

**IN THE CIRCUIT COURT  
FOR ANNE ARUNDEL COUNTY**

KATHRYN SZELIGA, et al.,

\*

*Plaintiff,*

\*

No. C-02-CV-21-001816

v.

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LINDA H. LAMONE, et al.,

\*

*Defendant.*

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NEIL PARROTT, et al.,

\*

*Plaintiffs,*

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v.

\*

No. C-02-CV-21-001773

LINDA LAMONE, et al.,

\*

*Defendants.*

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\* \* \* \* \*

**DEFENDANTS' RESPONSE TO SHOW CAUSE ORDER  
REGARDING COURT CONSULTANT**

Dr. James G. Gimpel should not be appointed to serve as a consultant to this Court because his apparent partisan bias may be seen to deprive him of the impartiality essential for a judicial appointee. His participation in this case as a court consultant would not promote, but instead would potentially diminish, “public confidence in the independence, integrity, and impartiality of the judiciary.” Md. Rule 18-201.2(a).

1. Dr. Gimpel has shown partisan bias through testimony offered in cases directly relevant to the claims pending before this Court. Dr. Gimpel has defended extreme gerrymanders instituted by and for the benefit of Republicans. For example, he testified in support of North Carolina's 2016 congressional redistricting plan. Exhibit 1, Expert Report of James G. Gimpel, Ph. D. in *Common Cause v. Rucho*, No. 16-1164 (M.D. N.C.) and *League of Women Voters of N. Carolina v. Rucho*, No. 16-1164 (M.D. N.C.). Dr. Gimpel endorsed that plan even though the plan was designed to maximize Republican dominance over an otherwise politically balanced electorate to the point that Rep. Lewis "d[id] not believe it's possible to draw a map" that was more favorable to Republicans, *Rucho v. Common Cause*, 139 S. Ct. 2484, 2491 (2019); see *Rucho v. Common Cause*, U.S. No. 18-422, Brief of Appellants Robert A. Rucho, David R. Lewis, et al., 2019 WL 629974 \*10 (Feb. 8, 2019) (same). The partisan gerrymander that Dr. Gimpel deemed acceptable resulted in Republicans winning 10 of North Carolina's 13 congressional seats in the 2018 election, though Democratic candidates received the majority of votes cast statewide.<sup>1</sup> *Rucho v. Common Cause*, U.S. No. 18-422, Brief of Appellees League of Women Voters of N. Carolina, 2019 WL 1057909, \*3, \*15 (Mar. 4, 2019).

2. Dr. Gimpel also served as an expert, both in federal court and state court, defending the 2011 congressional redistricting plan drawn to benefit Republicans in

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<sup>1</sup> In one of the races won by a Republican, the North Carolina State Board of Elections refused to certify the result due to evidence of widespread irregularities, and a new election was held for that seat.

Pennsylvania. Exhibit 2, Expert Report of James G. Gimpel, Ph. D. That is, Dr. Gimpel testified in support of the plan that the Supreme Court of Pennsylvania struck down as a partisan gerrymander in *League of Women Voters v. Commonwealth*, 178 A.3d 737, 768 n.40 (2018). The court found that the congressional plan Dr. Gimpel endorsed enabled Republicans in the 2012 election to win 13 of Pennsylvania's 18 congressional seats, though "Democrats earned a statewide share of 50.8% of the vote, . . . whereas Republicans earned only a statewide share of 49.2% of the vote." *Id.*, 178 A.3d at 764. The court also noted that, rather than contest a "motion to exclude the expert testimony of Dr. James Gimpel regarding the intended or actual effect of the 2011 Plan on Pennsylvania's communities of interest," the Legislative Respondents who were defending the plan "agreed to withdraw the challenged portion of the [sic] Dr. Gimpel's report." *Id.* at 768 n.40.

3. In the federal proceedings, Dr. Gimpel acknowledged that, based on the number of registered Democratic voters in Pennsylvania, Democrats were theoretically capable of winning 9 congressional seats, rather than the maximum of 5 seats they were able to muster under the Republican-drawn plan. *Agre v. Wolf*, 284 F. Supp. 3d 591, 672 (E.D. Pa. 2018). One member of the three-judge district court observed that "Professor Gimpel was very general in a lot of his answers," and "as the recorded testimony will show, but the written testimony will not, he raised his voice and started shouting on a number of occasions when his conclusions were under attack during cross examination. This is highly

unusual behavior by an experienced expert, and warrants the Court’s giving low weight to all of his testimony.” *Id.* at 674 (Baylson, J., dissenting).

4. Dr. Gimpel similarly served as an expert in support of Wisconsin’s pro-Republican gerrymander in *Whitford v. Gill*, No. 15–cv–421 (W.D. Wisc.). Exhibit 3, Expert Report of James G. Gimpel. As the Supreme Court noted, in the 2012 election, the state legislative plan supported by Dr. Gimpel’s testimony enabled Republicans to win 60 of Wisconsin’s 99 State Assembly seats “with 48.6% of the two-party statewide vote for Assembly candidates.” *Gill v. Whitford*, 138 S. Ct. 1916, 1923 (2018). “[T]he mechanism used to wreak that harm is ‘packing’ and ‘cracking,’” meaning “[i]n a relatively few districts, the mapmakers packed supermajorities of Democratic voters—well beyond the number needed for a Democratic candidate to prevail. And in many more districts, dispersed throughout the State, the mapmakers cracked Democratic voters—spreading them sufficiently thin to prevent them from electing their preferred candidates.” *Id.* at 1935 (Kagan, J., concurring). Dr. Gimpel’s expert report, however, sought to justify that extreme gerrymander.

5. Dr. Gimpel’s participation in these three prominent cases, involving redistricting challenges in three different states, consistently showed him to be an advocate for pro-Republican, extreme partisan gerrymandering, where Republicans were able to obtain dominance over politically balanced electorates solely through the mapmaking process. This record provides reason for neutral observers to question whether he would

be an impartial consultant if appointed by this Court. While Dr. Gimpel is free to prioritize support of Republican efforts in connection with his practice as an expert witness retained by litigants, the Court itself should avoid retaining consultants with such clearly defined political preferences when, as here, impartiality is so critical to the Court's function.

6. Dr. Gimpel has also been a frequent contributor of articles to the Center for Immigration Studies. *See* <https://cis.org/James-G-Gimpel>. The Southern Poverty Law Center has designated the Center for Immigration Studies as a hate group due to its "repeated circulation of white nationalist and antisemitic writers in its weekly newsletter and the commissioning of a policy analyst who had previously been pushed out of the conservative Heritage Foundation for his embrace of racist pseudoscience," as well as "its historical associations, and its record of publishing reports that hype the criminality of immigrants. . . ." <https://www.splcenter.org/fighting-hate/extremist-files/group/center-immigration-studies>.

7. Finally, should the Court proceed to retain the services of Dr. Gimpel notwithstanding the Defendants' objections, it should limit the scope of his services to assistance with understanding technical terms and concepts.

### **CONCLUSION**

For these reasons, Dr. Gimpel should not be appointed as consultant to this Court.

Respectfully submitted,

BRIAN E. FROSH  
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/s/ Steven M. Sullivan

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February 25, 2022

Attorneys for Defendants

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### **CERTIFICATE OF SERVICE**

I certify that on this 23rd day of February, 2022 the defendants' identification of expert witnesses, with curriculum vitae for each expert, was sent to all parties of record by electronic mail.

/s/ Steven M. Sullivan

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Steven M. Sullivan

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**IN THE UNITED STATES DISTRICT COURT  
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA**

COMMON CAUSE, *et al.*,

Plaintiffs,

v.

ROBERT A. RUCHO, in his official  
capacity as Chairman of the North  
Carolina Senate Redistricting Committee  
for the 2016 Extra Session and Co-  
Chairman of the Joint Select Committee  
on Congressional Redistricting, *et al.*,

Defendants.

CIVIL ACTION  
No. 1:16-CV-1026-WO-JEP

THREE-JUDGE COURT

League of Women Voters of North  
Carolina, *et al.*,

Plaintiffs,

v.

Robert A. Rucho, in his official capacity  
as Chairman of the North Carolina  
Senate Redistricting Committee for the  
2016 Extra Session and Co-Chairman of  
the 2016 Joint Select Committee on  
Congressional Redistricting, *et al.*,

Defendants.

CIVIL ACTION  
No. 1:16-CV-1164-WO-JEP

THREE-JUDGE COURT

James G. Gimpel, under penalty of perjury, makes the following declaration:

**Expert Report of**  
**James G. Gimpel, Ph.D.**

I am a Professor of Political Science in the Department of Government at the University of Maryland, College Park. I received a Ph.D. in political science at the University of Chicago in 1990. My areas of specialization include political behavior, political geography, geographic information systems (GIS), state politics, population mobility and immigration. Publications include papers in well-regarded peer reviewed political science journals (*AJPS*, *APSR*, *JoP*, *QJPS*), journals in other social science fields, as well as several books relating to the same topics.

