

VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

RIMA FORD VESILIND, *et al.*,

Plaintiffs,

v.

VIRGINIA STATE BOARD OF ELECTIONS, *et al.*,

Defendants.

Case No. CL15003886-00

**PLAINTIFFS' BRIEF IN OPPOSITION TO DEFENDANTS'
MOTION *IN LIMINE* AND DEFENDANT-INTERVENOR'S BRIEF IN SUPPORT**

Plaintiffs, by and through the undersigned counsel, submit this Brief in Opposition to the Motion *in Limine* filed by the Defendants and to the Brief in Support filed by the Defendant-Intervenors and respectfully state as follows:

INTRODUCTION

The arguments presented by the Defendants and Defendant-Intervenors (hereinafter collectively "Defendants") go to the weight and not to the admissibility of Dr. McDonald's testimony. His opinions are based on undisputed facts. All parties agree on the compactness scores for the Challenged Districts. Moreover, in his Alternative Plans, Dr. McDonald maintained the majority-minority districts drawn to comply with the Voting Rights Act (VRA) *in the exact configuration as the current maps*; he abided by the contiguity requirement; and he met the equal population standards set by the respective House and Senate Committee Resolutions. Plaintiffs concede there are different ways to draw an ideally compact map and if that presents an issue for Defendants they can address it on cross-examination or through their own experts. If they are able to produce an ideally compact map that undermines Dr. McDonald's degradation numbers for the Challenged Districts, kudos to them. So far, they have not done so.

Moreover, as Dr. McDonald testified in his deposition, if a map can be drawn that improves on the compactness scores in Alternative Plans 1 -- meaning even more "ideal" -- the degradation of compactness would be even greater than Dr. McDonald's model. The proposed test requires the legislature to make a good faith effort to prepare a map complying with all the constitutional requirements (Required Criteria) as close as reasonably possible--the "ideal" map--which then serves as the guide as they exercise their discretion to mold the districts using Discretionary Criteria (such as "communities of interest", etc.). As Discretionary Criteria are employed all Required Criteria must retain their priority and not be degraded beyond constitutional boundaries established by the courts. Heretofore, three of the four Required Criteria had boundaries; the fourth, compactness, did not. Dr. McDonald is proposing a way to determine if Discretionary Criteria predominated over compactness. If it does, Plaintiffs, by counsel, argue that the legislature violated the Constitution. Dr. McDonald's test provides the Court with a constitutional boundary for compactness to assure it the elevated status the law requires that it have and that each of the other three constitutional criteria have.

Furthermore, Defendants take offense to the title "predominance test" but they can call it whatever they want - degradation test, 50% test, etc. The title does not matter - what matters is that the legislature gave more weight to non-constitutional criteria than to compactness. Additionally, while the bright line developed by Dr. McDonald is new, the calculations and measures are not. Dr. McDonald utilized the same mapping software used by the General Assembly and the same measures used by the General Assembly. That they take issue with his averaging or the way he calculates degradation or the way the Alternative Plans were created again goes to the weight of his testimony - but not its admissibility. Finally, Defendants often regurgitate arguments from the Defendant-Intervenors' Motion for Summary Judgment. To that

end, Plaintiffs incorporate their Memorandum in Opposition to the Motion for Summary Judgment as if set forth herein.

Summary of Argument

Defendants' arguments have no merit as grounds upon which to exclude Dr. McDonald's testimony. Contrary to the assertion that his work lacks foundation in social sciences or legal precedent, he relies on nothing beyond what has been used for decades in the compactness literature and case law. True he employs it differently to some extent but the required foundation is there in abundance. To contend his test is legally flawed because he utilizes a guiding map constructed with only constitutionally required considerations, misses the entire premise of Dr. McDonald's effort. He recognizes that any map ultimately adopted by the legislature will consider all the Required and Discretionary Criteria. To create a hypothetical map to assist in the effort is perfectly permissible. Defendants' contention that any map drawn for any purpose must "consider all redistricting variables" is nonsense.

Defendants also complain that Dr. McDonald's decision to average scores is fatal to the admissibility of his testimony but Dr. McDonald eloquently defends this in his reports and testimony. Thus, after hearing all the experts, the Court can then decide whether to accept this method. Also, as Plaintiffs will show at trial, even if averaging is not used the compactness scores still show that Discretionary Criteria predominated. Defendants further argue that the Alternative Plans are somehow impaired because they were primarily prepared by an attorney formerly with Plaintiffs' law firm. On the facts of this case, as will be shown below, the maps were prepared under Dr. McDonald's supervision and approved by him. As such, the person who actually employed the widely used software to prepare the maps matters not in the slightest.

Finally, Defendants argue that Dr. McDonald's testimony should be rejected because the test he proposes might not be capable of use in all the legislative districts. The Virginia Constitution requires "every" district to be compact. This suit alleges that eleven of them are not compact because Dr. McDonald shows that Discretionary Criteria predominated over the Required Criterion of compactness. Nothing more is required and the fact that in some other district the test will not work because it is compromised by the superiority of other Required Criteria, such as the Voting Rights Act, is completely irrelevant.

STANDARD AND ARGUMENT

I. General Standard

"Determining whether an adequate foundation has been laid for the admission of an expert opinion is an exercise of the trial court's discretion, to be *made in light of all the testimony produced.*" *Smith v. Commonwealth*, 265 Va. 250, 254, 576 S.E.2d 465, 468 (2003) (citation omitted) (emphasis added). Furthermore:

If admissibility were conditioned upon universal acceptance of forensic evidence, no new scientific methods could ever be brought to court. Indeed, if scientific unanimity of opinion were necessary, very little scientific evidence, old or new, could be used. Wide discretion must be vested in the trial court to determine, when unfamiliar scientific evidence is offered, whether the evidence is so inherently unreliable that a lay jury must be shielded from it, or whether it is of such character that the jury may safely be left to determine credibility for itself.

Spencer v. Commonwealth, 240 Va. 78, 97-98, 393 S.E.2d 609, 621 (1990). Here, the only thing "unfamiliar" is the bright line Dr. McDonald draws to help this Court assess the legislature's compliance or non-compliance with the Virginia Constitution's compactness requirement. The methods by which he obtains that bright line are not new nor are they unreliable. The mere fact that the Defendants do not consent to a degradation calculation or that they quarrel with how well-established measures and reliable data are utilized is not a reason to exclude the results.

The “admission of expert testimony is in the sound discretion of the trial court.” *Payne v. Commonwealth*, 277 Va. 531, 542, 674 S.E.2d 835, 841 (2009) (citation omitted). Virginia Code § 8.01-401.3(A) and Rule 2:702(a)(i) state:

In a civil proceeding, 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.

There is no credible argument that Dr. McDonald lacks the “knowledge, skill, experience, training, or education” to qualify as an expert in the field in redistricting. *Id.* His curriculum vitae is part of Exhibit 3 to Defendants’ Motion *in Limine* and establishes his vast experience over the past thirty years in the redistricting arena. Dr. McDonald is qualified to offer his specialized knowledge about evaluating compactness and thereby help the Court determine a fact at issue - namely, did Discretionary Criteria predominate over the Required Criterion of compactness raising the legal issue as to whether the Challenged Districts are constitutionally compact. Rule 2:702(b) states:

Expert testimony may include opinions of the witness established with a reasonable degree of probability, or it may address empirical data from which such probability may be established in the mind of the finder of fact. Testimony that is speculative, or which opines on the credibility of another witness, is not admissible.

Here, Dr. McDonald expresses opinions “established with a reasonable degree of probability” and addresses “empirical data from which such probability may be established in the mind of the finder of fact.” *Id.* Dr. McDonald relies on extensive empirical data to establish to a reasonable degree of probability a degradation standard to assess constitutional compactness.

II. The Assistance of Counsel is a Red Herring

Rule 2:703(a) states:

In a civil action an expert witness may give testimony and render an opinion or draw inferences from facts, circumstances, or data made known to or perceived by such witness at or before the hearing or trial during which the witness is called upon to testify. The facts, circumstances, or data relied upon by such witness in forming an opinion or drawing inferences, if of a type normally relied upon by others in the particular field of expertise in forming opinions and drawing inferences, need not be admissible in evidence.

While Defendants advance a red herring from counsel's assistance in using Maptitude, there is nothing magical about that program and the data it produces is "of a type normally relied upon by others in the particular field of expertise in forming opinions and drawing inferences." *Id.* Defendants' experts and the legislature used the same data and the same program (Maptitude) to draw the maps. Indeed, Mr. Marston - one of the primary drawer of the House Plan - testified as follows:

Q Prior to 2011 what experience, if any, did you have in redistricting?

A I had taken a course in law school on election law that included some coverage of redistricting. And that was it.

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Q Describe for me in general terms how you went about getting whatever it is you thought you needed in order to prepare the map or to work with the person or persons who was going to prepare the maps.

A I reviewed case law. I went and received training on the software that we used called Maptitude. I both independently and with the assistance of consultants prepared what we called practice maps before the census data was released, using census estimates. And I gathered -- or I worked with the consultants to gather a data set that when the census results were released could be combined into one data set that we could load into the software to help us analyze districts.

See Exhibit A (p. 12, 23-24). If someone with literally no experience can be put in charge of drawing a map to be enacted as legislation for the next ten (10) years, the use of that same

software program to assist Dr. McDonald cannot be problematic. One of the Defendants' own experts, Dr. Bensen, states that the "Maptitude software offers several standard reports which can easily be generated for any districting plan once the plan geography has been loaded into the software." Exhibit B, Declaration of Clark H. Bensen (p. 2).

For this point Defendants rely heavily on one case involving a medical test used to show traumatic brain injury, *John v. Im*, 263 Va. 315, 559 S.E.2d 694 (2002). The primary holding in *John* is that only a medical doctor is qualified to give an expert opinion regarding the cause of a plaintiff's physical injury. *Id.* at 321, 559 S.E.2d at 697. In that case, the trial court excluded an expert witness who relied **on a test** but did not know who had even performed the test much less the conditions under which the test was performed. *Id.* Not exactly the same conditions here. In fact, far from it. Dr. McDonald performed the test. Counsel merely assisted with the underlying data using a software program "of a type normally relied upon by others in the particular field of expertise." Rule 2:703(a). The record in *John* showed that the expert could not "identify the person who actually performed the QEEG test on John. Without this information, the testing conditions and procedures could not be ascertained." *Id.*¹ Other deficiencies included the expert's "inability to account for the testing variables involving John's use of certain medications" and the "conflicting responses when asked about the testing variable of drowsiness." *Id.*

There is no corollary to the facts in this case. Unlike the medications or drowsiness in *John* - which could have had a profound effect on the results of the test - it does not matter who draws the Alternative Plans and particularly Alternative Plans 1. No significant effect on the

¹ Both Dr. McDonald and Mr. Mueller testified in their depositions that they had worked together with Governor McDonald's Independent Bipartisan Redistricting Commission and the student competition to draw maps in 2011 using a software program called DistrictBuilder. So, Mr. Mueller was no stranger to Dr. McDonald. See Exhibit 2 to Defendants' Motion *in Limine* (McDonald Deposition Transcript) and Exhibit C to this Brief.

results would have occurred if Dr. McDonald had drawn the maps himself or if Scooby Doo had drawn the maps as the intent was the same: to achieve one version of an ideally compact map and Dr. McDonald had final review of the finished product. Defendants identify no way in which Mr. Mueller drawing the plan had a significant impact on the outcome. Dr. McDonald acknowledged that different maps could be drawn that epitomize an ideally compact map but he opined that the change from one ideal to another would be marginal and you would still have a 50% degradation for the Challenged Districts. *See* Exhibit 2 to Defendants' Motion *in Limine*, McDonald Deposition Transcript at pp.102-104 ("if you make a good faith effort to create the most compact plan, it's unlikely you're going to be able to appreciably increase the compactness much more."). *See also* Exhibit C, Deposition of Nick Mueller at p. 54 ("Q. With alternative plan 1, how did you know you had achieved the best possible compactness? A. I continued to work -- to work at improving it until I did not see any places where I could make further improvements.").

