

# **Exhibit 5**

# Expert Report of Michael Barber, PhD

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# 1 Introduction and Qualifications

I have been asked by counsel for the Legislative Defendants to analyze North Carolina's 2025 enacted redistricting plans for Congressional Districts 1 and 3. My qualifications and education are contained in my current cv, which is attached as an appendix to this report.

## 2 Summary of Conclusions

Based on the evidence and analysis presented below, I draw several conclusions regarding the 2025 Enacted Congressional Map in response to reports submitted by Dr. Rodden and Dr. Lichtman for the Plaintiffs:

- The 2025 map makes changes to Districts 1 and 3 only. Both maps are now Republican leaning. District 1 has an average partisan index of 53.9% Republican while District 3 has an average partisan index of 54.7% Republican.<sup>1</sup>
- Districts 1 and 3 in the 2025 map are now more compact than they were in the 2024 map.<sup>2</sup>
- The changes between 2024 and 2025 reflect predictable demographic and partisan patterns arising from the geographic correlation between race and party in eastern North Carolina, not racial sorting or intent.
- The analyses presented by Dr. Rodden and Dr. Lichtman misinterpret these relationships by ignoring geographic structure, failing to disentangle race from politics, relying on nonstandard data or single-election measures, and drawing comparisons to

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<sup>1</sup>Throughout the report I use an index that is the average of 42 statewide elections from 2020, 2022, and 2024. This index is similar to the index that I used in my original September 2024 report and is also similar to indices that have been used by Dr. Rodden in his reports in this case.

<sup>2</sup>Throughout the report I refer to the 2024 map. This is the map that was enacted in 2023 and was used for the 2024 congressional elections.

an irrelevant 2022 baseline rather than the 2024 enacted map that directly preceded the 2025 plan.

### 3 Traditional Redistricting Criteria

The 2025 congressional plan alters only two districts in eastern North Carolina, Districts 1 and 3, while leaving the rest of the state unchanged. These two districts comprise the eastern third of the state and are bounded by the Virginia border to the north and the Atlantic Ocean to the east and southeast. As illustrated in Figures 1 and 2, the orientation of these two districts has shifted from a northern and southern alignment to a more east/west orientation. District 1 is now more compact and confined to the northeastern portion of the state. District 3 is also more compact and covers the southwest portion of the region, absorbing several counties that were previously in District 1.

The 2025 congressional plan reconfigures the boundaries of Districts 1 and 3 which produce changes in county composition and district geography. As shown in Table 1, District 1 now contains 23 whole counties, two more than in 2024, while District 3 contains 7 whole counties, three fewer than before. The number of split counties increased slightly in both districts, from one to two each, reflecting adjustments along the new boundary between 2025 District 1 and 3 in Onslow County.

The 2025 plan introduces one additional VTD split in Swansboro in Onslow County to equalize population. The 2025 plan is net neutral in the number of populated municipal splits.<sup>3</sup> The legislature's criteria for redistricting in 2025 did not include a consideration for

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<sup>3</sup>In the 2024 and 2025 maps, the cities of Oxford and Kenly are split between District 1 and 13. Likewise, in the 2024 and 2025 maps the cities of Spivey's Corner and Surf City are split between Districts 3 and 7. These splits remain unchanged between 2024 and 2025. In the 2024 map, the cities of Grifton and Mt. Olive are split between Districts 1 and 3. In the 2025 map, those cities are made whole. In the 2025 map, Sharpsburg and Swansboro are now split between District 1 and 3. This leads to a zero net change in populated municipal splits. The 2025 map also contains a zero-population split of Elm City between Districts 1 and 3. These numbers may differ from what is in Mr. Fairfax's report because Mr. Fairfax reports two different numbers in his report. In Table 8 of his report, Mr. Fairfax states that the 2023 map split 48 municipalities into 103 pieces. However, on page 76 of his report he states that the 2023 map split 53 municipalities are split into 113 pieces. It is unclear why there is a difference in these two parts of his

incumbency protection.<sup>4</sup>

Compactness improved under the 2025 configuration. The Reock score for District 1 rose from 0.42 to 0.49, and the Polsby–Popper measure increased from 0.27 to 0.33. District 3 saw a substantial improvement in Reock compactness, increasing from 0.37 to 0.60, while its Polsby–Popper measure remained stable at 0.25–0.26.<sup>5</sup> Overall, the 2025 plan yields districts that are more compact, geographically coherent, and consistent with traditional redistricting principles.

Table 1: Geographic Characteristics of Districts 1 and 3, 2024 vs. 2025 Maps

<b>Characteristic:</b>	<b>District 1</b>		<b>District 3</b>	
	<b>2024</b>	<b>2025</b>	<b>2024</b>	<b>2025</b>
Whole Counties	21	23	10	7
Partial Counties	1	2	1	2
Split VTDs	1	2	1	2
Split Municipalities	4	4	4	4
Reock / Polsby–Popper	0.42	0.49	0.37	0.60
Polsby–Popper	0.27	0.33	0.25	0.26

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report.

<sup>4</sup><https://webservices.ncleg.gov/ViewDocSiteFile/101156>

<sup>5</sup>Both the Reock and Polsby–Popper scores range from 0 to 1, with higher values indicating more compact districts.

Figure 1: 2024 Enacted Map

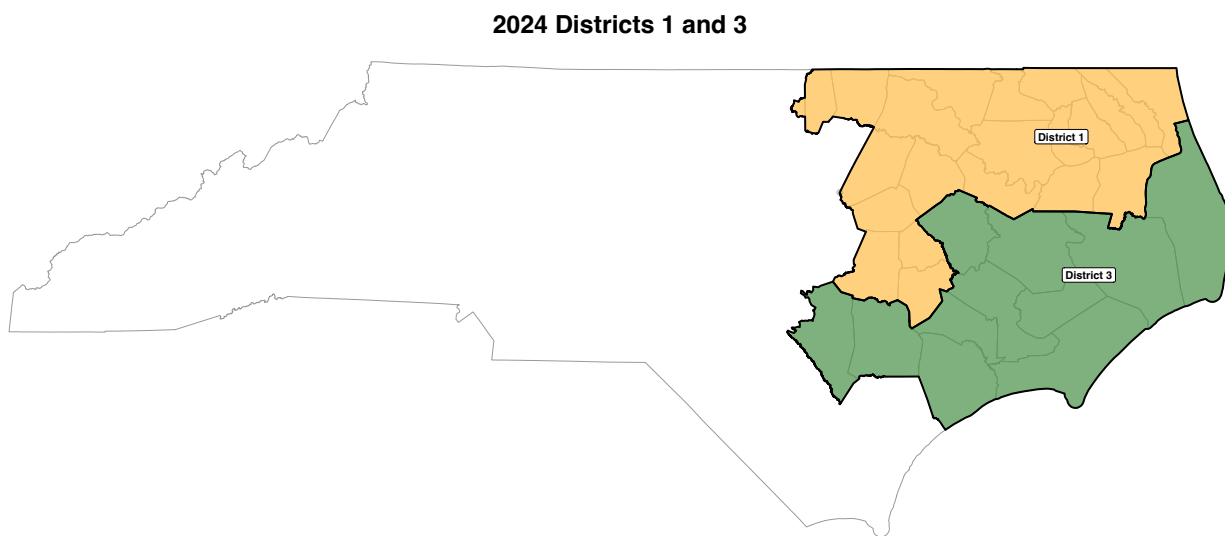
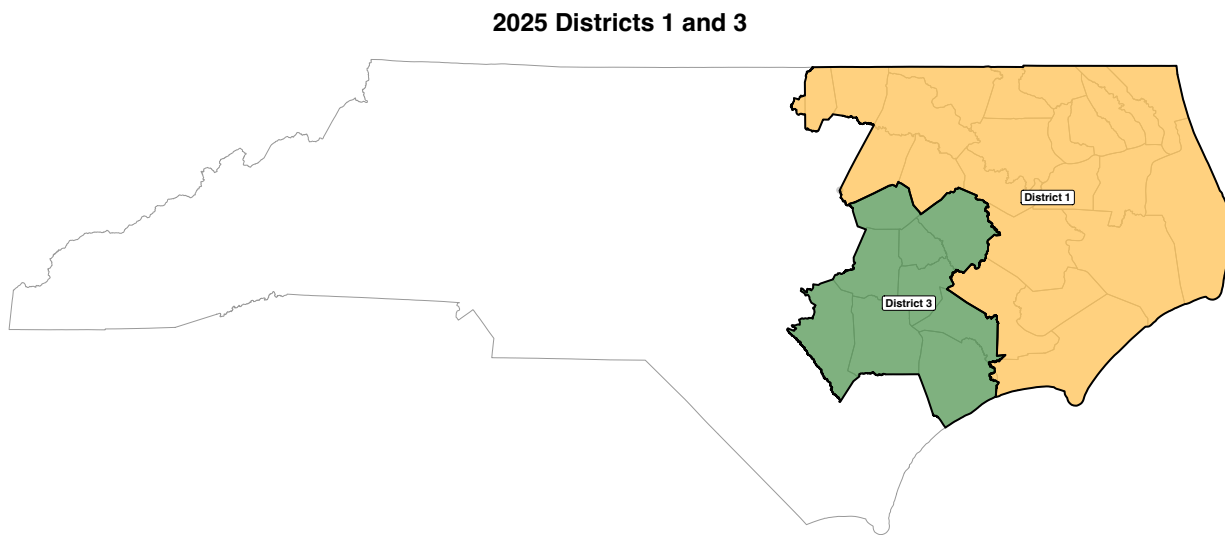