**Focus of Research and Overview**

On March 9, I was asked by the defendants in this case to respond to expert reports by the plaintiffs dated March 1, on North Carolina's present congressional redistricting plan, passed into law by the North Carolina legislature in 2016, and under which the 2016 congressional elections were carried out. I begin by reviewing the values and redistricting criteria commonly used by state legislatures to draw legislative districts. These criteria commonly conflict with each other, creating challenges for any would-be mapmaker. There is no perfect map that optimizes the value of all of the measures now incorporated into the redistricting process. Automated map drawing might reveal redistricting options much more quickly than a well-trained professional can use GIS software to draw the maps one-at-a-time, assessing each one *seriatim*, but the automated tools still fail to produce a problem-free map, insulated from credible legal challenge (Browdy 1990; Cho and Liu 2016). Those charged with the task of drawing, then approving, district boundaries inevitably weigh some priorities more heavily than others, some criteria must take precedence, and these decisions are inherently value laden and political, not within the capacity of technical expertise to decide. Technical experts can readily proliferate the

number of plans to consider, but nothing about their expertise leads inexorably to the conclusion that one map is best.

The expert reports by the plaintiffs use a variety of measures to show that the North Carolina 2016 districts have a Republican tilt, though this could be argued to be an incumbency protection plan, rather than a “Republican” plan, per se. In showing a Republican advantage, the plaintiffs’ experts have gone to considerable effort to confirm what is quite obvious to visual inspection and a few minutes of data analysis. Present GOP officeholders are advantaged somewhat by the 2016 map, though the sitting Democrats are as well. Legislators involved in *drawing* the maps, along with allied Republican observers called upon to comment, have admitted in various forums that the 2016 map exhibits a partisan tilt specifically designed to protect current members (Tomsic and Rumsey 2016; Savage 2016; Myrick 2017). Although maps with a less partisan tilt could have been drawn, as the plaintiff’s experts have shown, it is just as easy to show that maps with an equal or greater partisan bias could also have been drawn, depending on what other redistricting criteria are prioritized.

Finally, I show that when attempting to provide for the likely election of two African American candidates by grouping African American voters into districts, it becomes considerably more difficult to design a redistricting plan that is evenly competitive between the two major parties in the remaining districts. Some partisan tilt in a Republican direction is going to be the result of a redistricting plan that ensures descriptive representation for the state’s racial/ethnic minorities in two of the thirteen districts. Finally, on the way to reaching these conclusions, I also raise questions about some of the ambiguities present in the plaintiff’s expert reports, such as the definition of “reasonable maps,” as well as raising other questions about the measures used, and the example maps that are presented.

## Redistricting Principles in Conflict

By now it is no secret that the goals of redistricting frequently run counter to one another, creating trade-offs that are impossible to resolve in the absence of a consensus on priorities (Butler and Cain 1992, Chap 4; Niemi and Deegan 1978). The desirable features of congressional districts encompass both geographic (and geometric) features, as well as those thought to achieve the goal of fairness. Among the familiar geographic aspects are: contiguity and compactness, which need little explanation. To these is frequently added consistency or congruity with past districts, certainly to the extent possible. One would not switch a district from one side of the state to the other, or from a dense core city, to a sparsely settled rural area. In the redistricting process, new map drawing almost always begins with the implicit restrictions imposed by the boundaries of the previous map, not by throwing it out and starting from scratch. This desire for continuity is an important constraint, even if it is “understood” rather than expressly identified in legislated language. In many cases the demand to have districts consistent with past mappings is also in the service of the related aspiration to preserve “territorial community” (Stephanopoulos 2012) or ensuring that a map recognizes and preserves communities of shared interest (Forest 2004).

Among the fairness criteria are very well established principles such as equality of numbers, or certainly *near* equality. Under redistricting cases since the 1960s, this fairness doctrine has been interpreted consistent with Section 2 of the 14<sup>th</sup> Amendment to mean equality across the *whole* number of persons; not just those of voting age, those who are registered to vote, or those who identify with a political party. For practical reasons it is sometimes difficult to come by exact equality, but large deviations from equality are not desirable, except in cases in which several small states receive a singular representative in the U.S. House in spite of having considerably fewer people than the average House district elsewhere.

Other fairness criteria include minority descriptive representation, proportionality of seats with votes, and competitiveness of individual elections – presumably assured by drawing districts that encompass approximately even shares of identifiers with the two major political parties. The fairness goals are commonly in conflict with each other, and also with the geometric criteria.

Minority descriptive representation is understood to mean that minority, mainly African American and Latino, populations, should have a reasonably sure chance to elect someone from their own racial/ethnic group. Minorities should not be spread so thinly across districts that they have no opportunity to elect one of their own though bloc voting. Ensuring that African Americans and Latinos have an ability to elect an African American or Latino candidate, under circumstances of racially polarized voting, has been deemed necessary to achieving this end by assorted judgments under the Voting Rights Act of 1965, as amended in 1982. The challenge in some states, however, is to place ethnic minority voters in sufficiently concentrated pockets to further descriptive representation, without hindering the achievement of other important goals.

Given the close association of race and ethnicity with party identification, when African Americans and Latinos are grouped into geographic blocs within districts they are removed from having influence on the outcome of elections in the adjacent districts. The benefit of the majority-minority districts is descriptive representation for black and Latino voters. The cost is that other nearby districts are likely to be less politically competitive without the presence of those voters to support Democratic candidates. With a sufficiently large minority population share, coupled with multiple districts promoting descriptive representation, the remaining seats could well become safe, or at least *safer*, for the opposing party, distancing the seat share from the vote share. This is the sense in which the goals of descriptive representation and efficiency come into direct conflict.

Fairness criteria also regularly conflict with the requirement to hold together communities of interest that have formed over the course of state history. There is no universal agreement on what

makes a community-of-interest, probably because these vary with the unique histories of states. These communities of interest are sometimes conceived of as smaller official jurisdictions with well-defined boundaries such as counties or municipalities. In North Carolina for drawing the 2016 map, communities of interest were defined as counties, with the goal of keeping counties whole within congressional districts. This makes sense as counties are governing bodies in their own right, with elected commissioners (ranging from 3 to 9 in membership), a sheriff, a register of deeds and a clerk of court. Counties have taxing power, and other public boards are organized on a countywide basis, including those that supervise elections, alcoholic beverages, social services and schools. Importantly, North Carolina counties also fund public schools. Moreover, North Carolinians are known to identify with their counties as places they originate from and dwell. They are not arbitrary lines drawn on a map, but have come to constitute discrete locations with well-recognized qualities, social attachments and affiliations.

Preventing county splits is not the only possible way to measure the preservation of communities of interest. A state legislature is certainly entitled to look at other notions. Many communities of interest have an economic thrust, such as ports, military installations, or commercial hubs. Indian reservations and other areas of racial, ethnic and cultural importance may make reasonable claims to having a common interest. These places are frequently without official boundary lines, but are well-known to local residents and officeholders who carry about a unique local expertise an insular map drawer will lack. A powerful argument in favor of state legislative involvement in the redistricting process is the impressive amount of local knowledge legislators amass in living out their lives in a particular place, running for office, and serving a particular geographic constituency over a period of time. A high level of local knowledge is required to develop the kind of following that insulates a legislator from adverse electoral swings. But this same kind of knowledge is what uniquely enables legislators to draw maps encompassing interests known to belong together, as a territorial

community, rather than woodenly applying principles that would divide them, hampering the expression of common goals.

This kind of familiarity recognizes important community-level details unknown and often unknowable to the redistricting consultant; how neighborhoods relate to one another, how roadways and waterways separate communities psychologically not just physically, and other delimiters that distinguish interests that cannot be easily mapped relying on available boundary files. Typically, a redistricting consultant will gloss over communities of interest, not having the local expertise about what to include and what to discount. A state legislator, however, is apt to know every strip mall; ethnic restaurant; road construction project; pipeline; water tower; neighborhood association; grain elevator; intersection; power plant, and garbage dump. Not all of these features are going to be relevant to drawing boundaries, and clearly not everywhere, which is why a GIS specialist would not be inclined to collect this information on a statewide basis. Drawing upon local knowledge, however, on a district-by-district basis, this kind of information can identify a community of interest invisible to outsiders, but obvious to everyone occupying local ground.

Race-based districts aside, it takes little imagination to understand how achieving competitiveness is frequently at odds with the goal of preserving communities of interest. The mountain region of Western North Carolina bordering Tennessee is well recognized as a historical and cultural region distinctive from the rest of the state. The region is sufficiently unique that longstanding residents even have a characteristic accent with accompanying expressions not heard elsewhere. Given that the politics of the inhabitants of this region has developed hand-in-hand with their other cultural attributes, it is extremely difficult, if current party allegiances endure, to create a competitive congressional district west of Mecklenburg County (Charlotte) that doesn't encircle major parts of Charlotte itself. This difficulty also arises in other parts of the state given the way political party loyalty is expressed in present day settlement.