If Defendants wanted to submit such a map that proves Dr. McDonald wrong, they should have done so. Otherwise, his testimony stands unrebutted. Alternative Plans 2 were provided as an example where the most compact districts in Alternative Plans 1 are rendered somewhat less compact by reducing the number of jurisdictional divisions, voting precinct divisions and avoiding pairing of incumbents - in other words, by applying some of the legislature's Discretionary Criteria. Alternative Plans 2 merely demonstrate how certain redistricting considerations can be achieved without predominating over compactness. Most noteworthy is that no defense expert has raised an objection that Alternative Plans 1 or Alternative Plans 2 are not legal maps in the sense that they were accurately created from Maptitude - nor could they raise such an objection.

In *Online Resources Corp. v. Lawlor*, 285 Va. 40, 60, 736 S.E.2d 886, 897 (2013), the expert “did not take general knowledge and apply it to specific unknowns in this case. Instead, [the expert] took reliable stock valuations that he did not calculate and used those valuations to create the specific calculation that he was well-qualified to compute. Accordingly, the trial court did not abuse its discretion when it admitted [the expert's] expert opinion testimony.” Similarly here, Dr. McDonald “did not take general knowledge and apply it to specific unknowns in this case.” *Id.* Instead, he took reliable maps generated on a commonly used software program that he directed but did not generate himself and used those maps “to create the specific calculation that he was well-qualified to compute.” *Id.* As such, Dr. McDonald’s use of Alternative Plans 1 and 2 go “to the weight of [his] testimony, not to his qualification as an expert witness.” *Id.* See also *Lockheed Info. Mgmt. Sys. Co. v. Maximus, Inc.*, 259 Va. 92, 111, 524 S.E.2d 420, 430 (2000) (affirming a trial court's determination that the use of calculations by others “went to the weight of [the expert]'s testimony, not to his qualification as an expert witness.”).

Thus, Mr. Mueller did not need to be designated as an expert nor does he need to qualify as one any more than any of us need to be a software expert to use Word, Adobe or Excel. He followed a set of instructions when he: used the same software as the legislature; maintained the majority-minority districts drawn to comply with the VRA in the exact configuration as the current maps; abided by the contiguity requirement; met the equal population standards set by the respective Committee Resolutions; and then created an ideally compact map for Dr. McDonald to use in the performance of his analysis. It bears repeating that if a more ideally compact map can be drawn that improves the compactness scores of the Challenged Districts that only further supports Plaintiffs and will only increase the amount by which the constitutional mandate for compact districts is subordinated to Discretionary Criteria.

III. The Use of Averaging, the Method by Which Degradation is Calculated and the Name All Go to the Weight of Dr. McDonald's Testimony - Not the Admissibility

Defendants take issue with Dr. McDonald's averaging of compactness scores, the method by which he calculates degradation and even the name of the test, but these are matters that the Court can take into consideration when weighing Dr. McDonald's testimony. None are a proper basis to exclude it. Here Defendants' contentions go to "factual issues involving the weight of the evidence rather than its admissibility" and as such are for the Court to resolve. *O'Dell v. Commonwealth*, 234 Va. 672, 696-97, 364 S.E.2d 491, 505 (1988). In *O'Dell* the Supreme Court affirmed the admission of expert testimony because challenges to the "experience and competence of the examiner . . . and the manner in which [the examiner] did the tests" went to the weight the testimony should be afforded, not its admissibility. *Id.* See also *Dowdy v. Commonwealth*, 278 Va. 577; 686 S.E.2d 710 (2009). Likewise, challenges to Dr. McDonald's averaging and degradation method - "the manner in which [the examiner] did the tests" - go to the weight of his testimony, "not its admissibility." *Id.*

A. Averaging

In support of their argument that a basic mathematical concept taught at the third grade level - averaging - lacks a foundation "as a reliable scientific method", Defendants cite a non-peer reviewed article which actually averages compactness scores. The potential problem that Defendants note with averaging - that it could mask "when a district is unusual on one measure but not another" (Defendants' Motion *in Limine*, p. 11, fn8) is easily ascertained using Maptitude and is something the Court may consider when weighing Dr. McDonald's testimony. It is not a concern in this case, however, as Dr. McDonald explained in his deposition:

Where I think an interocular test could come into play, **although it doesn't in this situation for these particular districts that are being challenged by the Plaintiffs**, but hypothetically if two

measures were providing different signals, perhaps as the discussion we had minutes ago about the -- whether one district is more compact or another, and was it the area of the district or if it was the length of the perimeter that was causing the differences, we would want to -- I think that at that point it would be important for the court to apply an interocular test and understand what it is -- what visual factors, geographic factors, are leading to the conflicting signals that you may be getting for the predominance test measure.

Q. So your opinion as the designated expert in this case is that the court should look at the numbers and then use a visual inspection to help understand the numbers as needed?

MR. DURRETTE: Objection to form.

THE WITNESS: Correct, as needed. And **in this case there's no real disagreement on the direction that the measures are providing, so -- individually or as a composite score**, so the court would not need to take that next step in this particular situation.

I would recommend to the court that if the measures are in disagreement, **which is not the situation for these challenged districts**, but if the measures are in disagreement, one would want to take a look at the factors that are leading to the disagreement, which would be a visual inspection of the district, to understand, for example, is it merely just that the district's following a river boundary, and those tend to elongate the perimeters of districts.

And so the court may at that point make a determination that that's not -- that's an acceptable thing to do, and that a perimeter base measure is providing a false signal of how compact or non-compact the district is. So that would be where I think a visual inspection would be helpful for the court. But if the district is also not failing the predominance test on other -- like an area-based measure as well, then we've got two indicators pointing in the same direction that there is potentially a constitutional violation. And I wouldn't -- in that case, I don't -- the court would not need to look at -- do an inspection, because we've got two different types of measures that are providing a similar signal that might indicate that there's a constitutional violation.

See Exhibit 2 to Defendants' Motion in Limine, McDonald Deposition Transcript at pp.149-153
(emphasis added).

Furthermore, at least one other court has used average compactness scores of three different compactness measurements as a basis to evaluate relative compactness. In *Johnson v. Mortham*, the court observed that when “three measures of compactness” (perimeter score, dispersion score and population score) “are averaged together” the district at issue was found to be “the least compact, of any congressional district in the country.” *Johnson v. Mortham*, 926 F. Supp. 1460, 1472-1473 (N.D. Fla. 1996).

B. Degradation Calculation

Defendants also take issue with the way in which Dr. McDonald calculates degradation. The same consideration applies to the Defendant-Intervenors contention that subtraction should be used to determine the “difference” between the composite scores. But the difference between the numbers is not what is sought or the constitutional question to be asked. Rather, the question is by what percentage was the “ideal” compactness degraded, compromised or subordinated in creating the compactness of the Challenged District. This is necessary in order to determine whether Discretionary Criteria predominate over a Required Criterion and creates a constitutional issue. Merely subtracting does not get you there.

In support of this argument, Defendant-Intervenors cite the following footnote from *Frank v. Walker*, 768 F.3d 744, 752 fn3 (7th Cir. 2014):

We have given the percentages of persons who have these documents. Plaintiffs express the figures differently, giving the percentages of persons who lack the documents (2.4% of whites, 4.5% of blacks, and 5.9% of Latinos), then dividing one percentage by another to yield an expression such as “registered Black voters in Wisconsin were 70% more likely than white voters to lack a driver's license or state ID” (LULAC Br. 2). That is a misuse of data. Dividing one percentage by another produces a number of little relevance to the problem. If 99.9% of whites had photo IDs, and 99.7% of blacks did, the same approach would yield the statement “blacks are three times as likely as whites to lack qualifying ID” ($0.3 / 0.1 = 3$), but such a statement would mask the fact that the populations were effectively identical. That's why we do not divide percentages

While this is irrelevant since the issue goes to the weight and not the admissibility, it is important to note that the 7th Circuit is wrong that the calculation is meaningless because the populations are close. It depends on the size of the population. If you took a state senate district of approximately 200,000 people, the difference using the 7th Circuit numbers would be 4,000 and in a competitive district that is more than a margin of victory. So if you were to say that whites are three times more likely than blacks to have a photo identification, the significance of that depends on the size of the population you are measuring and if you expand to a congressional district, it really matters. And because you would always know the size of the population you can decide whether it is a material difference. But standing alone the three times more likely does not mask anything and you can decide on the basis of the population whether or not the percentage difference holds material consequences or even potential ones that give it relevance.

Therefore, it is a completely accurate use of data. The calculation is proper and the result is accurate. The argument in this footnote goes to the usefulness of the conclusions you can draw from the data using their hypothetical. The question is what does it tell us and the claim is that because the overall populations are close, it is not helpful. Again, that is debatable depending on the size of the relevant population.

But suppose you change the figures and use 94% and 99% and whites would then be 6 times more likely. In a population of 200,000 it would mean a 10,000 person difference. There were several Senate races in 2015 decided by margins where those votes could make the difference if blacks made up enough of the population. As such, the 7th Circuit's assertion that the populations were "effectively identical" is a value judgment that may be reasonable in some contexts but not in others. These kinds of situations are precisely where expert testimony can be valuable to inform the finder of fact. So, where we know the numbers and know the margin is

large what is wrong with dividing percentages? Nothing. Comparing to the data in this case, the numbers are not remotely close so the results of the formula do not deceive, but rather illuminate the difference. Secondly, this case does not compare the relative plight of two different groups of people subject to the same problem. Instead, Plaintiffs compare the compactness score of a district to an ideal.

C. Name

As noted previously, Defendants take issue with Dr. McDonald calling it a “predominance” test and they quarrel with Dr. McDonald’s use of a definition in his Rebuttal Report to explain what “predominance” means after a defense expert raised the question. Defendants can call the test whatever they want. Calling it a “predominance” test seems self-explanatory to Plaintiffs. In *United States v. Dicristina*, 886 F. Supp. 2d 164 (S.D.N.Y. August 21, 2012) *rev'd on other grounds*, 726 F.3d 92 (2d Cir. 2013), Judge Weinstein (one of the most highly regarded federal district judges in the country) authored an opinion defining “Texas Hold’em” poker as a game predominantly of “skill,” not “chance.” Judge Weinstein set aside the verdict under a predominance analysis. Ultimately, Judge Weinstein had the following to say about predominance:

That chance plays some role in the outcome of the game does not imply that poker is predominately a game of chance rather than predominately a game of skill. Chess, a game in which all moves are known in advance, can be characterized as a pure game of skill. . . . the same can be said of bridge, but. . . no one would dispute that bridge [is a game] of skill.

The fundamental question is not whether some chance or skill is involved in poker, but what element predominates. **To predominate, skill must account for a greater percentage of the outcome than chance—i.e., more than fifty percent.**

Dicristina, 886 F.Supp.2d at 231 (emphasis added). Here, to “predominate, [Discretionary Criteria] must account for a greater percentage of the outcome than [compactness]-i.e., more than

fifty percent.” *Id.* Dr. McDonald opines that, in the Challenged Districts, Discretionary Criteria predominated over the Required Criterion of compactness because the percentage by which compactness has been degraded from the approximation of the ideal in order to meet the legislature’s desired application of Discretionary Criteria is “more than fifty percent.” *Id.*

While the criteria and framework are different, the Supreme Court of Colorado stated succinctly the inverse for compactness when it was required to be subordinated in that state:

The remaining criteria, compactness and preservation of communities of interest, **are subordinate to compliance with section 47(2)**. Other nonconstitutional considerations, such as the competitiveness of a district, are not per se illegal or improper; however, such factors may be considered **only after all constitutional criteria have been met**.

