



expert testimony to be admissible at trial. The rule requires an expert to meet the following requirement before testifying:

If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion, or otherwise, if all of the following apply:

- (1) The testimony is based upon sufficient facts or data.
- (2) The testimony is the product of reliable principles and methods; and
- (3) The witness has applied the principles and methods reliably to the facts of the case.

N.C. Gen. Stat. § 8C-1, Rule 702(a).

The North Carolina Supreme Court held in *State v. McGrady* that Rule 702(a) of the North Carolina Rules of Evidence incorporates the standard set forth in *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993), making North Carolina a *Daubert* state. 368 N.C. 880, 892, 787 S.E.2d 1, 10 (2016).

When determining whether to admit expert opinion testimony, a trial court must serve “a gate keeping role” to “ensure that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” *Daubert*, 509 U.S. at 597. The gatekeeper role is not limited to expert scientific testimony but also extends to all “‘technical’ or ‘other specialized’ matters within the scope of Rule 702.” *Kumho Tire Co v. Carmichael*, 526 U.S. 137, 147 (1999).

Regarding Dr. Chen’s and Dr. Cooper’s proposed testimony, Plaintiffs “must show by a ‘preponderance of proof’ that the expert is qualified and will testify to . . . knowledge that will assist the trier of fact in understanding and disposing of the issues relevant to the case.” *Pride v.*

*BIC Corp.*, 218 F.3d 566, 578 (4th Cir. 2000) (citing *Daubert*, 509 U.S. at 592 n. 10); *State v. McGrady*, 368 N.C. 880, 892, 787 S.E.2d 1, 10 (2016).

The Supreme Court has identified a non-exhaustive list of factors that may assist the Court in assessing the reliability of a proposed expert's opinion including: (1) whether a theory or technique can or has been tested; (2) whether the theory has been subject to peer review or publication; (3) whether the technique has a known or potential error rate; and (4) whether the theory enjoys "general acceptance" in a "relevant scientific community." *Daubert*, 509 U.S. at 592-94. Legal opinion or conclusions by alleged experts should not be considered. *Stoler v. Penn Cent. Transp. Co.*, 583 F.2d 896, 899 (6th Cir. 1978); see also *Torres v. County of Oakland*, 758 F.2d 147, 150 (6<sup>th</sup> Cir. 1985); *Halvorsen v. Pluto Learning Inc.*, 167 Fed. App'x 524, 531 (6th Cir. 2006); *Knisely v. United States*, 817 F.Supp. 680, 690 (S.D. Ohio 1993). Moreover, lay opinions contesting the merits of policy decisions by a legislature are irrelevant. Under these standards, and as explained below, Dr. Chen's and Dr. Cooper's testimony should be excluded or strictly limited.

**A. Legal Opinions and Conclusions Offered by Experts are Inadmissible in North Carolina**

Dr. Chen and Dr. Cooper both offer testimony amounting to legal conclusions or opinions that should be excluded under North Carolina law and the federal standard articulated in the *Daubert* line of cases.

North Carolina Rule 704, which is identical to Federal Rule of Evidence 704, abrogates the "ultimate issue rule" in North Carolina stating that "[t]estimony in the form of an opinion is not objectionable because it embraces an ultimate issue to be decided by the trier of fact." N.C. Gen. Stat. Ann. 8C-1, 704. North Carolina Rule 704 comports with the North Carolina common law notion that the purpose of expert testimony is to help the trier of fact explain specialized or nuanced information to the fact finder. *State v. McGrady*, 368 N.C. 880, 896, 787 S.E.2d 1, 13 (2016).

However, there are limits on the admissibility of expert opinions. North Carolina courts have consistently held that legal opinions offered by an expert witness should be excluded because “an expert is in no better position to conclude whether a legal standard has been satisfied or a legal conclusion should be drawn than is a jury which has been properly instructed on the standard or conclusion.” *HAJMM Co. v. House of Raeford Farms, Inc.*, 328 N.C. 578, 587, 403 S.E.2d 483, 489 (1991). Furthermore, “[o]pinions of experts or other witnesses must not usurp the province of the court and jury by drawing conclusions of law or fact upon which the case depends, the test being whether additional light can be thrown on the question under investigation by a person of superior learning, knowledge or skill in the particular subject.” *Cape Fear Pub. Util. Auth. v. Costa*, 205 N.C. App. 589, 593, 697 S.E.2d 338, 340 (2010) quoting *Patrick v. Treadwell*, 222 N.C. 1, 21 S.E.2d 818 (1942). The Advisory Committee Notes for Rule 704 as well as North Carolina case law help decipher the line between admissible fact testimony and inadmissible legal opinions and conclusions. The Advisory Committee Note states:

The abolition of the ultimate issue rule does not lower the bars so as to admit all opinions. Under Rules 701 and 702, opinions must be helpful to the trier of fact, and Rule 403 provides for exclusion of evidence which wastes time. These provisions afford ample assurance against the admission of opinions which would merely tell the jury what result to reach, somewhat in the manner of the oath-helpers of an earlier day. They also stand ready to exclude opinions phrased in terms of inadequately explored legal criteria. Thus the question, ‘Did T have capacity to make a will?’ would be excluded, while the question, ‘Did T have sufficient mental capacity to know the nature and extent of his property and the natural objects of his bounty and to formulate a rational scheme of distribution?’ would be allowed. McCormick § 12.

N.C. Gen. Stat. Ann. 8C-1, 704.

The North Carolina Supreme Court in *HAJMM Co. v. House of Raeford Farms, Inc.* clarifies with respect to the Advisory Committee Note that, “opinion testimony would be allowed regarding the underlying factual premises the jury must consider in determining whether testamentary capacity exists...[but,] [o]pinion testimony could not be offered on whether the legal

conclusion that testamentary capacity existed should be drawn.” 328 N.C. 578, 587, 403 S.E.2d 483, 489 (1991).

In *Raeferd Farms, Inc.*, the North Carolina Supreme Court examined whether the trial court erred in admitting the testimony of an expert witness who opined that the board of directors for the defendant corporation abused its discretion, that a fiduciary relationship existed between plaintiff and defendant, and that the fiduciary relationship was breached. *Id.* at 487. The Court held that it was improper for the expert to give an opinion as to whether a fiduciary relationship existed and whether that relationship was breached because those are legal conclusions. *Id.* at 490. However, the Court deemed it proper for the expert to testify regarding the underlying factors that create a fiduciary relationship, or the ways in which in a relationship may be breached. *Id.* at 488.