Finally, fairness criteria are often in conflict with the goal of maintaining stability and continuity in representation. Sometimes this value is also known as incumbency protection, and cynically characterized as allowing politicians to pick their voters, but there are principled arguments for wanting to draw districts favorable to the reelection of officeholders. Among them is the desire for continuity in a state's congressional delegation, perhaps because a state is well served by the accruing seniority of its delegation in the U.S. House of Representatives. A state, through its legislature and governor, is in an authoritative position to decide if the promotion of incumbency through the redistricting process better serves state interests than having seats that can potentially change hands with even tiny shifts in public opinion. Redistricting maps that take the partisan tilt of districts into consideration are usually aimed at the goal of incumbency protection, though it is also unclear from existing research just how much redistricting contributes to promoting incumbency given that incumbents also have other advantages (McCarty, Poole and Rosenthal 2009; Abramowitz, Alexander and Gunning 2006).

#### **On the 2016 Map Having a Partisan Tilt**

The plaintiff's experts go to considerable effort to show that in comparison to other possible maps, the 2016 map adopted by the North Carolina legislature is the result of a partisan gerrymander. From one point of view, this is not really worth disputing, and not worth the cost of their reports. From another point of view, one has to ask, "partisan compared with what?" Have all of the reasonable possible maps been considered in the set utilized as their baselines for comparison? Arguing both of these points, first one, then the other, is not a contradiction given the precedent set by previous rounds of redistricting in North Carolina and other states.

First, in response to the goal of incumbency protection, Republicans and Democrats now and in the past have insisted that this is a reasonable goal of redistricting and perfectly within the law. Longstanding practice dating to the founding period shows support for the goal of incumbency



protection as a value in the redistricting process. Whether a legislature seeks primarily to protect the seniority and institutional power of its officeholders in Congress, or seeks to maintain a strong bond between incumbents and constituents, these are legitimate choices states are entitled to make. Maps designed consistent with these choices are, or should be considered, “reasonable” maps. So too should maps that produce a partisan tilt inadvertently in the pursuit of other goals, such as the likely election of African American candidates, or the desire to maintain communities of interest. After all, partisan advantage can be an inadvertent result of the straightforward adoption of redistricting criteria that maximize other goals. In the creation of majority-minority districts, for example, the concentration of black voters to create something like a 40 to 50 percent majority population in one or a few districts, will exclude those populations from casting votes in adjacent districts which may go more Republican as a result of the present relationship between party identification and race. But ensuring the election of black and Latino representatives may be judged to be well worth tilting neighboring districts in a direction disadvantageous to one party or the other. Maps that accomplished the goal of ensuring black descriptive representation, as many state maps did in the 1990, 2000 and 2010 rounds of redistricting, were certainly not considered unreasonable maps at the time they were adopted, nor are they considered unreasonable in the states where they exist now.

Critics of incumbency protection as a redistricting goal suggest that by protecting incumbents map drawers are undermining accountability, thwarting the election process, and heightening polarization (Issacharoff 2002). These charges have been met by studies showing that such negative effects have been hard to detect (Persily 2002). In the particular cycles where competition for House seats did ebb, redistricting was not the culprit; challengers find it hard to unseat incumbents independently of how districts are drawn (Abramowitz, Alexander and Gunning 2006; Poole, McCarty and Rosenthal 2009). Moreover, even long-term incumbents behave as though their electoral fortunes are insecure, and with no evidence of slack or lethargy being offered as evidence of a supposed

life of ease. As for claims that redistricting for incumbency protection enhances polarization, the claim has been investigated and found to be lacking, probably because the sources of polarization lie at the institutional level more than in the Congressional constituency (McCarty, Poole and Rosenthal 2009).

Incumbency may be of momentous value to a state or constituency therein for the greater institutional power and influence it conveys. Incumbency buys, among other goods, confidence in advocating for state and constituency causes; familiarity with institutional processes; seniority within a party caucus and on congressional committees; relationships with other legislators and influencers; comprehension of other institutions of national government; expertise in working with the bureaucracy; awareness of constituency interests; and the amassing of other formal and informal resources for accomplishing constituency-oriented goals.

It was surely in the service of incumbency protection concerns that the Democratic state legislature enacted a redistricting plan in 1991 that secured the seats of a number of incumbents in the subsequent elections. Not only did the legislature create a new safe seat in the highly litigated 12<sup>th</sup> District, but also sought to protect six other Democrats holding seats at the time, as the delegation was divided 8D to 4R (1991-93) and remained 8D to 4R after redistricting (1993-95). The territory encompassed by the new 1st Congressional District is an area of traditional African American settlement dating to the antebellum era. This district was drawn so single-party Democratic, it awarded Bill Clinton 61 percent of the vote in 1992, in a three-way race.

In the 2001 round of redistricting, a Democratic legislature again controlled the redistricting process, maintaining the 12<sup>th</sup> District in the hands of incumbent Mel Watt, and succeeding in 2002 in protecting four other Democrats, electing a new Democratic candidate to the 1<sup>st</sup> District replacing a retiree, and electing a Democrat to the newly created 13<sup>th</sup> District. Notably, all seven Republican incumbents running in 2002 also won reelection. In 2004, all incumbents running were reelected, and the two Republican seats where members retired were held by Republicans. In 2006, a year in which

Democratic tides ran strong, all incumbents were reelected save one, a Republican in the 11<sup>th</sup> District, defeated by a four point margin. As noted above, there are alternative explanations for high incumbency reelection rates aside from redistricting, but nothing in the districts that were drawn for 2002 did anything to submerge incumbency protection as a value.

The 2002 redistricting map and its redistricting-related properties are set forth in Figure 1 and the accompanying Table 1. For comparison purposes, throughout, I rely on averaging the Republican percentage of the vote for elections running from 2004 to 2010 across a number of statewide offices as well as the 2004 and 2008 presidential elections. There is no bright-line cutoff for when a district becomes safe for either party, but highlighted in boldface in the table are those districts that meet or exceed an average of 53 percent of the vote for Republicans. Though it's a somewhat arbitrary delineation, districts falling between 47 and 53 percent of the vote are understood as competitive between the parties. To make easier comparisons with the 2012 and 2016 maps, I also use 2010 data for the white and black populations in Table 1.

In summary, the results show that the 2002 districts in Figure 1 produced five safe Republican districts, six safe Democratic districts, and three competitive seats. There are two seats with African American populations between 40 and 50 percent, sufficient to ensure that black candidates can get elected in Districts 1 and 12, even under circumstances of low turnout.

The 2012 Map is substantially continuous with the 2002 version (see Figure 2; Table 2) as one would expect it to be given the tendency of state legislatures to respect previous boundaries. The 2012 map maintained, for example, Districts 1 and 12, as majority or nearly-majority black. District 4 changed so as to protect the Democratic incumbent even further there. The ten remaining seats