In re Reapportionment of the Colorado General Assembly, 332 P.3d 108, 111 (Colo. 2011) (emphasis added). If Defendants seriously contend that 50% is not a meaningful line that can be employed to determine what redistricting criteria predominate, they can make that argument but it has absolutely nothing to do with the admissibility of Dr. McDonald’s testimony.

IV. While the Bright Line is New, the Foundation is Entrenched in the Social Sciences

Defendants contend that because Dr. McDonald’s bright line² is new, the test cannot be based on a reliable scientific foundation. This argument is unavailing because the methods used for obtaining the bright line have been used in the social sciences for decades. The use of the compactness measures and the use of alternative maps is commonplace in redistricting litigation. *See, e.g., Whitford v. Gill*, 2016 U.S. Dist. Lexis 160811 (W.D. Wis. November 21, 2016). In this case, the foundation of Dr. McDonald’s testimony is sound: commonly accepted compactness

² There is also the suggestion that because the test might not apply to all districts in a plan that is a reason to reject its use for every district. As repeatedly noted, “every” district must be compact so the fact that when applied to certain districts such as VRA districts or districts with geographic constraints, if any, it cannot be determined if Discretionary Criteria predominated is irrelevant. All this shows is that compactness was degraded in part by other Required Criteria or factors not Discretionary because of geography, none of which applies to the 11 districts challenged here.

scores from the Reock, Polsby-Popper, and Schwartzberg measures. Defendants acknowledge that these scores are commonly accepted measures of compactness and do not dispute that they are the factual basis of Dr. McDonald's analysis. Defendants' Motion *in Limine* at p.3. Instead, Defendants simply take issue with Dr. McDonald's methodology in interpreting the compactness scores. The admissibility of Dr. McDonald's testimony should be determined in light of all of the testimony produced and not simply on one select excerpt regarding averaging of compactness scores in situations not applicable here, as Dr. McDonald explained in his deposition.

Moreover, the Supreme Court has "declined to adopt the 'Frye test' in Virginia" which would require a trial court to be convinced not only of the reliability of the test, but also of its general acceptance by the scientific community in the particular field in which the test belongs. *Spencer v. Commonwealth*, 240 Va. 78, 97, 393 S.E.2d 609, 621 (1990). In *O'Dell v. Commonwealth*, 234 Va. 672, 695-696, 364 S.E.2d 491, 504 (1988), the plaintiff claimed that "the Commonwealth failed to show the use of the electrophoretic technique on dried blood stains was generally accepted by the scientific community or sufficiently reliable for the results to be admissible in evidence." The plaintiff urged the Supreme Court to adopt the "Frye test." *Id.* at 696, 364 S.E.2d at 504. The Supreme Court refused to do so and held that all of the challenges raised by the plaintiff "were factual issues involving the weight of the evidence rather than its admissibility, and were properly resolved by the jury. *Id.* at 696-697, 364 S.E.2d at 505.

The same is true here. As further elucidated in *Spencer*:

When scientific evidence is offered, the court must make a threshold finding of fact with respect to the reliability of the scientific method offered, unless it is of a kind so familiar and accepted as to require no foundation to establish the fundamental reliability of the system, such as fingerprint analysis, *Avent v. Commonwealth*, 209 Va. 474, 478, 164 S.E.2d 655, 658 (1968); or unless it is so unreliable that the considerations requiring its exclusion have ripened into rules of law, such as "lie-detector" tests, *Robinson v. Commonwealth*, 231 Va. 142, 156, 341 S.E.2d

159, 167 (1986); or unless its admission is regulated by statute, such as blood-alcohol test results, Code §§ 18.2-268(O), -268(Y).

In making the threshold finding of fact, **the court must usually rely on expert testimony.** If there is a conflict, and the trial court's finding is supported by credible evidence, it will not be disturbed on appeal. **Even where the issue of scientific reliability is disputed, if the court determines that there is a sufficient foundation to warrant admission of the evidence, the court may, in its discretion, admit the evidence with appropriate instructions to the jury to consider the disputed reliability of the evidence in determining its credibility and weight.** See *O'Dell*, 234 Va. at 696-97, 364 S.E.2d at 505.

Spencer, 240 Va. 78, 97-98, 393 S.E.2d 609, 621 (1990). Thus, “[e]ven where the issue of scientific reliability is disputed, if the court determines that there is a sufficient foundation to warrant admission of the evidence”, the court may admit it and give proper consideration to its credibility and weight. *Id.* Here, there is a “sufficient foundation to warrant the admission” of Dr. McDonald’s testimony and this case is being tried to the Court and not a jury, thereby decreasing the likelihood of any improper application. *Id.*

In *Whitford v. Gill*, 2016 U.S. Dist. Lexis 160811 (W.D. Wis. November 21, 2016), the Western District of Wisconsin was asked “to adopt a new measure for assessing the discriminatory effect of political gerrymanders - the efficiency gap (or ‘EG’)” which “is the difference between the parties’ respective wasted votes in an election, divided by the total number of votes cast.” *Id.* at *31 (citation omitted). Despite challenges at both the motion to dismiss and the motion for summary judgment stage, the federal district court³ allowed the trial to go forward holding that there were “factual disputes regarding the validity of plaintiffs’ proposed measurement.” *Id.* at *38 (citation omitted).

³ As with all United States Constitutional challenges to redistricting, a three judge panel with two district judges and one circuit judge is convened. Here the decision was 2-1 with the circuit judge writing the opinion.

Utilizing the “new measure” proposed by the plaintiffs, the court in *Whitford* considered the plaintiffs’ expert’s “Demonstration Plan” which it concluded provided “additional evidence that the legislative imbalance resulting from Act 43 is not attributable to political geography.” *Id.* at *230. The expert had

attempted to draw an alternative districting plan to Act 43 “that had an efficiency gap as low to zero as I could get it” while also complying with traditional districting criteria as well as Act 43. He first created a regression model that estimated partisanship for each geographic area, so that he could compare his plan to Act 43. To ensure the model was accurate, Professor Mayer compared the predictions made by his regression model to the actual results in 2012. He concluded that the results aligned almost perfectly.

Once he was confident in his model, Professor Mayer “used a GIS redistricting program called Maptitude for redistricting to go ahead and complete the task of actually drawing the Assembly district map.” Proceeding along this course, Professor Mayer was able to draw a districting map that would have yielded a pro-Republican EG of only 2.2% for 2012, and “is comparable to Act 43” with respect to “all constitutional requirements.” Specifically his plan has a population deviation of .86% whereas Act 43 has a population deviation of .76%. He also noted that his plan keeps the same number of majority-minority districts. The plan is also slightly more compact, based on the “Reock score,” than Act 43. Finally, it had three fewer county splits but two more municipal splits than Act 43.

Id. at 230-232. Similarly to the Defendants here, the defendants in *Whitford* challenged the Demonstration Plan claiming that:

the Demonstration Plan “achieved its EG through 20/20 hindsight” and that the low EG will “hold only for those specific election conditions” that occurred in 2012. Specifically, the defendants contend that if the Republicans had a good electoral outcome like the one they saw in 2014, they would have received 63 seats under the Demonstration Plan and ended up with the same EG as Act 43. Consequently, from the standpoint of partisan effects, the Demonstration Plan is just as problematic as Act 43.

Id. at 232-233. The Court addressed these concerns as follows:

Although this evidence shows the need to test how the Demonstration Plan fares under likely electoral scenarios, it does not render the Demonstration Plan useless for our purposes. Under Professor Mayer's Demonstration Plan, the EG would be significantly pro-Republican had the Republicans received a high vote share in the first election year of the plan. However, had the opposite happened, and Democrats received a higher vote share in the first election year, the EG would have skewed towards the Democrats. This is because the Demonstration Plan was designed to have competitive districts, and the EG will be reactive to such districts. By contrast, as Professor Gaddie's and Professor Jackman's sensitivity analyses show, Act 43 will remain pro-Republican regardless of the electoral outcome. Consequently, the Demonstration Plan and Act 43 do not suffer from the same infirmities.

Among other issues, the defendants also similarly argued that “the Demonstration Plan fails to protect incumbents to the same degree as Act 43” and “that the number of paired incumbents in the Demonstration Plan was so great that such a plan would not have passed in the legislature.” *Id.* at *237. The Court addressed this concern as follows:

There is no question that, unlike Act 43, the Demonstration Plan does not take into account incumbency concerns. This infirmity does not negate entirely the value of the Demonstration Plan. Notably, the defendants have not argued that the location of incumbents hampered them in their efforts to draw a non-partisan plan or otherwise accounts for the electoral imbalance resulting from Act 43. Nevertheless, Professor Mayer's lack of attentiveness to this concern well might diminish the Demonstration Plan's worth as a viable, legislative alternative. The Demonstration Plan still shows, however, that it is very possible to draw a map with much less of a partisan bent than Act 43 and, therefore, that Act 43's large partisan effect is not due to Wisconsin's natural political geography.

Id. at 237-238. In the case at bar, Dr. McDonald uses Alternative Plans 2 as an example (and not to be “passed in the legislature” or even considered a “viable, legislative alternative”), and he took into account incumbency and other concerns deemed important to Defendant-Intervenors. Further and perhaps more importantly, his Alternative Plans 2 established that the legislature would have additional discretion to make further changes they deemed necessary - up to the 50% degradation mark. So if the same incumbents were not paired or some other discretionary criteria

were not considered, that might “diminish” the weight to give to Alternative Plans 2 but they “still show[], however, that it is very possible to draw a map with” much more compact districts while still allowing the legislature discretion to apply those criteria not mandated by law. *Id.*

The opinion in *Whitford* analyzed in depth the ruling from *Vieth v. Jubelirer*, 541 U.S. 267 (2004), which Defendants rely on. The Court in *Whitford* pinpointed the issue:

In resolving the plaintiffs' claim, we face a significant analytical problem. Although the Supreme Court's political gerrymandering cases establish that “an excessive injection of politics is unlawful,” *Vieth*, 541 U.S. at 293 (plurality opinion) (emphasis removed), **the Court has not come to rest on a single, judicially manageable or discernible test for determining when the line between “acceptable” and “excessive” has been crossed.** Indeed, a signature feature of these cases is that no single opinion has garnered a majority of the Court. **But the absence of a well-trodden path does not relieve us of the obligation to render a decision.**

Id. at *57-58 (emphasis added). Without question, no court has “come to rest on a single, judicially manageable or discernible test for determining when the line between ‘[compact]’ and ‘[non-compact]’ has been crossed.” *Id.* As in *Whitford*, Plaintiffs are asking this Court to adopt a new measure to help make that determination. And as in *Whitford*, “the absence of a well-trodden path” should not relieve the Court of its “obligation to render a decision.” *Id.*

The Court in *Whitford* went on to state:

On the facts presented in past cases, some members of the Supreme Court have expressed the view that judicial enforcement of the principle that each voter has a right to have his vote treated equally must be limited to situations where the dilution is based on classifications such as race and population. These reservations have been grounded in the concern that distinguishing between legitimate and illegitimate political motivations is not a task to be undertaken by judges. In their view, moreover, there are insurmountable problems in formulating manageable standards. See *Bandemer*, 478 U.S. at 147 (O'Connor, J., concurring in the judgment); *Vieth*, 541 U.S. at 288 (plurality opinion). Other Justices have not accepted such a limitation. See, e.g., *Vieth*, 541 U.S. at 306-17 (Kennedy, J., concurring in the judgment). As we shall discuss at greater length later, however, this case does not present these conundrums. **We are not presented with the problem of distinguishing between permissible and**

impermissible political motivations. We have a far more straight-forward situation. The plaintiffs have established, on this record, that the defendants intended and accomplished an entrenchment of the Republican Party likely to endure for the entire decennial period. They did so when the legitimate redistricting considerations neither required nor warranted the implementation of such a plan.