Similarly, in *Norris v. Zambito*, the plaintiff filed a wrongful death claim on behalf of a motorist killed in a high-speed chase with Durham police officers. 135 N.C. App. 288, 520 S.E.2d 113 (1999). The plaintiff alleged that the officers involved in pursuing the deceased motorist acted negligently, recklessly, and against policy when pursuing the deceased. *Id.* at 115. In support of this contention, the plaintiff offered expert testimony that the police officers’ pursuit was “grossly negligent” and “showed a reckless disregard for the safety of others.” *Id.* The trial court excluded the testimony because it offered inadmissible legal conclusions. *Id.* at 116. The Court of Appeals affirmed holding that “whether the officers’ conduct in pursuing *Zambito* was grossly negligent or showed reckless disregard for the safety of others are legal conclusions to be drawn from the evidence.” *Id.* Furthermore, “the City’s pursuit policy establishes a legal standard and, while [the expert] would certainly be permitted to testify as to the requirements of the City’s pursuit policy,

the trial court properly declined to consider his testimony as to whether the officers' conduct violated that standard." *Id.*<sup>1</sup>

### **B. Dr. Chen's Legal Opinions and Testimony Should be Excluded**

Here, Dr. Chen repeatedly offers legal conclusions in his expert report that are plainly inadmissible under North Carolina law. The following represent a non-exhaustive list of Dr. Chen's inadmissible legal opinions:<sup>2</sup>

- "I was asked to analyze: Whether partisan intent was the predominant factor in the drawing of the 2017 House and 2017 Senate Plans, both at a statewide level and with respect to certain county groupings." (Chen Report p. 2).
- "I am able to determine whether the enacted plan could have been the product of something other than the intentional pursuit of partisan advantage. With respect to North Carolina's 2017 House and 2017 Senate Plans, I determined that it could not." (Chen Report p. 3).
- "The simulation results thus warrant the conclusion that partisan considerations predominated over non-partisan districting criteria, particularly geographic compactness and minimizing municipality and precinct splits, in the drawing of the 2017 House Plan and the 2017 Senate Plan." (Chen Report p. 4).
- "If the enacted plan is in the far tail end of the distribution, or lies outside the distribution altogether – meaning that it favors a particular party more than in the vast majority or all of the simulated plans – then such a finding is a strong indication that the enacted plan was drawn with an overriding partisan intent to favor that political party, rather than to follow non-partisan, traditional districting criteria." (Chen Report pp. 9-10).

Dr. Chen does not hold a law degree. Yet, he opines throughout his report to the intent and motivation of the Legislative Defendants. He also purports to draw legal conclusions that are paramount to the issues in dispute. Specifically, Dr. Chen concludes that "the enacted plan was

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<sup>1</sup> Similarly, Federal Courts have routinely held that expert opinion testimony that draws a legal conclusion is generally inadmissible. See *U.S. v. McIver*, 470 F.3d 550 (4th Cir. 2006); *U.S. v. Barile*, 286 F.3d 749 (4th Cir. 2002); *U.S. v. Stewart*, 765 F. App'x 915 (4th Cir. 2019); *U.S. v. Poulin*, 461 F. App'x 272 (4th Cir. 2012).

<sup>2</sup> This list is not exhaustive because Dr. Chen's 182-page report reiterates the same conclusory statements throughout. Excerpts of Dr. Chen's report can be found at Exhibit 1 attached to this Motion.

drawn with an overriding partisan intent to favor that political party, rather than follow non-partisan, traditional districting criteria.” (Chen Report pp. 9-10). He also asserts that the enacted plan could not “have been the product of something other than the intentional pursuit of partisan advantage.” (Chen Report p. 3). Although North Carolina law permits opinions as to the ultimate issue of a case if the expert is opining to the underlying facts of the claim, Dr. Chen cannot simply give conclusory statements drawing such pointed legal conclusions because this is outside his role as an expert. *Norris*, 135 N.C. App. at 288, 520 S.E.2d at 113 (excluding conclusory expert testimony that defendants were “grossly negligent” or “showed reckless disregard for the safety of others” because testimony offered legal conclusions that are to be properly drawn from evidence); *see also Matter of Estate of Ward*, 813 S.E.2d 479 (N.C. Ct. App. 2018) (holding that testimony regarding the “red flags of undue influence” in will contest case where undue influence was issue before the Court was properly excluded because “testimony would have amounted to nothing more than an inadmissible opinion on whether legal standards have been satisfied or a comment on the legal effect of particular facts.”); *see also Smith v. Childs*, 112 N.C. App. 672, 680, 437 S.E.2d 500, 506 (1993) (holding that “while the legal expert may testify regarding the factual issues facing the jury, he is not allowed to either interpret the law or to testify as to the legal effect of particular facts.”); *Green ex rel. Crudup v. Kearney*, 217 N.C. App. 65, 719 S.E.2d 137 (2011) (Expert opinion testimony may be received regarding the underlying factual premise, which the fact finder must consider in determining the legal conclusion to be drawn therefrom, but may not be offered as to whether the legal conclusion should be drawn).

Dr. Chen’s appropriate role in this litigation should be to explain specialized and nuanced issues for the fact finder. By doing so, these opinions will assist the fact finder in making its decision. While it is certainly appropriate for Dr. Chen to testify as to the underlying facts of the

case including the maps and districts in dispute, or the science and math behind his simulations to better educate the fact finder as to whether partisan interests predominated when drawing the current districts, it is wrong for Dr. Chen to testify to the legislature's intent in drawing the maps. *Zambito*. 520 S.E.2d at 116. Doing so supplants the role of fact finder essentially transforming Dr. Chen into the arbiter of justice. Simply put, such testimony is inadmissible and should be excluded.

**C. Dr. Cooper's Legal Opinions and Testimony Should be Excluded**

Like Dr. Chen, Dr. Cooper's reports<sup>3</sup> contain multiple legal conclusions masquerading as expert testimony. For example, in his initial report, Dr. Cooper contends that the partisan outcomes in certain county groupings and in the maps as a whole are due to "partisan gerrymandering." (Cooper Report p. 3) ("After considering aggregate and district level data and the geographic boundaries of the districts, I have concluded that this radical shift in the partisan balance of the General Assembly is due, in large part, to partisan gerrymandering."). In his deposition, Dr. Cooper defined the term "gerrymandering" as "when one party draws lines to benefit themselves at the expense of the other party" but admitted that he offers no measure for the court to determine where the line is between constitutional and unconstitutional partisan gerrymandering. (Cooper Dep.<sup>4</sup> 40:5-41:11).