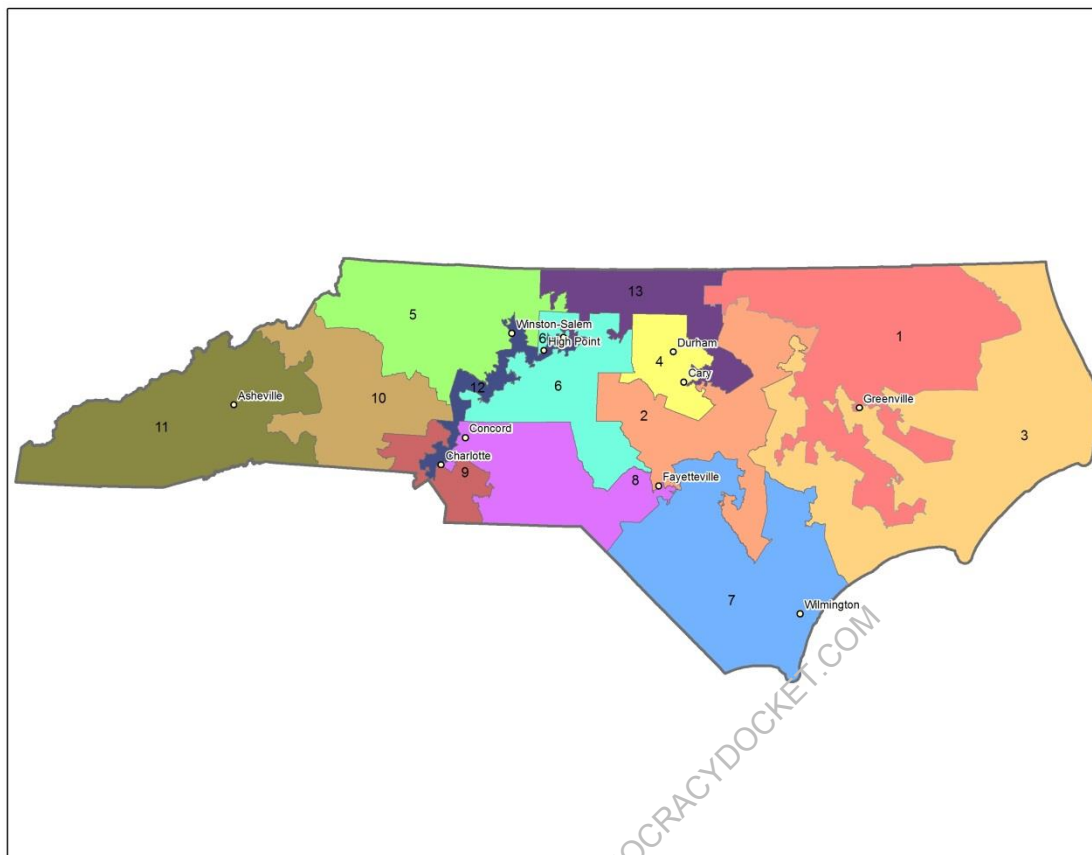


Figure 1 NC Congressional District Map 2002

Table 1. 2002 District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	44.2	<b>50.6</b>	5.2	<b>48.0</b>	34.6
2	60.8	29.1	12.6	27.4	46.9
3	75.5	17.9	7.4	15.9	<b>58.0</b>
4	66.9	20.3	9.1	19.0	41.4
5	85.2	8.8	6.7	7.7	<b>59.8</b>
6	82.5	10.9	6.8	9.7	<b>62.5</b>
7	63.5	22.9	7.0	20.9	48.2
8	58.3	29.9	11.6	27.2	46.5
9	75.6	16.1	8.2	14.2	<b>58.1</b>
10	84.7	9.6	5.5	8.4	<b>61.0</b>
11	89.1	4.8	5.6	3.9	50.9
12	42.5	<b>45.4</b>	12.2	<b>42.9</b>	31.9
13	60.3	29.8	10.6	27.4	42.3

% Black is 'Any Part Black' in the redistricting data for 2010.  
VAP indicates Voting Age Population.

Compactness	.11
Pop. Mean Dev.	6.16
County Splits	32
Efficiency Gap (pct)	14.8
Efficiency Gap	1.9

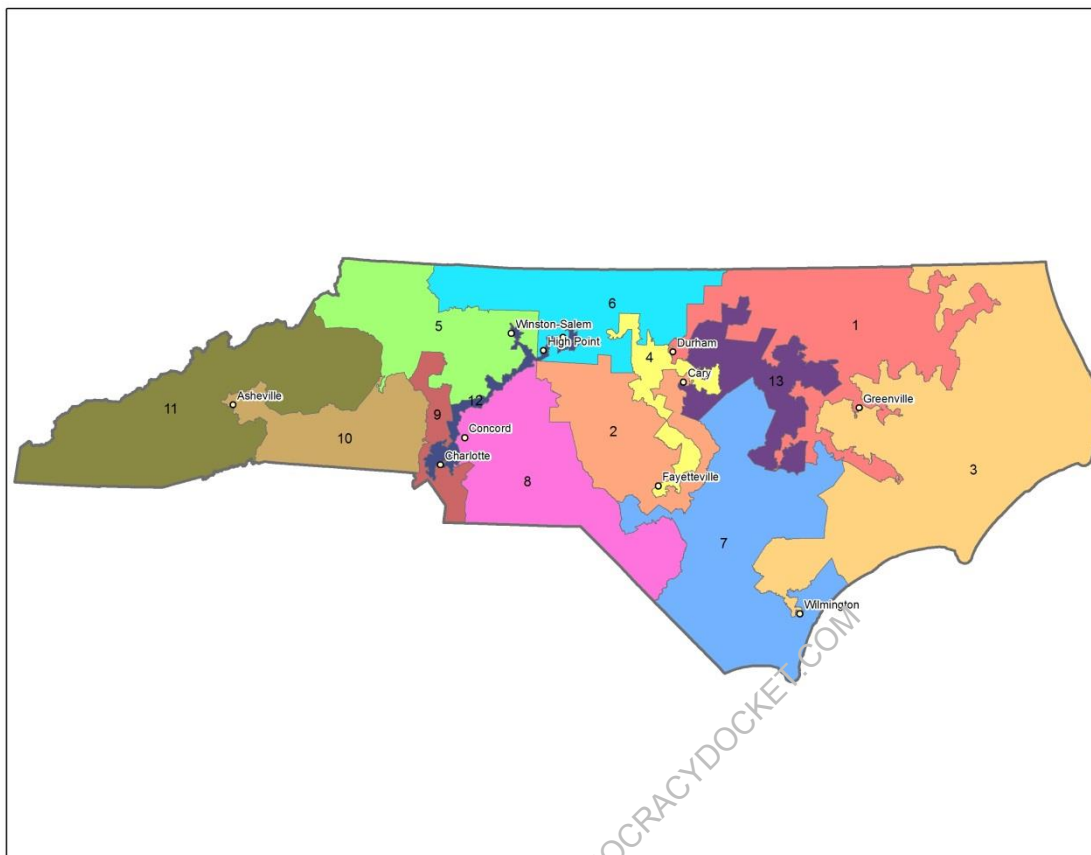


Figure 2 NC Congressional District Map 2012

Table 2. 2012 District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	38.2	<b>54.0</b>	8.0	<b>51.3</b>	28.3
2	71.3	17.8	10.6	15.9	<b>55.5</b>
3	73.5	20.7	6.4	18.5	<b>53.0</b>
4	53.1	34.0	11.6	30.7	30.9
5	79.3	13.3	8.2	11.8	<b>57.2</b>
6	78.4	15.5	5.7	14.3	<b>55.3</b>
7	72.2	18.3	9.3	17.0	<b>54.1</b>
8	65.9	19.7	8.4	18.0	<b>54.7</b>
9	78.1	13.4	7.6	11.9	<b>58.2</b>
10	82.2	12.5	5.6	10.8	<b>55.7</b>
11	90.0	3.7	5.4	3.0	<b>56.1</b>
12	33.6	<b>52.5</b>	14.2	<b>49.6</b>	24.3
13	73.9	18.3	8.0	16.9	<b>55.5</b>
% Black is 'Any Part Black' in the redistricting data for 2010. VAP indicates Voting Age Population.					

Compactness	.08
Pop. Mean Dev.	.27
County Splits	50
Efficiency Gap (pct)	16.3
Efficiency Gap	2.1

either leaned or were safely Republican, favoring incumbency protection but also in response to the challenge of producing competitive districts when a large share of African American voters are grouped together to promote descriptive representation.

The alterations that produced the 2016 Map (see Figure 3; Table 3) lowered the share of the African American population in Districts 1, 4 and 12. The African American population was more widely distributed across the remaining North Carolina districts, having the most notable effect of making Districts 7 and 13 more evenly divided by political party preference.

There are no surprises to be revealed in any of these three maps. They have been studied extensively and their plusses and minuses are well understood. What has been summarized here is a straightforward description of the facts plainly evident from ordinary inspection. No elaborate and decorative calculations are necessary to show what these maps plainly show.

In summary, these plans are a reflection of the traditional legislative priority given to continuity with past districts, incumbency protection and descriptive representation, above other values. The 2016 map does the best job balancing continuity, incumbency protection, descriptive representation with a demand for competitiveness. When considering other redistricting criteria, such as protecting communities of interest as gauged by county splits, the 2016 map is clearly superior to the previous two, dividing only 13 counties. The 2016 Map also has a lower efficiency gap (% popular vote - % seats), of course depending upon the standard used to identify party preference. Using 2008 measures of party preference from the hard fought statewide elections that year, the 2016 map “wastes” fewer votes than either the 2012 or 2002 plans, providing a better balance between votes cast and seats held. Even so, the efficiency gap is highly questionable as an indicator of political distortion, since “wasted votes” can result from many sources, not just artful boundary drawing. If an evaluation hangs on using this measure, however, 2016’s map performs admirably compared to the others.