Figure 2: 2025 Enacted Map



## 4 Political and Racial Geography of Eastern North Carolina

The population and voting patterns of eastern North Carolina display a strong relationship between race and partisanship, concentrated most clearly in the northern tier of counties that have long anchored Congressional District 1. These counties continue to make up the core of District 1. As shown in Figure 7, Black residents are heavily clustered in a contiguous band of counties stretching from Vance and Warren east through Halifax, Northampton, Hertford, and Bertie. These counties form the historical core of the Black Belt in North Carolina, a region with a dense concentration of Black population dating back to the nineteenth century and a modern political profile that remains overwhelmingly Democratic.<sup>6</sup> District 1 in both the 2024 and 2025 maps contain all of these counties that are majority BVAP (Halifax, Northampton, Hertford, Bertie, and Edgecombe), and 4 of the 5 counties that have a BVAP of 40-50% (Vance, Warren, Martin, and Washington. Lenoir County is in District 3 in the 2025 map). The one exception, Lenoir County, is notably not contiguous with these other heavily Black counties in the northeastern region of the state.

The geographic distribution of Democratic voters closely mirrors that of Black residents. Figure 4 shows that at the county level, the political geography of eastern North Carolina reveals a clear north-south divide. Counties along the Virginia border and in the interior coastal plain such as Vance, Warren, Halifax, Edgecombe, Northampton, Hertford, and Bertie, have the highest proportions of Black residents in the state and have consistently supported Democratic candidates by large margins in statewide elections. Moving south and east toward the coast, the partisan balance shifts sharply, with predominantly White counties such as Craven, Carteret, Pamlico, and Onslow returning strong Republican majorities.

The geographic distribution of Democratic voters closely mirrors that of Black resi-

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<sup>6</sup>See pages 24-25 in my September 2024 report for more on this topic.



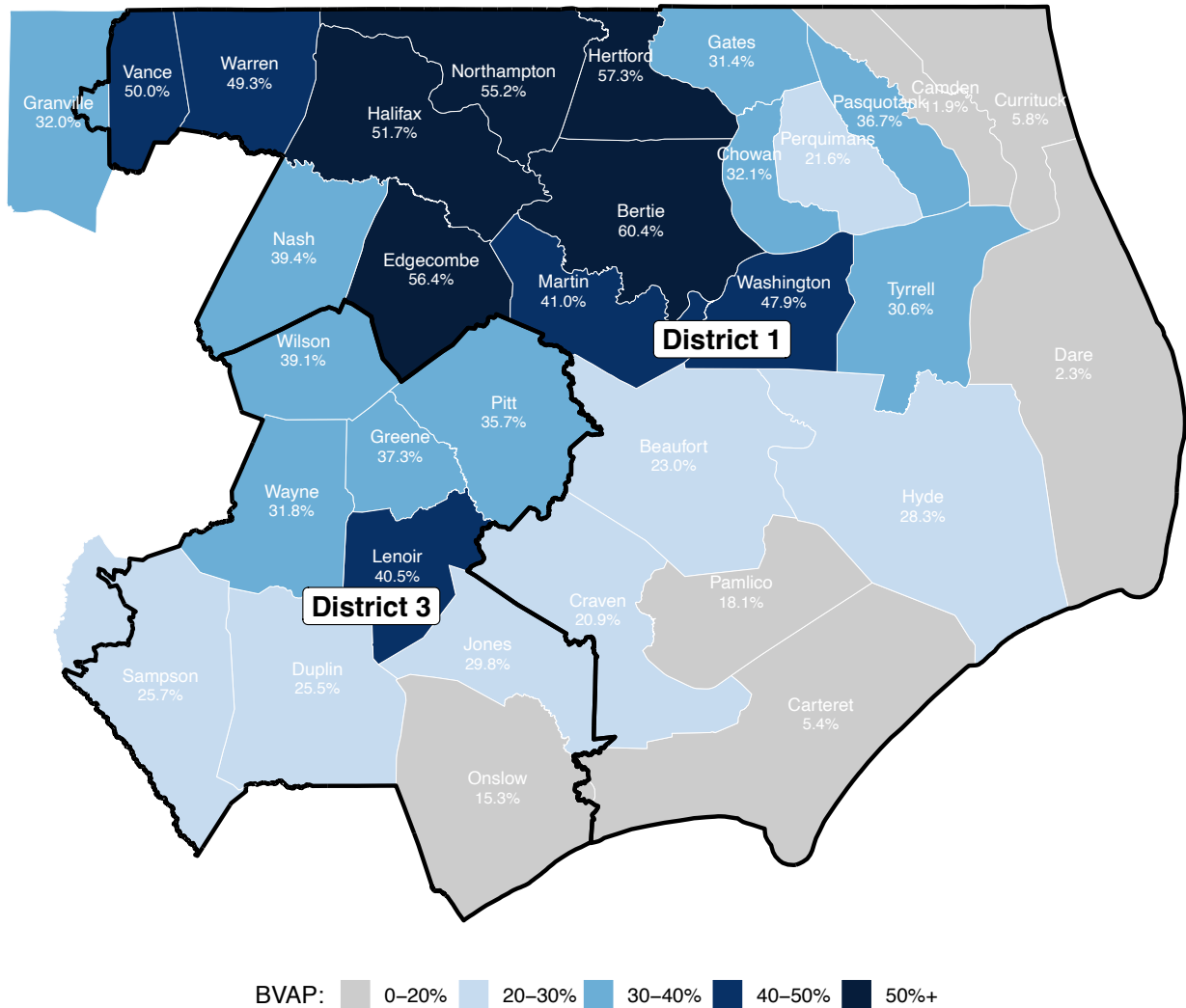
dents. Figure 5 shows this. When comparing the average Republican vote share in a county in this region with the Black Voting Age Population (BVAP) share in that county, there is a very strong negative correlation (-0.92). When examined at the precinct level, this relationship becomes even clearer. Precincts with the largest concentrations of Black population routinely deliver Democratic two-party vote shares above 80 or 90 percent, while precincts with predominantly White populations vote overwhelmingly Republican. The result is a dense cluster of heavily Democratic precincts in the northeastern counties surrounded by a broad expanse of Republican territory to the south and east.

This racial and partisan clustering has important implications for redistricting. Because Black and Democratic voters are geographically concentrated, any compact, contiguous district anchored in northeastern North Carolina will necessarily contain a high proportion of Black voters and produce Democratic-leaning election results. However, this area alone does not contain enough population to support a congressional district. Therefore, expanding the boundaries of a district beyond the majority Black counties inevitably alters the racial and partisan composition of the district, including dropping it below a 50%+1 BVAP. This is simply because race and partisanship are so unevenly distributed across space in this region of the state. An intentional effort to group these counties with other high BVAP counties in the region to produce a district with the highest possible BVAP (even if less than 50%) would likely constitute a racial gerrymander because race would have predominated in the drawing of that district.

Furthermore, an effort to draw geographically compact, Republican-leaning districts (while also not disturbing as many other districts in the existing plan as possible) would naturally lead to an arrangement of counties that linked these very Democratic northeastern counties with the more Republican-leaning “finger counties” and counties along the coastal plain.