Dr. Cooper similarly offers opinions regarding alleged "packing" and "cracking" of Democratic voters, which are traditionally regarded as legal terms of art. *See* Samuel Issacharoff, *Ballot Bedlam*, 64 Duke LJ 1363 n. 148 (April 2015) (citing Pamela S. Karlan, *All over the Map; The Supreme Court's Voting Rights Trilogy*, 1993 Sup. Ct. Rev. 245, 250) (" 'Packing' is a term

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<sup>3</sup> Excerpts from Dr. Cooper's report can be found at Exhibit 2 attached to this Motion.

<sup>4</sup> Excerpts from Dr. Cooper's deposition can be found at Exhibit 3 attached to this Motion.



of art in redistricting parlance, referring to the overconcentration of voters beyond that necessary to elect.”).

In one of the summary points in his report, Dr. Cooper contends that “[t]he current General Assembly districts ‘pack’ Democratic leaning voters into a small number of districts, thus producing a few Democratic districts with large electoral margins. The current district lines ‘crack’ the remaining Democratic voters across the remaining districts, so that Democratic voters cannot comprise a majority in any of those districts.” (Cooper Report p. 3). Dr. Cooper, a non-lawyer, goes on to provide his opinion that various districts have been “packed” or “cracked” numerous times over the course of his 103 page report. (*See* Cooper Report pp. 39, 44, 47, 53, 61, 65, 70, 73, 79, 76, 82, 84, 87, 91, 93, 97) His determination that legislative districts in North Carolina have been “cracked” or “packed” completely “usurp[s] the province of th[is] court...by drawing conclusions of law or fact upon which [this] case depends.” *Cape Fear Pub. Util. Auth.*, 205 N.C. App. At 593, 697 S.E.2d at 340 (quoting *Treadwell*, 222 N.C. 1, 21 S.E.2d 818 (1942)). The conclusion that “cracking” or “packing” has occurred in redistricting litigation has long been relegated to the judiciary not experts. Dr. Cooper’s opinions in this regard do not just “embrace” an ultimate issue in this case, “it tells [the court] what result to reach” and should be excluded. *See* NC. Gen. Stat. Ann. 8C-1, 704. Lest there be any doubt about Dr. Cooper’s intent to opine on the ultimate constitutionality of the district lines at issue, Dr. Cooper concludes his summary point on “packing” and “cracking” by contending that the maps at issue in this case “have led to a General Assembly that does not represent the will of the people of the state.” (Cooper Report p. 3).

Finally, in his rebuttal report<sup>5</sup>, Dr. Cooper contends that the files from Dr. Hofeller’s computer “reveal that partisanship was the overwhelming, if not the sole, motivation in drawing

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<sup>5</sup> Excerpts from Dr. Cooper’s rebuttal report can be found at Exhibit 4 attached to this Motion.

the state House and state Senate districts at issue.” (Cooper Rebuttal p. 3). Dr. Cooper testified in his deposition that this statement was based on the fact that the maps found on Dr. Hofeller’s computer contained partisan data fields but admitted that the same maps also contained population data and that he could not say how much partisanship or population factored into those maps. (Cooper Dep. 211:11-213:23).

These unsupported opinions do not provide the Court with any useful analysis of the facts at issue in this case but instead tell the Court to find the maps at issue here unconstitutional while providing no metric for the Court to use in making that determination. Accordingly, any testimony by Dr. Cooper labeling individual districts or the map as a whole as a “partisan gerrymander,” determinations that certain districts are “packed” or “cracked,” and unsupported opinions regarding Dr. Hofeller’s alleged “motivation” are not proper subjects of expert testimony and should be excluded.

### **CONCLUSION**

Based on the foregoing, the Court should exclude all legal opinions and conclusory testimony produced by Dr. Chen and Dr. Cooper from evidence in this case.

This the 21st day of June, 2019.

Respectfully submitted,

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CERTIFICATE OF SERVICE

This is to certify that the undersigned has this day served the foregoing in the above titled action upon all other parties to this cause by:

- Hand delivering a copy hereof to each said party or to the attorney thereof;
- Transmitting a copy hereof to each said party via facsimile transmittal;
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This the 21st day of June, 2019.

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# **EXHIBIT 1**

## EXPERT REPORT OF JOWEI CHEN, Ph.D.

April 8, 2019

I am an Associate Professor in the Department of Political Science at the University of Michigan, Ann Arbor. I am also a Research Associate Professor at the Center for Political Studies of the Institute for Social Research at the University of Michigan and a Research Associate at the Spatial Social Science Laboratory at Stanford University. In 2007, I received a M.S. in Statistics from Stanford University, and in 2009, I received a Ph.D. in Political Science from Stanford University. I have published academic papers on legislative districting and political geography in several political science journals, including *The American Journal of Political Science* and *The American Political Science Review*, and *Election Law Journal*. My academic areas of expertise include legislative elections, spatial statistics, geographic information systems (GIS) data, redistricting, racial politics, legislatures, and political geography. I have expertise in the use of computer simulations of legislative districting and in analyzing political geography, elections, and redistricting.

I have authored expert reports in the following redistricting court cases: *The League of Women Voters of Florida et al. v. Ken Detzner et al.* (Fla. 2d Judicial Cir. Leon Cnty. 2012); *Rene Romo et al. v. Ken Detzner et al.* (Fla. 2d Judicial Cir. Leon Cnty. 2013); *Missouri National Association for the Advancement of Colored People v. Ferguson-Florissant School District and St. Louis County Board of Election Commissioners* (E.D. Mo. 2014); *Raleigh Wake Citizens Association et al. v. Wake County Board of Elections* (E.D.N.C. 2015); *Corrine Brown et al. v. Ken Detzner et al.* (N.D. Fla. 2015); *City of Greensboro et al. v. Guilford County Board of Elections* (M.D.N.C. 2015); *Common Cause et al. v. Robert A. Rucho et al.* (M.D.N.C. 2016); *The League of Women Voters of Pennsylvania et al. v. Commonwealth of Pennsylvania et al.* (No. 261 M.D. 2017); *Georgia State Conference of the NAACP et al. v. The State of Georgia et al.* (N.D. Ga. 2017); *The League of Women Voters of Michigan et al. v. Ruth Johnson et al.* (E.D. Mich. 2017); and *William Whitford et al. v. Beverly Gill et al.* (W.D. Wis. 2018). I have testified either at deposition or at trial in the following cases: *Rene Romo et al. v. Ken Detzner et al.* (Fla. 2d Judicial Cir. Leon Cnty. 2013); *Missouri National Association for the Advancement of Colored People v. Ferguson-Florissant School District and St. Louis County Board of Election Commissioners* (E.D. Mo. 2014); *Raleigh Wake Citizens Association et al. v. Wake County Board of Elections* (E.D.N.C. 2015); *City of Greensboro et al. v. Guilford County Board of*