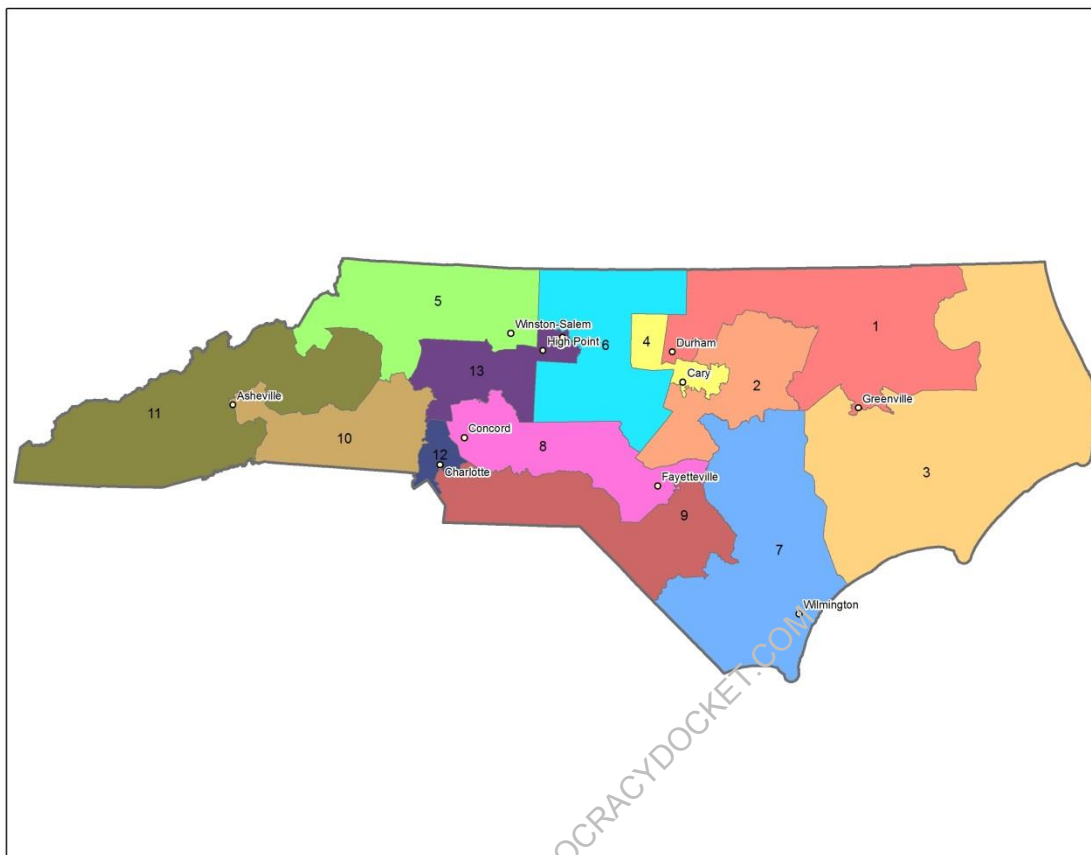


Figure 3 NC Congressional Districts 2016

Table 3. 2016 District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	45.4	<b>46.5</b>	8.0	<b>43.8</b>	32.0
2	71.7	20.3	8.8	19.2	<b>55.2</b>
3	71.4	22.7	6.5	20.7	<b>53.4</b>
4	62.1	24.1	10.3	21.7	38.2
5	77.3	15.0	8.8	13.6	<b>54.7</b>
6	71.5	20.8	9.2	19.4	<b>53.0</b>
7	70.3	21.5	8.9	19.9	51.6
8	67.1	24.2	9.0	21.7	<b>53.7</b>
9	64.5	20.4	7.1	19.1	<b>53.7</b>
10	81.8	12.9	5.6	11.3	<b>56.0</b>
11	89.7	3.8	5.6	3.0	<b>55.0</b>
12	47.8	<b>38.4</b>	14.0	<b>35.3</b>	36.0
13	69.5	22.5	7.1	20.6	51.9
% Black is 'Any Part Black' in the redistricting data for 2010. VAP indicates Voting Age Population.					

Compactness	.26
Pop. Mean Dev.	.15
County Splits	13
Efficiency Gap (pct)	7.6
Efficiency Gap	1.0

In fact, the 2016 map seems to do a better job along several dimensions than the Judges' map, discussed in Professor Mattingly's report for the plaintiffs. This map and an accompanying table of descriptive statistics is shown in Figure 4, below. The result in terms of partisan leaning suggests the likelihood of four Republican seats, four safe Democratic seats, and perhaps five evenly competitive seats. This is certainly a reasonable map if competitiveness is the preeminent goal of redistricting. Notably, though, the Judges' map does not do as well as the 2016 map at balancing seats and votes gauged by the efficiency gap. More importantly, the Judges' map clearly sacrifices descriptive representation in the effort to heighten competition. The largest African American bloc in any district drops to 43 percent. A Charlotte-centered district (9) is created with a 35 percent African American share. Black voters could easily lose voice in low turnout, off-year elections, quite aside from persistently low-turnout Democratic primaries.

Maps that produce competitive districts are not difficult to draw. The more difficult challenge is to incorporate other important goals in drawing them. In the appendix to this report, Figures A1-A4 display example maps all focused on producing competitive districts. Like the Judges' map, they do so first and foremost by sacrificing descriptive representation, distributing African American voters across other districts in order to erode any Republican edge. Example Map 3, in Figure A1, leaves three Republican districts, four Democratic districts, and six competitive districts. At the same time, this map does poorly on the efficiency gap measure, like the Judges' map. It also splits many counties, doing poorly on this admittedly simplistic operationalization of the communities of interest concept.

Example Map 5, shown in Figure A2, also predicts competitive outcomes, with three Republican seats, four Democratic seats, and six districts evenly divided. Though this map does well to avoid splitting counties, dropping the number to just 22, it does very poorly on the efficiency gap measure. This map also allows the African American population to rise above 30 percent in only one district, District 8 (where District 1 is presently), endangering the goal of descriptive representation.



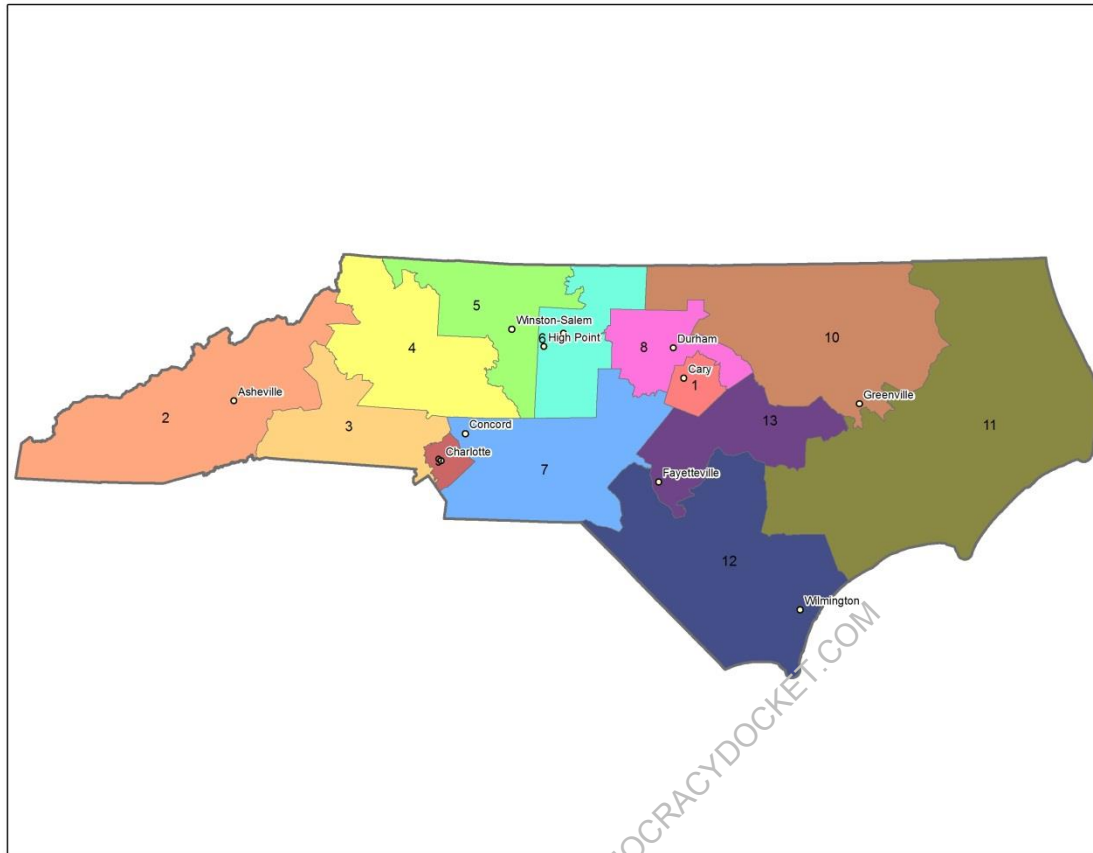


Figure 4. NC Congressional Districts as Proposed by Judges' Map

Table 4. Judges District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	65.8	21.8	9.8	19.9	45.2
2	89.9	4.1	5.5	3.3	51.5
3	78.2	15.4	6.5	13.7	<b>57.1</b>
4	83.8	9.9	6.6	8.8	<b>61.7</b>
5	74.8	17.1	9.3	15.7	<b>54.9</b>
6	65.0	26.9	7.4	24.8	48.6
7	73.6	18.1	9.5	16.7	<b>57.4</b>
8	61.6	26.7	11.2	24.8	38.0
9	52.1	34.9	12.5	32.0	40.7
10	51.8	<b>42.9</b>	5.4	<b>40.6</b>	40.6
11	70.7	22.8	7.5	20.9	52.8
12	62.9	22.2	7.2	20.3	47.7
13	60.1	30.5	10.8	28.1	49.6
% Black is 'Any Part Black' in the redistricting data for 2010. VAP indicates Voting Age Population.					

Compactness	.35
Pop. Mean Dev.	.07
County Splits	12
Efficiency Gap (pct)	16.2
Efficiency Gap	2.1

Example Map 8 (Figure A3) produces four Republican seats, three Democratic seats, and six evenly divided by partisan preference. The district does boost the African American percentages in three districts above 30 percent, but they are each barely over that threshold. This map does a better job minimizing wasted votes as measured by the efficiency gap, but it also splits 42 counties, largely failing to preserve communities of interest.