Figure 3

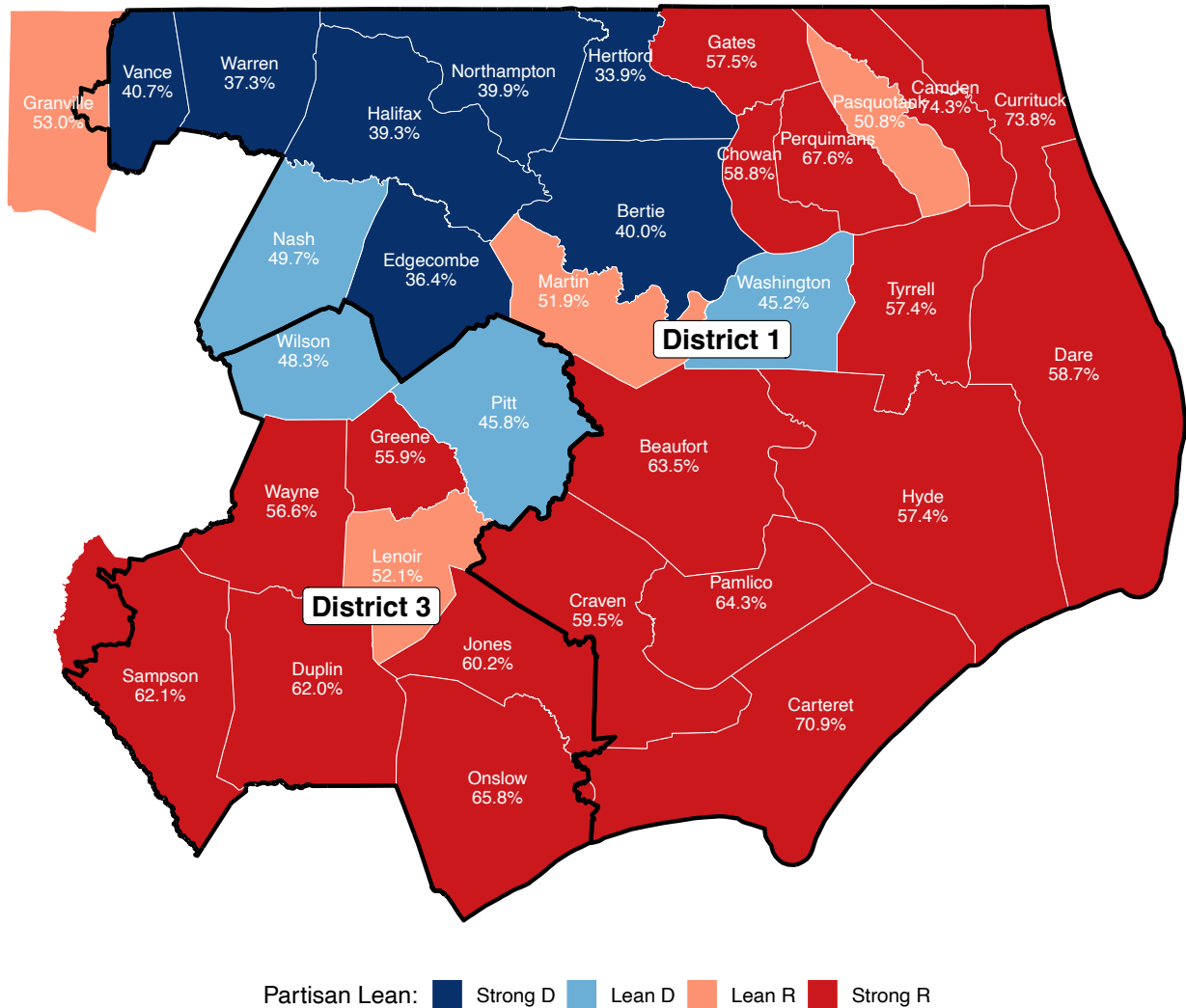
### County Black Voting–Age Population



Note: Percentages in each county report the 2020 US Census any-part Black voting age population percentages in the county. Solid black lines show the 2025 district boundaries.

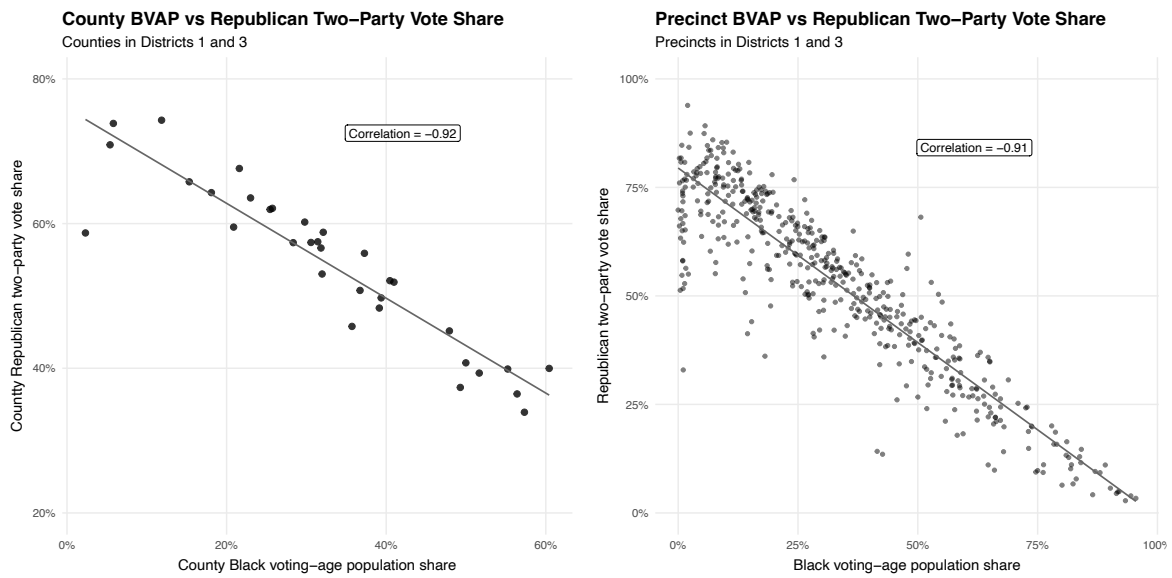
Figure 4

**Republican 2020–2024 statewide election two–party vote share index by county**



Note: Percentages in each county report the Republican two-party vote share in the county from an index of 42 statewide elections between 2020 and 2024. Solid black lines show the 2025 district boundaries.

Figure 5



Note: Race and partisan voting patterns are very highly correlated in the region of the state the includes Congressional Districts 1 and 3.

## 5 Congressional Map: 2024 to 2025 Changes

District 1 in the 2024 map was the least Democratic district held by a Democratic incumbent in the state while District 3 was among the most safely Republican districts under the 2024 map. In the 2024 map District 1 had an average partisan index of 49.6% Republican while District 3 has an average partisan index of 59.2% Republican. Any effort to build a more Republican-leaning map would naturally lead a map drawer toward swapping territory among these adjacent districts. Because these two districts are adjacent to one another, a reconfigured map can avoid spillover effects into other districts across the state by only altering the territory of these two districts. In the 2025 map District 1 has an average partisan index of 53.9% Republican while District 3 has an average partisan index of 54.7% Republican.

Figure 6 illustrates how the 2025 congressional plan altered the composition of Districts 1 and 3 compared to 2024 and maps the geographic areas exchanged between the two districts. Areas labeled “Dist 1 - Dist 3” are those that were moved from District 1 into District 3 and include all of Wilson, Greene, Wayne, and Lenoir counties. “Dist 3 - Dist 1” identifies the counties in the southeastern coastal plain that were moved into District 1 from District 3. The remaining areas are those that stayed in the same district between 2024 and 2025.

The top panel of Figure 7 presents the average Republican two-party vote share, based on the 2020–2024 statewide election composite, for each of these areas. The areas that remained within each district (“1 → 1” and “3 → 3”) closely resemble their prior partisan character. The tracts exchanged between districts are different politically, and the shifts roughly offset one another. Areas moved from District 1 to 3 are slightly Republican leaning (having a Republican lean of about 53%), while those added to District 1 are much more Republican leaning, by about 10 points (having a Republican lean of approximately 64%). The result is that the overall partisan balance of 2025 District 1 becomes more Republican while the partisan balance of District 3 becomes less Republican under the 2025 plan.

The bottom panel of Figure 7 presents the BVAP of each of these areas. The pattern mirrors the partisan results in the top panel. The areas that remained within each district (“1 → 1” and “3 → 3”) maintain similar racial compositions to the districts in the prior plan, while the tracts exchanged between districts differ more sharply. The territory moved from District 1 into District 3 has a higher BVAP (36.1%) than the territory moving in the opposite direction from District 3 to District 1, which has a comparatively low BVAP (14.1% BVAP). These reciprocal changes account for the overall decrease in BVAP in District 1 and increase in BVAP in District 3. As with the partisan results, the observed shifts are consistent with the geographic overlap and high correlation between race and political voting behavior in eastern North Carolina, not with any independent racial sorting.

Figure 8 compares the racial and partisan composition of each district before and after the 2025 redraw. Dr. Rodden highlights these same differences in his Table 2 and accompanying text (pp. 9-10), noting that the Black voting-age population of District 1 decreased by 8.08 percentage points, while the Democratic share of the two-party vote fell by 4.2 points.<sup>7</sup> He writes that “the magnitude of the change in the racial characteristics of the districts was about twice the size of the change in the partisanship of the districts,” and concludes that this difference suggests race, rather than partisanship, was the motivating factor in the 2025 redraw. Dr. Lichtman also makes a similar observation. He states, “...the 20.7% gap in Black population transfers from CD1 to CD3 is more than double the 9.1% gap in votes for Donald Trump” (Lichtman Report, pg. 13).

However, Dr. Rodden’s and Dr. Lichtman’s arguments of racial and partisan shifts needing to be balanced across districts appears to suggest that the legislature should have been guided primarily by race rather than not considering it when drawing the map. Their expectation of a one-to-one correspondence between racial and partisan shifts would imply that legislators could achieve a partisan objective only by precisely isolating and moving Black Democrats, rather than by exchanging entire counties that include both Black and

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<sup>7</sup>Dr. Rodden uses a slightly different election index, but the direction and overall results are largely the same.