Elections (M.D.N.C. 2015); Common Cause et al. v. Robert A. Rucho et al. (M.D.N.C. 2016); The League of Women Voters of Pennsylvania et al. v. Commonwealth of Pennsylvania et al. (No. 261 M.D. 2017); Georgia State Conference of the NAACP et al. v. The State of Georgia et al. (N.D. Ga. 2017); The League of Women Voters of Michigan et al. v. Ruth Johnson et al. (E.D. Mich. 2017); and William Whitford et al. v. Beverly Gill et al. (W.D. Wis. 2018). My Curriculum Vitae is attached as an exhibit to this report. I am being compensated \$500 per hour for my work in this case.

### **Research Question and Summary of Findings**

The attorneys for the plaintiffs in this case asked me to analyze the legislative districting plans enacted in 2017 for North Carolina's House of Representatives and Senate districts (the "2017 House Plan" and the "2017 Senate Plan"). Specifically, I was asked to analyze:

- 1) Whether partisan intent was the predominant factor in the drawing of the 2017 House and 2017 Senate Plans, both at a statewide level and with respect to certain county groupings.
- 2) The effect of the enacted plans on the number of Democratic and Republican legislators elected from North Carolina, both at a statewide level and with respect to certain county groupings;
- 3) The extent to which the 2017 House and 2017 Senate Plans conform to the "2017 House and Senate Plans Criteria" adopted by the House and Senate Redistricting Committees (the "2017 Adopted Criteria"), with the exception of the criterion regarding political considerations, and relatedly, the extent to which partisan intent subordinated these Adopted Criteria.
- 4) The effect of the enacted plans on the partisan composition of the individual plaintiffs' House and Senate districts.

In conducting my academic research on legislative districting, partisan and racial gerrymandering, and electoral bias, I have developed various computer simulation programming techniques that allow me to produce a large number of non-partisan districting plans that adhere to traditional districting criteria using US Census geographies as building blocks. This simulation process ignores all partisan and racial considerations when drawing districts. Instead, the

computer simulations are programmed to optimize districts with respect to various traditional districting goals, such as equalizing population, maximizing geographic compactness, and preserving political subdivisions such as county, municipal, and precinct boundaries. By randomly generating a large number of districting plans that closely adhere to these traditional districting criteria, I am able to assess an enacted plan drawn by a state legislature and determine whether partisan goals motivated the legislature to deviate from these traditional districting criteria. More specifically, by holding constant the application of non-partisan, traditional districting criteria through the simulations, I am able to determine whether the enacted plan could have been the product of something other than the intentional pursuit of partisan advantage. With respect to North Carolina's 2017 House and 2017 Senate Plans, I determined that it could not.

I use this simulation approach to analyze North Carolina's 2017 House and 2017 Senate Plans in several different ways:

***Statewide Plan Results:*** First, I conduct an initial set of 1,000 independent simulations for each chamber, instructing the computer to generate legislative districting plans that strictly follow the traditional districting criteria within the Adopted Criteria (i.e., population equality, geographic compactness, contiguity, respecting county groupings, and preserving municipal and precinct boundaries). These simulations, which follow only non-partisan districting criteria, are referred to as House Simulation Set 1 and Senate Simulation Set 1. I then measure the extent to which the 2017 House Plan and the 2017 Senate Plan deviate from these simulated plans with respect to the non-partisan portions of the Adopted Criteria. The simulation results demonstrate that the enacted 2017 House and Senate Plans both split far more precincts and municipalities than is reasonably necessary. Both enacted plans' districts are also significantly less geographically compact than the computer-simulated districts. By either measure of compactness specified in the 2017 Adopted Criteria (i.e., Reock and Polsby-Popper), the 2017 House Plan is significantly less compact than every single one of the 1,000 simulated House districting plans, and the 2017 Senate Plan is significantly less compact than every single one of the 1,000 simulated Senate districting plans.

By significantly subordinating these non-partisan, traditional districting criteria of geographic compactness and preserving municipal and precinct boundaries, the 2017 House Plan was able to create a total of 78 Republican-leaning districts (out of a total of 120 districts), as



measured using results from the ten historical elections that the General Assembly considered in 2017 according to the Adopted Criteria; the 2017 Senate Plan was able to create a total of 32 Republican-leaning districts (out of a total of 50 districts), as measured using the results of these ten historical elections. By contrast, the simulation results demonstrate that a map-drawing process adhering strictly to non-partisan, traditional districting criteria consistently creates plans with more Democratic districts and fewer Republican districts. Every one of the 1,000 simulated plans in House Simulation Set 1 creates fewer Republican-leaning districts than the enacted 2017 House Plan, and every one of the 1,000 plans in Senate Simulation Set 1 creates fewer Republican-leaning districts than the enacted Senate plan. Thus, 2017 House Plan and the 2017 Senate Plan are both extreme statistical outliers, creating levels of partisan bias never observed in a single one of the 1,000 computer-simulated plans for each chamber. Both enacted plans create more Republican seats and fewer Democratic seats than what is generally achievable through a map-drawing process that adheres solely to non-partisan, traditional districting criteria. The simulation results thus warrant the conclusion that partisan considerations predominated over non-partisan districting criteria, particularly geographic compactness and minimizing municipality and precinct splits, in the drawing of the 2017 House Plan and the 2017 Senate Plan.

