p> <p>5 Q Have you ever spoken to Mr. McCarthy?</p> <p>6 A Yes.</p> <p>7 Q Was counsel present for all of those</p> <p>8 conversations?</p> <p>9 A I believe so.</p> <p>10 Q And was Mr. McCarthy one was members of</p> <p>11 the ACLU data analytics team that you worked with</p> <p>12 to compile the data for your analysis?</p> <p>13 A Yes.</p> <p>14 Q Is Mr. McCarthy an attorney, to the best</p> <p>15 of your knowledge?</p> <p>16 A He's a political scientist.</p> <p>17 Q Okay. Thank you.</p> <p>18 MS. BRANNON: And I can state for the</p> <p>19 record that counsel was present at all of those</p> <p>20 conversations.</p> <p>21 MS. RIGGINS: Thank you, Sarah.</p> <p>22 Q So looking at the Excel spreadsheet in</p> <p>23 front of you on the computer, Dr. Handley, does</p> <p>24 this spreadsheet look at the presidential 2020</p> <p>25 election?</p>
<p>166</p> <p>1 A Yes.</p> <p>2 Q And do you see that it says, author,</p> <p>3 Devin McCarthy?</p> <p>4 A I see that it says that.</p> <p>5 Q And it says, last modified by Sarah</p> <p>6 Brannon?</p> <p>7 A Yes.</p> <p>8 Q Do you have any reason to doubt that</p> <p>9 this is a screenshot of -- out of the metadata of</p> <p>10 this Excel spreadsheet?</p> <p>11 A I do not have any reason to doubt that.</p> <p>12 I don't know that that means that Devin McCarthy</p> <p>13 created it, but he could have.</p> <p>14 Q But you agree that it says that this is</p> <p>15 the -- that Devin McCarthy is the author as shown</p> <p>16 in the metadata?</p> <p>17 A That is what it says.</p> <p>18 Q Have you ever spoken to Mr. McCarthy?</p> <p>19 MS. BRANNON: You can answer -- I'm</p> <p>20 going to object to the extent that that question</p> <p>21 calls for you to answer any detail about the scope</p> <p>22 of your conversations with Mr. McCarthy which are</p> <p>23 protected by attorney-client work product.</p> <p>24 A So --</p> <p>25 MS. BRANNON: You can answer a yes or no</p>	<p>168</p> <p>1 And feel free to, you know, maximize the</p> <p>2 column headers and things like that as you need</p> <p>3 to, to actually read it. That's partly why this</p> <p>4 doesn't print well.</p> <p>5 A It does.</p> <p>6 Q Okay. Did you review Dr. Solanky's</p> <p>7 rebuttal report in this case -- his surrebuttal</p> <p>8 report? I'm sorry.</p> <p>9 A I did.</p> <p>10 Q Okay. And do you recall that</p> <p>11 Dr. Solanky noted that this spreadsheet does not</p> <p>12 include all of the presidential candidates for</p> <p>13 2020?</p> <p>14 A It's true that one of the 13 candidates</p> <p>15 is missing that got virtually no votes. And, in</p> <p>16 fact, when you add up all of the candidates, it</p> <p>17 makes no difference whether he's there or not.</p> <p>18 The percentage -- the proportion that I used would</p> <p>19 actually have been the same.</p> <p>20 Q Sure. Was Bill Hammond the candidate</p> <p>21 that was omitted?</p> <p>22 A It's the last --</p> <p>23 Q So it's the 13th candidate listed on the</p> <p>24 Secretary of State website?</p> <p>25 A Yes.</p>

<p>173</p> <p>1 votes, so it wouldn't make much of a difference 2 anyway. But I'm not sure. 3 Q Okay. And the Secretary of State's 4 office publishes votes per candidate per precinct 5 for election day. 6 Is that right, Dr. Handley? 7 A I don't know. They report total votes 8 for the candidates, yes, on election day, because 9 early votes are not distributed to the precinct. 10 Yes. So that is correct. 11 Q Okay. So looking at -- we're going to 12 scroll over a little bit to column BW. This is 13 president_statewide_general_as_briancarroll. 14 Do you see that? 15 A Yes. 16 Q Okay. Is this the -- and there's a zero 17 underneath it for precinct 1, right? 18 A Yes. 19 Q So does this mean that presidential 20 candidate Brian Carroll got zero votes in 21 Precinct 1, or has been allocated zero votes in 22 Precinct 1? 23 A It means combining election day results 24 with the reallocated parish level results, he 25 still got zero votes.</p>	<p>175</p> <p>1 header for CE is 3.87 with some other numbers. 2 Is that right? 3 A Yes. 4 Q Okay. So rounding this to 4, does that 5 mean that Donald Trump received approximately 6 4 votes, based on your allocation, in Precinct 1? 7 A Yes. 8 Q And Dr. Handley, would you agree with me 9 that the number of votes allocated to 10 President Biden at 191 is higher than the 182 11 turnout reported in the spreadsheet? 12 A Yes. 13 Q Okay. Did the allocation in this 14 instance create a surplus of votes for 15 President Biden in the precinct? 16 A There are more votes cast than people 17 who turned out, yes. 18 Q In this spreadsheet? 19 A Yes, for this -- for this precinct, 20 Precinct 1, yes. 21 Q Okay. But you're not suggesting that 22 there were actually more votes cast for 23 President Biden in Precinct 1 than number of 24 people who actually cast a ballot in Precinct 1? 25 A Correct.</p>
<p>174</p> <p>1 Q Sorry. It's the attorney in me. I 2 picked the easiest math number. All right. 3 Let's scroll to column CA, if we could. 4 A Okay. 5 Q And does this say 6 president_statewide_general_dem_josephrbidenjr? 7 A It does. 8 Q What's the number directly underneath 9 the CA column header? 10 A 191.0435524. 11 Q And to make it easier, for the 12 attorneys, can we call that 191? Can we round it? 13 A You can. I agree that's the rounded 14 number. 15 Q So this is the number of votes for 16 President Biden allocated to Precinct 1? 17 A Correct. 18 Q Okay. And let's go to column CE, 19 please. 20 A Okay. 21 Q Is that the -- column the 22 president_statewide_general_rep_donaldjtrump 23 votes? 24 A Correct. 25 Q And the number underneath the column</p>	<p>176</p> <p>1 Q Okay. When did you become aware, 2 Dr. Handley, that some of the precincts here, your 3 allocation, resulted in a surplus of votes? 4 A A long time ago. I have no idea when. 5 Q Was it before looking at Dr. Solanky's 6 surrebuttal report? 7 A Yes. 8 Q So you were aware, Dr. Handley, prior to 9 August of this year that your allocation method 10 created a surplus of votes in certain precincts? 11 A Yes. But you do know that I don't use 12 the number of votes. I use proportions. 13 Q Sure. Can you elaborate on that? 14 A Yes. So when you do the analysis, in 15 doing the analysis using the proportion of Black, 16 White, and other turnout, and the proportion of 17 votes for Biden, Trump, and others. So the 18 columns still add to 1. 19 Q The columns still add to 1. You mean 20 100 percent? 21 A Well, if you were using percentages. I 22 use proportions. But yes, yes. 23 Q Sure. Okay. So using proportions, 24 adding up for the first precinct, would you have 25 assigned 191 votes to Joe Biden for precinct 1?</p>

<p>181</p> <p>1 Q Okay. And so I see that the</p> <p>2 presidential election, as you were discussing, has</p> <p>3 nearly a million early and absentee votes.</p> <p>4 Is that right?</p> <p>5 A Yes.</p> <p>6 Q Okay. And that it looks like that --</p> <p>7 okay. The next highest one on here, it looks</p> <p>8 like, is 2016 U.S. president, at 527,180 votes.</p> <p>9 Is that right?</p> <p>10 A I'm sorry. Okay. The next one you say</p> <p>11 is which one?</p> <p>12 Q Is election 4, election date 11/26,</p> <p>13 527,180?</p> <p>14 A Yes.</p> <p>15 Q Okay. All right. And is the difference</p> <p>16 here the reason, that you're not concerned, is</p> <p>17 that the difference between the total early and</p> <p>18 absentee votes?</p> <p>19 A No. It is true that fewer early votes</p> <p>20 would impact the analysis less. But no, that's</p> <p>21 not the reason.</p> <p>22 Q Okay. What is the reason then?</p> <p>23 A Well, first of all, I looked at who was</p> <p>24 casting early versus election day votes and</p> <p>25 whether it was more likely to be Democrats or</p>	<p>183</p> <p>1 can see that it is -- the results are such that I</p> <p>2 believe that the degree of polarization is</p> <p>3 actually greater than what was found because it,</p> <p>4 doesn't fit the pattern in most cases. I believe</p> <p>5 that the allocation bias in that particular</p> <p>6 contest led to a -- estimates that indicated less</p> <p>7 polarization than actually exists.</p> <p>8 So 2020 is problematic, but I felt that</p> <p>9 the other contests were not.</p> <p>10 Q And the other contests are not. Does</p> <p>11 that include the U.S. Senate election that's</p> <p>12 listed here on Table 5?</p> <p>13 A I'm sorry. 2020 elections were</p> <p>14 problematic. I don't mean just the presidential.</p> <p>15 I mean the 2020 elections.</p> <p>16 Q Okay. And so is it your testimony,</p> <p>17 Dr. Handley, that you did not perceive the U.S.</p> <p>18 Senate for 2022 election to be problematic?</p> <p>19 A There was a -- Democrats were slightly</p> <p>20 more likely to vote early, but the polarization</p> <p>21 was such that it was more or less identical, at</p> <p>22 least in terms of the votes for chambers. So I</p> <p>23 didn't feel like it was as problematic.</p> <p>24 Q And did I hear you correctly earlier,</p> <p>25 Dr. Handley, that you said Republicans tend to</p>
<p>182</p> <p>1 Republicans.</p> <p>2 And what happened in 2020 had not</p> <p>3 happened before, and that is that far more</p> <p>4 Democrats cast early votes than Republicans.</p> <p>5 Usually it's the case that there's only a slight</p> <p>6 difference, and usually the slight difference</p> <p>7 actually favors Republicans. But 2020 was quite</p> <p>8 different than the usual pattern. That's one</p> <p>9 thing I looked at.</p> <p>10 But then, of course, I also looked at</p> <p>11 whether there was a difference in the degree of</p> <p>12 polarization between early and total -- between</p> <p>13 early and election day. And if they were both</p> <p>14 equally polarized, I didn't have any reason to</p> <p>15 believe that the allocation process would</p> <p>16 introduce bias.</p> <p>17 And in every year but the presidential</p> <p>18 election, it was early and absentee versus</p> <p>19 election day were pretty equivalent in terms of</p> <p>20 the degree of polarization. But in the 2020</p> <p>21 presidential contest, there was a slight</p> <p>22 difference, and that was that the early votes were</p> <p>23 less polarized than the election day votes. So</p> <p>24 that could introduce some bias.</p> <p>25 And you can see it in the results. You</p>	<p>184</p> <p>1 vote early?</p> <p>2 A There was a --</p> <p>3 Q In general.</p> <p>4 A In most years, it was equal or</p> <p>5 Republicans were slightly more likely to vote</p> <p>6 early. The exception to that was 2022 where</p> <p>7 Democrats were slightly more likely.</p> <p>8 But the big difference was in November</p> <p>9 of 2020.</p> <p>10 Q And Dr. Handley, you mentioned a few</p> <p>11 minutes ago that you plug proportions, you do</p> <p>12 proportions for your EI analysis.</p> <p>13 Is that right?</p> <p>14 A That's correct.</p> <p>15 Q Okay. Does your EI program require you</p> <p>16 to enter the total by race or total by candidate?</p> <p>17 A Total by race and total by candidate...</p> <p>18 Q So do you have to report a total number</p> <p>19 in order to get your proportion in your program?</p> <p>20 A No.</p> <p>21 Q You don't?</p> <p>22 A That's correct, I do not. It depends on</p> <p>23 what I'm weighting by. But no, I use just</p> <p>24 proportions. I don't have to use a total number.</p> <p>25 Q Did you say it depends on what I'm</p>

<p>1 weighting by, like weighting, W-E-I-G-H-T-I-N-G? 2 <b>A (Nonverbal response.)</b> 3 Q So did you weight any elections or 4 anything in the analysis you did in this case? 5 <b>A Yes.</b> 6 Q What did you weight? 7 <b>A The EI analysis is weighted by total</b> 8 <b>turnout. So the number that turned out. So</b> 9 <b>larger precincts get weighed heavier in the</b> 10 <b>estimation process than less heavy -- less -- than</b> 11 <b>smaller precincts.</b> 12 Q And why do you do this weighting? 13 <b>A So that larger precincts count more than</b> 14 <b>smaller precincts.</b> 15 Q And larger by population, correct? Not 16 larger geographically? 17 <b>A That's correct.</b> 18 Q Did you know the race of the early 19 voters when you allocated them for your analysis, 20 or did you perform an EI estimate to get those? 21 <b>A The race of the early voters.</b> 22 <b>It's reported -- I should have</b> 23 <b>specified. I did this at the parish level, and it</b> 24 <b>is reported at the parish level. You get the</b> 25 <b>breakdown of early votes by race.</b></p>	<p>185 187 1 out, you described that one of the issues you had 2 was, like, a reality check because you looked at 3 the election results for the last ten years and 4 who was elected. 5 Is that right, Dr. Handley? 6 <b>A I wouldn't say I looked at the election</b> 7 <b>results. I just looked at who was elected. I</b> 8 <b>mean, I might have looked at the election results,</b> 9 <b>too. But that comment was based on who was</b> 10 <b>actually elected.</b> 11 Q How did you determine the race of the 12 members for the last ten years? 13 <b>A The ACLU has a double -- oh, what's the</b> 14 <b>word called -- double-bind [sic] process of --</b> 15 <b>where one person goes through and does the</b> 16 <b>research, and another person does it</b> 17 <b>independently, and then you compare. And that is</b> 18 <b>where I got the race of the candidates.</b> 19 <b>And in all circumstances except for</b> 20 <b>statewide contests where I might have looked</b> 21 <b>myself as well, or I might have looked before I</b> 22 <b>heard from the ACLU.</b> 23 Q And by looked yourself, you mean looked 24 at if the candidate reported their race to the 25 Secretary of State when they registered as a</p>
<p>186 1 Q And Dr. Handley, I believe you testified 2 to this earlier, but the investigation into the 3 bias that you looked at, that's not reported 4 anywhere in either of your reports, is it? 5 <b>A That's correct.</b> 6 Q Sorry with the sticky notes. But as you 7 heard Sarah say earlier, we're probably not going 8 to have anyone there asking questions, so I'm 9 covering for my colleagues. 10 Dr. Handley, did you do a study or 11 examine how many total elected officials in 12 Louisiana are Black? 13 <b>A By "elected officials," you mean more</b> 14 <b>than the state legislature.</b> 15 <b>Is that correct?</b> 16 Q Sure. 17 <b>A No, I did not.</b> 18 Q Do you have any understanding, 19 Dr. Handley, on if the number of Black elected 20 officials in the state has increased from 2000 to 21 today? 22 <b>A I would venture a guess that it probably</b> 23 <b>did, but I have no idea. I didn't look at it.</b> 24 Q So when we were reviewing Dr. Lewis's 25 report, and I don't think we need to get it back</p>	<p>188 1 candidate? 2 <b>A No. I looked at news reports and things</b> 3 <b>like that.</b> 4 Q And is the reason you looked at the ACLU 5 data, Dr. Handley, because the legislature doesn't 6 report the race of their members, like some states 7 do? 8 <b>A I guess, if you went to the registration</b> 9 <b>files, you could find out what -- I'm not sure.</b> 10 Q Sorry. Yeah, I don't think 11 individualized registration files -- I mean, some 12 states like North Carolina, you can look on the 13 general assembly's website, and it will report the 14 number of legislators that are White, Black, 15 Asian, et cetera. 16 Did you look at a similar report here in 17 Louisiana? 18 <b>A No.</b> 19 Q And I'm sorry to jump around, and I hope 20 we're nearing the end of the jumping. 21 Quick question on your -- the 22 proportions of the EI RxC. 23 So you entered the percentage of 24 candidates and did not need to enter the totals. 25 Is that right?</p>