Finally, Map 9 (Figure A4) is the best plan of all in creating the largest number of competitive districts. Seven districts lie in the competitive interval between 47 and 53 percent. Two Republican-tilted districts reach or exceed 55 percent. The final four of these districts lean in a Democratic direction. Predictably, however, these results come with a clear threat to descriptive representation for African Americans. This map is also the worst of the four in that it splits 42 counties, and also exhibits a high efficiency gap.

Trade-offs – these maps are about the thorny trade-offs involved in redistricting. Not even mentioned in this part of the discussion is the reasonable goal of stability and continuity in representation and how these maps threaten the seniority and status of North Carolina's congressional delegation. Nor has there been an investigation of how the Judges' map, or these other example maps, may divide communities of interest at a meaningful level of granularity well below the scale of counties.

Any college freshman with a few software tools can proliferate maps, tens-of-thousands of them. Contemporary computing technology makes district drawing a mass production enterprise. But who should be charged with evaluating the alternative plans for their 'goodness'? That's not a judgment experts are capable of making because technological tools can't establish the priority of values (Cho and Liu 2016). Historically, people have set value priorities in redistricting through their elected representatives.

### Map Drawing with Removal of African American Population Centers

So far, this effort has focused on showing that the Judges' map, and maps like it, might do very well at producing competitive districts, but do less well at fulfilling other redistricting goals. One way to reinforce this point is to make an effort to draw competitive districts dropping out voter tabulation districts with African American populations that are included in majority-minority districts, or districts where minorities closely approach a majority. Since time is short for producing this report, one might accomplish this quickly by removing from the map Districts 1 and 12 (from 2012) from the effort to draw new districts. Looking first at 2012 is a reasonable place to start since it was with the 2012 plan that the North Carolina General Assembly had to begin from in creating the 2016 plan. Knowing that they had to uphold the value of descriptive representation, and valuing continuity with previous plans, it is reasonable to expect legislators to have separated large parts of Districts 1 and 12 from their efforts to redraw the rest of the state's districts. As I have already implied above, this was not an easy task, even if the measurement of concepts like competitiveness and party preference go unquestioned.

Just as it has been shown above how the goal of drawing competitive districts puts descriptive representation at risk, when we remove the two traditionally African American districts from the map completely, the remaining districts exhibit a decidedly more Republican tilt. The reports by Professors Mattingly and Chen boast of how they can draw competitive maps when they are free to manipulate the geography of African American settlement, distributing and redistributing these voters as they please, as if dealing out randomly shuffled cards. But hold those African American districts intact, consistent with past boundaries, and it becomes much more challenging to produce eleven competitive districts in the rest of the state.

To illustrate with the Judges' map Table 5 tabulates the district characteristics for this plan after removing all of the VTDs that comprised Districts 1 and 12 from the 2012 map. Once the VTDs that constituted Districts 1 and 12 (from 2012) are removed, Republicans have a solid margin in seven

districts on the Judges' map, a slight edge in two more, and Democrats have only one safe seat, with one that leans their way. The two remaining seats are more even by party preference. Elections under such a plan could easily produce ten or eleven Republicans across thirteen districts; or nine Republicans across eleven -- either way the remaining seats after extracting the turf encompassed by Districts 1 and 12 become less competitive. This quick exercise was only for purposes of illustrating the trade-off that

<b>Table 5. Judges District Characteristics Removing 2012 Districts 1 and 12</b>					
<b>District</b>	<b>% White</b>	<b>% Black</b>	<b>% Hispanic</b>	<b>% BlackVAP</b>	<b>% Rep</b>
1	65.8	21.8	9.8	19.9	45.2
2	89.9	4.1	5.5	3.3	51.5
3	79.4	14.6	6.2	12.8	<b>57.8</b>
4	85.1	8.7	6.4	7.7	<b>62.4</b>
5	79.5	12.9	8.5	11.5	<b>58.1</b>
6	78.6	14.6	6.3	13.4	<b>57.5</b>
7	73.5	18.1	9.6	16.7	<b>57.4</b>
8	69.9	19.5	9.6	17.8	43.1
9	74.7	15.7	8.0	13.7	<b>54.6</b>
10	67.4	27.1	5.8	25.1	52.5
11	75.4	17.7	8.0	16.0	<b>56.6</b>
12	62.9	22.2	7.2	20.3	47.7
13	61.7	28.8	10.9	26.4	50.8
% Black is 'Any Part Black' in the redistricting data for 2010. VAP indicates Voting Age Population.					

the plaintiffs' reports disregard. Eliminating two entire districts worth of voters does not produce an acceptable plan in anyone's world. But the point is that when you accommodate the goal of ensuring descriptive representation using a template something like Districts 1 and 12 of the 2012 plan as the background, this makes it far more difficult to produce any sizable number of competitive seats in the rest of North Carolina.

This is exactly the position where the North Carolina General Assembly found itself in response to the challenge to the 2012 map. The General Assembly was assuredly not in the position of

Professors Mattingly and Chen, free to consider a plan unshackled from previous plans and longstanding habits of thought and practice. Constrained by the need to consider the African American population as a political bloc tied to a particular geography, they were required to modify the 2012 map restricted to modest alterations while still achieving an acceptable outcome. From that standpoint, the number of reasonable alternative maps was much smaller than what can be produced using minimal criteria and an automated redistricting program.

To be sure, there are alternative plans to the Judges' map. In choosing to manipulate the Judges' map for the illustration in Table 5, the point was not to single it out, in particular. Any of the competitive maps in the Appendix are expressive of the same conflict of interest. Remove the VTDs from the concentrated African American locations encircled by Districts 1 and 12, and it becomes far more challenging to produce six, seven or eight competitive districts in the rest of the state. Moreover, an investigator need not remove the VTDs from Districts 1 and 12, in particular, as was done here just for the sake of convenience. Remove clusters of contiguous high African American VTDs from around the state sufficient to produce two majority-minority districts and the remaining VTDs are much harder to amalgamate into any sizable number of politically competitive districts for U.S. House seats. North Carolina is not unique. Levitt (2016, 2) makes the same point about Arizona's congressional districts; competitive seats are hard to create if map drawers also care about minority representation.

To cloud matters even further, just what makes for a partisan map is confusing and unclear (Alexander and Prakash 2008). Surely partisanship and competitiveness cannot be judged simply by measuring the balance of party registration or voting in a district, as has been presented here and in other reports. The present understandings that rely on vote percentages for the major parties fail to offer any local baseline for what an acceptable distribution of partisanship should be. For a party decisively in the minority in a region, creating one or two competitive districts itself will require a highly

partisan effort. Some districts would rarely be competitive given the underlying concentration of the population settled there (Levitt 2016).

To borrow the earlier example, to create a competitive district in the mountain region surrounding Asheville might require meandering out to the Charlotte area to find the necessary Democratic identifiers to even out the balance of partisans further west. These “more competitive” maps can be drawn, but they could be easily taken as suggestive evidence of highly partisan motivations at work, not evidence of the desire to create better government, or the desire to make legislators more responsive or responsible. Given the current distribution of partisans in the westernmost part of the state, the districts there probably should not be highly competitive. A competitive map would instead reveal evidence of the ugliest kind of partisan map drawing at work, turning the usual indicators for partisan bias and competition on their heads. We should not forget that it is always the minority party that wants more competitive districts.

### **On Partisan Gerrymandering and Reasonable Maps**

The notion that a proper assessment of existing plans should require comparison to a reasonable baseline of alternative maps is a point carefully and persuasively made by Professor Mattingly. By this standard, one does not judge the 2012 or 2016 map against any possible collection of maps, much less a complete enumeration, but against a much narrower subset of “reasonable” or “plausible” maps that might have been drawn using redistricting criteria. In Professor Mattingly’s report, the baseline is a comparison against 24,000 alternative maps. In Professor Chen’s report, the baseline measure is derived from 1,000 possible maps.

Some restriction on what constitutes a reasonable baseline for comparison makes sense because we would not want the baseline to be a random collection of maps, and a complete enumeration of possible maps is not feasible for states the size of North Carolina given current

computing capacity. A baseline developed from a random draw of even a large set of possible maps is also undesirable. After all, no legislature would be considering a random map as a starting point.

Human settlement over a landscape is never random. A comparison based on randomness would make even the most trivial patterns of clustering stand out as statistically noteworthy. But the same problem of false discovery is true if a baseline is constructed that is not sufficiently attentive to the precedent established by previous plans, almost always a starting point for a state legislative body or redistricting commission. Baseline comparisons also need to take into account other plan criteria, including geometric and fairness guidelines.

There is ample room to question whether the baselines used in the plaintiff's reports consider the full range of plausible maps, or properly exclude the implausible ones. Professor Chen's report includes only the bare minimum of characteristics that figure into redistricting, presumably producing 1,000 maps that are reflective of those criteria, but do not encompass the precedent set by previous North Carolina maps and their existing boundaries. This baseline also fails to consider maps that are drawn under the commonly sensed pressure to support incumbents, something commonly implied in the redistricting process even if not articulated explicitly.