***Incumbency Protection:*** Having found that partisan considerations predominated in the drawing of the 2017 House Plan and the 2017 Senate Plan, I then conducted a separate analysis to evaluate whether an attempt to protect incumbent legislators in North Carolina's House and Senate delegation might explain the partisan bias in the two enacted plans. The Adopted Criteria defined "Incumbency Protection" as "avoid[ing] pairing incumbent members of the House or Senate with another incumbent," and I employ that definition. As detailed later in this report, I identified every district in the current districting plans for which the incumbent was protected (i.e., not paired with another incumbent) at the time the district was created. Although the protection of incumbents is not a traditional districting principle, I nevertheless analyzed whether an intentional effort to protect these incumbents somehow altered the partisan composition of districting plans and explains the Republican advantage exhibited by the 2017 House and Senate Plans.

I therefore conducted a second set of 1,000 House simulations and 1,000 Senate simulations by instructing the computer to produce districting plans that intentionally protect the

portions of the 2017 Adopted Criteria. Later, I generate an additional 1,000 simulated House plans and 1,000 Senate plans in Simulation Set 2 by maximizing the protection of incumbents within each county grouping while otherwise adhering to the non-partisan portions of the 2017 Adopted Criteria.

To measure partisan performance under each of these computer-simulated plans, I used actual election results from statewide elections in North Carolina. During the 2017 redistricting process, Representative David Lewis announced at the House Redistricting Committee's August 10, 2017 meeting that the General Assembly would use the following ten statewide elections in creating the 2017 Plans: The 2010 US Senate election, the 2012 US President, Governor, and Lieutenant Governor elections, the 2014 US Senate election, and the 2016 US President, US Senate, Governor, Lieutenant Governor, and Attorney General elections.

I obtained an electronic file detailing the results of these ten 2010-2016 election contests at the census block level. I aggregated these block-level election results to the district level within each simulated plan, and I calculated the number of districts that would have been won by Democrats and Republicans under each districting plan. I use these calculations to measure the partisan performance of each simulated plan analyzed in this report. In other words, I look at the census blocks that would comprise a particular district in a given simulation and, using the actual election results from those census blocks, I calculate whether voters in that simulated district collectively cast more votes for Democratic or Republican candidates in the 2010-2016 statewide election contests. I performed such calculations for each district under each simulated plan to measure the number of districts Democrats or Republicans would win under that particular simulated districting map.

I also performed the same calculations for the enacted 2017 House Plan and the enacted 2017 Senate Plan. In other words, I aggregated the block-level results from the 2010-2016 statewide elections to the level of the 2017 House and Senate districts and determined how many districts Republicans and Democrats were expected to win under the enacted plans, based on these past statewide election results. As a statistical matter, if an enacted plan had been drawn without partisanship as its predominant consideration, the enacted plan's partisan breakdown of seats would fall somewhere roughly within the normal range of the distribution of simulated, non-partisan plans. If the enacted plan is in the far tail end of the distribution, or lies outside the distribution altogether—meaning that it favors a particular party more than in the vast majority

or all of the simulated plans—then such a finding is a strong indication that the enacted plan was drawn with an overriding partisan intent to favor that political party, rather than to follow non-partisan, traditional districting criteria.

By randomly drawing districting plans with a process designed to strictly follow non-partisan districting criteria, the computer simulation process thus gives us a precise indication of the range of districting plans that plausibly and likely emerge when map-drawers are not motivated primarily by partisan goals. By comparing the enacted plans against the range of simulated plans with respect to partisan measurements, I am able to determine the extent to which a map-drawer's subordination of non-partisan districting criteria, such as geographic compactness and following municipal and precinct boundaries, was motivated by partisan goals.

These computer simulation methods are widely used by academic scholars to analyze districting maps. For over a decade, political scientists have used such computer-simulated districting techniques to make inferences about the racial and partisan intent of legislative map-drawers.<sup>2</sup> In recent years, a number of courts have also relied upon computer simulations to assess partisan bias in enacted districting plans.<sup>3</sup>

### **Non-Partisan Districting Criteria for North Carolina's Legislative Districts**

In programming the computer simulation algorithm to produce House and Senate districting plans for North Carolina, I strictly followed the non-partisan portions of the 2017 Adopted Criteria, as adopted by the General Assembly's Joint Select Committee on Redistricting on August 10, 2017. Below, I describe these seven non-partisan districting criteria in detail and explain how each criterion is implemented by the computer algorithm to produce simulated plans for North Carolina's House and Senate districts:

**1) *Population Equality:*** The Adopted Criteria require legislative districts to contain populations within a 5% deviation of the ideal district population, as calculated using 2010 federal decennial census data. North Carolina's 2010 Census population was 9,535,483, so

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<sup>2</sup> E.g., Carmen Cirincione, Thomas A. Darling, Timothy G. O'Rourke. "Assessing South Carolina's 1990s Congressional Districting," *Political Geography* 19 (2000) 189–211; Jowei Chen, "The Impact of Political Geography on Wisconsin Redistricting: An Analysis of Wisconsin's Act 43 Assembly Districting Plan." *Election Law Journal*

<sup>3</sup> See, e.g., *League of Women Voters of Pa. v. Commonwealth*, 178 A. 3d 737, 818-21 (Pa. 2018); *Raleigh Wake Citizens Association v. Wake County Board of Elections*, 827 F.3d 333, 344-45 (4th Cir. 2016); *City of Greensboro v. Guilford County Board of Elections*, No. 1:15-CV-599, 2017 WL 1229736 (M.D.N.C. Apr 3, 2017); *Common Cause v. Robert A. Rucho*, No. 1:16-CV-1164 (M.D.N.C. Jan 11, 2018).

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.

This 8th day of April, 2019.

A handwritten signature in black ink, appearing to read "Jowei Chen", written over a horizontal line.

Jowei Chen

# **EXHIBIT 2**

**Expert Report on North Carolina's General Assembly Districts**

Christopher A. Cooper

April 8, 2019

## Introduction

My name is Christopher A. Cooper. I have been retained to analyze data and provide my expert opinions related to North Carolina politics and geography, as it pertains to the current General Assembly districting plans in North Carolina enacted in 2017 and used in the 2018 election.

I am currently Professor and Department Head of Political Science and Public Affairs at Western Carolina University in Cullowhee, North Carolina, a university that I have served since 2002. I hold a PhD and MA in Political Science from the University of Tennessee, Knoxville and a BA in Political Science and Sociology from Winthrop University. My academic research focuses on state politics and policy, and southern politics—particularly in North Carolina. To date, I have published over 50 academic journal articles and scholarly book chapters, co-edited one book and co-authored another (both with the University of North Carolina Press). I teach courses on state and local politics, political parties, campaigns and elections, southern politics, and research methods. In 2013, I was named North Carolina Professor of the Year by the Carnegie Foundation for the Advancement of Teaching and I have received Western Carolina University's highest awards in teaching (Board of Governors Teaching Award) and scholarship (University Scholar).