<p>189</p> <p>1     <b>A   The percentage that each candidate</b> 2 <b>received in that precinct, that's correct. I</b> 3 <b>used -- it was the proportion, but same thing.</b> 4     <b>Q</b>   So there was no ceiling total or 5 something like that that you had to plug in, like 6 this analysis cannot exceed X number of votes? 7     <b>A   Correct.</b> 8         MS. RIGGINS: Why don't we take a 9 five-minute break. I've reached the end of my 10 time, but as you've seen from the sticky notes, my 11 colleagues may have something else. And I'll give 12 everybody five minutes to email their questions 13 otherwise. 14         (Recess from 4:07 p.m. until 4:16 p.m.) 15         MS. RIGGINS: Defendants have no further 16 questions for you, Dr. Handley. Your counsel may 17 have some. 18         MS. BRANNON: I just have one question 19 on redirect. 20                 EXAMINATION 21 BY MS. BRANNON: 22     <b>Q</b>   Can we pull out the minority success 23 peer reviewed article, which I think -- it's 24 Exhibit 5. 25         Dr. Handley, my only question for you is</p>	<p>191</p> <p>1                 ACKNOWLEDGEMENT OF DEPONENT 2 3                 I, LISA HANDLEY, Ph.D., do hereby 4 acknowledge that I have read and examined the 5 foregoing testimony, and the same is a true, 6 correct and complete transcription of the 7 testimony given by me, and any corrections appear 8 on the attached errata sheet signed by me. 9 10 11 _____ 12 (DATE)                 (SIGNATURE) 13 14 15 16 17 18 19 20 21 22 23 24 25</p>
<p>190</p> <p>1 whether this article has any specific information 2 about Louisiana or voting patterns in Louisiana 3 exclusively? 4     <b>A   It does not.</b> 5         MS. BRANNON: Nothing further. 6         MS. RIGGINS: Do you want to read and 7 sign? 8         MS. BRANNON: Yes, we will read and 9 sign. 10         (Transcript orders discussed.) 11         COURT REPORTER: Thank you. That's all 12 I need. 13         (Off the record at 4:17 p.m.) 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p>192</p> <p>1                 C E R T I F I C A T E 2 3                 I, Lisa V. Feissner, RDR, CRR, CLR, do 4 hereby certify that the witness was first duly 5 sworn by me and that I was authorized to and did 6 report said proceedings. 7                 I further certify that the foregoing 8 transcript is a true and correct record of the 9 proceedings; that said proceedings were taken by 10 me stenographically and thereafter reduced to 11 typewriting under my supervision; that reading and 12 signing was requested; and that I am neither 13 attorney nor counsel for, nor related to or 14 employed by, any of the parties to the action in 15 which this deposition was taken; and that I have 16 no interest, financial or otherwise, in this case. 17 18                 IN WITNESS WHEREOF, I have hereunto set my 19 hand this 29th day of SEPTEMBER, 2023. 20 21                          22                         _____ 23                         Lisa V. Feissner, RDR, CRR, CLR 24                 (The foregoing certification of this 25 transcript does not apply to any reproduction of the same by any means, unless under the direct control and/or supervision of the certifying reporter.)</p>

# **Exhibit 4**



<p style="text-align: center;">1</p> <p style="text-align: center;">UNITED STATES DISTRICT COURT MIDDLE DISTRICT OF LOUISIANA</p> <p style="text-align: center;">Civil Action No. 3:22-cv-00178 SDD-SDJ</p> <p>DR. DOROTHY NAIRNE, JARRETT LOFTON, REV. CLEE EARNEST LOWE, DR. ALICE WASHINGTON, STEVEN HARRIS, ALEXIS CALHOUN, BLACK VOTERS MATTER CAPACITY BUILDING INSTITUTE, and THE LOUISIANA STATE CONFERENCE OF THE NAACP,</p> <p style="text-align: center;">Plaintiffs,</p> <p>Versus</p> <p>R. KYLE ARDOIN, in his official capacity as Secretary of State of Louisiana,</p> <p style="text-align: center;">Defendant.</p> <p style="text-align: center;">DEPOSITION OF JOHN R. ALFORD, Ph.D., given in the above-entitled cause, pursuant to the following stipulation, via Zoom videoconferencing, before Sandra P. DiFebbo, Certified Shorthand Reporter, in and for the State of Louisiana, on the 18th day of September, 2023, commencing at 9:35 AM.</p>	<p style="text-align: center;">3</p> <p>1 APPEARANCES CONT'D: 2 REPRESENTING THE INTERVENOR DEFENDANTS: 3 BAKER HOSTETLER, LLP BY: ROBERT J. TUCKER, ESQ. 4 200 Civic Center Drive Suite 1200 Columbus, Ohio 43215 5 SHOWS, CALI &amp; WALSH 6 BY: JOHN C. WALSH, ESQ. 7 JOHN CONINE, JR., ESQ. 628 St. Louis Street 8 Baton Rouge, Louisiana 70821 9 10 REPRESENTING DEFENDANT R. KYLE ARDOIN IN HIS OFFICIAL CAPACITY AS SECRETARY OF STATE: 11 NELSON, MULLINS 12 BY: ALYSSA RIGGINS, ESQ. 301 Hillsborough Street, Suite 1400 13 Raleigh, North Carolina 27603 14 Also Present: 15 MALIK SAMMONS, ALEXA BRADY 16 17 Reported By: 18 Sandra P. DiFebbo Certified Shorthand Reporter 19 State of Louisiana 20 21 22 23 24 25</p>
<p style="text-align: center;">2</p> <p>1 APPEARANCES (Via Zoom): 2 REPRESENTING THE PLAINTIFFS: 3 NAACP LEGAL DEFENSE &amp; EDUCATIONAL FUND BY: VICTORIA WENGER, ESQ. 4 STUART NAIFEH, ESQ. 40 Rector Street, 5th Floor New York, NY 10006 5 COZEN O'CONNOR 6 BY: DAKOTA KNEHANS, ESQ. The Promenade 7 1230 Peachtree Street NE Suite 400 8 Atlanta, Georgia 30309 9 COZEN O'CONNOR 10 BY: JASON KURTYKA, ESQ. One Liberty Place 11 1650 Market Street, Suite 280 Philadelphia, Pennsylvania 191033 12 ADCOCK LAW, LLC 13 BY: JOHN ADCOCK, ESQ. P. O. Box 791309 14 3110 Canal Street New Orleans, Louisiana 70179 15 AMERICAN CIVIL LIBERTIES UNION FOUNDATION 16 BY: SARAH BRANNON, ESQ. MEGAN C. KEENAN, ESQ. 17 915 15th Street NW Washington, DC 20005 18 AMERICAN CIVIL LIBERTIES UNION FOUNDATION 19 BY: DAYTON CAMPBELL-HARRIS, ESQ. LUIS MANUEL RICO ROMAN, ESQ. 20 125 Broad Street, 18th Floor New York, NY 10004 21 NAACP LEGAL DEFENSE &amp; EDUCATIONAL FUND 22 BY: SARA ROHANI, ESQ. JARED EVANS, ESQ. 23 700 14th Street, Suite 600 Washington, DC 20005 24 25</p>	<p style="text-align: center;">4</p> <p>1 EXAMINATION INDEX 2 3 Page 4 BY MS. WENGER: 6 5 6 7 8 EXHIBIT INDEX 9 10 Page 11 Exhibit 1 12 12 Exhibit 2 145 13 Exhibit 3 148 14 Exhibit 4 173 15 Exhibit 5 178 16 17 18 19 20 21 22 23 24 25</p>

<p style="text-align: right;">5</p> <p>1        S T I P U L A T I O N</p> <p>2</p> <p>3        It is stipulated and agreed by and</p> <p>4 between Counsel for the parties hereto that the</p> <p>5 deposition of JOHN R. ALFORD, Ph.D., is hereby</p> <p>6 being taken via Zoom videoconferencing pursuant to</p> <p>7 the Federal Rules of Civil Procedure for all</p> <p>8 purposes in accordance with law;</p> <p>9        That the formalities of reading and</p> <p>10 signing are specifically reserved;</p> <p>11        That the formalities of sealing,</p> <p>12 certification, and filing are hereby specifically</p> <p>13 waived.</p> <p>14        That all objections, save those as to</p> <p>15 the form of the question and responsiveness of the</p> <p>16 answer are hereby reserved until such time as this</p> <p>17 deposition or any part thereof is used or sought to</p> <p>18 be used in evidence.</p> <p>19        * * * * *</p> <p>20        Sandra P. DiFebbo, Certified Shorthand</p> <p>21 Reporter, in and for the State of Louisiana,</p> <p>22 officiated in administering the oath to the witness</p> <p>23 remotely.</p> <p>24</p> <p>25</p>	<p style="text-align: right;">7</p> <p>1 accountable to speaking slowly for the benefit of</p> <p>2 our court reporter, and, also, making sure not to</p> <p>3 communicate anything just through gestures but</p> <p>4 rather on the record. Does that sound all right?</p> <p>5        A. Yes.</p> <p>6        Q. Excellent. I'm going to hope to avoid</p> <p>7 interrupting you, also, for maintenance of the</p> <p>8 record, and if you can, also, just please let me</p> <p>9 finish my questions before chiming in with your</p> <p>10 response. That would be great. Is that okay?</p> <p>11        A. Sounds good.</p> <p>12        Q. Excellent. If you don't understand my</p> <p>13 question, please ask me to clarify or rephrase at</p> <p>14 any point. I'm happy to, but if you answered a</p> <p>15 question that I've asked, I'm going to assume you</p> <p>16 understood what I said. Does that sound fair?</p> <p>17        A. Yes.</p> <p>18        Q. If you feel like you need a break at any</p> <p>19 time, I will try to structure some in, and I</p> <p>20 welcome your counsel or anyone else to chime in if</p> <p>21 we'd like a break and for the amount of time, but</p> <p>22 please do let me know if you need a short break or</p> <p>23 a longer one at any point.</p> <p>24        A. I will.</p> <p>25        Q. Excellent. If we can try to at least get</p>
<p style="text-align: right;">6</p> <p>1        JOHN R. ALFORD, Ph.D., 15907 Erin</p> <p>2 Creek Court, Houston, Texas, 77062, after</p> <p>3 having been first duly sworn by the reporter,</p> <p>4 was examined and testified on his oath as</p> <p>5 follows:</p> <p>6 EXAMINATION BY MS. WENGER:</p> <p>7        Q. Good morning, Dr. Alford. My name is</p> <p>8 Victoria Wenger, and I'm an attorney for the</p> <p>9 plaintiffs in this case with the Legal Defense</p> <p>10 Fund. I'm going to start with a few logistics and</p> <p>11 understandings before we hop into the substance of</p> <p>12 today's conversation. To begin, can you let me</p> <p>13 know how many times you have been deposed prior to</p> <p>14 today?</p> <p>15        A. I don't know the exact number, but I</p> <p>16 would guess more than 50 times.</p> <p>17        Q. About how many times have you testified</p> <p>18 at trial?</p> <p>19        A. Thirty times, maybe.</p> <p>20        Q. So none of this is going to be too new to</p> <p>21 you, but just to go over a few ground rules for our</p> <p>22 shared understanding. Of course, today is all</p> <p>23 being conducted virtually, so it is going to be</p> <p>24 especially important to answer my questions</p> <p>25 audibly. I am also going to try to hold myself</p>	<p style="text-align: right;">8</p> <p>1 to the end of my question or a current topic, where</p> <p>2 possible, let's try to stick to that, but I will</p> <p>3 also try to honor breaks where you need them.</p> <p>4        A. Sounds good.</p> <p>5        Q. Excellent. Because we're communicating</p> <p>6 virtually today, Dr. Alford, can you let me know</p> <p>7 where you are currently situated?</p> <p>8        A. I am at my home at the address that I</p> <p>9 gave earlier.</p> <p>10        Q. And is anyone else in the room with you?</p> <p>11        A. No.</p> <p>12        Q. If anyone else comes in the room during</p> <p>13 the deposition, can you just let me know, and we'll</p> <p>14 take a brief break, if necessary?</p> <p>15        A. Yes.</p> <p>16        Q. And while we're on the record, asking and</p> <p>17 answering questions, I'd like to ask for you to</p> <p>18 refrain from communicating with anyone else unless</p> <p>19 you need to ask your counsel a question regarding</p> <p>20 privilege. Is that okay?</p> <p>21        A. That's fine.</p> <p>22        Q. If someone tries to communicate to you</p> <p>23 specifically through your computer or other</p> <p>24 technological means, can you just let me know?</p> <p>25        A. Absolutely.</p>