Starting from the boundaries of the 2012 map, quite a number of reasonable maps might have been drawn with the settlement of party identifiers as a priority consideration. An important caveat here is that a large number of non-competitive pro-Republican districts will be difficult to draw so long as the need for descriptive representation is ignored and the reliably Democratic African American population is scattered.

Figure 5 represents one of many possible pro-Republican maps but this time with no certain majority minority districts carved out. About the best thing this map accomplishes from a Republican point of view is the minimization of the number of non-competitive Democratic seats (Districts 6, 8 and 12). The remaining 9 are either evenly competitive (6) or tip toward Republicans (4). The results in

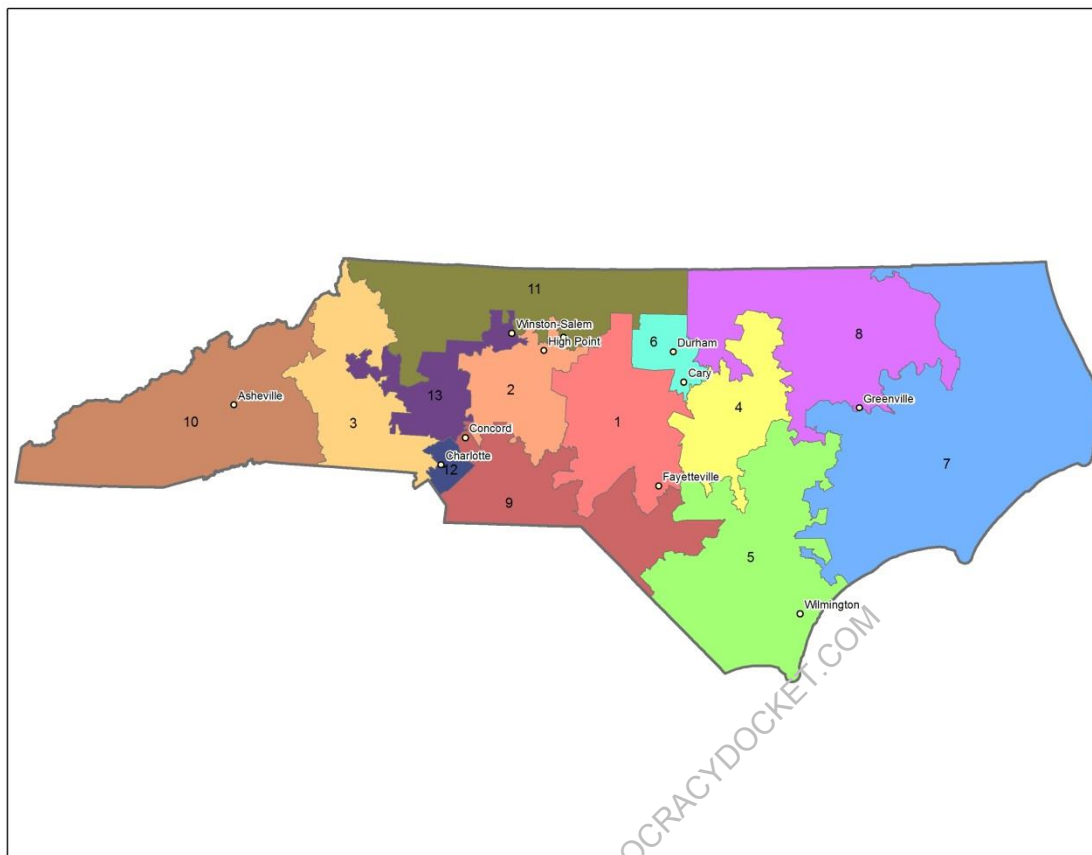


Figure 5. North Carolina Congressional Districts in an Example Map

Table 6. District Characteristics from Figure 5 Map					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	65.7	27.9	11.6	25.5	49.6
2	71.6	18.8	7.4	16.9	<b>54.8</b>
3	77.3	23.9	6.1	22.4	<b>55.4</b>
4	63.3	18.1	12.0	16.7	49.1
5	68.1	4.4	8.0	3.5	49.7
6	63.3	27.7	9.9	25.1	37.2
7	71.9	19.1	6.2	17.6	<b>53.0</b>
8	53.2	23.2	5.8	20.7	41.6
9	62.2	30.3	8.8	28.1	52.7
10	89.2	7.2	5.5	6.3	51.7
11	73.1	<b>40.2</b>	6.6	<b>38.1</b>	52.2
12	53.7	31.9	12.8	29.9	41.8
13	77.8	20.5	8.5	18.9	<b>57.6</b>
% Black is 'Any Part Black' in the redistricting data for 2010. VAP indicates Voting Age Population.					

Compactness	.17
Pop. Mean Dev.	.14
County Splits	55
Efficiency Gap (pct)	16.5
Efficiency Gap	2.1



Table 6 reinforce the idea that competitive districts emerge much more naturally in a map-drawing exercise in which descriptive representation is sacrificed. This map also exemplifies how a Republican-oriented plan and a competitive plan may be largely consistent with one another if majority-minority districts are scrapped and little attention is given to shoring up incumbency. Apparently a map with the features in Figure 5 is quite pleasing to a majority party in a state legislature because it is a common partisan strategy to maximize the number of seats the party can win, even at some reduction in electoral security (Ryan and Lyons 2015, 253; Gopoian and West 1984). Presumably a large number of GOP partisans would prefer to create a few safe seats for the opposition in exchange for a larger number of marginal seats. A map with only four safe Democrats is still a pretty Republican map, even if the remaining 9 districts are divided between safe Republicans and seats both parties can regularly contest. Not surprisingly, the map in Figure 5 does not meet the goal of achieving a low efficiency gap, doing slightly worse than the Judges' map in that respect.

In summary, the 2016 map is a reasonable response to the multiple and contradictory demands of the redistricting process, including that of descriptive representation. Toss out descriptive representation and it is considerably easier to even out the balance of party identifiers across North Carolina's congressional districts (Levitt 2016; Nakao 2011). Certainly 2016 ought to be included within the realm of "reasonable" or "plausible" maps as understood by the plaintiff's experts when reconsidering the history from which the North Carolina General Assembly was drawing. The 2002 and 2012 ought to be considered within the subset of reasonable maps as well. There is no justification for excluding them from reasonableness criteria given the unsettled nature of redistricting law. Conversely, a great many of the maps from simulations based only on two, three or a few redistricting principles would be ruled out as *unreasonable* for excluding the full set of criteria understood as shaping redistricting work. The 2016 map stands out from the distribution of "reasonable maps" in the plaintiff's reports mainly because their definition of reasonable maps ignores what has sometimes been called the

set of “reasonably imperfect plans” that satisfy enough of the redistricting criteria so that they are acceptable to relevant and important stakeholders (Cain 2012). Plans drawn by experts fulfilling only minimal requirements of contiguity, population equality and compactness but that are not realistic from the standpoint of involved interest groups and parties, should not be included among the set of reasonably imperfect plans (Cho and Liu 2016, 355).

### **Ground-Truthing Redistricting Plans**

There has not been time in writing this response to adequately discuss the importance of *ground truthing* a redistricting plan to ensure communities of interest have been preserved. The term ground truthing originates from geography and geology meaning to validate mapped representations with close-up, onsite field investigation that will reveal features and details that those representations fail to capture. In the redistricting context this means that any boundary drawing approval process should spend some time in close inspection of the locations boundaries divide and unify. I indicated above that state legislators are in an ideal position to offer such knowledge and expertise, perhaps almost uniquely qualified to do so.

Solutions imposed from “30,000 feet” multiply errors. Maps are abstractions from reality, and it is surprisingly easy to place a boundary a mile or more from where it should be drawn, or miss a new housing development that has added hundreds of voters to a VTD. Data sources are sometimes dated and statistical processes can be inaccurate, or more regularly, are only accurate to a level of precision that is not entirely known. Map drawing by experts is no substitute for local expertise, but complementary to it. Many redistricting specialists complete their plans and proclaim them finished without ever leaving their desks. With no ground-truthing process in place, map drawing is naïve empiricism. Excluding the local knowledge of state legislators that has historically informed redistricting does not make a plan unbiased – quite the opposite.

## Concluding Remarks

Redistricting plans have to satisfy many goals, and they always do this imperfectly because the goals are in conflict. A district that preserves a territorial community quite well is likely to be politically lopsided on a number of other measures because they promote homogeneity of interest. Conversely, competitive districts could well be disruptive of communities if they have to go out of their way to incorporate diverse interests.

Responsiveness, or “efficiency,” is not the preeminent goal of redistricting any more than other values that could be elevated. Just as there are reasonable arguments for creating more competitive districts, there are equally reasonable arguments for desiring lower turnover in leadership. Some argue quite reasonably for representatives who will ignore the short-run impulses and protests of constituents in favor of policy that will serve the longer-term interests of the state. Expertise and seniority in Congress are also valuable resources in exercising oversight, and advocating on behalf of a state’s voters. From this standpoint, having new and inexperienced leaders trading office in every election is not better than having a stable group of representatives in place to address the long-term interests of North Carolina on Capitol Hill. Some would even insist that the U.S. House of Representatives is, by design, supposed to be a continuing and highly stable body, not subject to the whims of each new administration.