White voters of both parties. Such an exact one-to-one approach would require precise race-based sorting at the individual level, an unconstitutional method of district design.

In contrast, the 2025 plan reallocated whole counties that are politically distinct but demographically mixed. The four counties transferred from District 1 to District 3 (Wayne, Wilson, Greene, and Lenoir) are slightly Republican leaning (52.1%), and together these four counties have a BVAP of 36.1%. The counties moved in the opposite direction (from 3 to 1) are uniformly more Republican (63.6% Republican index) and have a collective BVAP of 14.4%. The difference in their partisanship is about 10 percentage points while the difference in their BVAPs is about 20 percentage points. Dr. Rodden and Lichtman note that these numbers are not the same. However, for these numbers to be the same, a map drawer would have to specifically target Black Democrats and White Republicans for movement between the two districts. There does not appear to be evidence of that in the 2025 plan.

Furthermore, from a practical standpoint, if a map drawer were looking to move more Republican counties into District 1 while removing less Republican counties, there are very few other options than the ones chosen here, given the geographic constraints of this region of the state and the requirement that districts be geographically contiguous and compact. Wilson, Wayne, Greene, and Lenoir counties are the southern most counties in 2024 District 1, and therefore targeting them for movement into District 3 has the added benefit of increasing the compactness scores of both Districts 1 and 3. Insofar as these counties are now a part of District 3, the only counties that are available to move from District 3 to District 1 while still keeping the districts contiguous are those along the coastal plain (Dare, Hyde, Carteret, Pamlico, Craven, and Beaufort).

The 2025 adjustments therefore reflect the realities of available counties to move, combined with the partisan objectives of the map drawer, not an independent racial motive. The data underlying Figures 6–8 show that the boundary shifts between Districts 1 and 3 produced changes in both racial composition and partisan vote share, fully consistent with the geographic and political patterns in this region.

Figure 6

**Areas shifting between 2024 and 2025 districts**

Black borders show 2025 district boundaries

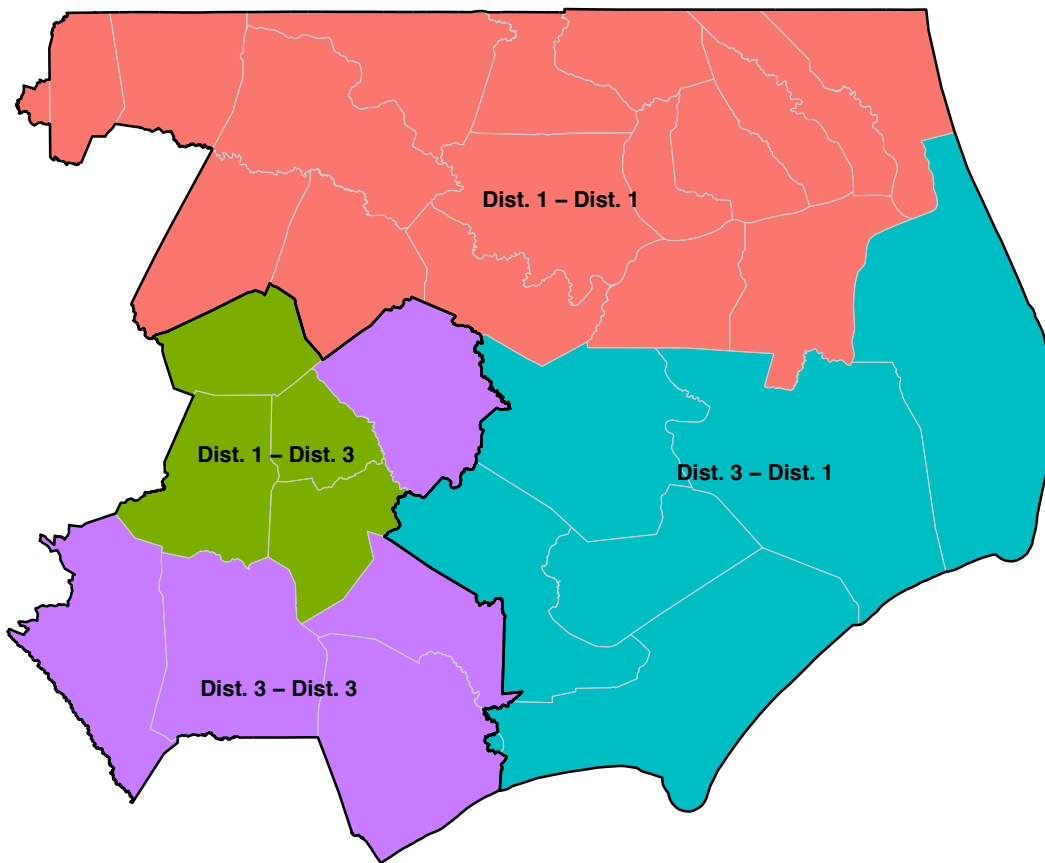
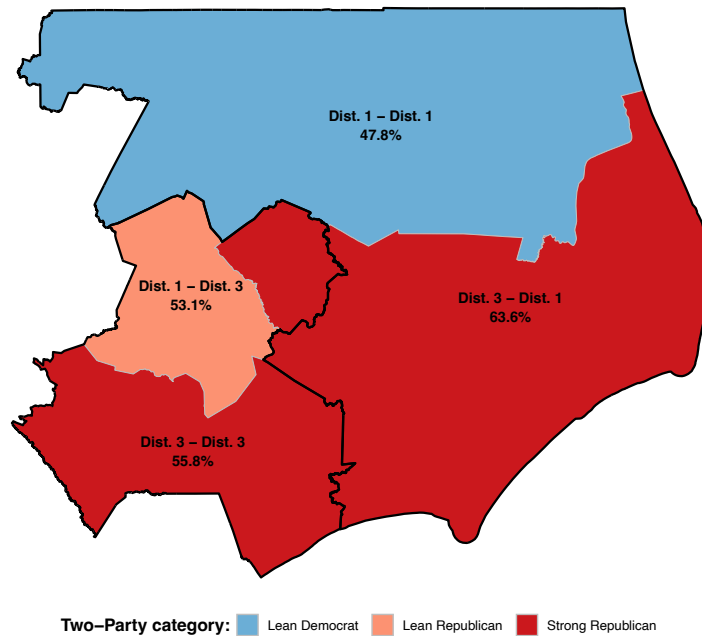