<p style="text-align: right;">9</p> <p>1 Q. And you understand that you are under 2 oath today? 3 A. Yes. 4 Q. Is there any reason that you could not 5 provide truthful answers to my questions today? 6 A. No. 7 Q. How did you first hear about this case? 8 A. I was -- if I'm recalling this correctly, 9 there are a lot of cases going on in the last 10 couple of years, but I believe in this case I was 11 contacted by one of the lawyers that I had worked 12 with in a previous Louisiana case indicating that 13 he was passing my name on to the lawyers of this 14 case and then I got either a call or an e-mail from 15 them and worked out an agreement for me to work on 16 this case. 17 Q. Around when was that? 18 A. I really don't know. I believe there is 19 a document somewhere. There is a contract with a 20 date on it, but I don't really recall what that 21 date was. 22 Q. When did you learn you were going to be 23 deposed today? 24 A. I think there had been some earlier back 25 and forth about fitting this in, given the</p>	<p style="text-align: right;">11</p> <p>1 prepare for today's deposition? 2 A. I had two Zoom sessions with the 3 attorneys. One I think maybe a week ago, maybe at 4 the end of the previous week, and then another on 5 last Friday. 6 Q. Do you recall which attorneys you met 7 with? 8 A. I don't know who all was on the -- I 9 don't recall who all was on the Zoom. 10 Q. Are you aware if it was attorneys for the 11 intervenor defendants, the Speaker of the Louisiana 12 House and the President of the Louisiana Senate 13 specifically, or were there also attorneys from the 14 Secretary of State's office or for the State of 15 Louisiana? 16 A. I frankly have not kept it straight, and 17 this is in multiple other cases at this time 18 involving multiple defendants and sometimes 19 multiple plaintiffs, and so I don't know who the 20 lawyers actually represent in this matter. 21 Q. About how long were your prep sessions? 22 A. I think the first one may have been an 23 hour and a half or something, I think, and the talk 24 on Friday much briefer, maybe half hour. 25 Q. During those conversations, did you</p>
<p style="text-align: right;">10</p> <p>1 schedule. Maybe a week ago I think I might have, 2 somewhere in that range, gotten the actual date and 3 recently saw the Notice of Deposition. I think it 4 was maybe a week or two weeks ago, whenever the 5 date was settled. 6 Q. What did you do to prepare for this 7 deposition? 8 A. I looked back over my report in this 9 case. I looked back over Dr. Handley's reports in 10 this case. I looked briefly at Dr. King's most 11 recent report. I've looked briefly at Traci 12 Burch's most recent report. I may be leaving 13 something out, but I think that's basically it. 14 Looking at some of the most recent reports in the 15 case. That's primarily what I looked at. 16 Q. Do you know how many reports by Dr. Lisa 17 Handley you reviewed? 18 A. I think there was a preliminary Handley 19 report, a Handley report, and a Handley rebuttal 20 report. In reviewing for the deposition I think I 21 looked at the -- I don't think I looked back at the 22 preliminary, but I looked at the report and the 23 rebuttal or supplement, whatever. The most recent 24 report. 25 Q. Did you meet or speak with anyone to</p>	<p style="text-align: right;">12</p> <p>1 review any other documents beyond the reports that 2 you mentioned to me? 3 A. No. I don't recall reviewing anything 4 other than the documents we talked about. 5 Q. I'd like to pull up what I'm going to 6 label as Exhibit 1, Expert Report of John R. 7 Alford, Ph.D. My colleague, Sarah, will have this 8 on the screen. Dr. Alford, do you have a paper 9 copy of this? 10 A. I do. I printed out a clean paper copy, 11 so I have that in front of me. 12 Q. Thank you for that. How long did you 13 take spending -- how long did you spend writing 14 your report? 15 A. I have no idea. 16 Q. Do you have any ball park? 17 A. Not even a ball park. I think I'm 18 involved in maybe six cases that I'm being deposed 19 and testifying, writing reports in. Just in the 20 last 12 months I started working simultaneously on 21 different things at different times, so I have no 22 idea what the time -- amount of time or even the 23 time frame was other than that I submitted it on 24 July 28th. 25 Q. You are logging your hours for billing</p>

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1 partisan affiliation?

2 A. I have no data on the partisan  
3 affiliation of Louisiana voters in terms of this  
4 analysis. I am commenting on an analysis that Dr.  
5 Handley performed based on the candidates in the  
6 contest and analysis of the way different racial  
7 groups cast votes for the candidate. So that  
8 analysis does not provide information about what  
9 leads voters to vote in a particular way.

10 Q. Let's get into the report a bit. I might  
11 circle back to more questions on this topic.

12 MS. WENGER:

13 If we can pull up, again, on the  
14 screen, Sarah, Dr. Alford's report.

15 BY MS. WENGER:

16 Q. Dr. Alford and anyone that has a hard  
17 copy, I'm going to turn to Page 3. Again, this is  
18 Exhibit 1, expert report of John R. Alford, Ph.D.,  
19 submitted July 28th, 2023.

20 A. Yes.

21 Q. On Page 3 you represent here that you had  
22 reviewed the reports of Dr. Lisa Handley and relied  
23 on data provided by her?

24 A. Correct.

25 Q. Does your report address the opinions of

1 differently, so I'm drawing my conclusions from her  
2 analysis, cognizant of what her data sources were  
3 and what her analytical techniques were, and I  
4 don't think those are things that would need to be  
5 altered in order to allow these conclusions to be  
6 drawn.

7 Q. So no critique of the numbers, number of  
8 elections she looked at or anything else?

9 A. I've always preferred to look at the  
10 broadest possible set of elections, but that is --  
11 I think I'm able to reach my conclusions. She is  
12 able to reach her conclusions. I think it's an  
13 adequate set of elections.

14 Q. We touched on this a bit, but just to  
15 round it out, do you have any concerns about,  
16 beyond what you've shared, the statistical methods  
17 Dr. Handley used to analyze voting behavior in  
18 various areas across Louisiana?

19 A. I mean, I have a, unlike Dr. Handley, I  
20 have a strong preference for the most recent  
21 version of EI, the true RxC EI. I don't like to  
22 see people continuing to rely on iterative  
23 particularly, and I think we are well beyond ER, so  
24 I prefer not to -- I don't use those techniques. I  
25 think there is very little value in providing them,

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1 experts other than Dr. Handley?

2 A. I believe the report is directed at the  
3 analysis of Dr. Handley. I don't know -- I don't  
4 recall whether I'm moving beyond Handley at any  
5 point, but I believe it is primarily almost  
6 exclusively a commentary on Dr. Handley's report.

7 Q. Did you have enough time to complete the  
8 analysis you believed was necessary to respond to  
9 Dr. Handley's opinions?

10 A. Yes.

11 Q. Did the intervenors attorneys here  
12 provide you with any other facts or data in this  
13 case that you relied on in preparing your report?

14 A. No.

15 Q. Do you have any concerns about the data  
16 sources Dr. Handley relied on in reaching her  
17 conclusions?

18 A. To the extent we're talking about her  
19 ecological inference analysis, I replicated some of  
20 that. Her source for the election data is very  
21 straightforward. Election returns are election  
22 returns. There is a little -- it's going to be a  
23 little more unusual in terms of looking at the  
24 demographics, but I don't find anything there that  
25 I would necessarily think needed to be done

1 so I certainly wouldn't agree with using those  
2 techniques if there wasn't an also true RxC  
3 analysis, but there is an RxC analysis here, so I  
4 don't have any complaint.

5 Q. To confirm, Dr. Handley's statistical  
6 methods used here are commonly used and generally  
7 accepted methods of estimating voter behavior?

8 MR. TUCKER:

9 Objection to form.

10 THE WITNESS:

11 For presenting this kind of  
12 information in legal matters, yes.

13 BY MS. WENGER:

14 Q. Do Dr. Handley's statistical methods  
15 produce the best estimates of voter behavior  
16 available?

17 A. No. Again, if we're going to use  
18 election results and do ecological inference  
19 analysis, I would not say that of all her methods,  
20 but the RxC analysis is the best methodology for  
21 doing ecological inference, and to the extent you  
22 are going to base your analysis on ecological data,  
23 then that -- she is using the best technique that  
24 is available.

25 Q. Does your report criticize any of the

<p style="text-align: right;">85</p> <p>1 statistical methods that Dr. Handley used?</p> <p>2 A. No.</p> <p>3 Q. Do you dispute any of the results</p> <p>4 produced by her statistical methods?</p> <p>5 A. No.</p> <p>6 Q. Dr. Handley stated that racially</p> <p>7 polarized voting is present where Black voters</p> <p>8 voting alone would elect a different candidate than</p> <p>9 White voters voting alone. We discussed your own</p> <p>10 definition a bit, but I'm curious whether or not</p> <p>11 you agree with this definition.</p> <p>12 A. It is certainly one of the definitions</p> <p>13 she might offer in a world of logical definitions,</p> <p>14 but in the legal concept, it is not the appropriate</p> <p>15 definition. It borders on absurdity.</p> <p>16 Q. Can you expand upon what you mean by</p> <p>17 that?</p> <p>18 A. Well, Gingles is a long time ago. We</p> <p>19 have a framework for this. Not only is the</p> <p>20 framework established by Gingles, but we actually</p> <p>21 call the two tests the Gingles -- the three tests,</p> <p>22 the Gingles threshold test. We have a test here.</p> <p>23 The standard she is offering is in no way connected</p> <p>24 to the Gingles threshold standards. So offering</p> <p>25 those definitions in a court, when you say I'm</p>	<p style="text-align: right;">87</p> <p>1 to assess whether Blacks are voting cohesively for</p> <p>2 that candidate. If all you want to do is determine</p> <p>3 can you determine the preferred candidate, since it</p> <p>4 is universally the case that you can determine</p> <p>5 that, then you can just eliminate Gingles 2. There</p> <p>6 is no requirement. Preferred candidate does not</p> <p>7 imply cohesion in any sense, hence, the fact that</p> <p>8 it is universally met. A standard that -- a</p> <p>9 threshold that is always met, by definition, is not</p> <p>10 a threshold. It is not a standard. It is just a</p> <p>11 fact of the world. So it renders the Gingles</p> <p>12 threshold test, particularly the second Gingles</p> <p>13 threshold test, worthless. Having done that, it is</p> <p>14 hard to say what exactly the Gingles 3 test might</p> <p>15 be, but if your Gingles 3 test is just whether</p> <p>16 White voters have a different preferred candidate,</p> <p>17 then, again, if we just -- if we had Black voters</p> <p>18 vote by tossing a coin and White voters vote by</p> <p>19 tossing a coin, they would have different preferred</p> <p>20 candidates half the time, and if your standard for</p> <p>21 legally significant voting is that half the time</p> <p>22 they disagree, then you have no standard for any of</p> <p>23 the Gingles tests at all. So it is not -- I mean,</p> <p>24 I don't know. This has been tossed around a lot.</p> <p>25 We see it referred to a lot, but it is not related</p>
<p style="text-align: right;">86</p> <p>1 going to assess the Gingles preconditions or</p> <p>2 threshold, whatever, that totally ignores the</p> <p>3 Gingles standard I think is not particularly</p> <p>4 useful, and, among other things, might lead a court</p> <p>5 to mistakenly believe you addressed the Gingles</p> <p>6 factors, when, by her definition, you have not even</p> <p>7 begun to address the Gingles factors. So if you</p> <p>8 are just looking at what candidate would be elected</p> <p>9 by Black voters voting alone, that is what is</p> <p>10 called a Black preferred candidate. There is</p> <p>11 always a Black preferred candidate in every</p> <p>12 election that we analyze. It's just simply defined</p> <p>13 as the candidate that has more votes from Black</p> <p>14 voters than any other candidate. That is true in</p> <p>15 two party. It is true in multiparty. There is</p> <p>16 always a preferred candidate.</p> <p>17 So the first question would be when you</p> <p>18 are assessing, you are looking at the vote of Black</p> <p>19 voters. What are you agreeing to determine? The</p> <p>20 Gingles test is not about determining the preferred</p> <p>21 candidate of Black voters and saying, okay, Black</p> <p>22 voters have a preferred candidate. We have met the</p> <p>23 Gingles threshold test. The first step of the</p> <p>24 threshold test is to identify the preferred</p> <p>25 candidate of Blacks. There is always one, and then</p>	<p style="text-align: right;">88</p> <p>1 to the Gingles test as enunciated in the case or as</p> <p>2 it has been followed since. It has no test for</p> <p>3 cohesion on the part of minority voters, and it has</p> <p>4 no test for block voting on the part of majority</p> <p>5 voters.</p> <p>6 Q. How do you define cohesion?</p> <p>7 A. Cohesion is a continuous measure that</p> <p>8 varies from zero when vote is split fifty-fifty.</p> <p>9 That is what she would define as, apparently, as</p> <p>10 automatic cohesion. I would define as the lack of</p> <p>11 cohesion. It is where cohesion is zero. Cohesion</p> <p>12 reaches its peak at 100 percent of the vote, so it</p> <p>13 varies from 50 to 100. Fifty is not halfway. In</p> <p>14 her definition, 50 is cohesion. Maybe because it's</p> <p>15 halfway between zero and 100, but that simply</p> <p>16 misunderstands the nature of the scale. If voter</p> <p>17 support goes below 50 for a particular candidate,</p> <p>18 by definition, it has to go up for the other</p> <p>19 candidates, so your cohesion moves up. As you move</p> <p>20 above 50, it moves up, as you move below 50. So</p> <p>21 it's just for different candidates. So if you</p> <p>22 recognize that it is zero at 50 and it is 100 at</p> <p>23 100, then the question is, what is the cohesion in</p> <p>24 between that. You can just report a number.</p> <p>25 Cohesion is 62 percent. If the court wants to then</p>

# **Exhibit 5**

Transcript of Dr. Tumulesh Solanky  
Conducted on September 22, 2023

1 (1 to 4)

1	3
<p>1 IN THE UNITED STATES DISTRICT COURT</p> <p>2 FOR THE MIDDLE DISTRICT OF LOUISIANA</p> <p>3 -----x</p> <p>4 DR. DOROTHY NAIRNE, et al., :</p> <p>5 Plaintiffs, : Case No.</p> <p>6 vs. : 3:22-cv-00178-SDD-SDJ</p> <p>7 R. KYLE ARDOIN, in :</p> <p>8 his official capacity :</p> <p>9 as Secretary of Louisiana, :</p> <p>10 Defendants. :</p> <p>11 -----x</p> <p>12</p> <p>13</p> <p>14</p> <p>15 Deposition of DR. TUMULESH SOLANKY</p> <p>16 New York, New York</p> <p>17 Friday, September 22, 2023</p> <p>18 9:57 p.m.</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23 Job No.: 507954</p> <p>24 Pages: 1 - 262</p> <p>25 Recorded By: Harold Rodriguez</p>	<p>1 A P P E A R A N C E S</p> <p>2</p> <p>3 ON BEHALF OF THE PLAINTIFF:</p> <p>4 AMANDA GIGLIO, ESQUIRE</p> <p>5 DAKOTA KNEHANS, ESQUIRE</p> <p>6 ALIZA ESTRELLA, ESQUIRE</p> <p>7 COZEN O'CONNOR</p> <p>8 3 WTC</p> <p>9 175 Greenwich Street, 55th Floor</p> <p>10 New York, NY 10007</p> <p>11 212.509.9400</p> <p>12</p> <p>13 ON BEHALF OF PLAINTIFFS:</p> <p>14 SARAH BRANNON, ESQUIRE</p> <p>15 AMERICAN CIVIL LIBERTIES UNION FOUNDATION</p> <p>16 915 15th Street, NW</p> <p>17 Washington, DC 20005</p> <p>18 202.675.2337</p> <p>19</p> <p>20 ON BEHALF OF THE DEFENDANT:</p> <p>21 ALYSSA RIGGINS, ESQUIRE</p> <p>22 NELSON MULLINS RILEY &amp; SCARBOROUGH, LLP</p> <p>23 301 Hillsborough Street, Suite 1400</p> <p>24 Raleigh, North Carolina 27603</p> <p>25 919.329.3800</p>
2	4
<p>1 Deposition of DR. TUMULESH SOLANKY,</p> <p>2 held at the offices of:</p> <p>3</p> <p>4</p> <p>5</p> <p>6 COZEN O'CONNOR</p> <p>7 3 WTC</p> <p>8 175 Greenwich Street, 55th Floor</p> <p>9 New York, New York 10007</p> <p>10</p> <p>11</p> <p>12</p> <p>13 Pursuant to agreement, before Harold</p> <p>14 Rodriguez, Notary Public in and for the</p> <p>15 State of New York.</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1 C O N T E N T S</p> <p>2</p> <p>3 EXAMINATION OF DR. TUMULESH SOLANKY PAGE</p> <p>4 By Ms. Giglio 5</p> <p>5 By Ms. Riggins 254</p> <p>6</p> <p>7 E X H I B I T S</p> <p>8 (Attached to transcript.)</p> <p>9 DEPOSITION EXHIBIT PAGE</p> <p>10 Exhibit 1 Report 20</p> <p>11 Exhibit 2 Rebuttal 23</p> <p>12 Exhibit 3 Report 24</p> <p>13 Exhibit 4 Report 24</p> <p>14 Exhibit 5 Election results 92</p> <p>15 Exhibit 6 Map 119</p> <p>16 Exhibit 7 Map 120</p> <p>17 Exhibit 8 Example drawn out 224</p> <p>18 Exhibit 9 Report 257</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>