Much of my academic research relates directly to North Carolina politics and policy, including my co-edited book, *The New Politics of North Carolina*, and my co-authored book chapters, "North Carolina: Still Swingin' in the South," "The Bluest Red State in America: Exploring North Carolina's Political Past, Present, and Future" (both of which appeared in editions of *Presidential Swing States: Why Only Ten States Matter*) as well as "The People's Branch: Reassessing the N.C. General Assembly," "Traditionalism and Progressivism in North Carolina," and "Rethinking Progressivism and Governance in North Carolina" (all three of which appeared in *The New Politics of North Carolina*).

I have been quoted and interviewed for a variety of state and national media outlets about North Carolina politics including *The New York Times*, *The Washington Post*, *Politico*, CNN, *The News and Observer* (Raleigh), *The Charlotte Observer*, and National Public Radio (national,

as well as outlets in Asheville, Charlotte, and Chapel Hill). I have also written 87 op-eds for media outlets including CNN.com, *The News and Observer* (Raleigh), *The Charlotte Observer*, and *The Asheville Citizen-Times* and have given dozens of talks about North Carolina politics and policy to groups ranging from the North Carolina City and County Management Association, to the North Carolina Government Finance Officers Association. I have also given talks about redistricting and gerrymandering in North Carolina to a variety of groups in the state, including the Asheville Chamber of Commerce. I have not testified as an expert witness in any prior cases. My Curriculum Vitae is attached as Exhibit A to this report.

I am being compensated at a rate of \$220 per hour by the firm Arnold & Porter Kaye Scholer LLP.



North Carolina is a state defined by ideologically moderate, two-party politics among its voters and in most of its elected offices. Since the 2010 election, however, the partisan composition of the North Carolina General Assembly has stood in stark contrast to these other offices and in contrast to the will of the voters. For the first time since Reconstruction, Republicans took over majority control of the General Assembly in 2010 and, in the first election following the 2011 redistricting cycle, increased that majority to a supermajority in 2012. These changes made the General Assembly a rarity in North Carolina politics—an elected institution where Democrats have virtually no chance of electoral parity. After considering aggregate and district level data and the geographic boundaries of the districts, I have concluded that this radical shift in the partisan balance of the General Assembly is due, in large part, to partisan gerrymandering. These effects were initially felt following the 2011 round of redistricting and have continued with the new maps instituted in 2017. This gerrymandering has produced a state where the citizens (who are, on average, politically moderate) are represented by a state legislature that produces consistently conservative policies.

### **Summary of Key Findings**

- In the aggregate, North Carolinians are best described as ideologically moderate. The state includes similar numbers of liberal, Democratic-leaning voters and conservative, Republican-leaning voters.
- North Carolina has consistently experienced competitive elections for statewide offices and North Carolinians have elected both Democrats and Republicans to statewide offices in recent years.
- At the same time, the North Carolina General Assembly remains dominated by the Republican Party.
- The current General Assembly districts “pack” Democratic leaning voters into a small number of districts, thus producing a few Democratic districts with large electoral margins. The current district lines “crack” the remaining Democratic voters across the remaining districts, so that Democratic voters cannot comprise a majority of any of those

districts. Conversely, the current maps are drawn so Republican voters are distributed more evenly and efficiently across districts. These practices ultimately result in large Republican advantages in seats in the General Assembly—advantages that far outweigh the Republicans’ share of the aggregate vote between the two parties. These maps have led to a General Assembly that does not represent the will of the people of the state.

- The current General Assembly districts unnecessarily split municipalities, VTDs,<sup>1</sup> and communities of interest in order to reduce the voice of Democrats in the General Assembly.
- The gap in representation between public opinion of the people and policies passed by North Carolina’s state government is among the largest in the country.

### **North Carolina’s Political Moderation**

North Carolina has long been known for political moderation and two-party politics, particularly when compared to the rest of the American South. In 1960, political scientist V.O. Key described North Carolina as a “progressive plutocracy,” with a mood that is “at odds with the rest of the South.” Key continued by noting that North Carolina “enjoys a reputation for progressive outlook and action in many phases of life.”<sup>2</sup> This reputation for progressivism and the promise of two-party politics seemed to be borne out a half century later. On the precipice of the 21<sup>st</sup> century, North Carolina journalist Rob Christensen and Wake Forest University political science Professor Jack D. Fler noted that the state enjoys “two strong and competitive parties.” Christensen and Fler then prognosticated that “for the foreseeable future, control of political power is most likely to alternate irregularly between them as both short-and long-term forces buttress ongoing political change in the Tar Heel State.”<sup>3</sup> More recent work examining the state’s politics reinforces this notion of strong two-party competition. J. Michael Bitzer and Charles

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<sup>1</sup> A “VTD” is the generic term used by the Census Bureau to refer to a “voting tabulation district,” which may “include a wide variety of small polling areas, such as election districts, precincts, or wards.”

<sup>2</sup> Key, V.O., Jr., *Southern Politics in State and Nation* (Knoxville: University of Tennessee Press, 1960), 205.

<sup>3</sup> Christensen, Rob, and Jack D. Fler, “North Carolina: Between Helms and Hunt No Majority Emerges,” in Alexander P. Lamis, ed. *Southern Politics in the 1990s* (Baton Rouge: Louisiana State University Press, 1999), 106.

### **Conclusion**

After reviewing these county clusters in the North Carolina House and Senate, it is clear that the current General Assembly district lines advantage Republican candidates at the expense of Democratic candidates—and Democratic voters. This was done by virtually guaranteeing that the Democrats would win a few number of seats by large margins, while distributing the remaining Democratic voters in a manner intended to preclude Democratic victories outside of the packed districts. In contrast, the current district lines spread Republican voters more efficiently, thus increasing the odds that Republican candidates will win more seats by smaller margins. Not only do these district lines create partisan outcomes that are at odds with the wishes of the voters, but they also create substantial voter confusion. As indicated above, the current district lines unnecessarily split municipalities, college campuses, and VTDs. These district lines represent a partisan gerrymander.