Figure 7

**Republican Two-Party Vote Share by Changed Area**

Average Republican statewide election index, 2020–2024



**Black Voting-Age Population by Changed Area**

2020 US Census Any-Part Black Share of VAP

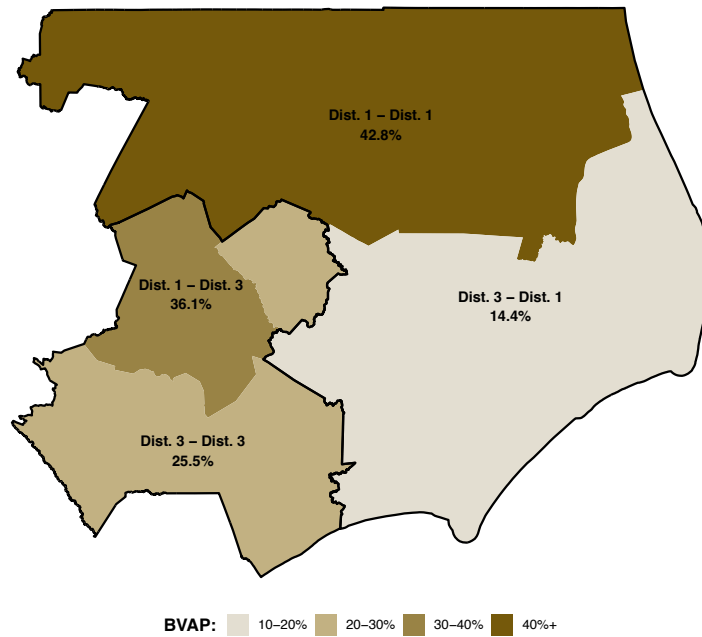
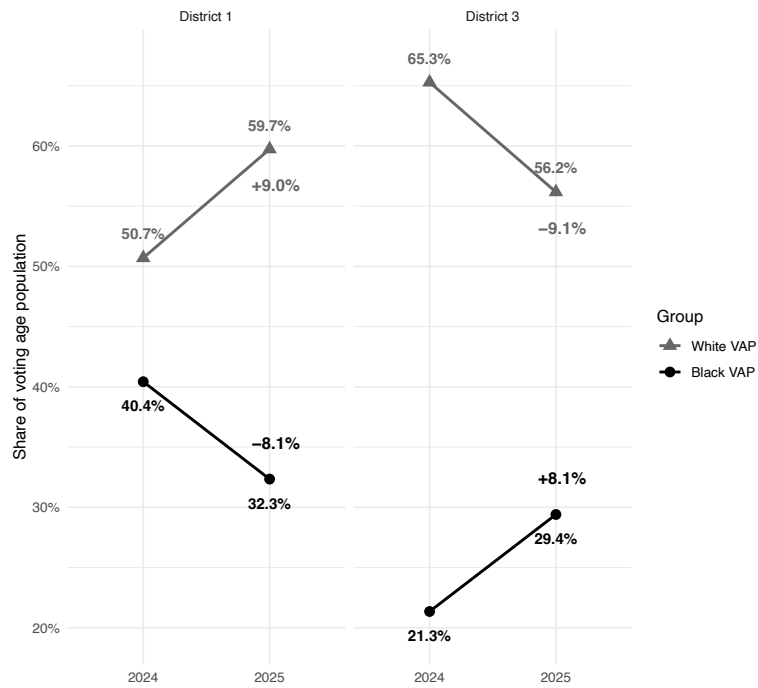
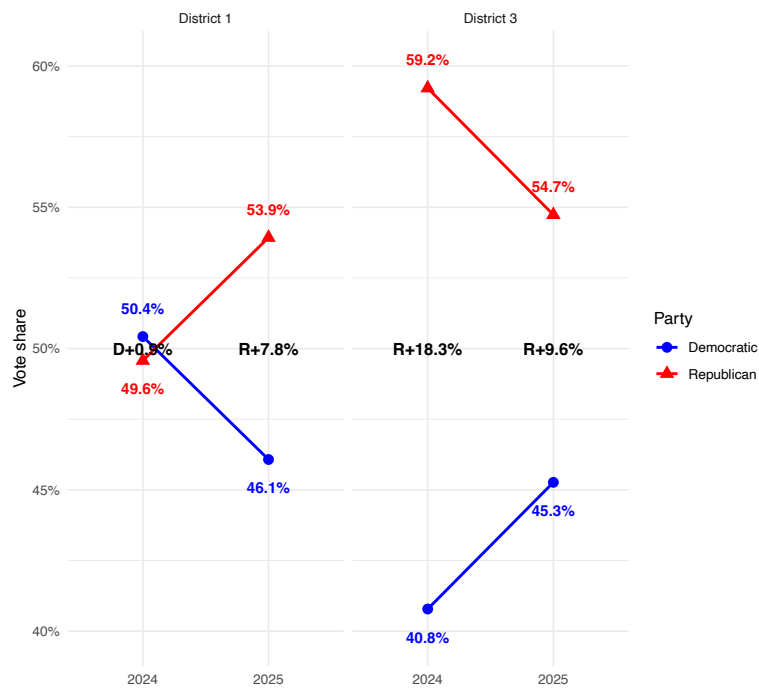


Figure 8

Black and White VAP change across districts  
2024 versus 2025



Change in partisan vote shares across districts  
2024 versus 2025



Dr. Rodden's most recent report reprises what he calls an "in-out" analysis, which compares the racial and partisan composition of areas moved into and out of each district between the two plans. Yet observing that the areas shifted across districts differ by race or partisanship is not, on its own, evidence of racial gerrymandering. This inference ignores the strong correlation between race and partisanship in North Carolina and the fact that both are distributed unevenly across space. When two variables are closely related and geographically clustered, any boundary adjustment will naturally create racial differences between the "in" and "out" areas, even if race played no role in the map-drawing process.

Dr. Rodden himself acknowledged this limitation in his earlier North Carolina report, where he moved beyond descriptive "in-out" comparisons to regression models that attempted to separate the effects of race from geography and political context. On pages 17–18 of his August 1, 2024 report, he cautioned that "one might suspect that this [racial difference] is driven in some way by geography," and noted that "along parts of the district boundary, the General Assembly was following the Charlotte city boundary... and the city boundary corresponds in some places with racial segregation." To address this concern, he added controls for both distance to the district's population center and residence inside the largest city's limits. These steps acknowledged that racial composition is often shaped by geography, municipal boundaries, and historic settlement patterns rather than by racial intent.

In contrast, his most recent report omits these controls and returns to simple descriptive tabulations. Without accounting for spatial proximity to the district, city boundaries, or the spatial clustering of racial and partisan groups, the "in-out" analysis conflates geographic patterns with racial motivation. Because race and partisanship are strongly correlated in this region ( $r = 0.92\text{--}0.93$  between BVAP and Republican vote share, see Figure 5 above), any district change that alters partisan balance will also alter the district's racial composition. That relationship is a statistical artifact of geography, not evidence that race predominated in the line-drawing process.

A sounder approach would explicitly account for geographic information, such as distance to the district core, municipal and county boundaries, or accounting for the inherent correlation between race and partisan voting, to test whether race has an independent effect once geography and politics are held constant. Without such controls, Dr. Rodden’s “in-out” tables cannot determine whether racial patterns result from racially motivated choices of the map drawer or from the natural geography of race and politics. His earlier recognition of this limitation highlights the inconsistency of his current interpretation.

Even if Dr. Rodden were to reintroduce the controls he used earlier, those variables would only partly capture the complex relationships among race, partisanship, and geography. As explained in my September 2024 report, race is correlated with nearly every structural and socioeconomic factor that constrains district design: population density, commuting networks, employment clusters, migration patterns, political subdivision boundaries, and the geographic requirements of contiguity and compactness.<sup>8</sup> Districts cannot be drawn at random, and their boundaries inevitably reflect these spatial realities. Consequently, even a model that includes a few geographic variables cannot fully isolate race from the many interconnected characteristics of the areas being compared.

Moreover, Dr. Rodden’s limited efforts to account for partisanship in his most recent October 31, 2025 report do not fully separate race from partisanship within North Carolina. Dr. Rodden considers the racial composition of the “in”, “out”, and “core” portions of each district by looking at the racial composition of registered voters using the state voter file. He then also looks at these same racial groups within categories of partisan registration. For example, looking at the proportion registered Democrats in the “core” of the district who are Black or White, or looking at the proportion of registered Republican in the “into district” portion of the district who are Black or White.

This does not solve the problem of disentangling race from politics because partisan

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<sup>8</sup>See pages 29-35 of my September 2024 report for my original critiques of the in-out-core method used by Dr. Rodden.

registration can be a poor proxy for voter preferences.<sup>9</sup> For instance, the most common status in the voter file is “unaffiliated,” and registration often diverges from actual vote choice. For example, of Black voters in Districts 1 or 3, 16% of them are not affiliated with a political party in the voter file. Among White voters in these districts, 36% of them are unaffiliated.

Furthermore, Dr. Rodden’s inference that racial differences in the areas moved into and out of District 1 reflect racial intent depends on an assumption that is demonstrably false. He writes in his October 31, 2025 report, “if race and party were perfectly correlated, and the county swaps were purely a matter of partisanship, there would be no discernable [sic] racial differences within partisan groups” (p. 12). His interpretation therefore rests on the assumption of an almost perfect relationship between race and partisan registration, which is his measure of partisanship in these analyses. Yet, as shown in Table 2 below, the actual correlations between race and partisan registration in this part of the state are far weaker. Using the North Carolina voter file for individuals residing in District 1 or 3 under either the 2024 or 2025 boundaries, the correlations range from about  $r = 0.11$  to  $0.58$ , far below anything close to perfect correspondence.

These results confirm that race and party *registration* are related but not tightly enough to meet the assumption that is necessary for Dr. Rodden’s analysis to be reliable. Instead, both are moderately correlated, meaning that racial variation within partisan registration categories is expected even if a map drawer considers only partisanship. The racial differences in Dr. Rodden’s “in-out” tables are therefore consistent with the imperfect correlation between race and party registration and cannot be taken as evidence that race predominated above and beyond partisan considerations in the redistricting process.

These modest correlations also show why partisan registration is a poor proxy for actual vote choice. As shown earlier in this report and in my 2024 analysis, the relationship between race and observed two-party vote share is much stronger than the relationship be-

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<sup>9</sup>See pages 14-17 in my September 2024 report for my original critiques of using the voter registration file for this type of analysis.

Table 2: Correlation Between Race and Partisan Registration in District 1 (2024 or 2025 Boundaries)

Variables	Correlation (r)	Interpretation
Republican and Black	-0.39	Moderate negative correlation
Democratic and Black	0.58	Moderate positive correlation
Unaffiliated and Black	-0.21	Weak negative correlation
Republican and White	0.40	Moderate positive correlation
Democratic and White	-0.49	Moderate negative correlation
Unaffiliated and White	0.11	Weak positive correlation

tween race and party registration. Figure 5 shows that in the region encompassing Districts 1 and 3, the correlation between Black voting-age population and Republican two-party vote share exceeds  $r = 0.90$  at both the county and precinct levels. In contrast, the strongest correlation between race and party *registration* in the voter file is about 0.58. Many voters recorded as “unaffiliated” nonetheless vote consistently with one party. And many voters who may have registered with a party decades ago may now be loyal to a different party. Analyses like Dr. Rodden’s, which use party registration should not be relied upon because of the low correlation between party registration and actual voting behavior.