Transcript of Dr. Tumulesh Solanky  
Conducted on September 22, 2023

2 (5 to 8)

<p style="text-align: right;">5</p> <p>1 PROCEEDINGS</p> <p>2 Whereupon,</p> <p>3 DR. TUMULESH SOLANKY,</p> <p>4 being first duly sworn or affirmed to testify to</p> <p>5 the truth, the whole truth, and nothing but the</p> <p>6 truth, was examined and testified as follows:</p> <p>7 EXAMINATION BY COUNSEL FOR THE PLAINTIFF</p> <p>8 BY MS. GIGLIO:</p> <p>9 Q Good morning, Dr. Solanky. My name is</p> <p>10 Amanda Giglio, and I, along with my colleagues at</p> <p>11 Cozen O'Connor, the Legal Defense and Educational</p> <p>12 Fund, and the ACLU represent the plaintiffs in</p> <p>13 this case. Let me first ask you before we start:</p> <p>14 have you ever been deposed before?</p> <p>15 A Yes, I have been.</p> <p>16 Q How many times?</p> <p>17 A A large number of times, I cannot.</p> <p>18 Q More than 10?</p> <p>19 A More than 10.</p> <p>20 Q Okay, Great. So I just want to go over</p> <p>21 a couple of logistics and ground rules before we</p> <p>22 really get started on the substance. So we've</p> <p>23 established you've testified a lot, so I'm sure</p> <p>24 that you've heard these before, but do you</p> <p>25 understand that you're under oath to testify</p>	<p style="text-align: right;">7</p> <p>1 breaks, short breaks every hour just for the sake</p> <p>2 of everyone's sanity. But if I'm in the middle of</p> <p>3 a question or a short series of questions, I will</p> <p>4 ask that we finish that out before we take a break.</p> <p>5 Great. Okay. So let's get started.</p> <p>6 Dr. Solanky, can you please state and spell your</p> <p>7 name for the record?</p> <p>8 A Sure. My full name is Tumulesh Kumar</p> <p>9 Singh Solanky, and I'll spell it; T-U-M-U-L-E-S-H,</p> <p>10 K-U-M-A-R, S-I-N-G-H, and the last name,</p> <p>11 S-O-L-A-N-K-Y.</p> <p>12 Q What did you do to prepare for today's</p> <p>13 deposition?</p> <p>14 A I looked over some of the reports that</p> <p>15 have been submitted.</p> <p>16 Q Did you meet with Counsel to prepare</p> <p>17 for this deposition?</p> <p>18 A Not really. We met yesterday and we --</p> <p>19 we talked about some of things.</p> <p>20 Q You don't need to tell me what you</p> <p>21 talked about, just for the sake of protecting your</p> <p>22 --</p> <p>23 A Okay.</p> <p>24 Q -- privilege with your counsel, but you</p> <p>25 can just tell me that you met. I'll ask how long</p>
<p style="text-align: right;">6</p> <p>1 truthfully under perjury today?</p> <p>2 A Yes, I do.</p> <p>3 Q And is there any reason why you would</p> <p>4 be unable to testify truthfully today?</p> <p>5 A There -- there is no reason.</p> <p>6 Q So please be sure to answer my</p> <p>7 questions audibly for the sake of the court</p> <p>8 reporter. This deposition is being transcribed.</p> <p>9 It's important that our court reporter can</p> <p>10 transcribe your answers. He won't be able to hear</p> <p>11 uh-huhs or head nods, things like that. And</p> <p>12 especially -- it's -- it's especially because this</p> <p>13 is being transcribed, it's important that we don't</p> <p>14 talk over each other. So I'll answer -- I'll ask</p> <p>15 my question, I'll finish and then I will let you</p> <p>16 finish completely before moving on to additional</p> <p>17 questions.</p> <p>18 That's true also if your counsel</p> <p>19 objects to a question; let her finish her</p> <p>20 objection and then start your answer. Please let</p> <p>21 me know if you don't understand one of my</p> <p>22 questions and I'll do my best to rephrase it.</p> <p>23 Otherwise, I'll assume that you understand it and</p> <p>24 I'll expect you to answer it. If you feel like</p> <p>25 you need a break, let me know. I will try to take</p>	<p style="text-align: right;">8</p> <p>1 was -- were those meetings?</p> <p>2 A Okay.</p> <p>3 Q How long were those meetings?</p> <p>4 A A few hours.</p> <p>5 Q So you were retained as an expert in</p> <p>6 this case; is that right?</p> <p>7 A That is correct.</p> <p>8 Q Who retained you?</p> <p>9 A I believe Mr. Tom Farr.</p> <p>10 Q And --</p> <p>11 A So he's the one I first spoke with.</p> <p>12 Q And who does Mr. Tom Farr represent in</p> <p>13 this case?</p> <p>14 A The defendants.</p> <p>15 Q Do you know if -- if he represents one</p> <p>16 of the particular defendants?</p> <p>17 A I don't feel comfortable answering</p> <p>18 that, I -- I think.</p> <p>19 Q Okay. What were you asked to do as</p> <p>20 part of your retention?</p> <p>21 A In general, I was asked to look at the</p> <p>22 voting data, and -- and -- and -- and -- and</p> <p>23 review some of the plaintiff's expert reports, and</p> <p>24 -- and -- and -- and tender an opinion based on</p> <p>25 what is being done, that sort of thing.</p>



Transcript of Dr. Tumulesh Solanky  
Conducted on September 22, 2023

58 (229 to 232)

<p style="text-align: right;">229</p> <p>1 analysis, as opposed to in, like, literal numbers.</p> <p>2 <b>A Now, first of all, a -- a -- a -- a</b></p> <p>3 <b>huge impact. Let's look at it. The basic flaw,</b></p> <p>4 <b>allocating to the precincts who had more election</b></p> <p>5 <b>day votes. And so the precincts who already had</b></p> <p>6 <b>too many votes, say that the precincts had lots of</b></p> <p>7 <b>blacks, and they all voted for this candidate</b></p> <p>8 <b>here, then she would took --</b></p> <p>9 Q Well, instead of this candidate here,</p> <p>10 Dr. Solanky, just to be clear, let's ascribe them</p> <p>11 with --</p> <p>12 <b>A Okay, okay. Sorry. Yeah.</b></p> <p>13 Q -- with -- no, that's okay.</p> <p>14 <b>A Yeah.</b></p> <p>15 Q Let's ascribe them with political</p> <p>16 parties just to keep --</p> <p>17 <b>A Okay.</b></p> <p>18 Q -- things relevant, because --</p> <p>19 <b>A Okay.</b></p> <p>20 Q -- this, I think, is a little -- it'll</p> <p>21 be a little confusing long term.</p> <p>22 <b>A Okay, so -- so as an illustration, say</b></p> <p>23 <b>the -- the -- the Precinct B has a very high</b></p> <p>24 <b>percentage of blacks, and -- and they all voted</b></p> <p>25 <b>for President Biden, say 98 percent voted for him,</b></p>	<p style="text-align: right;">231</p> <p>1 <b>there in each precinct, and then on top, she is</b></p> <p>2 <b>allocating votes, whosoever had more votes</b></p> <p>3 <b>proportionally in a precinct.</b></p> <p>4 <b>So like, for example here, so -- so</b></p> <p>5 <b>this Candidate X got hundred percent of the -- of</b></p> <p>6 <b>the votes on election day, because this -- the</b></p> <p>7 <b>first candidate got zero on election day. So if</b></p> <p>8 <b>you look at the --</b></p> <p>9 Q No, I understand.</p> <p>10 <b>A -- if you look at the allocation day</b></p> <p>11 <b>percentage, B gets hundred percent of election</b></p> <p>12 <b>day, and hence, B gets a hundred percent of the</b></p> <p>13 <b>early votes. So -- so that's a very flawed</b></p> <p>14 <b>argument. Instead the argument should have been</b></p> <p>15 <b>that you look at early -- total early votes.</b></p> <p>16 Q Go ahead, I -- I'm listening.</p> <p>17 <b>A Yeah.</b></p> <p>18 Q No, honestly I appreciate it.</p> <p>19 <b>A You were looking over -- so I stopped.</b></p> <p>20 Q Thank you.</p> <p>21 <b>A No big deal. So -- so the correct</b></p> <p>22 <b>argument would be -- correct methodology would be</b></p> <p>23 <b>that you look at how many early votes are by</b></p> <p>24 <b>candidate and allocate them proportionally,</b></p> <p>25 <b>restricted to how many early votes are there.</b></p>
<p style="text-align: right;">230</p> <p>1 <b>and they voted on election day, what her</b></p> <p>2 <b>methodology would do would be allocate even</b></p> <p>3 <b>additional votes, surplus votes which don't exist,</b></p> <p>4 <b>and then the EI analysis will say that 99 percent</b></p> <p>5 <b>of blacks voted for him, for President Trump --</b></p> <p>6 <b>or, President Biden.</b></p> <p>7 <b>So -- so that is the basic flaw. It</b></p> <p>8 <b>magnifies the number of votes in precincts which</b></p> <p>9 <b>have already too many votes proportionally, and --</b></p> <p>10 <b>and she is doing that because she's disregarding</b></p> <p>11 <b>that key piece of information, which is, how many</b></p> <p>12 <b>early votes are there?</b></p> <p>13 <b>Mathematically, this is a very simple</b></p> <p>14 <b>algorithm. She just ignored the key piece of</b></p> <p>15 <b>information in her proportional allocation. So</b></p> <p>16 <b>it's the two flaws. She ignored this key piece of</b></p> <p>17 <b>information, and even the logic that whosoever had</b></p> <p>18 <b>early should get more, not taking into account how</b></p> <p>19 <b>many early votes are there for that person, that's</b></p> <p>20 <b>a flaw.</b></p> <p>21 Q When you say, whoever -- I'm sorry, can</p> <p>22 you repeat what you just said? Whoever gets early</p> <p>23 has more?</p> <p>24 <b>A So -- so -- so there are two flaws.</b></p> <p>25 <b>First is, she is ignoring how many early votes are</b></p>	<p style="text-align: right;">232</p> <p>1 Q Okay. I think that what I am trying to</p> <p>2 suss out, Dr. Solanky -- I understand that what</p> <p>3 you're saying is the total votes -- the total</p> <p>4 voter turnout for each precinct is available. And</p> <p>5 then if we subtract the number of election day</p> <p>6 votes from that total voter turnout, which is a</p> <p>7 number that -- that you've compiled using Dr.</p> <p>8 Handley's data; is that right?</p> <p>9 <b>A The -- those are there in Dr. Handley's</b></p> <p>10 <b>data.</b></p> <p>11 Q Right. But the total -- you -- you</p> <p>12 indicated earlier that the total voter turnout</p> <p>13 column was you adding those figures up; right?</p> <p>14 <b>A Correct.</b></p> <p>15 Q Okay.</p> <p>16 <b>A So she has, for example, how many --</b></p> <p>17 <b>Q Turnout black, turnout other, turnout</b></p> <p>18 <b>white?</b></p> <p>19 <b>A And you just add those, and you have --</b></p> <p>20 <b>Q Yep.</b></p> <p>21 <b>A -- total turnout.</b></p> <p>22 Q Okay. But -- but that was a number</p> <p>23 that you created in your --</p> <p>24 <b>A Right. So this last column --</b></p> <p>25 <b>Q -- you're just being clear.</b></p>

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59 (233 to 236)

<p>233</p> <p>1 A -- yeah. This last column was not 2 there. 3 Q Understood. So you would subtract the 4 total number of votes that were cast on election 5 day, and you would get a -- a total number of 6 early votes for -- you would -- you would, 7 essentially, back in -- allegedly, back into a 8 number of early votes per precinct -- 9 A <b>Correct.</b> 10 Q -- is that right? 11 A <b>That is right.</b> 12 Q Okay. And then -- 13 A <b>And this is a very simple math.</b> 14 Q -- you have -- I'm so -- I'm so sorry. 15 A <b>Those are the -- those are the two</b> 16 <b>choices. Either a vote is early, or vote is</b> 17 <b>election day.</b> 18 Q Uh-huh. 19 A <b>So if it is not election day, it's</b> 20 <b>early.</b> 21 Q Uh-huh. 22 A <b>Right. It's early or absentee.</b> 23 Q Uh-huh. And then when ascribing those 24 total votes to a particular candidate, how would 25 you suggest doing that?</p>	<p>235</p> <p>1 A <b>So if you look at Caddo Parish and --</b> 2 <b>and, say, President Trump and President Biden.</b> 3 Q Just give me, one moment, Dr. Solanky. 4 So Dr. Solanky, in looking at the overview that 5 you provide in Table 1 and Table 4 -- 6 A <b>Okay.</b> 7 Q -- where you have the turnout, general 8 black turnout, general, other, and turnout general 9 white numbers -- 10 A <b>Right.</b> 11 Q -- from Dr. Handley's report -- 12 A <b>Correct.</b> 13 Q -- the same is true in Table 4; correct? 14 A <b>That is right.</b> 15 Q Do you know how Dr. Handley calculated 16 those turnout numbers? 17 A <b>They are there in the secretary of</b> 18 <b>state data. That's how I verified them. So -- so</b> 19 <b>we -- so I exactly know, using the secretary of</b> 20 <b>state data, which 82, 182. In the data they</b> 21 <b>provided, they had removed the registration number</b> 22 <b>--</b> 23 Q Uh-huh. 24 A <b>-- otherwise I can go even find them.</b> 25 <b>But you, exactly know, which 182 rows voted in</b></p>
<p>234</p> <p>1 A <b>So that you do proportionately.</b> 2 Q Okay. 3 A <b>So -- so restricted to how many early</b> 4 <b>votes are there.</b> 5 Q And how would you come up with the 6 proportions for the candidates? 7 A <b>You used to -- for each candidate, you</b> 8 <b>have total percentage of total early votes. So</b> 9 <b>you are allocating early votes for each candidate</b> 10 <b>--</b> 11 Q By parish; correct? 12 A <b>For the parish.</b> 13 Q Uh-huh. 14 A <b>Conditioned upon early votes for the</b> 15 <b>precinct, proportionately.</b> 16 Q Okay. 17 A <b>Okay?</b> 18 Q Okay. 19 A <b>So -- so that is a much, much better</b> 20 <b>allocation method.</b> 21 Q Okay. Okay. I'm just thinking about 22 where to go next. Just give me a minute. 23 A <b>Let me -- you -- you asked me some bias</b> 24 <b>question. Let me add to that.</b> 25 Q Sure.</p>	<p>236</p> <p>1 <b>that election from Caddo Parish and -- and are</b> 2 <b>white, black, or other.</b> 3 Q Okay. 4 A <b>So -- and I'm assuming she got her</b> 5 <b>numbers from there, too. But I crosscheck those</b> 6 <b>numbers on that voter level data and -- and these</b> 7 <b>are right. And these are coming from what she has</b> 8 <b>provided.</b> 9 Q Uh-huh. Okay. So I'd like to move on 10 to the other critique that you have rendered about 11 Dr. Handley's report. So I'm looking at your 12 initial report in your Summary of Conclusions on 13 Page 29. 14 So in Point 3 of your summary, you say 15 that The estimate, the EI estimates in Dr. 16 Handley's report, providing voter polarization 17 estimates in parishes and regions, combining 18 several parishes, provide an incomplete and 19 misleading conclusion of voter polarizations. Is 20 that right? 21 A <b>Right.</b> 22 Q Can you explain what you mean by she's 23 providing incomplete analyses? 24 A <b>So -- so in a -- so -- and I explained</b> 25 <b>that in the remaining part of the paragraph.</b></p>