Id. at 110-111 (emphasis added). The same is true here. Dr. McDonald's test creates "a far more straight-forward situation" where it is not necessary to inquire into the motive of the legislature or to distinguish "between permissible and impermissible political motivations." *Id.*

Justice Scalia in the *Vieth* opinion emphasized this point:

Determining whether the shape of a particular district is so substantially affected by the presence of a rare and constitutionally suspect motive as to invalidate it is quite different from determining whether it is so substantially affected by the excess of an ordinary and lawful motive as to invalidate it. Moreover, the fact that partisan districting is a lawful and common practice means that there is almost always room for an election-impeding lawsuit contending that partisan advantage was the predominant motivation; not so for claims of racial gerrymandering. Finally, courts might be justified in accepting a modest degree of unmanageability to enforce a constitutional command which (like the Fourteenth Amendment obligation to refrain from racial discrimination) is clear; whereas they are not justified in inferring a judicially enforceable constitutional obligation (the obligation not to apply too much partisanship in districting) which is both dubious and severely unmanageable. For these reasons, to the extent that our racial gerrymandering cases represent a model of discernible and manageable standards, they provide no comfort here.

Vieth, 541 U.S. at 286. This is applicable here - "the fact that partisan districting is a lawful and common practice means that there is almost always room for an election-impeding lawsuit contending that partisan advantage was the predominant motivation; not so for claims of **[compactness]**. Finally, courts might be justified in accepting a modest degree of unmanageability to enforce a constitutional command which (like the Fourteenth Amendment obligation to refrain from racial discrimination **[or the Virginia's constitutional mandate for compact districts]**) is clear...." *Id.* (emphasis/language added). This is enormously more

important when the constitutional provision in question is in the constitution to “preclude at least the more obvious forms of gerrymandering,” some of which are now before the court. 1 A.E. Dick Howard, Commentaries on the Constitution, 415 (1974). Given the definiteness of Dr. McDonald’s test, *Vieth* does not support Defendants. Perhaps trying to judge predominate intent for partisan advantage can be unmanageable. But that is not the case here. This is another difference with Dr. McDonald’s test - it does not judge intent but only results.

CONCLUSION

Rule 2:704(a) states:

In civil cases, no expert or lay witness shall be prohibited from expressing an otherwise admissible opinion or conclusion as to any matter of fact solely because that fact is the ultimate issue or critical to the resolution of the case. But in no event shall such witness be permitted to express any opinion which constitutes a conclusion of law. Any other exceptions to the “ultimate fact in issue” rule recognized in the Commonwealth remain in full force.

Here, while Dr. McDonald is expressing an opinion as to a matter of fact that “is the ultimate issue or critical to the resolution of the case” he is not expressing a “conclusion of law.” *Id.* Dr. McDonald opines only that in these Challenged Districts Discretionary Criteria have predominated over the Required Criterion of compactness. It is the Plaintiffs, by counsel, who then argue that when this occurs the districts violate the constitutional mandate that they be compact. Defendants’ criticisms are of the type directly addressed by the Supreme Court in several cases: such matters are the basis for cross examination or argument, not exclusion. Dr. McDonald’s testimony is proper and should be considered at the trial of this matter.

Plaintiffs respectfully request that this Court deny Defendants’ Motion *in Limine* and to award such further relief this Court finds just and proper.

Dated February 27, 2017

Respectfully submitted,

RIMA FORD VESILIND, et al,
By Counsel



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Counsel for Plaintiffs

CERTIFICATE OF SERVICE

I hereby certify that on this 27th day of February, 2017, a copy of the foregoing was filed and served on the following counsel of record by mail with a courtesy copy sent by email:

<p>Mark Herring Cynthia E. Hudson John W. Daniel II Heather H. Lockerman (VSB # 65535) Joshua D. Heslinga (VSB # 73036) Anna T. Birkenheier (VSB # 86035) Office of the Attorney General 202 North 9th Street Richmond, Virginia 23219 hlockerman@oag.state.va.us jheslinga@oag.state.va.us abirkenheier@oag.state.va.us <i>Counsel for Defendants</i></p>	<p>Katherine L. McKnight (VSB # 81482) E. Mark Braden BAKER & HOSTETLER LLP 1050 Connecticut Avenue, N.W., Suite 1100 Washington, D.C. 20036 mbraden@bakerlaw.com kmcknight@bakerlaw.com <i>Counsel for Defendant-Intervenors</i></p>
--	---



Christine A. Williams, Esquire

EXHIBIT A

In The Matter Of:
Rima Ford Vesilind, et al v.
Virginia State Board of Elections, et al

Christopher Michael Marston
November 14, 2016

ZAHN
COURT REPORTING

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1 VIRGINIA:

2 IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

3 - - - - - x

4 RIMA FORD VESILIND, et al., :

5 Plaintiffs, :

6 v. : Case No. CL15003886-00

7 VIRGINIA STATE BOARD :

8 OF ELECTIONS, et al., :

9 Defendants. :

10 - - - - - X

11

12 Deposition of CHRISTOPHER MICHAEL MARSTON

13 Washington, DC

14 Monday, November 14, 2016

15 11:17 a.m.

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19

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21

22

23

24

25 Reported by: Debra A. Whitehead

1 doing campaign finance compliance reporting, which I
2 have been engaged in ever since.

3 Q I take it you have never practiced law as
4 a practitioner where on a full-time daily basis you
5 have clients for whom you render legal services?

6 A That's correct.

7 Q How would you describe the use of your law
8 degree? Well, first of all, let me strike that and
9 back up.

10 Are you licensed to practice law in any
11 jurisdiction?

12 A I am; in Virginia and DC.

13 Q Okay. In your work history, how would you
14 characterize your use of your law license, if there
15 is a way to characterize it?

16 A So while I've never -- this isn't how the
17 bar characterizes it -- been a lawyer for hire, you
18 know, in a daily practice where clients hired me. I
19 have provided legal counsel both in my capacity with
20 the House Republican Caucus and with clients in my
21 campaign finance business.

22 Q How did you get involved in the 2011
23 redistricting in Virginia?

24 A I worked on the 2009 election for the
25 caucus. And someone needed to be in charge, and I

1 got the job, I guess. So someone -- someone had to
2 be involved, and I was the staffer that got picked.

3 Q Who hired you?

4 A Speaker Howell.

5 Q Did you have a written engagement?

6 A I did not.

7 Q From what source were you paid?

8 A To the best of my recollection, I received
9 compensation from the House Republican Campaign
10 Committee and an LLC that was established. The
11 name, Metropolitan Consulting, to the best of my
12 recollection.

13 Q Do you know who the members were of the
14 LLC?

15 A I do. Speaker Howell, Majority Leader
16 Kirk Cox, Chris Jones, and Rob Bell, all members of
17 the House of Delegates.

18 Q Okay. Do you know the sources of funding
19 for the LLC?

20 A I do. They were derived from campaign
21 funds from those four individuals.

22 Q From those members?

23 A Yes.

24 Q Any other sources of funding for the LLC
25 that you were aware of?

1 A Not that I'm aware of.

2 Q Prior to 2011 what experience, if any, did
3 you have in redistricting?

4 A I had taken a course in law school on
5 election law that included some coverage of
6 redistricting. And that was it.

7 Q When did you begin working for -- I'm
8 going to use the term for the caucus, even though
9 you were paid by two different sources.

10 When did you start working for the caucus
11 in connection with the 2011 redistricting?

12 A It was certainly after the 2009 election.
13 I don't recall if it -- if it started in 2009 or
14 2010, but it certainly would have been by early
15 2010.

16 Q Okay. Who did you report to? And if --
17 beginning with your start time in 2010 through the
18 passage of the redistricting legislation in 2011.
19 And if it changed, you can tell me when it -- tell
20 me about that.

21 A I guess I reported to the Speaker most
22 directly. He was the one who could have fired me,
23 so in that sense I reported to him. For
24 administrative matters I often worked with his chief
25 of staff, Paul Nardo. For substantive matters I

1 traditional redistricting criteria or other
2 considerations?

3 A I do not.

4 Q Did you have any discussions with either
5 of them about that?

6 A With regard to the priority of
7 particular --

8 Q Yes.

9 A No.

10 Q Okay. Let's talk a little bit about what
11 you did just in general terms to prepare for the
12 ultimate process of drawing the map.

13 A Okay.

14 Q Describe for me in general terms how you
15 went about getting whatever it is you thought you
16 needed in order to prepare the map or to work with
17 the person or persons who was going to prepare the
18 maps.

19 A I reviewed case law. I went and received
20 training on the software that we used called
21 Maptitude. I both independently and with the
22 assistance of consultants prepared what we called
23 practice maps before the census data was released,
24 using census estimates. And I gathered -- or I
25 worked with the consultants to gather a data set

1 that when the census results were released could be
2 combined into one data set that we could load into
3 the software to help us analyze districts.

4 Q And by "consultants" do you mean the
5 names, the individuals that you've identified for me
6 this morning?

7 A Yes.

8 Q Who was the most adept at using Maptitude,
9 if there was one person who was better at it than
10 anyone else?

11 A John Morgan. I like to think that I was a
12 pro, but he was certainly better.

13 Q I'm sorry?

14 A I said I like to think that I was a pro,
15 but he was certainly better.

16 Q Do you consider yourself proficient in the
17 use of Maptitude?

18 A I did at the time. I would no longer
19 consider myself proficient, as I haven't used it
20 since then.

21 Q Okay. So you ultimately received the
22 census data. Correct?

23 A Yes.

24 Q Describe for me what is in the census
25 data. As best your recollection serves you.

1 CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

2 I, Debra Ann Whitehead, the officer before whom
3 the foregoing proceedings were taken, do hereby
4 certify that the foregoing transcript is a true and
5 correct record of the proceedings; that said
6 proceedings were taken by me stenographically and
7 thereafter reduced to typewriting under my
8 supervision; and that I am neither counsel for,
9 related to, nor employed by any of the parties to this
10 case and have no interest, financial or otherwise, in
11 its outcome.

12 IN WITNESS WHEREOF, I have hereunto set my hand and
13 affixed my notarial seal this 23rd day of November,
14 2016.

15
16 My commission expires:

17 September 14, 2018



18
19
20
21 *Debra Ann Whitehead*

22 NOTARY PUBLIC IN AND FOR THE
23 DISTRICT OF COLUMBIA
24
25

ACKNOWLEDGMENT OF DEPONENT

I, CHRISTOPHER MICHAEL MARSTON, do hereby acknowledge that I have read and examined the foregoing testimony, and the same is a true, correct and complete transcription of the testimony given by me and any corrections appear on the attached Errata sheet signed by me.

12/16/2016

(DATE)

Ch. Marston

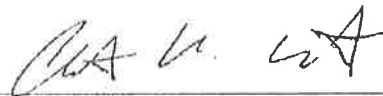
(SIGNATURE)

ERRATA SHEET

Rima Ford Vesilind v. Virginia State Board of Elections

WITNESS: Christopher Michael Marston

Page	Line	Change	Reason
13	11	Change "conducted" to "contacted"	Transcription Error.
17	20-22	Change "constitutions" to "Constitution's".	Transcription Error.
74	25	Change "Rush" to "Rust"	Transcription Error.
86	17-19	Change "Spotsy" to "Spotsylvania".	Transcription Error.