## 6 Simulations

Dr. Rodden presents a simulation analysis that he describes as a way to evaluate whether the enacted 2025 districts appears anomalous when compared to a set of maps drawn by a computer algorithm that did not consider race. His approach compares the racial composition of the enacted districts to those produced by a large ensemble of computer-generated, race-blind plans. In principle, this kind of analysis can be informative when the simulated plans are properly specified and when they isolate the effects of race from other valid districting criteria. In practice, however, Dr. Rodden’s implementation fails to meet those standards.

The simulations that Dr. Rodden relies upon were not designed for this type of analy-

sis. He relies upon an ensemble of 5,000 maps that I created using a redistricting simulation algorithm in 2024 to show flaws in the envelope analysis he presented at the time. These simulations did not consider partisanship, nor were they isolated to this region of the state at issue in this case. His current use of this ensemble of maps includes any map that happens to produce three districts in eastern North Carolina, even though both the 2024 and 2025 enacted plans contain only two districts in that region. This structural mismatch means that many simulated maps are not comparable to the enacted plan at all, because they divide the region in entirely different ways across more than two districts. As a result, the ensemble does not represent the range of possible configurations that the legislature could realistically have considered when drawing the 2025 plan while only changing Districts 1 and 3.

A second problem is that the simulations make no effort to separate race from partisanship. Dr. Rodden treats the simulated plans as race-neutral baselines, yet many of the maps will differ substantially in their partisan composition from the 2025 Enacted map. The U.S. Supreme Court's decision in *Alexander v. South Carolina State Conference of the NAACP*, explains that an appropriate comparison must involve maps that achieve the same partisan objectives but through different racial configurations. It is notable that he does not make any effort here, because he did attempt this in his previous reports.<sup>10</sup> Because Dr. Rodden's ensemble includes plans that do not match the partisan balance of the enacted map, it fails this test. The inclusion of politically dissimilar plans means that any differences in racial composition between the 2025 map and these simulations could simply reflect differences in partisanship rather than race.

One potential reason that there is no accounting for partisanship by Dr. Rodden this time around is that there are very few simulated maps that achieve an equivalent partisan treatment of this region of the state as the 2025 map. When I examined these simulated maps, there are only 5 of the 5,000 simulations where the district with the highest BVAP

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<sup>10</sup>See, for example, his attempt to account for partisanship on pages 19-22 of his October 17, 2024 report. I discuss in my March 17, 2025 report that Dr. Rodden's attempt to account for partisanship in that report nevertheless fails because he does not isolate the simulations that are equally Republican-leaning as the 2024 Enacted Map. See pages 9-11 of my March 17, 2025 report.

in the region has a Republican partisan index of 53% or more.<sup>11</sup> Thus, there are only a small handful of simulations in this region that match the partisan composition of the 2025 Enacted map, and this is certainly not enough maps to draw any meaningful comparison or conclusions from.

Even setting those flaws aside, the results of Dr. Rodden's simulation analysis do not support a conclusion that race predominated in the redistricting process, nor that Districts 1 or 3 are racial outliers when compared to these simulations. In Dr. Rodden's October 31, 2025 report, he documents that District 1's Black voting-age population (BVAP) lies near the 12th percentile of the simulation distribution, meaning that about 88 percent of simulated districts have a higher BVAP and 12 percent have a lower BVAP. Under any reasonable standard, a point this near the middle of the distribution is not an outlier.<sup>12</sup>

For District 3, Dr. Rodden provides no numerical result, stating only that it is "at the upper end" of the distribution, an imprecise characterization that does not allow for meaningful interpretation. When I conducted this calculation using Dr. Rodden's replication data, I found that District 3 was at the 54th percentile of the simulations. Thus, it is not at the "upper end" of the distribution, but rather is extremely close to the median simulation.

In sum, despite the various flaws that render the comparison of these simulations to the 2025 Enacted map invalid, if we set those flaws aside and look at where the 2025 Enacted map falls in the distribution, there is no conceivable way in which one would characterize the 2025 Enacted map as a racial outlier.

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<sup>11</sup>This is a conservative estimate given that District 1 in the 2025 Enacted map has a Republican lean of approximately 54 percent.

<sup>12</sup>In the social and natural sciences, the typical thresholds for an outlier is an observation that is outside the 95th, 97.5th, or 99th percentile. There is no set threshold, but these are the overwhelmingly most common benchmarks that are used at different times.



## 7 Lichtman Report

I have also reviewed the expert report of Professor Allan Lichtman, with particular attention to the data and methodology used in his Tables 2 and 3. In my opinion, these tables do not offer a meaningful or reliable basis for assessing either the process or effects of the 2025 congressional plan.

Table 2 in Dr. Lichtman's report compares municipal and VTD splits in the 2025 plan to the 2022 plan. That baseline is not informative. The 2022 plan was a court-drawn, interim map designed to be politically neutral and was used for only the 2022 election. In 2023, the General Assembly enacted a new congressional plan that governed the 2024 election and was drawn with explicit instructions to create more Republican-leaning districts. The 2025 plan is a revision of that 2023 legislative map, not a variant of the 2022 court-drawn map. Skipping the 2023 plan obscures the continuity between 2023 and 2025 and instead invites a comparison across maps produced under different authorship, aims, and constraints.<sup>13</sup>

Table 3 in Dr. Lichtman's report purports to describe the partisan and racial composition of counties moved between Districts 1 and 3. Two issues arise.

The table relies on the 2024 presidential results as the sole indicator of county partisanship. Single-election snapshots are noisy and less reliable. Candidate idiosyncrasies, national tides, and year-specific issues can swing outcomes by several points. A multi-election composite, spanning different statewide contests over several cycles, is a more stable indicator of underlying partisan alignment. That is the type of measure I use throughout my analysis and the one Dr. Rodden also uses. Using only the 2024 presidential result risks overstating or understating the true partisan lean of the exchanged counties.

The table's racial figures do not match the 2020 Decennial Census Voting-Age Population (VAP) statistics that are the accepted benchmark in redistricting analysis and the common basis for the other experts in this matter. Although two Census web pages are

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<sup>13</sup>I have a similar discussion of using the 2022 special master drawn map as a comparison point in my original September 2024 report. See pages 10-13 of that report.

cited, those pages host multiple series with differing estimation methods. The report does not specify which series were used, and the numbers reported do not align with the 2020 VAP figures or the total population values for the listed counties. For example, the values reported in the “Percent Black” column of the table do not reflect the 2020 Decennial Census any part Black VAP numbers or the 2020 Decennial Census any part Black total population numbers for any of the counties in the table. Therefore the results of this table will not match what I report here, nor what Dr. Rodden has written in his reports. This lack of clarity prevents replication and makes the results non-comparable to the record elsewhere in this case.

On page 12, the report states that plan drawers “transferred majority minority counties with heavy black populations from CD1 to CD3” and brought “majority white counties with minimal black populations from CD3 to CD1.” That framing overstates the racial content of these transfers. None of the counties removed from District 1 and placed in District 3 are majority-Black. As shown in my figures above (Figure 3), all majority-Black counties remained in District 1 from 2024 to 2025. To sustain the claim, the report shifts from “Black” to “majority-minority,” grouping all non-white voters together. Even under that broader category, only two of the four counties moved out of District 1 have majority-nonwhite VAP. This matters because the legal and historical analysis of CD1 raised by plaintiffs concerns issues with Black voter opportunity, not a generic “nonwhite” aggregation.

I, Dr. Michael Barber, acting in accordance with 28 U.S.C. 1746, Federal Rule of Civil Procedure 26(a)(2)(B), and Federal Rules of Evidence 702 and 703, hereby declare that the foregoing is true and accurate to the best of my knowledge.

Dated: November 14, 2025

Michael Barber

Signed: \_\_\_\_\_

## Appendix

These are the elections used in the partisan index that is discussed throughout the report. The table shows the results of each contest in 2025 Districts 1 and 3.