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60 (237 to 240)

<p>237</p> <p>1 Q Uh-huh.</p> <p>2 A But -- but let me explain. Based on my</p> <p>3 analysis of the data, there are precincts within</p> <p>4 parishes, which work differently. So if I come up</p> <p>5 with one estimate that, say, in the entire Caddo</p> <p>6 Parish, 90 percent of whites vote Republican, that</p> <p>7 would be misleading.</p> <p>8 Q Uh-huh.</p> <p>9 A Why? Because if you look at -- for</p> <p>10 example, look at, based on the density, you could</p> <p>11 see that it's not true. So she -- so she's</p> <p>12 providing one estimate, not for parish, but for</p> <p>13 the entire region, without going inside those two</p> <p>14 regions and seeing that there are some parts of</p> <p>15 the region, some precincts which are voting</p> <p>16 differently from the others. So -- so that is</p> <p>17 what I meant here.</p> <p>18 Q Okay. And, Dr. Solanky, do you have an</p> <p>19 understanding of the term endogenous elections?</p> <p>20 A No.</p> <p>21 Q Did you review any -- so did you review</p> <p>22 any endogenous elections as part of the analysis</p> <p>23 in your report?</p> <p>24 MS. RIGGINS: Objection.</p> <p>25 A No. Explain what that word means?</p>	<p>239</p> <p>1 Q 11.</p> <p>2 A Yeah. Okay, no worries.</p> <p>3 Q I'm looking at the top where it says</p> <p>4 that, In addition to examining recent statewide</p> <p>5 elections in the area of -- areas of interest, I</p> <p>6 also analyzed recent 2015 to 2022 state</p> <p>7 legislative elections, including special state</p> <p>8 legislative elections in the -- in these areas.</p> <p>9 These election contests are endogenous in that</p> <p>10 they are for the office at issue, seats in the</p> <p>11 state legislature, but they do not necessarily</p> <p>12 cover the same geographic areas of the proposed</p> <p>13 districts. The state legislative contexts</p> <p>14 analyzed were held in the districts as they were</p> <p>15 drawn in 2011.</p> <p>16 Did you review the endogenous elections</p> <p>17 that Dr. Handley evaluated?</p> <p>18 A No, I could not verify them, but -- but</p> <p>19 -- but I'm assuming they are -- they are based</p> <p>20 upon the same proportional allocation, so they</p> <p>21 would suffer from the same bias in errors, which</p> <p>22 the other data does. So --</p> <p>23 Q So I'd -- I'd like you to turn to</p> <p>24 Appendices B1 and P2. Just take a look at them?</p> <p>25 A Okay.</p>
<p>238</p> <p>1 Q Well, I'll direct you to Dr. Handley's</p> <p>2 report, Page 11. And -- yeah.</p> <p>3 A Which report?</p> <p>4 Q So in her --</p> <p>5 A My report --</p> <p>6 Q -- 2023 report --</p> <p>7 A Page 11?</p> <p>8 Q -- Page 11, it says --</p> <p>9 A I'm not seeing the same thing you're --</p> <p>10 Q -- on the top. Oh, on the --</p> <p>11 A Just this?</p> <p>12 Q So I think that you're in the wrong --</p> <p>13 you're in Solanky 3. That should be Solanky 4.</p> <p>14 That's why.</p> <p>15 A Okay.</p> <p>16 Q Solanky 4.</p> <p>17 A So it's her --</p> <p>18 Q Determine --</p> <p>19 A -- my report?</p> <p>20 Q -- no, no, it's her --</p> <p>21 A Her report; right?</p> <p>22 Q -- more recent report of 2023.</p> <p>23 A Okay. Okay.</p> <p>24 Q That's okay. No worries.</p> <p>25 A So Page 11.</p>	<p>240</p> <p>1 Q In your review of these elections, do</p> <p>2 they reflect analysis of past, actual elections in</p> <p>3 house and senate districts?</p> <p>4 A Okay.</p> <p>5 Q Do they, based in -- based on your</p> <p>6 review?</p> <p>7 A I'm just assuming what they say is what</p> <p>8 they are.</p> <p>9 Q Yes.</p> <p>10 A But not -- they are still based on her</p> <p>11 proportional allocation, which, in my opinion, is</p> <p>12 misleading and wrong.</p> <p>13 Q That's --</p> <p>14 A Can I assume that?</p> <p>15 Q -- that's your perspective, Dr.</p> <p>16 Solanky, but I --</p> <p>17 A So --</p> <p>18 Q -- well, I can't verify whether your</p> <p>19 criticism of her analysis holds true for the state</p> <p>20 legislative elections, if you did not conduct that</p> <p>21 verification yourself.</p> <p>22 A And she has not stated that she used</p> <p>23 any other proportional allocation, other than what</p> <p>24 -- what is on Footnote 8. So based on that, I'm</p> <p>25 assuming that the same proportional allocation was</p>

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<p>241</p> <p>1 carried out even in these elections.</p> <p>2 Q But you -- did you independently review</p> <p>3 --</p> <p>4 A No, I --</p> <p>5 Q -- these appendices?</p> <p>6 A -- no, I did not verify them.</p> <p>7 Q Okay. So in looking at the elections</p> <p>8 studied, setting aside the results. In looking at</p> <p>9 the election studied, Dr. Handley analyzed past,</p> <p>10 actual elections in the house and the senate of</p> <p>11 Louisiana --</p> <p>12 A Okay.</p> <p>13 Q -- is that right? Is that -- is that</p> <p>14 what this indicates?</p> <p>15 A That's what it indicates, yes.</p> <p>16 Q And would you agree that the voting</p> <p>17 districts at issue in this litigation are</p> <p>18 districts in Louisiana House and Louisiana Senate?</p> <p>19 A Okay.</p> <p>20 Q Would you agree?</p> <p>21 A Sure. You're asking me to verify</p> <p>22 something, which I have not verified.</p> <p>23 Q I'm asking you the -- the -- the</p> <p>24 districts at issue in this litigation that you</p> <p>25 have offered an expert report in, deal with</p>	<p>243</p> <p>1 -- so -- so that was one reason.</p> <p>2 And second reason was based on the time</p> <p>3 I had available to me, I had choices to -- to see</p> <p>4 and do the things, which I thought was</p> <p>5 contributing more. And -- and -- and -- and</p> <p>6 that's what I did.</p> <p>7 Q And you didn't conduct any independent</p> <p>8 analysis to correct the alleged bias; correct?</p> <p>9 A Correct.</p> <p>10 Q In your opinion, would evaluating</p> <p>11 elections in the same kinds of districts be</p> <p>12 probative of whether voting is polarized in -- in</p> <p>13 actual areas, and types of districts at issue?</p> <p>14 A Now, this is the same kind of analysis</p> <p>15 which we have looked at before, and I have similar</p> <p>16 remarks. So -- so assuming -- you know, looking</p> <p>17 at the entire district, there could be precincts</p> <p>18 within --</p> <p>19 Q Uh-huh.</p> <p>20 A -- which could be voting differently.</p> <p>21 So -- so unless that has been done, it would be</p> <p>22 difficult for me to say that the estimates which</p> <p>23 are there for district-wise are meaningful.</p> <p>24 Q Well, I'm speaking more generally, Dr.</p> <p>25 Solanky, than -- than these specific analyses. In</p>
<p>242</p> <p>1 districts in the Louisiana House of</p> <p>2 Representatives; isn't that right?</p> <p>3 A No, I have not looked at specific</p> <p>4 districts and -- and analyzed those.</p> <p>5 Q Correct.</p> <p>6 A So --</p> <p>7 Q But the -- the issue in this litigation</p> <p>8 is over the Louisiana House --</p> <p>9 A Okay.</p> <p>10 Q -- is that right?</p> <p>11 A That is right.</p> <p>12 Q And -- and the Louisiana State Senate?</p> <p>13 A Right.</p> <p>14 Q And your analysis is parish wide; isn't</p> <p>15 that right?</p> <p>16 A Parish-wise, precinct-wise, within</p> <p>17 parish-wise. Yes.</p> <p>18 Q Did you evaluate -- and you -- and you</p> <p>19 said earlier you didn't evaluate voting patterns</p> <p>20 in any of the legislative districts; is that right?</p> <p>21 A That is right.</p> <p>22 Q And why didn't you do that?</p> <p>23 A For -- for one reason I knew how</p> <p>24 incorrect these numbers would be. So -- so the</p> <p>25 proportional allocation really creates a bias. So</p>	<p>244</p> <p>1 evaluating voting patterns within -- within the</p> <p>2 context of a litigation dealing with house and</p> <p>3 senate districts, in your expert opinion, would it</p> <p>4 be probative to evaluate elections in similarly</p> <p>5 situated districts to aid in that analysis?</p> <p>6 A Sure. So you should look at similarly</p> <p>7 districts and look at within the districts to see</p> <p>8 if there is any disparity between how black and</p> <p>9 white voters are voting.</p> <p>10 Q And you don't do that in your report;</p> <p>11 is that right?</p> <p>12 A No, I have not done that.</p> <p>13 Q And what's your understanding of a</p> <p>14 functional analysis?</p> <p>15 A Can you point me to where you are on</p> <p>16 the report?</p> <p>17 Q Well, if you turn to doctor -- pages 17</p> <p>18 and 18 of Dr. Handley's report, which is Exhibit</p> <p>19 4, to be clear. I know there are two of them</p> <p>20 floating around. So pages 17 and 18 --</p> <p>21 A Correct.</p> <p>22 Q -- and 17 onward, really.</p> <p>23 A Uh-huh.</p> <p>24 Q So if you take a look at these pages --</p> <p>25 and I can give you a minute, if you'd like to take</p>

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<p>245</p> <p>1 a closer look, what's your understanding of the</p> <p>2 analysis that Dr. Handley was conducting in this</p> <p>3 section of her report?</p> <p>4 <b>A Now, I have not verified this section.</b></p> <p>5 <b>And I'm looking at, for example, Page 19 --</b></p> <p>6 Q Uh-huh.</p> <p>7 <b>A Jefferson and St. Charles. These are</b></p> <p>8 <b>very different parishes. If you look at the -- by</b></p> <p>9 <b>voting -- by -- by the density --</b></p> <p>10 Q Uh-huh.</p> <p>11 <b>A -- you'll come across some precincts,</b></p> <p>12 <b>which work very differently.</b></p> <p>13 Q And you -- but you didn't analyze</p> <p>14 Jefferson Parish in your report; correct?</p> <p>15 <b>A No, I did not. But --</b></p> <p>16 Q And you didn't analyze St. Charles</p> <p>17 Parish in your report?</p> <p>18 <b>A No, I live in Jefferson Parish and --</b></p> <p>19 <b>and I -- if there's -- but that -- that was not</b></p> <p>20 <b>the point. The point was to show that when you</b></p> <p>21 <b>look within a parish, you see big differences.</b></p> <p>22 <b>But I have not done that work.</b></p> <p>23 Q Given these additional analyses of</p> <p>24 elections in state house and state legislative</p> <p>25 districts -- excuse me, and given Dr. Handley's</p>	<p>247</p> <p>1 (Whereupon, a recess was taken.)</p> <p>2 THE REPORTER: Back on the record.</p> <p>3 BY MS. GIGLIO:</p> <p>4 Q So, Dr. Solanky, I just want to go</p> <p>5 over, one more time, the process that you propose</p> <p>6 for -- the alternative that you suggest for</p> <p>7 allocating -- yeah, early, and absentee votes. So</p> <p>8 the way that you propose you would take the total</p> <p>9 vote -- voter -- I'm going to say, words out loud</p> <p>10 in English. Total voter turnout in each precinct,</p> <p>11 subtract the election day votes, and then you have</p> <p>12 the total early and absentee votes that were cast</p> <p>13 in that precinct. So then you would allocate</p> <p>14 those early and absentee votes to candidates.</p> <p>15 How would you allocate those votes to</p> <p>16 candidates?</p> <p>17 <b>A So suppose -- let me make -- make it</b></p> <p>18 <b>clear. Let me make it simple. See there in the</b></p> <p>19 <b>parish, there are total, whatever, number of</b></p> <p>20 <b>votes. So among the early votes -- total early</b></p> <p>21 <b>votes, say, Biden got -- let me just -- so that we</b></p> <p>22 <b>can follow --</b></p> <p>23 Q Sure. Sure.</p> <p>24 <b>A -- say President Biden got 50 percent</b></p> <p>25 <b>of them, of those early votes. President Trump</b></p>
<p>246</p> <p>1 analysis of the maps involved in this case, why</p> <p>2 would you still say that? Would you still say</p> <p>3 that her -- her analysis is incomplete?</p> <p>4 <b>A Absolutely. If all of her analysis is</b></p> <p>5 <b>based on that misleading allocation, I would -- I</b></p> <p>6 <b>would say all her numbers are misleading. And I</b></p> <p>7 <b>give you a very simple example, how she's coming</b></p> <p>8 <b>up with voters which don't exist and how she's</b></p> <p>9 <b>ignoring the voters who actually voted.</b></p> <p>10 Q Are you familiar -- in -- in conducting</p> <p>11 functional analysis, which is what's happening in</p> <p>12 Pages 17 onward, of Dr. Handley's report, of the</p> <p>13 illustrative districts -- districts and the</p> <p>14 enacted districts, do you know whether there's any</p> <p>15 allocation done as part of a functional analysis?</p> <p>16 <b>A Absolutely. How else she got the</b></p> <p>17 <b>number of votes for the precinct? If she's -- if</b></p> <p>18 <b>she's doing precinct-level analysis, then it has</b></p> <p>19 <b>to be based on her proportional allocation. Why</b></p> <p>20 <b>-- how do I know that? That's -- that's the only</b></p> <p>21 <b>allocation she has mentioned. So --</b></p> <p>22 Q Okay. I'm just thinking about whether</p> <p>23 we've covered everything.</p> <p>24 MS. GIGLIO: Can we take five?</p> <p>25 MS. RIGGINS: Sure.</p>	<p>248</p> <p>1 <b>got those 40 percent of those early votes in the</b></p> <p>2 <b>entire parish and others got 10 percent of early</b></p> <p>3 <b>votes.</b></p> <p>4 Q Okay.</p> <p>5 <b>A So use this allocation to allocate the</b></p> <p>6 <b>president level early votes. So -- so whatever</b></p> <p>7 <b>you are observing for the entire parish, assume it</b></p> <p>8 <b>also happened for each precinct.</b></p> <p>9 Q Okay. Understood.</p> <p>10 <b>A And it's a very simple algorithm. And</b></p> <p>11 <b>this is the only assumption it follows, that</b></p> <p>12 <b>whatever happened in parish happened in each</b></p> <p>13 <b>precinct also.</b></p> <p>14 <b>The beauty of this allocation is, if</b></p> <p>15 <b>you have additional information, then we can</b></p> <p>16 <b>allocate them differently.</b></p> <p>17 Q Uh-huh.</p> <p>18 <b>A But knowing the gap, how many votes</b></p> <p>19 <b>need to be allocated in that each precinct, I</b></p> <p>20 <b>think that's the fundamental flaw in Dr. Handley's</b></p> <p>21 <b>methodology.</b></p> <p>22 Q Okay.</p> <p>23 <b>A So --</b></p> <p>24 Q So the allocation that you would</p> <p>25 propose is analyzing the performance of --</p>