Christopher Michael Marston

EXHIBIT B

VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

RIMA FORD VESILIND, <i>et al.</i>)	
Plaintiffs)	
)	
v.)	Case No. CL15003886
)	
VIRGINIA STATE BOARD OF ELECTIONS, <i>et al.</i>)	
Defendants.)	

DEFENDANTS' DESIGNATION OF EXPERTS

Pursuant to Rule 4:1(b)(4)(A)(i) and the Amended Pretrial Scheduling Order in this case, Defendants the Virginia State Board of Elections and each of its members (James B. Alcorn, Clara Belle Wheeler, and Singleton B. McAllister, in their official capacities as Chairman, Vice-Chairman, and Secretary, respectively) (collectively, the Board), the Department of Elections (the Department), and Edgardo Cortés in his official capacity as Commissioner of Elections, hereby provide the following identification of expert witnesses who may testify at the trial of this matter:

1. **Clark H. Bensen**, Polidata LLC, 1303 Hayward Rd, P.O. Box 530, Corinth, VT, 05039.

a. Subject matters on which the expert is expected to testify: Mr. Bensen's testimony is expected to be unnecessary unless there is a dispute concerning, or a challenge to, the data used in Dr. Hood's analysis regarding the Senate or Dr. Hofeller's analysis regarding the House. Mr. Bensen is an expert in redistricting, including the redistricting process, analysis of data used in the redistricting process, and the use of Maptitude for Redistricting software. If required, Mr. Bensen is expected to testify concerning the applicable demographic and/or

political data, redistricting plan shape and block assignment files, Maptitude for Redistricting software, and reports and maps generated through Maptitude.

b. Substance of the facts and opinions to which the expert is expected to testify: If required, Mr. Bensen's testimony is expected to concern the facts and opinions set forth in the Declaration of Clark H. Bensen included with this designation.

c. Summary of the grounds for each opinion: Mr. Bensen's Declaration discusses data (including map files and other underlying data) that he used and his work with that data, including reports generated. In addition to materials referenced in his Declaration, Mr. Bensen will rely on his training, education, experience, expertise, and knowledge of the issues in the applicable professional literature and other sources. A copy of Mr. Bensen's CV is included with his Declaration. Mr. Bensen may also rely upon public records of the redistricting process (including but not limited to committee criteria and minutes, floor debates, and materials submitted to the U.S. Department of Justice in 2011 to obtain preclearance), records of past Virginia reapportionments, and upon other materials and information shared in this case to date and going forward.

2. **Dr. M.V. (Trey) Hood III**, Professor, Department of Political Science, University of Georgia, 104 Baldwin Hall, Athens, GA 30602.

a. Subject matters on which the expert is expected to testify: Dr. Hood's testimony is expected to address the subject matters in his report, a copy of which is included with this designation. Dr. Hood is an expert in American politics, including redistricting. He is expected to testify regarding the enacted 2011 Senate redistricting plan and his analysis of that plan, including: compactness; other redistricting criteria; the challenged districts; other districts in the enacted 2011 Senate redistricting plan; measurement and analysis of compactness; the

balancing of criteria in redistricting; and the proper comparisons and assessment of the 2011 Senate redistricting. Dr. Hood is also expected to testify concerning, and in response to, Plaintiffs' designated expert, Michael P. McDonald, and the analysis and testimony of Dr. McDonald.

b. Substance of the facts and opinions to which the expert is expected to testify: Dr. Hood's testimony is expected to concern the facts and opinions set forth in his report included with this designation and the facts and opinions set forth in Plaintiffs' designation of Dr. McDonald. To the extent further material facts or opinions emerge from Dr. McDonald in discovery, depositions, and at trial, Dr. Hood is expected to address such further facts and opinions.

c. Summary of the grounds for each opinion: Dr. Hood's report discusses data that he used and his analysis of that data. In addition to materials referenced in his report, Dr. Hood will rely on his training, education, experience, expertise, and knowledge of the issues in the applicable professional literature and other sources. A copy of Dr. Hood's CV is included with his report. Dr. Hood may also rely upon Virginia case law, public records of the redistricting process (including but not limited to committee criteria and minutes, floor debates, and materials submitted to the U.S. Department of Justice in 2011 to obtain preclearance), records of past Virginia reapportionments, and upon other materials and information shared in this case to date and going forward.

3. With respect to the House of Delegates, Defendants adopt and incorporate (as if fully set forth herein) the Defendant-Intervenors' designation of **Dr. Thomas B. Hofeller**.

In addition to materials produced in discovery, Defendants may offer maps, charts, or demonstrative exhibits to illustrate the testimony of designated experts.

Defendants will supplement this designation as necessary and appropriate, in accordance with supplementation duties under the Rules of the Supreme Court of Virginia.

STATE BOARD OF ELECTIONS
JAMES B. ALCORN
CLARA BELLE WHEELER
SINGLETON B. MCALLISTER
DEPARTMENT OF ELECTIONS
EDGARDO CORTÉS

By: _____


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CERTIFICATE OF SERVICE

I certify that, on January 12, 2017, I am serving a copy of the foregoing on the following
by mail, with a courtesy copy sent by email:

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Delegates Speaker William J. Howell*



A handwritten signature in black ink, appearing to read 'E. Mark Braden', is written over a horizontal line.

00752447

VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

RIMA FORD VESILIND, <i>et al.</i>)	
Plaintiffs)	
)	
v.)	Case No. CL15003886
)	
VIRGINIA STATE BOARD OF ELECTIONS,)	
<i>et al.</i>)	
Defendants.)	

DECLARATION OF CLARK H. BENSEN

1. I am over the age of eighteen (18) years and suffer under no legal disabilities. I give this Declaration of my own free will and based upon my personal knowledge.
2. Attached hereto as Exhibit A is an up-to-date curriculum vitae that summarizes my qualifications and experience, publications, and cases for the past few decades.
3. I am a consulting data analyst. My company's name is POLIDATA, LLC, operating as POLIDATA ® Political Data Analysis. Since the reapportionment cycle of 1990, POLIDATA has had redistricting clients across the country, from small states such as Vermont to large states such as California. My general client list also includes national political and publishing entities. I have been involved with redistricting data and legal issues since at least the redistricting that took place following the 1980 Census. I have developed political and census databases for every state. I have spoken at national conferences on redistricting matters and my work is used by national and regional media organizations.
4. My clients include stakeholders in the redistricting process. My work for them relates to the development and analysis of the data related to the redistricting process. For the cycles following the 2000 and 2010 Censuses the specialized software package used for such work has been Maptitude for Redistricting produced by the Caliper Corporation of Newton, Massachusetts. By virtue of this work before, during, and after the actual redistricting process I have gained substantial knowledge and experience in this software.
5. For Virginia, in the litigation of *Vesilind v. Virginia State Board of Elections*, I was retained by both the Office of the Attorney General of Virginia and Baker Hostetler, Washington, D.C. to assist in the preparation of information pertinent to districting plans. Most of this declaration is appropriate for this work for each client though some specific notes may be included.
6. The Maptitude software offers several standard reports which can easily be generated for any districting plan once the plan geography has been loaded into the software

environment. Several of these standardized reports were generated by me for the use of plan review and analysis for this litigation for multiple plans.

7. The notation used by POLIDATA to designate a districting plan includes a four character alphanumeric code, e.g., S211, which is used as a shorthand for districting plans and for naming the report files generated. The prefixes are "C1" for congressional plans; "S2" for state senate plans; "H3" for state house plans; and "X4" for other statewide plans if applicable.
8. In similar fashion, an abbreviation has been adopted for most of the reports generated. Following each of the reports listed below will appear the abbreviation used for the file names (e.g., mtr_popsum). The file name will include either the POLIDATA ® Plan Code or an abbreviation of the way the state describes the plan when applicable.
9. The main standardized reports which were generated include: a) Population Summary; b) Incumbents Reports; c) Measures of Compactness; and d) Political Subdivision Splits.
10. The Population Summary Report (mtr_popsum) details for all districts the population, deviation from the ideal as an absolute number and a relative percentage. Also included are summary statistics for the overall plan which include metrics for the entire plan as well as highs and lows for some factors. For Virginia, the information in this report is substantially as included in Exhibit B of the Michael P. McDonald expert designation (hereinafter "McDonald Report").
11. The Incumbents Reports (mtr_incumbents) details the incumbent members whose residence is in the districts in the subject plan. The residence of each incumbent can be a bit of information that is difficult to obtain and may, in fact, change as an election calendar is engaged. This report also summarizes the count of members that are paired and a break by party as well. Party and residence are included in the Maptitude software based upon the so-called Political File that is entered specifically for the chamber and the plans involved. Because of the difficulty in obtaining this information, its mutability, and the importance of the timeframe at issue, some differences may be noted in the calculation of what constitutes a pair or an open seat. For Virginia, this information was obtained by the House Republican Caucus, the Republican National Committee, or the Office of the Attorney General of Virginia. The counts of pairings are included in Exhibit F of the McDonald Report in a table.
12. The Measures of Compactness (mtr_compact) report details the results from any of the 8 compactness measures that are available in the Maptitude software. These 8 include: a) Reock; Schwartzberg; Perimeter; Polsby-Popper; Length-Width; Population Polygon; Population Circle; and Ehrenburg. It is unclear as to why this is the order these tests are included in the software but a reclassification by the general type of measure: Dispersion; Perimeter; or Population would produce the following classification. Dispersion: Reock; Ehrenburg; and Length-Width. Perimeter: Polsby-Popper; Schwartzberg; and Perimeter. Population: Population Polygon; and Population Circle. For Virginia, 4 of these 8 were

calculated: Reock (Dispersion); Schwartzberg (Perimeter); Polsby-Popper (Perimeter); and Perimeter (Perimeter). The first three of these were included in Exhibit G of the McDonald Report. Note, however, that the Schwartzberg measure is open ended and a lower value indicates more compactness, contrary to the Reock and Polsby-Popper measures for which a higher value indicates more compactness. The values reported by Dr. McDonald are a modification which is an inverse value (calculated by dividing 1 by the original value from the Maptitude report) so that it at least comports in direction with the Reock and Polsby-Popper, i.e., a higher value for the inverse value indicates more compactness.

13. The Political Subdivisions Split Between Districts (mtr_split-cy or -vtd) reports count and list the instances in which a district boundary line runs through a political subdivision. A political subdivision may vary by state though counties are generally the first level for which such reports are run. In some states the next level of interest would be the town/city or the Voting District (VTD) precinct which is an approximation of the election precincts a few years before the census. There are generally two separate runs of this report made: one for counties and a separate one for VTDs, even though the VTD report includes the same information as the county report. The county one is shorter and more likely to be of use in printed form. A caution on these reports: there are three summary counts for the number of subdivisions: a) those not split; b) those split; and c) those split but which affect no population. In reality c) is a subset of b) so the total of a) and b) should equal the number of total subdivisions reviewed. For Virginia, the term county includes independent cities: as of the 2010 Census there were a total of 134 counties and independent cities and 2,373 VTDs. This information is in exhibit E of the McDonald Report.
14. In addition to the standardized Maptitude reports discussed above, block-level files were generated to assist the experts in assessing the calculation of the core retention measurements. These files were simply the result of a merger of the incumbency information with the plan assignments for any comparison of two plans. Each census block record included the district assignment and incumbent member(s) or status for these two plans. From these files the measures could look with forward or backward as respect to the two plans.
15. Additional material prepared or compiled for the experts included information on the DLS Legislative Services site pages: generally <http://redistricting.dls.virginia.gov/2010/> or for specific plans: <http://redistricting.dls.virginia.gov/2010/RedistrictingPlans.aspx>. In a few instances the same material, e.g., racial breaks or political election information was not included on the DLS site and thus I provided similar information from my own redistricting database. There might be some differences in the racial information based upon the actual variables used as some are recalculations of the official data from the so-called PL94-171 files. There might also be some small differences in the political information as this was not provided by DLS and my database was independently developed.
16. I supplied this information to Dr. Trey Hood and Dr. Thomas B. Hofeller. Each expert was provided substantially the same type of information though the plans of interest to each of

them differed. Specific maps of districts, regions, or plans, were also prepared and some of these were delivered to the experts depending upon their area of inquiry.