Table 3: Two-Party Republican Vote Share in Districts 1 and 3 under the 2025 Map

Year	Election	District 1	District 3
2020	Ag. Commissioner	55.2%	56.0%
2020	Attorney General	51.9%	52.8%
2020	Auditor	49.3%	51.0%
2020	Court of Appeals Seat 04	53.6%	54.5%
2020	Court of Appeals Seat 05	53.1%	53.9%
2020	Court of Appeals Seat 06	53.6%	54.5%
2020	Court of Appeals Seat 07	53.4%	54.2%
2020	Court of Appeals Seat 13	53.0%	53.8%
2020	Governor	50.8%	51.7%
2020	Insurance Commissioner	52.9%	54.3%
2020	Labor Commissioner	52.5%	53.2%
2020	Lt. Governor	53.8%	54.7%
2020	President	53.5%	54.2%
2020	Secretary of State	50.4%	51.1%
2020	Sup. Public Instruction	53.1%	54.1%
2020	Supreme Court Chief Justice	52.2%	52.9%
2020	Supreme Court Seat 02	52.8%	53.6%
2020	Supreme Court Seat 04	52.4%	53.3%
2020	Treasurer	54.1%	54.8%
2020	U.S. Senate	52.8%	53.6%
2022	Court of Appeals Seat 08	57.1%	58.2%
2022	Court of Appeals Seat 09	58.6%	59.8%
2022	Court of Appeals Seat 10	57.6%	58.6%
2022	Court of Appeals Seat 11	57.6%	58.5%
2022	Supreme Court Seat 03	57.3%	58.5%
2022	Supreme Court Seat 05	57.0%	58.2%
2022	U.S. Senate	56.8%	57.8%
2024	Ag. Commissioner	57.4%	58.1%
2024	Attorney General	53.1%	53.6%
2024	Auditor	54.6%	55.2%
2024	Court of Appeals Seat 12	54.9%	55.8%
2024	Court of Appeals Seat 14	55.9%	56.8%
2024	Court of Appeals Seat 15	55.7%	56.7%
2024	Governor	48.6%	48.6%
2024	Insurance Commissioner	55.7%	56.5%
2024	Labor Commissioner	56.1%	57.1%
2024	Lt. Governor	53.2%	53.6%
2024	President	55.9%	56.9%
2024	Secretary of State	52.1%	52.8%
2024	Supreme Court Seat 06	54.1%	54.8%
2024	Sup. Public Instruction	52.7%	53.2%
2024	Treasurer	55.6%	56.5%

# Michael Jay Barber

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## CONTACT INFORMATION

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Department of Political Science  
724 KMBL  
Provo, UT 84602

barber@byu.edu  
<http://michaeljaybarber.com>  
Ph: (801) 422-7492

## ACADEMIC APPOINTMENTS

### **Brigham Young University**, Provo, UT

August 2025 - present    Professor, Department of Political Science  
August 2020 - July 2025    Associate Professor, Department of Political Science  
Jan 2023 - present    Director, Center for the Study of Elections and Democracy  
2014 - July 2020    Assistant Professor, Department of Political Science  
2014 - Jan 2023    Faculty Scholar, Center for the Study of Elections and Democracy

## EDUCATION

### **Princeton University Department of Politics**, Princeton, NJ

Ph.D., Politics, July 2014

- Advisors: Brandice Canes-Wrone, Nolan McCarty, and Kosuke Imai
- Dissertation: "Buying Representation: the Incentives, Ideology, and Influence of Campaign Contributions on American Politics"
- 2015 Carl Albert Award for Best Dissertation, Legislative Studies Section, American Political Science Association (APSA)

M.A., Politics, December 2011

### **Brigham Young University**, Provo, UT

B.A., International Relations - Political Economy Focus, April, 2008

- *Cum Laude*

## RESEARCH INTERESTS

American politics, congressional polarization, political ideology, campaign finance, survey research

## PUBLICATIONS

28. **"Illiberalism among American State Legislative Candidates"**  
with Hans Hassell and Michael Miller, *Nature Humanities and Social Science Communications*
27. **"Which Republican Constituencies Support Restrictive Abortion Laws? Comparisons among donors, wealthy, and mass publics**, with Brandice Canes-Wrone, Joshua Clinton, and Greg Huber Forthcoming at *Public Opinion Quarterly*
26. **"The Crucial Role of Race in 21st Century U.S. Political Realignment**, with Jeremy Pope, *Public Opinion Quarterly* (2024): 1-10.

25. **“Misclassification and Bias in Predictions of Individual Ethnicity from Administrative Records”**, with Lisa Argyle, *American Political Science Review* (2023): 1-9.
24. **“Partisanship and Trolleyology”**, with Ryan Davis  
*Research & Politics*
23. **“Does Issue Importance Attenuate Partisan Cue-Taking”**, with Jeremy Pope, *Political Science Research and Methods* (2024): 1-9.
22. **“A Revolution of Rights in American Founding Documents”**, with Scott Abramson and Jeremy Pope  
*Journal of Political Institutions and Political Economy*
21. **“Groups, Behaviors, and Issues as Cues of Partisan Attachments in the Public”**, with Jeremy Pope  
*American Politics Research*
20. **“Ideological Disagreement and Pre-emption in Municipal Policymaking”**, with Adam Dynes, *American Journal of Political Science*, no. 1 (2023): 119-136.
19. **“400 million voting records show profound racial and geographic disparities in voter turnout in the United States”**, with John Holbein  
*PloS One*, 2022, Vol. 17, no. 6: e0268134
18. **“Comparing Campaign Finance and Vote Based Measures of Ideology”**  
*Journal of Politics*, 2022. Vol. 84, no. 1 (2022): 613-619.
17. **“The Participatory and Partisan Impacts of Mandatory Vote-by-Mail”**, with John Holbein  
*Science Advances*, 2020. Vol. 6, no. 35, DOI: 10.1126/sciadv.abc7685
16. **“Issue Politicization and Interest Group Campaign Contribution Strategies”**, with Mandi Eatough  
*Journal of Politics*, 2020. Vol. 82: No. 3, pp. 1008-1025
15. **“Campaign Contributions and Donors’ Policy Agreement with Presidential Candidates”**, with Brandice Canes-Wrone and Sharece Thrower  
*Presidential Studies Quarterly*, 2019, 49 (4) 770–797
14. **“Conservatism in the Era of Trump”**, with Jeremy Pope  
*Perspectives on Politics*, 2019, 17 (3) 719–736
13. **“Legislative Constraints on Executive Unilateralism in Separation of Powers Systems”**, with Alex Bolton and Sharece Thrower  
*Legislative Studies Quarterly*, 2019, 44 (3) 515–548  
Awarded the Jewell-Loewenberg Award for best article in the area of subnational politics published in *Legislative Studies Quarterly* in 2019
12. **“Electoral Competitiveness and Legislative Productivity”**, with Soren Schmidt  
*American Politics Research*, 2019, 47 (4) 683–708
11. **“Does Party Trump Ideology? Disentangling Party and Ideology in America”**, with Jeremy Pope  
*American Political Science Review*, 2019, 113 (1) 38–54
10. **“The Evolution of National Constitutions”**, with Scott Abramson  
*Quarterly Journal of Political Science*, 2019, 14 (1) 89–114
9. **“Who is Ideological? Measuring Ideological Responses to Policy Questions in the American Public”**, with Jeremy Pope  
*The Forum: A Journal of Applied Research in Contemporary Politics*, 2018, 16 (1) 97–122
8. **“Status Quo Bias in Ballot Wording”**, with David Gordon, Ryan Hill, and Joe Price  
*The Journal of Experimental Political Science*, 2017, 4 (2) 151–160.

7. **“Ideologically Sophisticated Donors: Which Candidates Do Individual Contributors Finance?”**, with Brandice Canes-Wrone and Sharece Thrower  
*American Journal of Political Science*, 2017, 61 (2) 271–288.
6. **“Gender Inequalities in Campaign Finance: A Regression Discontinuity Design”**, with Daniel Butler and Jessica Preece  
*Quarterly Journal of Political Science*, 2016, Vol. 11, No. 2: 219–248.
5. **“Representing the Preferences of Donors, Partisans, and Voters in the U.S. Senate”**  
*Public Opinion Quarterly*, 2016, 80: 225–249.
4. **“Donation Motivations: Testing Theories of Access and Ideology”**  
*Political Research Quarterly*, 2016, 69 (1) 148–160.
3. **“Ideological Donors, Contribution Limits, and the Polarization of State Legislatures”**  
*Journal of Politics*, 2016, 78 (1) 296–310.
2. **“Online Polls and Registration Based Sampling: A New Method for Pre-Election Polling”** with Quin Monson, Kelly Patterson and Chris Mann.  
*Political Analysis* 2014, 22 (3) 321–335.
1. **“Causes and Consequences of Political Polarization”** In *Negotiating Agreement in Politics*. Jane Mansbridge and Cathie Jo Martin, eds., Washington, DC: American Political Science Association: 19–53. with Nolan McCarty. 2013.