Transcript of Dr. Tumulesh Solanky  
Conducted on September 22, 2023

63 (249 to 252)

<p>249</p> <p>1 <b>A The proportion of.</b></p> <p>2 Q -- the proportion of -- so you would</p> <p>3 allocate them proportionally?</p> <p>4 <b>A Right. So whatever happened in the</b></p> <p>5 <b>entire parish, you assume it happened in each</b></p> <p>6 <b>precinct. That's one way.</b></p> <p>7 Q Okay.</p> <p>8 <b>A And -- and -- and -- and you do that,</b></p> <p>9 <b>you would never go over or under. Like, what I</b></p> <p>10 <b>have outlined in my appendix in my rebuttal</b></p> <p>11 <b>report. Literally, every precinct is either going</b></p> <p>12 <b>over -- how can you have more voters than how many</b></p> <p>13 <b>people who showed up to vote? That's such a</b></p> <p>14 <b>fundamental flaw.</b></p> <p>15 Q Uh-huh.</p> <p>16 <b>A Or how could you just have so many less</b></p> <p>17 <b>than who actually voted?</b></p> <p>18 Q Uh-huh.</p> <p>19 <b>A So none of that would be there if you</b></p> <p>20 <b>take into account how many early voters are there</b></p> <p>21 <b>in each precinct.</b></p> <p>22 Q You didn't just -- and I know we've</p> <p>23 covered this a couple of times, but you didn't</p> <p>24 conduct that analysis on these districts to see</p> <p>25 what difference, if any, the -- the -- the</p>	<p>251</p> <p>1 report, briefly?</p> <p>2 <b>A Look, can I look at my CV so that I --</b></p> <p>3 Q Sure. Of course you can.</p> <p>4 <b>A -- give the exact, same thing. And if</b></p> <p>5 <b>you could specify which line you're looking at, I</b></p> <p>6 <b>don't --</b></p> <p>7 Q I'm looking at Line 37.</p> <p>8 <b>A -- so Line 37. So -- so I looked at --</b></p> <p>9 <b>you know, one of the key things I looked at was</b></p> <p>10 <b>how much women, in general, are driving, based on</b></p> <p>11 <b>the -- the locations of abortion clinics.</b></p> <p>12 <b>The Mississippi is surrounded by New</b></p> <p>13 <b>Orleans -- Orleans Parish. It has Memphis on top,</b></p> <p>14 <b>and I think there are other abortion clinics</b></p> <p>15 <b>around. So -- so I looked at how many women of</b></p> <p>16 <b>reproductive age live in each county, and then I</b></p> <p>17 <b>estimated how much on the average they would</b></p> <p>18 <b>drive. So that -- that was first thing. And</b></p> <p>19 <b>there were a number of other such things, which I</b></p> <p>20 <b>mathematically calculated.</b></p> <p>21 Q And who retained you in that case?</p> <p>22 <b>A I think the attorney general of -- of</b></p> <p>23 <b>Mississippi, his office.</b></p> <p>24 Q And in that case, the attorney general</p> <p>25 of Mississippi was defending a law that limited</p>
<p>250</p> <p>1 different methods had on the EI analysis?</p> <p>2 <b>A No, I did not. The -- all I did was to</b></p> <p>3 <b>estimate, to tell, that what bias it is creating.</b></p> <p>4 Q Uh-huh.</p> <p>5 <b>A So in my original report, I talked</b></p> <p>6 <b>about the bias and how it is misleading. In my</b></p> <p>7 <b>rebuttal report, I went a step further to show how</b></p> <p>8 <b>many excess votes. If there are 182 voters, how</b></p> <p>9 <b>could she have 199 total votes by candidates --</b></p> <p>10 Q Uh-huh.</p> <p>11 <b>A -- and so on? So -- so that's a very</b></p> <p>12 <b>big, fundamental flaw. And it's all because she</b></p> <p>13 <b>ignored the key piece of information in the data.</b></p> <p>14 Q Understood.</p> <p>15 <b>A Which she had produced even in her</b></p> <p>16 <b>spreadsheets.</b></p> <p>17 Q Understood. So, Dr. Solanky, you</p> <p>18 testified earlier that you served as an expert in</p> <p>19 a number of other cases; is that right?</p> <p>20 <b>A That is right.</b></p> <p>21 Q And you submitted an expert report in</p> <p>22 Jackson Women's Health Organization v. Dobbs</p> <p>23 before the District of Mississippi; is that right?</p> <p>24 <b>A That is right.</b></p> <p>25 Q Can you just describe that expert</p>	<p>252</p> <p>1 access to abortion care; is that right?</p> <p>2 <b>A Something like that.</b></p> <p>3 Q And you also submitted a report in</p> <p>4 Planned Parenthood Arizona, Incorporated v. Mark</p> <p>5 Brnovich before the District of Arizona; is that</p> <p>6 right? That's number 36.</p> <p>7 <b>A Right.</b></p> <p>8 Q Can you briefly describe that case?</p> <p>9 <b>A Very similar calculation, computing the</b></p> <p>10 <b>mathematics. In -- in some of these cases, I do</b></p> <p>11 <b>not recall exactly which ones, I had access, to</b></p> <p>12 <b>me, the actual data.</b></p> <p>13 <b>So -- so take out identifying</b></p> <p>14 <b>information, but I exactly knew where a person</b></p> <p>15 <b>lived and where she went for an abortion and I</b></p> <p>16 <b>could quantify mathematically, on the average</b></p> <p>17 <b>women living in, say, Mississippi, how many miles</b></p> <p>18 <b>they are driving. So a number of mathematical</b></p> <p>19 <b>calculations like that.</b></p> <p>20 Q Okay. And do you recall who -- who</p> <p>21 retained you in that case?</p> <p>22 <b>A The State of Arizona.</b></p> <p>23 Q So this is not the only case in which a</p> <p>24 -- a Republican administration has hired you to be</p> <p>25 an expert when facing civil rights challenges?</p>

# **Exhibit 6**

IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF LOUISIANA

DR. DOROTHY NAIRNE, JARRETT  
LOFTON, REV. CLEE EARNEST LOWE, DR.  
ALICE WASHINGTON, STEVEN HARRIS,  
ALEXIS CALHOUN, BLACK VOTERS  
MATTER CAPACITY BUILDING  
INSTITUTE, and THE LOUISIANA STATE  
CONFERENCE OF THE NAACP,

*Plaintiffs,*

v.

R. KYLE ARDOIN, in his official capacity as  
Secretary of State of Louisiana

*Defendant.*

CIVIL ACTION NO. 3:22-cv-00178  
SDD-SDJ

Dr. Handley Supplemental Rebuttal  
Report

**Supplemental Rebuttal Report**

**Dr. Lisa Handley**



Dr. Solanky contends that the allocation method I used to distribute the votes cast before election day for each of the candidates to the precincts potentially creates a bias in my estimates of Black and White voter support for the candidates in the election contests I analyzed.<sup>1</sup> I do not believe that my allocation method creates any bias and I do not believe there is uncertainty in the Ecological Inference (“EI”) and Ecological Regression (“ER”) analyses caused by my allocation method.

### **I. The Need to Adopt an Allocation Algorithm for Early Votes**

Because a relatively large percentage of voters cast early votes in recent Louisiana elections, there are simply too many votes to exclude from the analyses. These early candidate votes, which are reported only at the level of the parish as a whole, must be allocated down from the parish level to the precincts within the parish in order to include them in the analysis. This is because the statistical analyses used rely on precincts as the units of observation.

The best method is the one that is most closely replicates reality by recognizing that voting across the individual precincts is likely to be different from precinct to precinct. In my expert opinion, as well as the opinion of other political scientists with expertise in analyzing voting patterns by race, allocating parish level votes to the precinct level on the basis of the candidates’ votes received on election day is the best approach as it is the most likely to reflect reality.

### **II. Ascertaining Whether the Allocation Introduces Bias in the EI Results**

To be certain that my opinion about the lack of bias is correct, I examined the possibility of allocation bias using two different approaches: I examined whether the voters of one political party were more likely to vote early than the other party; and I analyzed the voting patterns of early voters and election day voters separately to see if the degree of polarization among the two sets of voters differed substantially.

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<sup>1</sup> Most of these votes are in-person early votes but absentee mail votes are also included in this allocation process.

*Comparing the percentage of early votes by political party* An examination of early votes by political party indicates that there are only small differences in the percentages of Democrats and Republicans who cast early votes as compared to election day votes in most of the election years analyzed. As demonstrated by table presented in Appendix A,<sup>2</sup> the percentage of Republican and Democratic voters who cast early votes was quite similar for many of the elections during the period under investigation. Overall, Republicans were slightly more likely to vote early, although Democrats were slightly more likely to vote early in 2022. The 2020 election was the only exception: Democrats were distinctly more likely than Republicans to cast their votes early in this election.

*Racial polarization among early voters compared to election day voters* An examination of the degree of racial polarization among early voters and election day voters indicates that the levels of polarization are quite similar for the two groups of voters. I determined this by conducting separate parish level analyses of (1) early votes and early turnout by race and (2) election day votes and election turnout by race in recent elections.<sup>3</sup> I found that the voting patterns were very similar and voting was quite polarized for both groups of voters. Appendix B contains the results of the ecological regression estimates produced by these analyses. Figures 1-5, in Appendix C, offer the associated scatterplots, the top plot displays the voting patterns of early voters and the center plot the voting patterns of election day voters for the Black-preferred candidates in recent elections. In addition, I created scatterplots that compare early and election day support for these Black-preferred candidates (bottom plot). I found only random scatter around the reference line (the line representing an equal proportion of early and election day votes for the candidate).

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<sup>2</sup> The early voting statistics, which report all types of early voting including in-person early voting and absentee mail votes, and the post election turnout statistics reported in Appendix A were obtained directly from the Louisiana Secretary of State website:  
<https://www.sos.la.gov/ElectionsAndVoting/GetElectionInformation/FindResultsAndStatistics/Pages/default.aspx>.

<sup>3</sup> The analysis had to be performed at the parish level because, although the Secretary of State reports early and total turnout by race at the precinct level, early votes for each candidate are available only at the parish level. If early votes were available at the precinct level then of course no allocation of these votes would be necessary.



### III. Conclusion

Because early votes are not reported at the precinct level, reallocating these votes produces only an approximation of the actual votes cast by residents of the precincts. My analyses confirm my belief that the method I used to allocate early votes down from the parish level to the precinct level was appropriate and did not introduce bias into the EI and ER results.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct. Executed September 29, 2023.

A handwritten signature in cursive script that reads "Lisa Handley".

---

Lisa Handley, Ph. D.

**Appendix A****Percent Early Voters of Total Voters by Race and Party**

	<b>Total</b>	<b>White</b>	<b>Black</b>	<b>other</b>	<b>Dem</b>	<b>Rep</b>	<b>other</b>
<b>Nov-22</b>							
<b>total</b>	1410475	998268	356896	55311	548682	590831	270962
<b>early</b>	377428	267776	98008	11644	159386	161817	56225
election day (subtraction)	1033047	730492	258888	43667	389296	429014	214737
<b>% early</b>	<b>26.8%</b>	<b>26.8%</b>	<b>27.5%</b>	<b>21.1%</b>	<b>29.0%</b>	<b>27.4%</b>	<b>20.8%</b>
<b>Nov-20</b>							
<b>total</b>	2169401	1454067	609079	106255	874125	817444	477832
<b>early</b>	986428	646212	293240	46976	435748	367879	182801
election day (subtraction)	1182973	807855	315839	59279	438377	449565	295031
<b>% early</b>	<b>45.5%</b>	<b>44.4%</b>	<b>48.1%</b>	<b>44.2%</b>	<b>49.8%</b>	<b>45.0%</b>	<b>38.3%</b>
<b>Oct-19</b>							
<b>total</b>	1359969	939554	374702	45713	610404	504992	244573
<b>early</b>	386468	278227	97990	10251	168951	159633	57884
election day (subtraction)	973501	661327	276712	35462	441453	345359	186689
<b>% early</b>	<b>28.4%</b>	<b>29.6%</b>	<b>26.2%</b>	<b>22.4%</b>	<b>27.7%</b>	<b>31.6%</b>	<b>23.7%</b>
<b>Nov-19</b>							
<b>total</b>	1518722	995471	468340	54911	696001	539889	282832
<b>early</b>	503620	331996	156757	14867	234236	191495	77889
election day (subtraction)	1015102	663475	311583	40044	461765	348394	204943
<b>% early</b>	<b>33.2%</b>	<b>33.4%</b>	<b>33.5%</b>	<b>27.1%</b>	<b>33.7%</b>	<b>35.5%</b>	<b>27.5%</b>

	Total	White	Black	other	Dem	Rep	other
<b>Nov-18</b>							
<b>total</b>	1519405	1022263	437796	59346	687241	538737	293427
<b>early</b>	315773	216418	89100	10255	145984	121707	48082
election day (subtraction)	1203632	805845	348696	49091	541257	417030	245345
<b>% early</b>	<b>20.8%</b>	<b>21.2%</b>	<b>20.4%</b>	<b>17.3%</b>	<b>21.2%</b>	<b>22.6%</b>	<b>16.4%</b>
<b>Dec-18</b>							
<b>total</b>	530463	356364	158839	15260	250590	202007	77866
<b>early</b>	129715	87848	38626	3241	62647	50726	16342
election day (subtraction)	400748	268516	120213	12019	187943	151281	61524
<b>% early</b>	<b>24.5%</b>	<b>24.7%</b>	<b>24.3%</b>	<b>21.2%</b>	<b>25.0%</b>	<b>25.1%</b>	<b>21.0%</b>
<b>Oct-17</b>							
<b>total</b>	424497	300554	110987	12956	206260	159139	59098
<b>early</b>	96742	69062	25425	2255	47609	38401	10732
election day (subtraction)	327755	231492	85562	10701	158651	120738	48366
<b>% early</b>	<b>22.8%</b>	<b>23.0%</b>	<b>22.9%</b>	<b>17.4%</b>	<b>23.1%</b>	<b>24.1%</b>	<b>18.2%</b>
<b>Nov-17</b>							
<b>total</b>	386152	258865	114536	12751	194451	138128	53573
<b>early</b>	93679	63665	27697	2317	47285	36138	10256
election day (subtraction)	292473	195200	86839	10434	147166	101990	43317
<b>% early</b>	<b>24.3%</b>	<b>24.6%</b>	<b>24.2%</b>	<b>18.2%</b>	<b>24.3%</b>	<b>26.2%</b>	<b>19.1%</b>