17. The POLIDATA ® Plan Code and plan abbreviation for all plans through 2011 available on the DLS site or as provided with the McDonald Report are as follows for the Senate:

- S200 Current 2010 benchmark plan with 2010 blocks [same as S212]
- S211 1_ENACTED-HB5005
- S212 2_CURRENT-2010 [appears sometimes as S200]
- S213 3a_PROP-SB#a-Howell
- S214 3b_PROP-SB#b-Howell-3-30-11
- S215 3c_PROP-SB5001-Howell-4-3-11
- S216 4_PROP-SB5001-Miller-W&M
- S217 5a_PROP-HB5001-SenSub
- S218 5b_PRPO-HB5001-PassedSen [sic, typo followed through reports]
- S219 5c_PROP-HB5001-Conference
- S220 6_PROP-SB#x-Watkins
- S221 7_PROP-ComSub-Watkins-4-7-11
- S222 8_PROP-Commission-Opt1
- S223 9_PROP-HB5005-SenSub
- S231 ALT-1S_Vesilind-McDonald-1_Dec13
- S232 ALT-2S_Vesilind-McDonald-2_Dec13.

18. The POLIDATA ® Plan Code and plan abbreviation for all plans through 2011 available on the DLS site or as provided with the McDonald Report are as follows for the House:

- H300 Current 2010 benchmark plan with 2010 blocks [same as H312]
- H311 1_ENACTED-HB5005
- H312 2_CURRENT-2010 [appears sometimes as H300]
- H313 3a_PROP-HB5001-Jones
- H314 3b_PROP-HB5001-HseSub
- H315 3c_PROP-HB5001-SenSub
- H316 3d_PROP-HB5001-PassedSenate
- H317 3e_PROP-HB5001-Conference
- H318 4_PROP-HB5002-Brink-UofR
- H319 5_PROP-HB5003-Morrissey
- H320 6a_PROP-HB5005-Jones
- H321 6b_PROP-HB5005-SenSub
- H331 ALT-1H_Vesilind-McDonald-1_Dec13
- H332 ALT-2H_Vesilind-McDonald-2_Dec13.

Pursuant to Va. Code § 8.01-4.3, I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 16th day of January 2017.

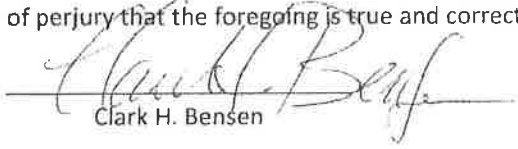

Clark H. Bensen

EXHIBIT A

Curriculum Vitae

CLARK HAMILTON BENSEN, B.A., J.D.

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PRESENT POSITION:

POLIDATA ® POLITICAL DATA ANALYSIS: Consulting data analyst and attorney specializing in politically-related matters. POLIDATA ® DEMOGRAPHIC AND POLITICAL GUIDES AND ATLASES: publisher of reference tools for demographic and political research.

EDUCATION:

Graduate: VERMONT LAW SCHOOL, South Royalton, Vermont 05068 (September 1975-January 1978). Transferred as incoming second year student with full credits. Elective concentration: Environmental, Land Use, Administrative and Governmental Law, Antitrust and Civil Procedure. Legislative intern. A full leave of absence for service in the Vermont General Assembly resulted in a graduation in June 1978. Degree: Juris Doctor, February 1978. WESTERN NEW ENGLAND COLLEGE, SCHOOL OF LAW, Springfield, Massachusetts 01119. Academic rank after first year: 17/205 (August 1974-May 1975)

Undergraduate: UNIVERSITY OF VERMONT, COLLEGE OF ARTS AND SCIENCES, Burlington, Vermont 05405 (September 1970-May 1974). Political science major, economics and computer applications minor. Legislative intern. Degree: Bachelor of Arts, May 1974.

LEGISLATIVE EXPERIENCE:

State Representative. VERMONT HOUSE OF REPRESENTATIVES, Sessions of 1977-1978, elected 1976 from district Chittenden 5-1. Member House Committee on Natural Resources.

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Legislative Intern. VERMONT HOUSE OF REPRESENTATIVES, Adjourned Session, 1976. Attached to Rep. Douglas I. Tudhope, House Committee on Appropriations.

Legislative Intern. VERMONT HOUSE OF REPRESENTATIVES, Adjourned Session, 1974. Attached to House Committee on Commerce, Paul R. Graves, Esq., Chairman.

LEGAL EXPERIENCE:

Adjunct Counsel: part of the litigation team for several cases relating to redistricting and census issues either following the 2000 or the 1990 redistricting cycles or in preparation for the cycle to follow the 2010 census. (See details *infra*.)

Adjunct Assistant Counsel, Office of the Chief Counsel, REPUBLICAN NATIONAL COMMITTEE, 1986 to 1989.

Staff Counsel, Committee on Contests/Committee on Credentials, REPUBLICAN NATIONAL CONVENTION, 1988, New Orleans, LA.

Admitted to the practice of law before the SUPREME COURT OF THE UNITED STATES, October 1985.

Admitted to the practice of law before the SUPREME COURT OF THE STATE OF VERMONT, October 1979. Inactive 1997-2005; active 2006-date.

Law Clerk, Cleveland, Unsworth, Bennett and Bailey, Ltd., Shelburne, Vermont 05482, 1978.

Law Clerk, State's Attorney, Addison County, Middlebury, Vermont 05753, 1976.

POLITICAL EXPERIENCE:

REPUBLICAN STATE COMMITTEE. At-large member of the Executive Committee of the State Committee, 1979-81. At-large member of the State Committee from Chittenden County, 1977-81. Member of the Legislative Campaign Committee, 1978 and 1980.

CHITTENDEN COUNTY REPUBLICAN COMMITTEE. Member from South Burlington City, 1975-81. Member of the Executive Committee, 1979-81.

SOUTH BURLINGTON REPUBLICAN CITY COMMITTEE. Chairman, 1979-81. Member, 1972-82.
CORINTH REPUBLICAN TOWN COMMITTEE. Chair, 2015-date.

GEORGE BUSH FOR PRESIDENT, Executive Director of the Vermont Campaign for the March 4, 1980 Presidential Preference Primary.

Active in various campaigns for statewide office in various capacities: SMITH FOR CONGRESS(1988), SMITH FOR GOVERNOR(1986), EASTON FOR GOVERNOR(1984), SMITH FOR LT.GOVERNOR(1982), SNELLING FOR GOVERNOR(1978,1980), EASTON FOR ATTORNEY GENERAL(1980), DOUGLAS FOR SECRETARY OF STATE(1980), PETER SMITH FOR LT. GOVERNOR(1978), TUDHOPE FOR LT. GOVERNOR(1976), HACKETT FOR GOVERNOR(1972), DAVIS FOR GOVERNOR(1968,1970). Most direct interaction with campaigns since 1988 has been as a consultant on smaller projects or as an unofficial advisor on an infrequent basis, including some in Vermont, DOUGLAS FOR SENATE (1992); JEFFORDS FOR SENATE (1994), SWEETSER FOR CONGRESS (1996).

Member, VERMONT HOUSE OF REPRESENTATIVES, Chittenden 5-1, 1977-78. Twice Republican Nominee for the VERMONT HOUSE OF REPRESENTATIVES, Chittenden District 5-1, 1976 and 1978.

PROFESSIONAL EXPERIENCE:

POLIDATA ® POLITICAL DATA ANALYSIS, Consulting Data Analyst and Attorney, since 1989, and POLIDATA ® DEMOGRAPHIC AND POLITICAL GUIDES AND ATLASES, since 1995. POLIDATA is one company with two divisions. I divide my time between the two operations on a varying basis.

POLIDATA: POLITICAL DATA ANALYSIS: (1989 to date).

- o Redistricting Support: A considerable effort was made on behalf of redistricting stakeholders in their preparation and participation in the redistricting cycle following the 2000 and 2010 Censuses. (See details *infra*.)

- o Redistricting Litigation Support, Precinct Development Project: A major client from October 1989 through 1991 was the Metromail Corporation, which had a contract to develop a nationwide precinct level election database. This project included all partisan general elections from 1984 to 1990 for the nearly 200,000 reporting units (e.g., precincts) in the 50 states and the District of Columbia. My assignment here was to design the structure of the databases and give final

approval of each dataset so that the final product is a good foundation from which any litigant in the 1990 redistricting process would be able to create an integrated database and be able to use it in litigation without much additional development work.

- o Census Adjustment Review: During the 1990 census process, several clients retained me to review the various political aspects of any adjustment to the 1990 federal census. These analyses have focused on the pragmatic political aspects of the process. The results of these analyses have been used by clients and other interested parties as material for testimony before Congress and state legislative bodies as well as for press distribution.

- o Election Data Analysis: Several projects have been undertaken over the years to compile the results of the Presidential Elections by Congressional Districts. Either at the RNC or independently, POLIDATA has taken the lead on this project since the 1984 elections, several times with CONGRESSIONAL QUARTERLY and/or NATIONAL JOURNAL. This project involves coordination with hundreds of local election officials and takes six months to complete due to the complex and multi-jurisdictional nature of many Congressional Districts. Clients, and/or publications using these, and related results include: POLITICS IN AMERICA and/or THE ALMANAC OF AMERICAN POLITICS, in CONGRESSIONAL DISTRICTS IN THE 1990s, and 2000s, the COOK POLITICAL REPORT, separate analytical volumes by POLIDATA and several national media organizations.

- o Redistricting Consulting: Several clients have retained Polidata for the provision of generalized consulting with respect to the legal, data, and technical aspects of the redistricting cycle, including census issues.

- o Campaign Finance Analysis: Several projects have revolved around campaign finance data, federal and state, including normal in-cycle review of spending patterns to comprehensive "data-mining" of the extensive campaign disclosure database maintained by the Federal Election Commission.

- o Campaign Finance Litigation: worked with the legal team to prepare data analysis in the *Landell v. Sorrell* (D. VT, 1999) case challenging certain aspects of the Vermont campaign finance law; testified as an expert witness on the results of this analysis. This case was appealed to the U.S. Supreme Court; argument was heard February 28, 2005. The opinion by Justice Breyer made specific mention of the expert report and testimony offered at the trial as being probative. (Decided as

Randall v. Sorrell, No. 04-1528, June 26, 2006.) Undertook an analysis of campaign finance data and delivered testimony in the Montana case of *Lair v. Bullock* (D. MT, 2012). Undertook an analysis of campaign finance data and delivered testimony in the Alaska case of *Thompson v. Dauphinais* (D. AK, 2016). Undertook an analysis of campaign finance data in the Kentucky case of *Schickel v. Dilger* (E.D. KY, 2016).

o Demographic and Political Research: Several projects involve the analysis of these data for a variety of purposes, including campaign targeting and overlay of information to voter lists for campaign use in direct mail or other voter contact.

POLIDATA: DEMOGRAPHIC AND POLITICAL GUIDES AND ATLASES: (1995 to date). This is a project to compile information relating to the art of politics and assemble it in a format that meets the needs of demographic and political researchers. The market is primarily the public, academic or research library or participants in state and national politics, both practitioners and media. Volumes are produced for both the state and national market in several standing series. (See details *infra*.)