- Reprinted in *Solutions to Political Polarization in America*, Cambridge University Press. Nate Persily, eds. 2015
- Reprinted in *Political Negotiation: A Handbook*, Brookings Institution Press. Jane Mansbridge and Cathie Jo Martin, eds. 2015

AVAILABLE  
WORKING  
PAPERS/ONGOING  
PROJECTS

**“Donations and Dollars: Characterizing the Policy Views of Donors and the Affluent”**

with Brandice Canes-Wrone, Gregory Huber, and Joshua Clinton (Revise and Resubmit at *Journal of Politics*)

**“Preferences for Representational Styles in the American Public”**

with Ryan Davis and Adam Dynes (*under review*)

**“Illiberalism among American State Legislative Candidates”**

with Hans Hassell and Michael Miller (*under review*)

INVITED  
PRESENTATIONS

**“Are Mormons Breaking Up with Republicanism? The Unique Political Behavior of Mormons in the 2016 Presidential Election”**

- Ivy League LDS Student Association Conference - Princeton University, November 2018, Princeton, NJ

**“Issue Politicization and Access-Oriented Giving: A Theory of PAC Contribution Behavior”**

- Vanderbilt University, May 2017, Nashville, TN

**“Lost in Issue Space? Measuring Levels of Ideology in the American Public”**



- Yale University, April 2016, New Haven, CT

“The Incentives, Ideology, and Influence of Campaign Donors in American Politics”

- University of Oklahoma, April 2016, Norman, OK

“Lost in Issue Space? Measuring Levels of Ideology in the American Public”

- University of Wisconsin - Madison, February 2016, Madison, WI

“Polarization and Campaign Contributors: Motivations, Ideology, and Policy”

- Hewlett Foundation Conference on Lobbying and Campaign Finance, October 2014, Palo Alto, CA

“Ideological Donors, Contribution Limits, and the Polarization of State Legislatures”

- Bipartisan Policy Center Meeting on Party Polarization and Campaign Finance, September 2014, Washington, DC

“Representing the Preferences of Donors, Partisans, and Voters in the U.S. Senate”

- Yale Center for the Study of American Politics Conference, May 2014, New Haven, CT

#### CONFERENCE PRESENTATIONS

Money in Politics APSA Pre-Conference:

- Founder (2020) and organizing committee (2020, 2021, 2022, 2023)

Washington D.C. Political Economy Conference (PECO):

- 2017 discussant

American Political Science Association (APSA) Annual Meeting:

- 2014 participant and discussant, 2015 participant, 2016 participant, 2017 participant, 2018 participant

Midwest Political Science Association (MPSA) Annual Meeting:

- 2015 participant and discussant, 2016 participant and discussant, 2018 participant

Southern Political Science Association (SPSA) Annual Meeting:

- 2015 participant and discussant, 2016 participant and discussant, 2017 participant

#### TEACHING EXPERIENCE

Poli 301: Data Visualization

- Summer 2022, Fall 2022, Winter 2023, Winter 2024

Poli 315: Congress and the Legislative Process

- Fall 2014, Winter 2015, Fall 2015, Winter 2016, Summer 2017, Fall 2018, Spring 2019, Fall 2022

Poli 328: Quantitative Analysis

- Winter 2017, Fall 2017, Fall 2019, Winter 2020, Fall 2020, Winter 2021, Fall 2023

Poli 410: Undergraduate Research Seminar in American Politics

- Fall 2014, Winter 2015, Fall 2015, Winter 2016, Summer 2017, Fall 2018, Winter 2024

#### AWARDS AND GRANTS

2024 BYU Early Career Scholarship Award

2021 BYU FHSS Research Grant, \$6,500

2020 BYU FHSS Young Scholar Award

2019 BYU Mentored Environment Grant (MEG), Ideology in America Project, \$35,000

2017 BYU Political Science Teacher of the Year Award

2017 BYU Mentored Environment Grant (MEG), Funding American Democracy Project, \$20,000

2016 BYU Political Science Department, Political Ideology and President Trump (with Jeremy Pope), \$7,500

2016 BYU Office of Research and Creative Activities (ORCA) Student Mentored Grant x 3

- Hayden Galloway, Jennica Peterson, Rebecca Shuel

2015 BYU Office of Research and Creative Activities (ORCA) Student Mentored Grant x 3

- Michael-Sean Covey, Hayden Galloway, Sean Stephenson

2015 BYU Student Experiential Learning Grant, American Founding Comparative Constitutions Project (with Jeremy Pope), \$9,000

2015 BYU FHSS Research Grant, \$5,000

2014 BYU Political Science Department, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \$3,000

2014 BYU FHSS Award, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \$3,000

2014 BYU Center for the Study of Elections and Democracy, 2014 Washington DC Mayoral Pre-Election Poll (with Quin Monson and Kelly Patterson), \$2,000

2012 Princeton Center for the Study of Democratic Politics Dissertation Improvement Grant, \$5,000

2011 Princeton Mamdouha S. Bobst Center for Peace and Justice Dissertation Research Grant, \$5,000

2011 Princeton Political Economy Research Grant, \$1,500

#### OTHER SCHOLARLY ACTIVITIES

Expert Witness in Nancy Carola Jacobson, et al., Plaintiffs, vs. Laurel M. Lee, et al., Defendants. Case No. 4:18-cv-00262 MW-CAS (U.S. District Court for the Northern District of

Florida)

Expert Witness in Common Cause, et al., Plaintiffs, vs. Lewis, et al., Defendants. Case No. 18-CVS-14001 (Wake County, North Carolina)

Expert Witness in Kelvin Jones, et al., Plaintiffs, v. Ron DeSantis, et al., Defendants, Consolidated Case No. 4:19-cv-300 (U.S. District Court for the Northern District of Florida)

Expert Witness in Community Success Initiative, et al., Plaintiffs, v. Timothy K. Moore, et al., Defendants, Case No. 19-cv-15941 (Wake County, North Carolina)

Expert Witness in Richard Rose et al., Plaintiffs, v. Brad Raffensperger, Defendant, Civil Action No. 1:20-cv-02921-SDG (U.S. District Court for the Northern District of Georgia)

Expert Witness in Georgia Coalition for the People's Agenda, Inc., et. al., Plaintiffs, v. Brad Raffensperger, Defendant. Civil Action No. 1:18-cv-04727-ELR (U.S. District Court for the Northern District of Georgia)

Expert Witness in Alabama, et al., Plaintiffs, v. United States Department of Commerce; Gina Raimondo, et al., Defendants. Case No. CASE No. 3:21-cv-00211-RAH-ECM-KCN (U.S. District Court for the Middle District of Alabama Eastern Division)

Expert Witness in League of Women Voters of Ohio, et al., Relators, v. Ohio Redistricting Commission, et al., Respondents. Case No. 2021-1193 (Supreme Court of Ohio)

Expert Witness in Regina Adams, et al., Relators, v. Governor Mike DeWine, et al., Respondents. Case No. 2021-1428 (Supreme Court of Ohio)

Expert Witness in Rebecca Harper, et al., Plaintiffs, v. Representative Destin Hall, et al., Defendants (Consolidated Case). Case No. 21 CVS 500085 (Wake County, North Carolina)

Expert Witness in Carter, et al., Petitioners, v. Degraffenreid et al., Respondents (Consolidated Case). Case No. 464 M.D. 2021 (Commonwealth Court of Pennsylvania)

Expert Witness in Harkenrider, et al., Petitioners, v. Hochel et al., Respondents. Case No. E2022-0116CV (State of New York Supreme Court: County of Steuben)

Expert Witness in Our City Action Buffalo, Inc., et al., v. Common Council of the City of Buffalo (State of New York Supreme Court: County of Erie)

Expert Witness in Citizens Project, et al., v. City of Colorado Springs, et al. Case No. 22-cv-1365-CNS-MDB (U.S. District Court for the District of Colorado)

Expert report filed in League of Women Voters of Ohio v. Ohio Redistricting Comm., 172 Ohio St.3d 597, 2023-Ohio-4271 (Supreme Court of Ohio)

Expert Witness in Dr. Dorothy Nairne, et al., Plaintiffs, v. R. Yle Ardoin, Defendant, Case No. 3:22-cv-00178 (U.S. District Court for the Middle District of Louisiana)

Court Appointed Mapping Special Master in Donald Agee, et al., Plaintiffs, v. Jocelyn Benson, in her official capacity as the Secretary of State of Michigan, et al., Defendants., No. 1:22-cv-272 Three-Judge Court (U.S. District Court for the Western District of Michigan)

Expert report filed in remedial phase in Alpha Phi Alpha, et al., Plaintiffs, v. Brad Raf-

fensperger, in his official capacity as the Secretary of State of Georgia, et al., Defendants., Case No. 1:21-cv-5337 (U.S. District Court for the Northern District of Georgia)

Expert Witness in McClure, et al. and Addoh-Kondi, et al., Plaintiffs, v. Jefferson County Commission, et al., Defendant, Case No. Case No.: 2:23-cv-00503-MHH (U.S. District Court for the Northern District of Alabama)

Expert Witness in Williams, et al. and North Carolina NAACP v. Berger, in his official capacity as President Pro Tempore of the North Carolina Senate, et al. Case Nos: 1:23-CV-1057, 1:23-CV-1104 (U.S. District Court for the Middle District of North Carolina)

Expert Witness in League of Women Voters of Utah, et al., v. Utah State Legislature, et al., Civil Action No. 220901712 (Third Judicial District Court in and for Salt Lake County, Utah)

ADDITIONAL  
TRAINING

EITM 2012 at Princeton University - Participant and Graduate Student Coordinator

COMPUTER  
SKILLS

Statistical Programs: R, Stata, SPSS, parallel computing

Updated November 10, 2025