	Total	White	Black	other	Dem	Rep	other
<b>Oct-15</b>							
<b>total</b>	1134729	784831	319373	30525	579308	371700	183721
<b>early</b>	234722	167341	62556	4825	118974	84236	31512
election day (subtraction)	900007	617490	256817	25700	460334	287464	152209
<b>% early</b>	<b>20.7%</b>	<b>21.3%</b>	<b>19.6%</b>	<b>15.8%</b>	<b>20.5%</b>	<b>22.7%</b>	<b>17.2%</b>
<b>Nov-15</b>							
<b>total</b>	1165800	778621	353462	33717	599334	378824	187642
<b>early</b>	270144	183578	80216	6350	141437	92937	35770
election day (subtraction)	895656	595043	273246	27367	457897	285887	151872
<b>% early</b>	<b>23.2%</b>	<b>23.6%</b>	<b>22.7%</b>	<b>18.8%</b>	<b>23.6%</b>	<b>24.5%</b>	<b>19.1%</b>

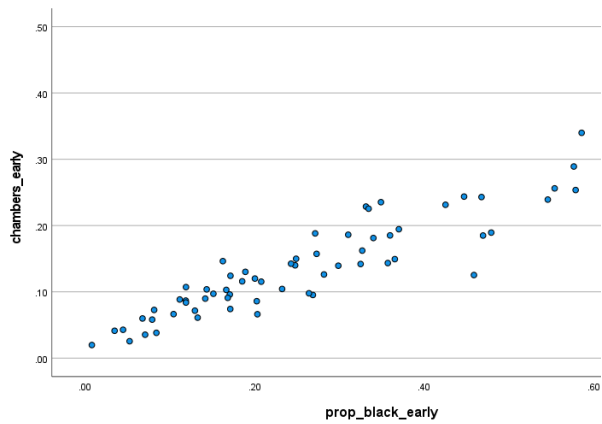
**Appendix B****Parish Level Ecological Regression Analysis of Recent Statewide Elections**

			Estimates for Black Voters		Estimates for White Voters	
	Party	Race	early voters	election day voters	early voters	election day voters
<b>2022 November</b>						
<b>U.S. Senator</b>						
John Kennedy	R	W	2.5	3.8	90.6	93.9
Gary Chambers, Jr	D	B	46.3	54.5	1.0	0.0
Luke Mixon	D	W	34.3	24.4	5.7	2.9
Others			16.9	17.5	2.6	3.5
<b>2020 November</b>						
<b>U.S. President</b>						
Biden/Harris	D	W/B	104.9	99.5	5.6	1.6
Trump/Pence	R	W/W	-6.4	-1.7	93.4	97.0
Others			1.3	2.3	0.9	1.5
<b>2019 November</b>						
<b>Secretary of State</b>						
Gwen Collins-Greenup	D	B	99.4	96.3	5.9	6.3
Kyle Ardoin	R	W	0.5	3.7	94.0	93.7
<b>2019 October</b>						
<b>Secretary of State</b>						
Gwen Collins-Greenup	D	B	89.9	88.4	4.8	4.1
Kyle Ardoin	R	W	7.3	5.2	60.8	52.9
Thomas Kennedy III	R	W	2.7	5.9	26.3	32.1
Amanda Smith	R	W	0.2	0.7	8.0	10.9
<b>2019 November</b>						
<b>Secretary of State</b>						
Gwen Collins-Greenup	D	B	96.9	94.5	10.1	17.1
Kyle Ardoin	R	W	3.1	5.5	89.9	82.9
<b>2018 December</b>						
<b>Secretary of State</b>						
Gwen Collins-Greenup	D	B	94.7	96.2	10.2	7.2
Kyle Ardoin	R	W	5.2	3.8	89.8	92.8

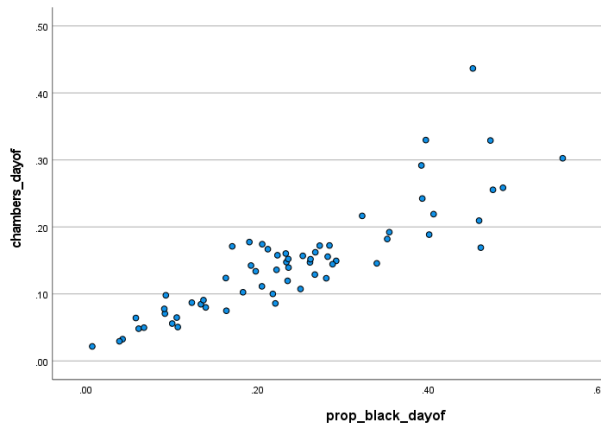
## Appendix C

Figures 1-5

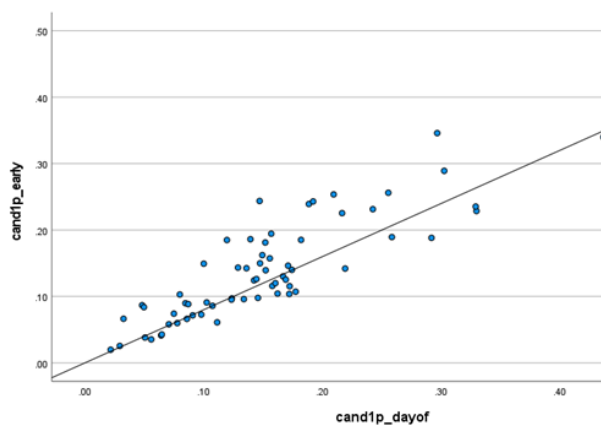
**November 2022, U.S. Senate: Votes for Gary Chambers, Jr.**



*Figure 1.1. Proportion early votes for Chambers by proportion of early Black turnout*

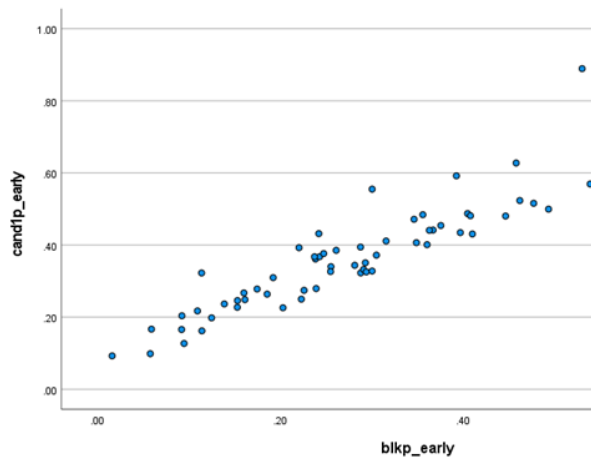


*Figure 1.2. Proportion election day votes for Chambers by proportion of election day Black turnout*

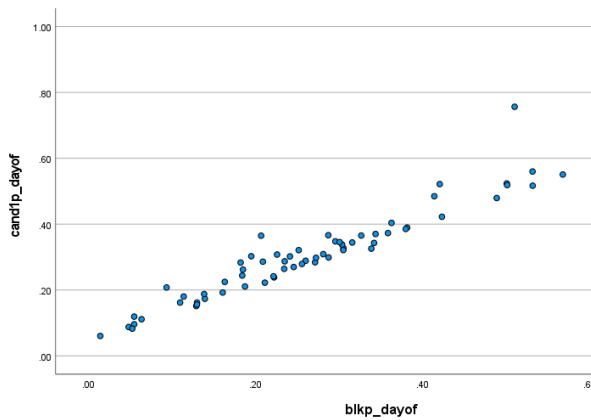


*Figure 1.3. Proportion of early votes for Chambers by proportion of election day votes for Chambers*

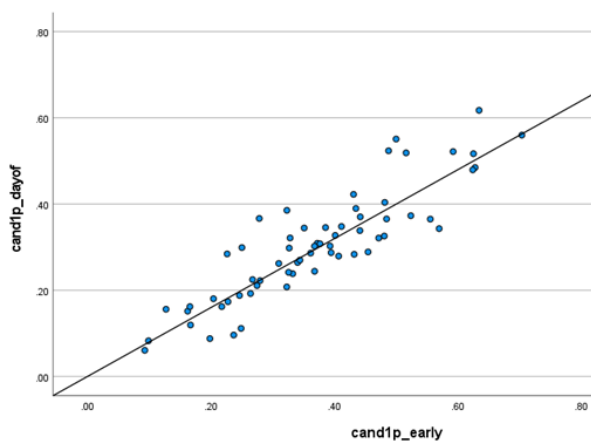
November 2020, U.S. President, Votes for Joseph Biden



*Figure 2.1. Proportion early votes for Biden by proportion of early Black turnout*



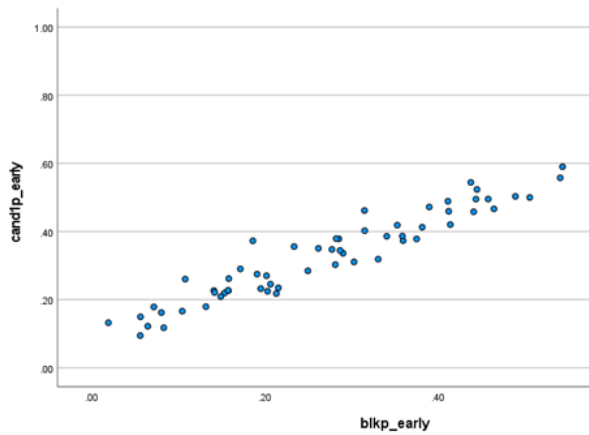
*Figure 2.2. Proportion election day votes for Biden by proportion of election day Black turnout*



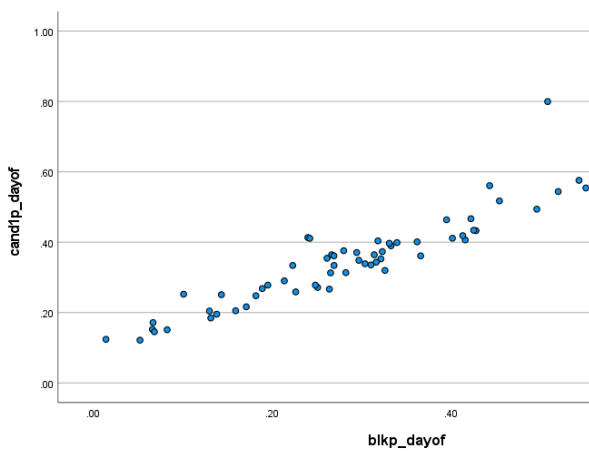
*Figure 2.3. Proportion of early votes for Biden by proportion of election day votes for Biden*



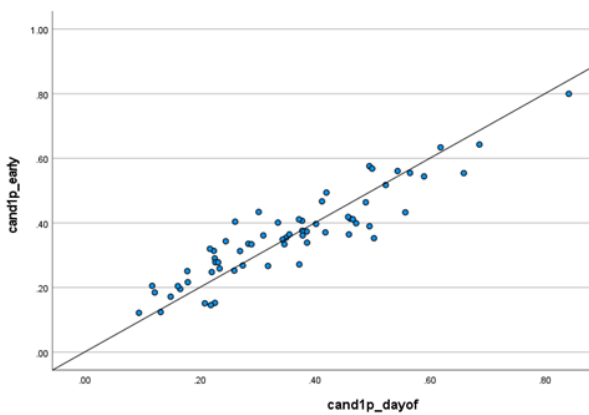
November 2019, Secretary of State runoff, Votes for Gwen Collins-Greenup



*Figure 3.1. Proportion early votes for Collins-Greenup by proportion of early Black turnout*

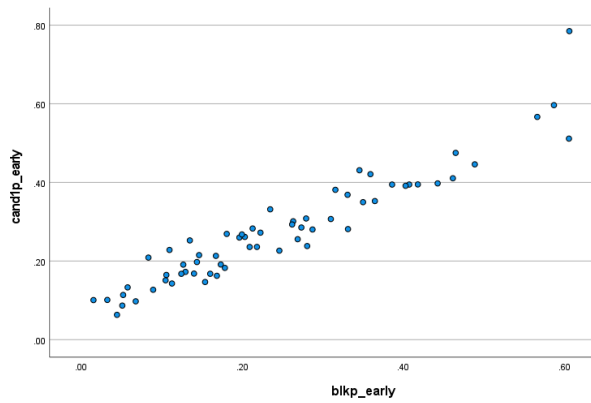


*Figure 3.2. Proportion election day votes for Collins-Greenup by proportion of election day Black turnout*

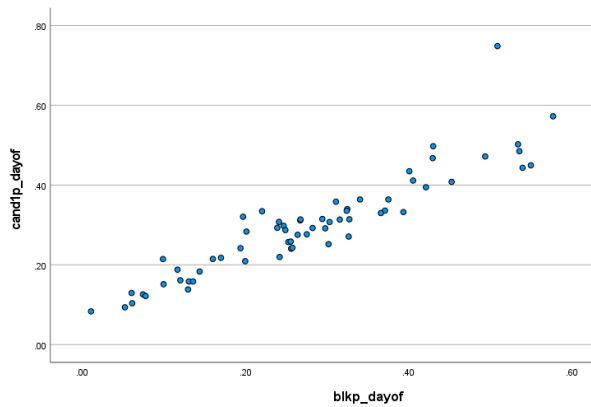


*Figure 3.3. Proportion of early votes for Collins-Greenup by proportion of election day votes for Collins-Greenup*

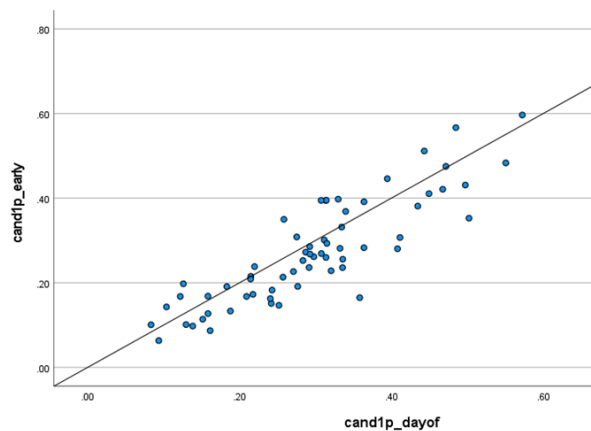
October 2019, Secretary of State, Votes for Gwen Collins-Greenup



*Figure 4.1. Proportion early votes for Collins-Greenup by proportion of early Black turnout*