COMPUTER SERVICES DIVISION, REPUBLICAN NATIONAL COMMITTEE: (1993 to 1995). I returned to the RNC for the 1994 election cycle. My position was as the Director of this Division, a senior staff position. My staff numbered between 15 and 20 persons. The responsibilities of the Division included: operation of a in-house computer network for approximately 250 workstations and an off-site network with all 50 states; development of software for the entire RNC staff; development and processing of voter lists for all 50 states; development of precinct-level election datasets for all 50 states; maintenance of all in-house lists aside from donors; substantial direct assistance to the Political/Campaign Operations Division; coordination of special projects for every Division of the RNC.

POLITICAL ANALYSIS, REPUBLICAN NATIONAL COMMITTEE: (1981 to 1989). As the first director of this department, started in 1983, the role here was to undertake the collection, compilation, systematization and analysis of politically related data. With a combination of technical, analytical and legal skills, this project resulted in a complex data system which allowed the organized study of political, demographic and economic data.

o Publications and analysis: The primary result of the data system was the biennial publications, *The Republican Almanac*, three editions of which were my responsibility, and the *Election Summary*. The *Almanac* profiles each state from a political/election perspective and the *Election Summary* reviews election results for all states from a national perspective. Other reports which were produced involve these political data and were produced for a clientele ranging from the Republican

state committees to a more limited group of political activists in the Washington area, notably White House sections, presidential campaigns and the major Republican national committees.

- o Legal activities: As the analysis of data plays a role in several legal activities of participants in national politics, litigation support analyses have been performed on the following: Congressional reapportionment and legislative redistricting (See details *infra.*), matters relating to the rules of the party and the convention, assistance to the Contests and Credentials Committee for the 1988 Convention, and several ad hoc special analyses relating to miscellaneous proposals before the national committee.

- o Public Speaking: Though not as often as with my earlier activities as a politician, opportunities were provided to speak before several groups. These talks included instruction in targeting and computer application in political environments, the role of the RNC and the parties in politics in America, and technical/legal discussions relating to reapportionment and redistricting. This also included being a surrogate for BUSH/QUAYLE '88 in a debate.

- o Management: Throughout these eight years at the Republican National Committee, project and personnel management were part of my positional responsibilities, ranging from the normal departmental staff of about ten to overseeing ad hoc projects involving several dozen personnel, to a role as Deputy Director for the Computer Services Division. These positions resulted in senior staff status starting in 1986.

REAPPORTIONMENT, REDISTRICTING AND RELATED PROJECTS: (1980 to date).

- o VERMONT, LEGISLATIVE APPORTIONMENT BOARD: Served as consultant to the Board during 1981. This assignment resulted in the preparation and analysis of numerous potential redistricting plans and proposals for both the Vermont Senate and the Vermont House of Representatives, preparing them for submission to each legislative body.

- o VERMONT, HOUSE OF REPRESENTATIVES: Due to the structure of the reapportionment/redistricting process in Vermont, I was able to also serve the Government Operations Committee as consultant to prepare and review several proposals for the House.

o National, Data Analysis: Since 1981, involvement in redistricting has revolved around the perspective of the REPUBLICAN NATIONAL COMMITTEE. This included frequent analysis of the 1990 reapportionment of the U.S. House through the use of population estimates and the monitoring and analysis of congressional proposals to adjust the 1990 Census after the fact.

o National, Litigation Support: Activities in this regard relate to litigation support for redistricting cases which were on appeal to the U.S. Supreme Court or federal appellate courts. The principal cases here were the landmark case of *DAVIS v. BANDEMER*, a 1986 Supreme Court case which decided that the question of political gerrymandering was justiciable, and *BADHAM v. EU*, a case which was on appeal to the Supreme Court, relating to Congressional gerrymandering in California. Involvement in this case resulted in the status of an assistant counsel on matters submitted to the U.S. Supreme Court.

o National, Legal Preparation: Activity in this area also includes assistance in the preparation of a redistricting legal manual.

o Redistricting Clients: during the 1990 redistricting cycle I worked with several entities involved in the process, mostly Republican or non-partisan groups, nationally and in the following states: Wyoming, Illinois, Ohio, New York, and Florida. Cases in which I participated included at least the following: Wyoming: *Gorin v. Karpan*, 788 F. Supp 1199 (D. Wyo. 1992); Illinois: *Legislative Redistricting Commission v. LaPaille*, 786 F. Supp. 704 (N.D. Ill. 1992), 792 F. Supp. 1110 (N.D. Ill. 1992), *aff'd* 506 U.S. 948 (1992); Ohio: *Quilter v. Voinovich*, this case had many different paths, including several trips to the Supreme Court, *see*. 503 U.S. 979 (1993), 507 U.S. 146 (1993) and 116 S.Ct. 2542 (1996); New York: *FAIR v. Weprin*, 796 F. Supp. 662 (N.D., NY 1992), *aff'd* 506 U.S. 1017 (1992); Florida: *Johnson v. DeGrandy*, 114 S.Ct. 2647 (1994). Project assignments included several different levels of production, from strict database development, preparation of material for expert witnesses, witness testimony as to database development, working with the litigation team, being a part of the litigation team. I co-authored a brief to the U.S. Supreme Court in the *FAIR v. Weprin* case.

o Census Litigation: in preparation for the current 2001-2002 redistricting cycle following the 2000 census, I have worked on several fronts, including work on the consolidated cases of *Glavin v. Clinton* and *Department of Commerce v. U.S. House of Representatives* (January 26, 1999), as well as work for the HOUSE SUBCOMMITTEE ON THE CENSUS and the CENSUS MONITORING BOARD, CONGRESSIONAL MEMBERS. Project

assignments included several different levels of production, from strict database development, preparation of material for expert witnesses, witness testimony as to database development, working with the litigation team, being a part of the litigation team; co-authored a brief to the U.S. Supreme Court in the *U.S. Department of Commerce v. U.S. House of Representatives* case.

o Redistricting Litigation, (2000 census cycle cases in which reports or testimony were prepared or offered for submission): VIRGINIA LEGISLATIVE, (*West v. Gilmore*, August 2001): prepared for testimony relating to the data aspect of the partisan gerrymandering claim; the claim was dropped during the trial and testimony was not offered. TEXAS CONGRESSIONAL, (*Balderas vs. Texas*, October 2001): testified as an expert witness as to partisan fairness in the federal court action. TEXAS LEGISLATIVE, (November 2001): a similar fairness report was submitted for the proposed legislative lines but was rejected for timeliness. NEW MEXICO CONGRESSIONAL, (*Jepsen vs. Vigil*, December 2001): testified as an expert witness as to a Least Changes plan in the state court action; this was the congressional plan adopted by the Court. MARYLAND LEGISLATIVE, (*In the Matter of Legislative Redistricting*, May 2002): testified on behalf of Michael Steele, Chairman of Maryland Republican Party at the Special Master hearing; a new plan was ordered by the state Court of Appeals. OKLAHOMA CONGRESSIONAL, (*Alexander v. Taylor*, May 2002): testified as an expert witness as to partisan fairness in the state court action; the fairness analysis was cited by the Court. OHIO LEGISLATIVE, (*In re Legislative Apportionment Board*, October 2002): testified as an expert witness as to the suitability of data for racial bloc voting analysis. GEORGIA LEGISLATIVE AND CONGRESSIONAL, (*Georgia v. Ashcroft*, 2002, and *Larios v. Cox*, 2004): testified as expert witness as to population deviation in *Larios*. [Case styles may be working titles only.]

o Election Contests: actively worked with several election contest teams since 1980, including the 1980 Vermont U.S. Senate Recount, 1981 New Jersey Gubernatorial Recount, the 1982 Illinois Gubernatorial Recount, and the 2004 Washington Gubernatorial Recount.

o Election-related litigation: Worked as a consultant to the litigation team in the Indiana voter identification litigation of *Indiana Democratic Party v. Rokita*, S.D., Ind., 2006. An expert report was submitted. Worked as an adjunct counsel to the Village's litigation team in the *Department of Justice v. The Village of Port Chester*, S.D., N.Y., 2007. Prepared an expert report during the remedy stage in 2008. The report was not admitted, largely due to a previous role as legal counsel.

- o Redistricting Consulting (2000 census cycle): Redistricting projects for this cycle include several types of entities in at least the following states: Vermont, New Hampshire, Connecticut, New York, Pennsylvania, Ohio, Illinois, Wisconsin, Maryland, Virginia, South Carolina, Georgia, Florida, Tennessee, Oklahoma, Texas, New Mexico, Colorado, Nevada and California.

- o Census Issues: Commented on several topics relating to the federal census and reapportionment and redistricting at numerous meetings over the past two decades, including panels at the National Conference of State Legislatures (NCSL) testimony before Congressional panels and comments as a speaker at other conferences. Worked as a consultant to the U.S. Census Monitoring Board, Congressional Members, periodically from 1995-2000.

- o Census Decennial Advisory Committee: Named to this federal panel by the Secretary of Commerce, August 2005 through 2011 when the charter expired. This panel of 20 organizations advises the Secretary and the Census Director on issues relating to the decennial census, including how the census affects the apportionment process and the districting phase thereof.

- o Election Assistance Commission: Part of a team that worked with the U.S. Election Assistance Commission to summarize the results of a nationwide survey of election-related information with respect to the 2006 General Elections. Status was as a subcontractor and the role was largely relating to the data conversion and/or preparation and formatting for reports. A follow-up contract was also involved for the preparation for the 2008 survey instrument and a third contract involved the data development and analysis of the information for the 2008 General Elections. Work here was as a subcontractor of the federal contractor.

- o Redistricting Consulting (2010 census cycle): Redistricting projects for this cycle include several types of entities in at least the following states: Connecticut, New Jersey, Pennsylvania, Ohio, Illinois, Minnesota, Virginia, North Carolina, South Carolina, Tennessee, New Mexico, and Nevada. In several instances this cycle before panels, special masters, and courts, reports were submitted, depositions were taken, or affidavits were provided, all dealing with the districting aspects of plans.

CONGRESSIONAL COMMITTEES PROJECT: (1977-1989). Served as Technical Consultant for the compilation of a database including pertinent information every assignment to Standing, Select and Special committees for every member, and for every Congress since 1789,. This

project continues under the direction of Professor Garrison Nelson, Ph.D., at the University of Vermont at Burlington. The end result is a multiple volume reference work published by Congressional Quarterly of Washington, DC. This project was the recipient of a grant from the National Science Foundation for the period of 1980 and 1981.

VERMONT POLIDATA: (1974 to 1989). This was an independent venture that had been a part-time activity for the past several years and is now a part of my full-time activity. This entails various projects which revolve around the political scene in Vermont and the political data relating thereto. For example: the study of legislative voting behavior results in annual summaries of voting record analyses for the participants, the aspirants, and the observers of the political scene. These studies range from the individual to the collective perspective, from a mere recitation of the member's record to a comparative analysis on a range of issues or a rating of the member's record from the viewpoint of the Chief Executive, or an interest group. The name was changed to Polidata during the 1990 redistricting cycle as more work was focused on states other than Vermont.

Other research studies include election analysis, historical trends in the state and the establishment of large data systems. For example, the establishment of a complete system for the efficient implementation of the election process for the office of the Secretary of State in Vermont (the Uniform System of Election Recording, or USER). Also, this type of work included the creation of a reapportionment analysis system for the Vermont General Assembly.

VERMONT ELECTIONS PROJECT: (1972-1989). This project also involved large data systems and revolved around the computerization of town-level election data for the state of Vermont for the period from 1828 to date. Contemporary data have been published in the form of *Primary and General Elections, Vermont, (for 1978, 1980 and 1982)*, published with the cooperation of the Secretary of State. Assignment here was Analyst and Editor.