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**Christopher A. Cooper**

# Exhibit 3

STATE OF NORTH CAROLINA  
COUNTY OF WAKE

GENERAL COURT OF JUSTICE  
SUPERIOR COURT DIVISION  
18 CVS 014001

COMMON CAUSE, ET AL.,        )  
                                  )  
                  Plaintiffs,    )  
                                  )  
                  vs.                )  
                                  )  
DAVID R. LEWIS, ET AL.,        )  
                                  )  
                  Defendants.        )

DEPOSITION OF  
CHRISTOPHER A. COOPER, PH.D.

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9:33 A.M.

THURSDAY, JUNE 13, 2019

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OGLETREE, DEAKINS, NASH, SMOAK & STEWART  
4208 SIX FORKS ROAD, SUITE 1100  
RALEIGH, NORTH CAROLINA

BY: LISA A. WHEELER, RPR, CRR

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## I N D E X

	PAGE
EXAMINATION BY MR. MCKNIGHT	5
EXAMINATION BY MR. PENCOOK	234

## E X H I B I T S

COOPER NUMBER	DESCRIPTION	PAGE
EXHIBIT 1	Expert Report on North Carolina's General Assembly Districts, Christopher A. Cooper, April 8, 2019	20
EXHIBIT 2	Responses to Drs. Barber, Brunell, Hood, Lewis, Johnson, and Owen, Christopher A. Cooper, June 7, 2019	20
EXHIBIT 3	Article, The boogeymen in American politics, May 8, 2016	65
EXHIBIT 4	Elon Poll, February 12-15, 2018	235
EXHIBIT 5	Article, Partisan Change in Southern State Legislatures, 1953-2013	248
EXHIBIT 6	Article, N.C. counties shift to red, March 14, 2013	260
EXHIBIT 7	Article, Redistricting 101: An FAQ on a current political issue, July 17, 2011	267



## P R O C E E D I N G S

CHRISTOPHER A. COOPER, PH.D.,

having been first sworn or affirmed by the court reporter and Notary Public to tell the truth, the whole truth, and nothing but the truth, testified

as follows:

## EXAMINATION

BY MR. MCKNIGHT:

Q. Good morning, Mr. Cooper. My name is Michael McKnight and I'm one of the attorneys for the legislative defendants in this matter. Could you please state your full name.

A. Sure. Christopher Alan Cooper.

Q. Okay. And have you ever gone by any other names?

A. No.

Q. What is your address?

A. 160 Rose Street, Sylva, North Carolina, 28779.

Q. And have you ever been deposed before?

A. One time.

Q. Okay. And in what -- what context?

A. It was somebody who was denied tenure at a university where I work.

Q. Okay. Not any kind of case involving

1 districts. I talk about the creation of  
2 majority/minority districts. We talk about  
3 the argument pros and cons for  
4 majority/minority districts.

5 Q. All right. How do you define gerrymander?

6 A. When one party draws lines to benefit  
7 themselves at the expense of the other party.

8 Q. Is there a distinction between legal and  
9 illegal gerrymandering in your mind?

10 MR. CELLA: Objection to form.

11 A. I think that's for the court to decide.

12 Q. So you don't have an opinion about where that  
13 line is?

14 A. I don't think that's what I was asked to do  
15 here and I think that's why the court -- what  
16 the court's going to decide.

17 Q. Okay. Well, I'm asking if -- if you, based  
18 upon your professional experience, have any  
19 opinion on -- on where the line is between  
20 legal and illegal gerrymandering, and  
21 specifically I'm talking about political  
22 gerrymandering.

23 MR. CELLA: Objection, form.

24 A. I think that's for the court to decide.

25 Q. So you don't have an opinion about that?

1 A. I think other people have developed measures  
2 and I have not.

3 Q. Okay. And so -- so that -- that was my next  
4 question. You have not developed any measure  
5 for a court to determine where the line is  
6 between a constitutional or unconstitutional  
7 political gerrymander?

8 MR. CELLA: Objection to form.

9 A. A measure -- I have not developed a sharp  
10 quantitative line in the sand that says this  
11 is and this is not.

12 Q. Okay. Have you developed any line?

13 A. That says what is legal or that says what is  
14 a gerrymander?

15 Q. Well, let's start out with what's a  
16 gerrymander, okay? Have you developed any  
17 method of testing or determining what is or  
18 is not a gerrymander?

19 A. I believe my report does that.

20 Q. Okay. Explain -- explain what you mean by  
21 that.

22 A. I think in the cluster-by-cluster analysis, I  
23 discuss the presence of gerrymandering in  
24 these clusters.

25 Q. Okay. Is that the only place where you

1           these files reveal that partisanship was the  
2           overwhelming, if not the sole, motivation in  
3           drawing the state House and state Senate  
4           districts at issue. And I'm looking --

5       A.    What page are you on here?

6       Q.    Page 3.

7       A.    Okay.

8       Q.    Do you see that sentence?

9       A.    What paragraph are you on? I'm sure you're  
10           right. I'm just --

11       Q.    Last paragraph. Please double-check me.  
12           Sentence again is, those files reveal that  
13           partisanship was the overwhelming, if not the  
14           sole, motivation in drawing the state House  
15           and state Senate districts at issue.

16                    Do you see that sentence?

17       A.    I do.

18       Q.    How do you know what Dr. Hofeller's  
19           motivation was in drawing the districts at  
20           issue in this lawsuit?

21       A.    I know what data he had access to.

22       Q.    But that's the only basis for your statement  
23           about his motivation?

24       A.    I know what data he had access to and it was  
25           overwhelmingly partisan data.

1 Q. What do you mean overwhelmingly partisan  
2 data?

3 A. I mean, those were the data fields that he  
4 tended to have active. He didn't have a lot  
5 of other data on there other than  
6 partisanship.

7 Q. Well, when I look at these maps --

8 A. Uh-huh.

9 Q. -- what I see on here is I see numbers in all  
10 of the VTDs. Do you see those?

11 A. Give me a page number and I'm sure you're  
12 right, but --

13 Q. Sure. Well, take -- let's take a -- we were  
14 looking at -- let's look at Page 15, for  
15 example.

16 A. All right.

17 Q. Numbers are pretty clear on that page.

18 A. Yes.

19 Q. Okay. Do you see those -- those numbers in  
20 each of the VTDs?

21 A. Yes.

22 Q. Okay. So what do you think those numbers  
23 are?

24 A. If I remember correctly, those numbers are  
25 population.

1 Q. So that -- is that the population that lives  
2 in each VTD?

3 A. I believe that is correct.

4 Q. So given that that was also on the screen,  
5 why couldn't population be the sole  
6 motivating factor for creating these  
7 districts?