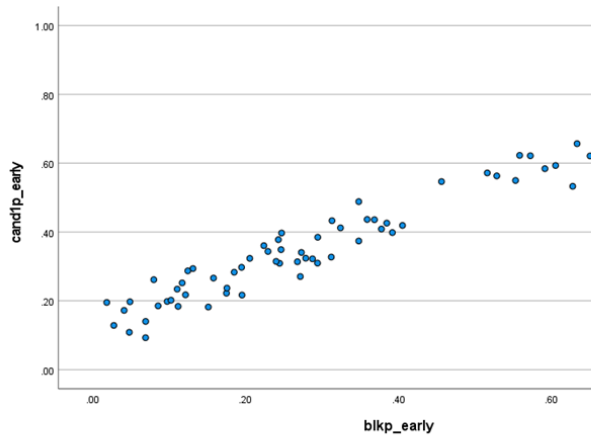


*Figure 4.2. Proportion election day votes for Collins-Greenup by proportion of election day Black turnout*

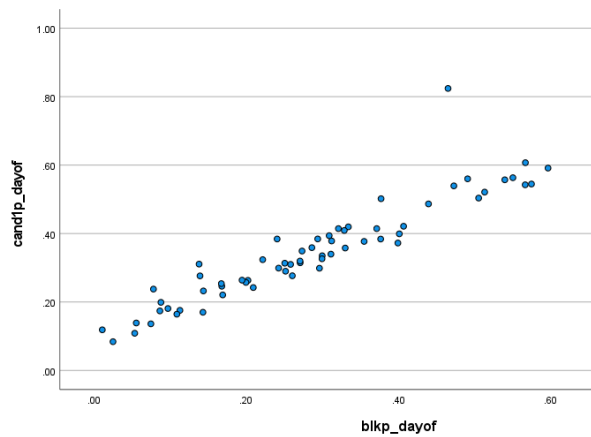


*Figure 4.3. Proportion of early votes for Collins-Greenup by proportion of election day votes for Collins-Greenup*

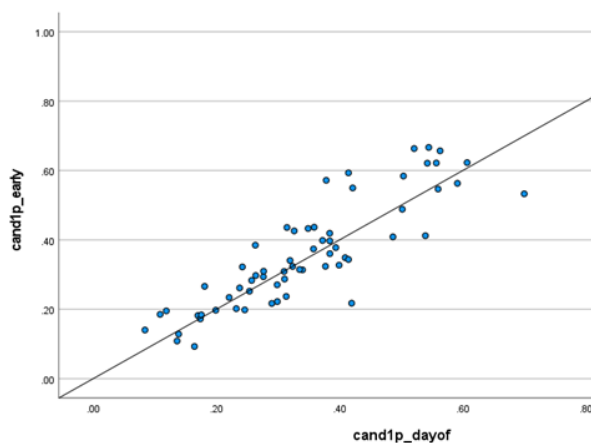
December 2018, Secretary of State Runoff, Votes for Gwen Collins-Greenup



*Figure 5.1. Proportion early votes for Collins-Greenup by proportion of early Black turnout*



*Figure 5.2. Proportion election day votes for Collins-Greenup by proportion of election day Black turnout*



*Figure 5.3. Proportion of early votes for Collins-Greenup by proportion of election day votes for Collins-Greenup*

# **Exhibit 7**

## 2020 Election Results by Precinct

### Vote Column Label Format

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Columns reporting votes follow a standard label pattern. One example is:

G20PRERTRU

The first character is G for a general election, C for recount results, P for a primary, S for a special, and R for a runoff.

Characters 2 and 3 are the year of the election.

Characters 4-6 represent the office type (see list below).

Character 7 represents the party of the candidate.

Characters 8-10 are the first three letters of the candidate's last name.

### Office Codes

AGR - Agriculture Commissioner

ATG - Attorney General

AUD - Auditor

COC - Corporation Commissioner

COU - City Council Member

DEL - Delegate to the U.S. House

GOV - Governor

H## - U.S. House, where ## is the district number. AL: at large.

INS - Insurance Commissioner

LAB - Labor Commissioner

LAN - Commissioner of Public Lands

LTG - Lieutenant Governor

PRE - President

PSC - Public Service Commissioner

RRC - Railroad Commissioner

SAC - State Appeals Court (in AL: Civil Appeals)

SCC - State Court of Criminal Appeals

SOS - Secretary of State

SSC - State Supreme Court

SPI - Superintendent of Public Instruction

TRE - Treasurer

USS - U.S. Senate

#### Party Codes

D and R will always represent Democrat and Republican, respectively.

See the state-specific notes for the remaining codes used in a particular file; note that third-party candidates may appear on the ballot under different party labels in different states.

#### Alabama

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Election results from the Alabama Secretary of State Elections Division  
(<https://www.sos.alabama.gov/alabama-votes/voter/election-data>).

Absentee and provisional ballots were reported countywide in all counties. These were distributed by candidate to precincts based on their share of the precinct-level reported vote.

For the ky\_2020 shapefile precincts have been merged and labeled to match the smallest identifiable units by which election results were reported by the respective counties.

For the ky\_2020\_vtd\_estimates shapefile the 2020 election results have been further apportioned to individual precincts based on the vote from the 2016 election results for President and for US Senate. The 2016 election results were adjusted where necessary to account for changes in precinct boundaries and modified to account for the change in the number of ballots cast by precinct between November 2016 and November 2020. Votes for each candidate on the 2020 ballot were then distributed from 2020 reporting units to the precincts that comprise those reporting units based on the adjusted share of the 2016 vote from each precinct that was cast for that party's candidate or for the most ideologically similar candidate.

G20PRERTRU - Donald J. Trump (Republican Party)

G20PREDBID - Joseph R. Biden (Democratic Party)

G20PRELJOR - Jo Jorgensen (Libertarian Party)

G20PREIWES - Kanye West (Independent)

G20PREIPIE - Brock Pierce (Independent)

G20USSRMCC - Mitch McConnell (Republican Party)

G20USSDMCG - Amy McGrath (Democratic Party)

G20USSLBAR - Brad Barron (Libertarian Party)

Louisiana

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Election results from LA Secretary of State (<https://voterportal.sos.la.gov/static/>)

Precinct shapefiles from the U.S. Census Bureau's 2020 Redistricting Data Program Phase 2 release.

Early votes were reported at the parish level. These were distributed by candidate to precincts based on their share of the precinct-level reported vote.

Election results from the following parishes include "alpha" precincts in which voters within the same geographic boundaries are assigned to separate precincts by the first letter of their surname: Ascension, Assumption, Bossier, East Baton Rouge, Caddo, Lafourche, Rapides, St. Charles, St. Landry, Terrebonne

The following precincts were modified to reflect alterations enacted prior to the 2020 election:

Avoyelles: Merge 2-5B/6-1A

East Baton Rouge: Split 3-16/3-71, 3-32/3-72

Plaquemines: Merge 2-1/2-2, 4-1/4-2, 5-1/5-2

St. Charles: Merge 2-6/2-7, 3-1/3-6, 3-3/3-4, 6-2/6-3, 6-4/6-5

Vermilion: Split 49B-1/49B-2

Webster: Merge 7/11

West Baton Rouge: Split 2-A/2-B; 11-A/11-B

G20PRERTRU - Donald J. Trump (Republican Party)

G20PREDBID - Joseph R. Biden (Democratic Party)

G20PRELJOR - Jo Jorgensen (Libertarian Party)

G20PREOWES - Kanye West (The Birthday Party)

G20PREOOTH - Other Candidates

G20USSRCAS - "Bill" Cassidy (Republican Party)

G20USSRMUR - Dustin Murphy (Republican Party)



G20USSDPER - Adrian Perkins (Democratic Party)  
G20USSDEDW - Derrick "Champ" Edwards (Democratic Party)  
G20USSDPIE - Antoine Pierce (Democratic Party)  
G20USSDKNI - David Drew Knight (Democratic Party)  
G20USSDWEN - Peter Wenstrup (Democratic Party)  
G20USSLSIG - Aaron C. Sigler (Libertarian Party)  
G20USSIMEN - M.V. "Vinny" Mendoza (Independent Party)  
G20USSOPRI - Melinda Mary Price (Other party)  
G20USSOJOH - "Xan" John (Gold Party)  
G20USSNBIL - Beryl Billiot (No party)  
G20USSNBOU - John Paul Bourgeois (No party)  
G20USSNMOM - Jamar Montgomery (No party)  
G20USSNDAR - Reno Jean Daret III (No party)

Maine

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Election results by township from Maine Bureau of Corporations, Elections & Commissions (<https://www.maine.gov/sos/cec/elec/results/index.html>)

Election results by ward from municipal reports for Auburn, Augusta, Belfast, Ellsworth, Gorham, Lewiston, Portland, Sanford, South Portland.

Precinct shapefiles primarily from the U.S. Census Bureau's 2020 Redistricting Data Program. Voting district shapefiles were available for Androscoggin, Cumberland, Kennebec, Sagadahoc, Waldo, York. County subdivision shapefiles were used instead for Aroostook, Franklin, Hancock, Knox, Lincoln, Oxford, Penobscot, Piscataquis, Somerset, Washington.

## 2016 Election Results by Precinct

### Vote Column Label Format

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Columns reporting votes follow a standard label pattern. One example is:

G16PREDCli

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The first character is G for a general election, P for a primary, C for a caucus, R for a runoff, S for a special.

Characters 2 and 3 are the year of the election.

Characters 4-6 represent the office type (see list below).

Character 7 represents the party of the candidate.

Characters 8-10 are the first three letters of the candidate's last name.

### Office Codes

AGR - Commissioner of Agriculture

ATG - Attorney General

AUD - Auditor

COM - Comptroller

COU - City Council Member

DEL - Delegate to the U.S. House

GOV - Governor

H## - U.S. House, where ## is the district number. AL: at large.

HOD - House of Delegates, accompanied by a HOD\_DIST column indicating district number

HOR - U.S. House, accompanied by a HOR\_DIST column indicating district number

INS - Commissioner of Insurance

LAB - Commissioner of Labor

LTG - Lieutenant Governor

LND - Commissioner of Public Lands

PRE - President

PSC - Public Service Commissioner

PUC - Public Utilities Commissioner

RGT - State University Regent

RRC - Railroad Commissioner

SAC - State Court of Appeals

SCC - State Court of Criminal Appeals

SOS - Secretary of State

SOV - Senate of Virginia, accompanied by a SOV\_DIST column indicating district number

SPI - Superintendent of Public Instruction

SSC - State Supreme Court

TRE - Treasurer

USS - U.S. Senate

#### Party Codes

D and R will always represent Democrat and Republican, respectively.

See the state-specific notes for the remaining codes used in a particular file; note that third-party candidates may appear on the ballot under different party labels in different states.

Alabama

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B103/E101, F101/F104, G101/G104, G103/G105, H103/H110, H104/H111, H105/H106

Fayette: Split A108/A175, A162/A178, B123/B228, B142/B154, B182/B229/B230, C102/C151; Merge A205 into A183/A191/A199; Adjust B204/B232, B170/B217/B231

Hardin: Merge E004/E007; Split G004/G005, H002/H007; Adjust B003/B005, H005/H006/H007, H006/H008

Madison: Merge B110/B111, D106/D108

Mason: Split A101/A102, B102/B103, B105/B106

McCracken: Merge A113/A134, C109/C129; Split A119/A133, B114/B118

G16PRERTRU - Donald J. Trump (Republican Party)

G16PREDCLI - Hillary Rodham Clinton (Democratic Party)

G16PRELJOH - Gary Johnson (Libertarian Party)

G16PREGSTE - Jill Stein (Green Party)

G16PREIMCM - Evan McMullin (Independent)

G16PREOFUE - Rocky Roque De La Fuente (American Delta Party)

G16USSRPAU - Rand Paul (Republican Party)

G16USSDGRA - Jim Gray (Democratic Party)

Louisiana

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Election results from LA Secretary of State:  
<https://voterportal.sos.la.gov/static/2016-11-08>

Precinct shapefile from LA House of Representatives:  
[http://house.louisiana.gov/H\\_Redistricting2011/default\\_LouisianaPrecinctShapefiles](http://house.louisiana.gov/H_Redistricting2011/default_LouisianaPrecinctShapefiles)

Absentee votes and provisional ballots were reported at the parish level. These were distributed by candidate to precincts based on their share of the precinct-level reported vote.

Election results from the following parishes include "alpha" precincts in which voters within the same geographic boundaries are assigned to separate precincts by the first letter of their surname: Ascension, Assumption, Bossier, Caddo, East Baton Rouge, Lafayette, Lafourche, Rapides, St. Charles, St. Landry, Terrebonne

The following precincts were modified to reflect alterations enacted prior to the 2016 election:

Avoyelles: Merge 2-5B/6-1A

Plaquemines: Merge 2-1/2-2, 4-1/4-2, 5-1/5-2

St. Charles: Merge 2-6/2-7, 3-1/3-6, 3-3/3-4, 6-2/6-3, 6-4/6-5

Vermilion: Split 49B-1/49B-2

West Baton Rouge: Split 2-A/2-B; 11-A/11-B

G16PRERTRU - Donald J. Trump (Republican Party)

G16PREDCLI - Hillary Clinton (Democratic Party)

G16PRELJOH - Gary Johnson (Libertarian Party)

G16PREGSTE - Jill Stein (Green Party)

G16PREOMCM - Evan McMullin (Courage Character Service Party)

G16PRECCAS - Darrell Castle (Constitution Party)

G16PRE00TH - Other Candidates

G16USSRKEN - John Kennedy (Republican Party)

G16USSRBOU - Charles Boustany (Republican Party)

G16USSRFLE - John Fleming (Republican Party)  
G16USSRMAN - Rob Maness (Republican Party)  
G16USSRDUK - David Duke (Republican Party)  
G16USSRCRA - Donald "Crawdaddy" Crawford (Republican Party)  
G16USSRCAO - Joseph Cao (Republican Party)  
G16USSRMAR - Charles Marsala (Republican Party)  
G16USSRPAT - Abhay Patel (Republican Party)  
G16USSDCAM - Foster Campbell (Democratic Party)  
G16USSDFAY - Caroline Fayard (Democratic Party)  
G16USSDEDW - Derrick Edwards (Democratic Party)  
G16USSDLAN - Gary Landrieu (Democratic Party)  
G16USSDPEL - Joshua Pellerin (Democratic Party)  
G16USSDWIL - Peter Williams (Democratic Party)  
G16USSDMEN - MV "Vinny" Mendoza (Democratic Party)  
G16USSLCLE - Thomas P. Clements (Libertarian Party)  
G16USSLGIL - Le Roy Gillam (Libertarian Party)  
G16USSOLAN - William Robert "Bob" Lang, Jr. (Other Party)  
G16USSOTAY - Gregory Taylor, Jr. (Other Party)  
G16USSNBIL - Beryl Billiot (No Party Affiliation)  
G16USSNHEB - Troy Hebert (No Party Affiliation)  
G16USSNMAR - Kaitlin Marone (No Party Affiliation)  
G16USSNWEL - Arden Wells (No Party Affiliation)  
  
R16USSRKEN - John Kennedy (Republican Party)  
R16USSDCAM - Foster Campbell (Democratic Party)