PUBLICATIONS:

POLIDATA ® DEMOGRAPHIC AND POLITICAL GUIDES:

POLIDATA publishes volumes for both national and state markets. A few state series have covered volumes for every state, while a few have only seen volumes for a handful of states completed to date. Series and titles published include:

National Publications:

Election Reports:

PRESIDENTIAL RESULTS BY CONGRESSIONAL DISTRICT, 1992: 2 volumes; 1996: 1 volume; 2000: 1 volume; 2004: 1 volume

PRESIDENTIAL ELECTION, 1996: 3 volumes

PRESIDENTIAL ELECTION, 2000: 2 volumes

PRESIDENTIAL ELECTION, 2004: 2 volumes

CONGRESSIONAL VOTE, DISTRICTS BY COUNTY: 1992; 1996; 1 volume each

Demographic Reports:

DEMOGRAPHIC GUIDE TO THE U.S, STATES & COUNTIES, 2000 Census

DEMOGRAPHIC GUIDE TO THE U.S., DISTRICTS OF THE 108TH CONGRESS;
updated for the 109th and the 110th Congresses

POPULATION ESTIMATES, STATES AND COUNTIES: annually from 1995 to 2006

DEMOGRAPHIC BASE MAPS, COUNTY-BASED REGIONS

Political Reports:

APPORTIONMENT IN 2000, NATIONAL SUMMARY: annually from 1998 to 2000

APPORTIONMENT IN 2010, NATIONAL SUMMARY: annually from 2003

State Publications:

DEMOGRAPHIC ATLASES: 25 states for the 1990 census

DEMOGRAPHIC GUIDES: 25 states for the 1990 census; 50 for the 2000 census

DEMOGRAPHIC AND POLITICAL GUIDES: 3 states for the 1990 census

DEMOGRAPHIC ABSTRACTS: customized for a county for the 1990 census

POLITICAL GUIDES: 1 state

POLITICAL ATLASES: 1 state

ELECTION YEARBOOKS: 5 states through 1998

ELECTION HISTORIES: 48 states through 2003-2004; 20 updated to 2008/2009

POLITICAL HANDBOOKS: 50 states for the 2000 census

POLIDATA ® POLITICAL DATA ANALYSIS:

During the period from 1989 to date, most papers have been prepared directly for clients. However, some material has been published via Press Releases or as part of Remarks, Testimony. A few examples of material publicly available are listed below. Many are available at the website www.polidata.org. A few are annual releases, notably relating to apportionment projections; see the News page for more information: www.polidata.org/news.htm. Public comments at various meetings, including those at the National Conference of State Legislatures (NCSL) conferences are available as well.

April 4, 2013: *Presidential Results by Congressional Districts, 2012. Preliminary Summary.* Published by Polidata. These results also published in the *Cook Political Report*, a national political newsletter and the *Almanac of American Politics*, published by National Journal.

2007-2011: *National Conference of State Legislatures (NCSL)*. At several events papers were delivered relating to the aspects of districting from both the preparatory and operational perspectives.

March 31, 2009: *Presidential Results by Congressional Districts, 2008. Preliminary Summary.* Published by Polidata. These results also published in the *Cook Political Report*, a national political newsletter and the *Almanac of American Politics*, published by National Journal.

February 1, 2006: *Jackson v. Perry et al., Amicus Brief in consolidated cases 05-204, 05-254, 05-276 and 05-439.* Submitted by Alan Heslop, Ph.D., et al. Coauthored brief for the U.S. Supreme Court in this case.

December 6, 2005: *The Impact of Citizen Apportionment.* Written testimony to accompany appearance as a witness before the U.S. House Committee on Government Reform. This was an exploratory hearing reviewing potential impacts of such a measure.

March 25, 2005: *Presidential Results by Congressional Districts, 2004. Preliminary Summary.* Published by Polidata. These results also published in the *Cook Political Report*, a national political newsletter and the *Almanac of American Politics*, published by National Journal.

December 10, 2004: "*Substantial Political Consequences, A Practitioner's Perspective on Redistricting*". An article published in *Extensions*, by the Carl Albert Center at the University of Oklahoma.

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Frequent attendee of conferences held by the National Conference of State Legislatures (NCSL) since the 1980s.

EXHIBIT C



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VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

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RIMA FORD VESILIND, et al., :

Plaintiffs, :

v. : Case No.

VIRGINIA STATE BOARD OF ELECTIONS, : CL15003886

et al., :

Defendants. :

- - - - - x

Deposition of NICHOLAS MUELLER

Washington, D.C.

Thursday, February 16, 2017

6:12 p.m.

Job No. 135739

Pages 1 - 135

Reported by: Karen Young

1 redistricting?

2 A I don't believe so.

3 Q During the course of law school, you
4 became involved at some point in the redistricting
5 competition; is that correct?

6 A That's correct.

7 Q When was that, and how did you get
8 connected with the redistricting competition?

9 A The professor who taught the election --
10 taught the election law class -- the election law
11 survey class and who oversaw the election law
12 program reached out to students who might be
13 interested in it, after having heard that that
14 existed, and I believe we -- I believe we got
15 credit -- class credit for being part of -- being
16 part of the competition. I could be wrong about
17 that, but I think we did.

18 Q And was that Professor Rebecca Green?

19 A That's correct. She may have been
20 Rebecca Hulse at the time.

21 Q Fair enough. Other than the election law
22 class, did you have any other classes at law school

1 that dealt with redistricting?

2 A I don't believe so.

3 Q In the election law class, was there
4 discussion of redistricting?

5 A Absolutely.

6 Q Aside from the competition, there was --

7 A Yes.

8 Q -- discussion in class. What was the
9 general nature of the discussion or the study of
10 redistricting in the election law class?

11 A We did a survey through the -- the main
12 cases in redistricting law and the history
13 throughout, you know, from the, you know, early
14 population-based cases to the race-based cases and
15 the study of the Voting Rights Act particularly as
16 it related to redistricting.

17 Q Did you study cases having to do with
18 compactness?

19 A I believe compactness is referred to in
20 many of those cases or in some of those cases. I
21 do not believe we studied a case specifically on
22 compactness.

1 Q Both House and Senate?

2 A I believe so.

3 Q What was your involvement with the state
4 legislative maps?

5 A My involvement was simply as -- as I
6 said, when we got back together and had the whole
7 group give feedback to share thoughts on changes
8 that could be made, different approaches, feedback
9 to the primary drawers of those maps.

10 Q Do you recall who the primary drawers
11 were of the state legislative maps?

12 A I do not.

13 Q What software did the team use to draw
14 the maps?

15 A I don't recall the name of the software.
16 It was provided by the competition.

17 Q DistrictBuilder?

18 A That sounds familiar. That may be it.

19 Q Not Maptitude?

20 A It was not Maptitude, no.

21 Q Did you have any contact with Professor
22 Michael McDonald or Dr. Michael McDonald during the

1 course of the competition?

2 A I did. At the very least, I met him when
3 the, you know, awards were handed out and the plans
4 were presented at the Virginia library. I also --
5 sorry.

6 Q Go ahead.

7 A I also met him multiple times thereafter
8 working with the governor's bipartisan
9 redistricting commission.

10 Q Okay. Was that -- was the competition
11 the first time that you had ever met Dr. McDonald?

12 A I believe so.

13 Q And your -- your interactions with him
14 during the competition -- were they extensive,
15 casual? Were they related to the drawing of the
16 maps? What was the -- can you say anything more
17 about the nature of your contacts with him?

18 A I don't believe they were extensive. I'm
19 not sure I can -- that I have much more I can
20 specifically recall for you there.

21 Q Were they related to the drawing of the
22 team's maps?

1 A I mean, I imagine, yes, it may have been
2 small talk in, you know, formalities too, may have
3 discussed the team's maps or the project of the --
4 of the competition and its goals or --

5 Q Okay.

6 A Or he may have told the story of its
7 origin. I don't recall.

8 Q Okay. After the competition, did you
9 have other work aside from your competition, the
10 William & Mary Law School competition team, did you
11 have other work with the governor's bipartisan
12 redistricting commission?

13 A I did.

14 Q What was the nature of that work?

15 A Myself and one or two other students were
16 asked to come and help in the drawing of maps for
17 the governor's bipartisan commission. We met with
18 the commission in one or two -- one or two meetings
19 and then side meetings, and I did work drawing the
20 governor's commission's maps for the U.S.
21 Congressional districts.

22 Q Okay. No drawing of state legislative

1 maps that you did in your work with the commission?

2 A I don't believe so. I was present for
3 the conversations and may have had -- may have said
4 something, not -- I don't recall anything specific
5 about that. The map that I drew for the
6 competition won the competition, and so I was --
7 they were interested in that specific map for the
8 U.S. Congressional districts, and I was asked to
9 come in and help them with that and talk to them
10 about that.

11 Q Okay. Was the commission using the same
12 software that your team had used as part of the
13 competition?

14 A I'm not sure what all software they were
15 using. I continued to use that software when I was
16 drawing any additional maps and sending them
17 probably to Dr. McDonald, who was the contact point
18 with the commission at that point, but --

19 Q Okay. Did you have any contact in the
20 course of either the redistricting commission --
21 sorry, scratch that. In the course of either the
22 redistricting competition or your work with the

1 verbally as it is to --

2 Q Okay. In both alternative plan 1 and
3 alternative plan 2, understanding that they had
4 somewhat different criteria, were you trying to
5 achieve the best possible compactness, given the
6 criteria for each plan?

7 A As to alternative plan 1, yes, I was
8 trying to achieve the best possible compactness.
9 As to alternative plan 2, I was not trying to
10 achieve the best possible compactness because it
11 would have just been alternative plan 1 then or
12 something very similar. Obviously compactness gave
13 way in -- to those other discretionary goals that
14 we had elected to follow to a degree, but we
15 attempted to make the districts as compact as we
16 could while meeting those discretionary goals.

17 Q With alternative plan 1, how did you know
18 you had achieved the best possible compactness?

19 A I continued to work -- to work at
20 improving it until I did not see any places where I
21 could make further improvements.

22 Q And does -- I think this is another place

1 where you have to explain Maptitude to me. Does it
2 keep kind of a constant running tally of
3 compactness as you're adjusting alternative plan 1
4 that you can look at, or how does that --

5 A It does not have a running tally on the
6 screen as you draw maps, but you can run the
7 compactness report at any time that you want to for
8 any of the measures that it uses.

9 Q And was it by running the reports that
10 you would tell if you had improved or not the
11 compactness of alternative plan 1?

12 A Ultimately yes. When you've used your
13 districting software enough and you're familiar
14 with how the measures work, you have a pretty good
15 sense of eyeballing. You're not flipping something
16 back and forth, you know, A-B testing for every
17 single census block or every single precinct.
18 You're able to recognize oh, if I change this, that
19 will smooth out this border, or it will take away
20 an extension off the core of the district that's
21 unnecessary but confirmed by the compactness
22 scores.

CERTIFICATE OF SHORTHAND REPORTER - NOTARY PUBLIC

I, Karen Young, the officer before whom
the foregoing deposition was taken, do hereby
certify that the foregoing transcript is a true and
correct record of the testimony given; that said
testimony was taken by me stenographically and
thereafter reduced to typewriting under my
direction, and that I am neither counsel for or
related to, nor employed by any of the parties to
this case and have no interest, financial or
otherwise, in its outcome.

IN WITNESS WHEREOF, I have hereunto set
my hand and affixed my notarial seal this 20th day
of February, 2017.

Karen Young



NOTARY PUBLIC IN AND FOR

THE DISTRICT OF COLUMBIA

My commission expires:

July 31, 2019