8 A. Then why have the partisanship layer active  
9 at all?

10 Q. Okay. Why have the population on there at  
11 all?

12 A. Population was clearly important. He has to  
13 draw --

14 Q. Yeah.

15 A. -- lines with relatively the same number of  
16 people in every district, so certainly  
17 population is a factor as well.

18 Q. Okay. But you can't say how much of a factor  
19 population is versus partisanship, can you?

20 A. No, I cannot.

21 Q. And you don't endeavor to do that in your  
22 report, do you?

23 A. No.

24 Q. Look at Page 19 of your rebuttal report.

25 A. Uh-huh.

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A C K N O W L E D G E M E N T   O F   D E P O N E N T

I, CHRISTOPHER A. COOPER, PH.D., declare under the penalties of perjury under the State of North Carolina that I have read the foregoing 284 pages, which contain a correct transcription of answers made by me to the question therein recorded, with the exception(s) and/or addition(s) reflected on the correction sheet attached hereto, if any.

Signed this, the \_\_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
CHRISTOPHER COOPER, PH.D.

State of: \_\_\_\_\_

County of: \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 2019.

\_\_\_\_\_  
Notary Public

My commission expires: \_\_\_\_\_

# Exhibit 4



**Responses to Drs. Barber, Brunell, Hood, Lewis, Johnson, and Owen**

Christopher A. Cooper

June 7, 2019

## Introduction

This report responds to the expert witness reports of Drs. Barber, Brunell, Hood, Lewis, Johnson, and Owen. I will respond to each of the above-named reports in turn, but I offer these initial observations relating to all of the expert reports at the outset:

- Six of the seven experts offered by Legislative Defendants and Intervenors do not discuss, much less challenge, my individual county cluster analysis—an analysis which occupied 78 pages (over  $\frac{3}{4}$ ) of my original report. The only expert who does discuss individual clusters, Dr. Johnson, limits his analysis to just 16 House districts and 2 Senate districts in Mecklenburg, Wake, and New Hanover counties. None of the Defendants' or Intervenors' experts challenged the data I presented on packing and cracking using electoral outcomes, or the predictive data from Civitas and the North Carolina Free Enterprise Foundation about district-level competitiveness. None of the experts offered any rebuttal related to how and why the current maps split municipalities and certain communities of interest, like college campuses.
- None of the experts commissioned by Legislative Defendants and Intervenors challenge my assertion that since 2011, the composition of the North Carolina General Assembly has been consistently more Republican than other political offices where district lines are fixed or non-existent.
- Several of the Defendants' and Intervenors' experts reference the history of regional voting patterns in North Carolina. While such patterns are no doubt evident, the district lines that are the basis of Plaintiffs' challenge are drawn *within a single region*, so regional voting patterns are less than helpful for discerning the presence or absence of gerrymandering.
- Several of Legislative Defendants' and Intervenors' experts stated that mapmakers in North Carolina are constrained from drawing boundaries to maximize partisan advantage. But evidence from Dr. Thomas Hofeller's hard drive indicates not only that the mapmaker did have options but that he actively considered partisanship when drawing district lines in the North Carolina General Assembly.

### Hood, Johnson, and Brunell on Partisan Intent

Drs. Hood, Johnson, and Brunell characterize the process of mapmaking in North Carolina as a straightforward one with little room for judgment or manipulation. All three also question whether “partisan intent” can be inferred from the current maps. For example, Dr. Hood describes drawing state legislative districts in North Carolina as a “formulaic exercise,” citing the state’s whole county provision along with other criteria that the General Assembly purportedly applied in 2017.<sup>1</sup> According to Dr. Hood, there is insufficient evidence that “the General Assembly was engaged in an effort to engage in extreme partisan gerrymander.”<sup>2</sup> He goes on to explain that the process of “legislative redistricting in North Carolina...is quite constrained, which greatly limits the ability of map drawers to create districts where partisan motives predominate.”<sup>3</sup> Like Dr. Hood, Dr. Johnson claims that “the ‘county groupings’ requirement significantly limits the legislature’s ability to draw lines based exclusively on partisanship.”<sup>4</sup> And Dr. Brunell similarly asserts that “[d]ivining the intent of the map-maker is extraordinarily difficult because the process of redistricting is complex.”<sup>5</sup>

As set forth in my original report, the partisan effects of the General Assembly in drawing the relevant state House and state Senate districts—within individual counties or county groupings—is clear from analyzing the district lines and historical election data. Indeed, despite claiming that partisan intent is difficult to discern or that there is insufficient evidence of such intent here, Drs. Hood, Johnson, and Brunell do not dispute any of my cluster-by-cluster analyses or my conclusion that the contours of the relevant districts have partisan effects.

There is even more evidence regarding partisan intent with respect to North Carolina’s General Assembly districts. I understand that Plaintiffs’ counsel obtained via subpoena the files of Dr. Thomas Hofeller, who drew the 2011 and 2017 plans. Those files reveal that partisanship was the overwhelming, if not the sole, motivation in drawing the state House and state Senate districts at issue. Below I present my analysis based on a number of Dr. Hofeller’s files that I and geographic information systems specialist Blake Esselstyn (who assisted me in processing and preparing the screenshots for the maps below) received directly from Plaintiffs’ forensic vendor. The maps presented below are taken directly from Dr. Hofeller’s Maptitude files (Maptitude for Redistricting™ is the software that Dr. Hofeller used to draw redistricting plans). These images reflect the exact

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<sup>1</sup> April 30, 2019 report of Dr. M.V. Hood III (hereinafter, “Hood Report I”), p. 2.

<sup>2</sup> Hood Report I, p. 9.

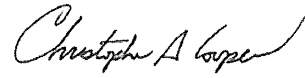
<sup>3</sup> Hood Report I, pp. 9-10.

<sup>4</sup> April 30, 2019 report of Dr. Douglas Johnston (hereinafter, “Johnston Report I”), p. 13.

<sup>5</sup> Report of Thomas Brunell (hereinafter, “Brunell Report”), p. 7.

\*\*\*\*\*

Submitted June 7, 2019.



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Christopher A. Cooper