All maps are imperfect, objectionable to someone. Representational gaps abound. Minority parties, independent voters, women, Catholics, Asian Americans, and many other identity groups fail to find representation in the legislature proportional to their voting presence in elections. Some popularly elected legislative body has to be awarded the authority to adjudicate among these contending claims and priorities. These state legislators may well try to advantage themselves by drawing districts favorable to their reelection, but those legislators can also be defeated because voters come to

disapprove of this practice. Voters, in the end, have control over whether there are competitive elections.

**Appendix Follows**

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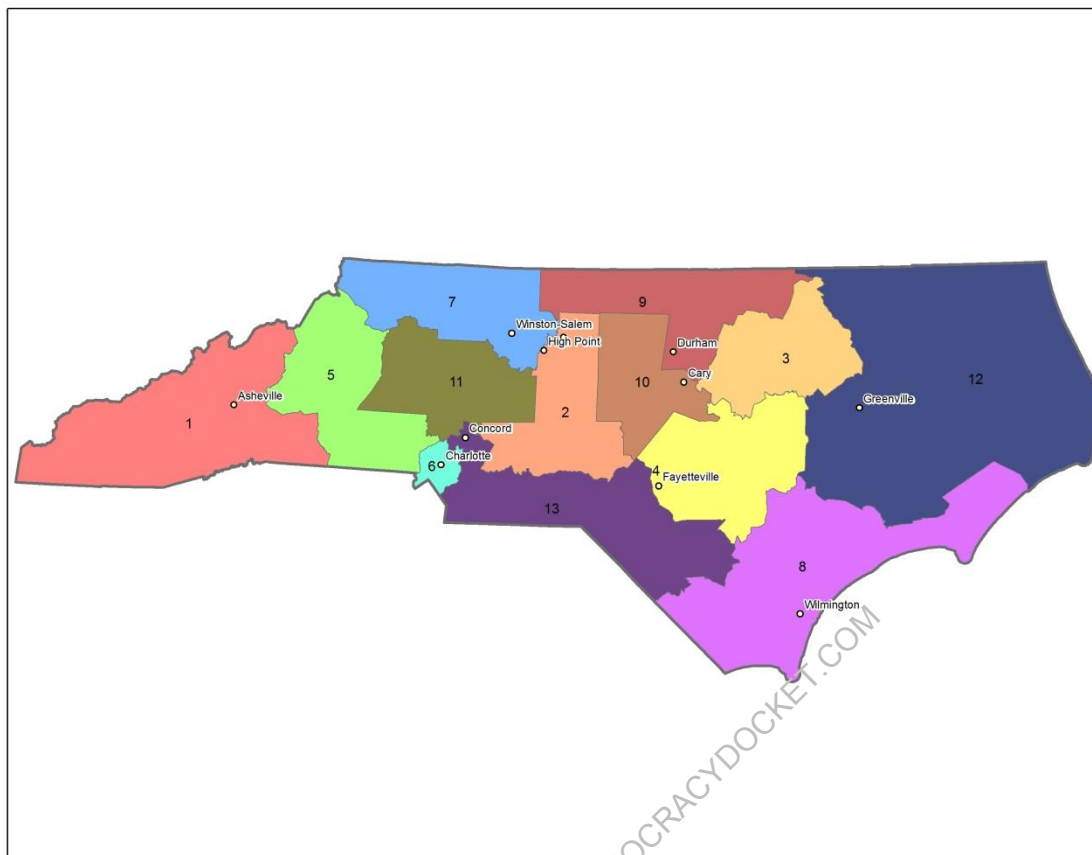


Figure A1. Example Map 3 Illustrating Tradeoffs

District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	89.0	5.0	5.5	4.0	51.0
2	65.8	26.0	7.8	23.8	49.5
3	54.5	36.2	10.1	33.8	41.1
4	59.4	30.7	11.0	28.3	49.3
5	83.8	11.2	5.0	9.8	<b>58.9</b>
6	51.0	35.7	13.4	32.7	39.8
7	75.6	16.3	9.1	14.9	<b>55.5</b>
8	76.0	17.4	7.0	15.4	52.9
9	60.4	30.4	8.6	28.5	40.5
10	73.2	14.7	10.0	13.6	48.3
11	82.1	11.2	7.0	10.1	<b>61.6</b>
12	61.0	34.0	5.3	31.8	46.0
13	60.9	23.0	8.7	21.5	51.3

% Black is 'Any Part Black' in the redistricting data for 2010.  
VAP indicates Voting Age Population.

Compactness	.24
Pop. Mean Dev.	12.77
County Splits	174
Efficiency Gap (pct)	10.5
Efficiency Gap*	1.2

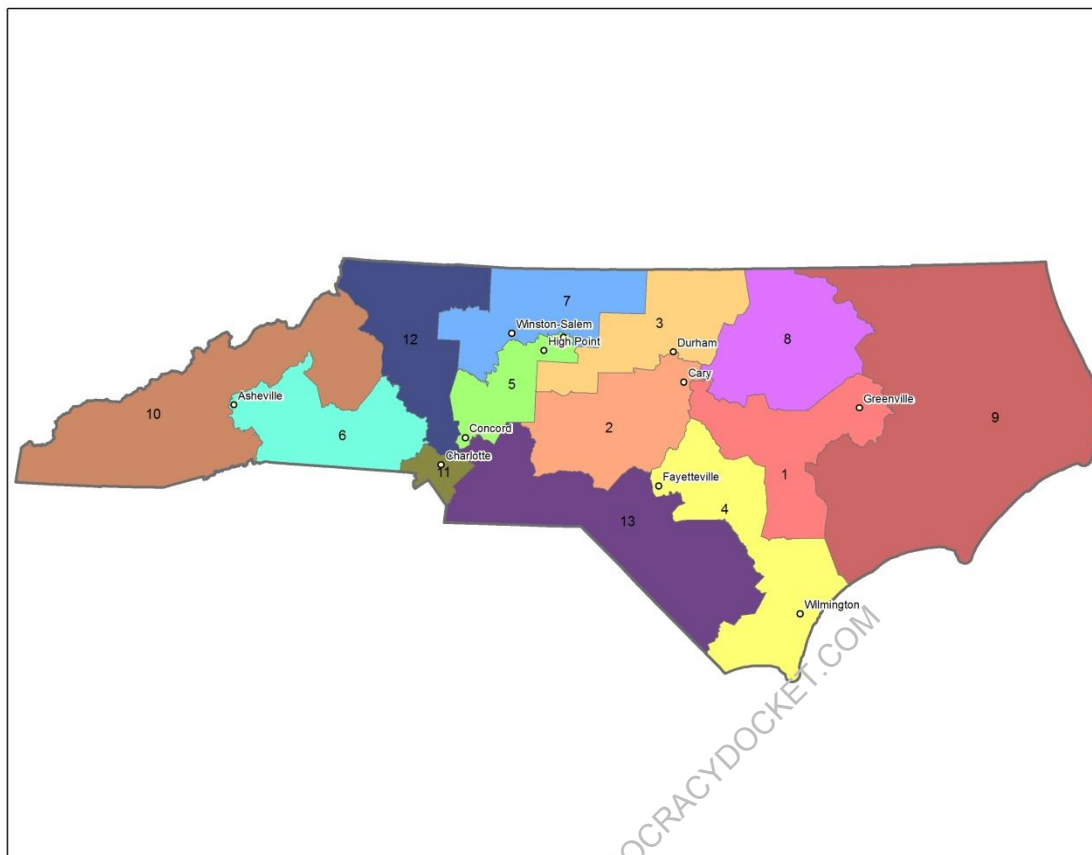


Figure A2. Example Map 5 Illustrating Tradeoffs

Table A2. Map 5 District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	63.5	26.9	10.6	25.1	49.1
2	70.3	17.8	9.4	16.6	47.2
3	67.0	23.4	10.0	21.8	45.2
4	66.5	25.8	8.1	23.0	48.4
5	66.9	24.4	8.5	22.4	50.7
6	82.0	12.8	5.9	11.1	<b>54.5</b>
7	69.3	23.1	8.1	21.3	51.8
8	54.8	36.7	9.3	34.6	43.0
9	68.1	26.7	5.8	24.7	50.0
10	90.2	3.5	5.3	2.8	<b>55.2</b>
11	59.6	28.4	11.8	26.0	46.5
12	73.1	18.4	8.3	16.6	<b>54.2</b>
13	59.5	24.8	8.0	23.2	49.8

% Black is 'Any Part Black' in the redistricting data for 2010.  
VAP indicates Voting Age Population.

Compactness	.31
Pop. Mean Dev.	1.07
County Splits	22
Efficiency Gap (pct)	16.2
Efficiency Gap*	2.1

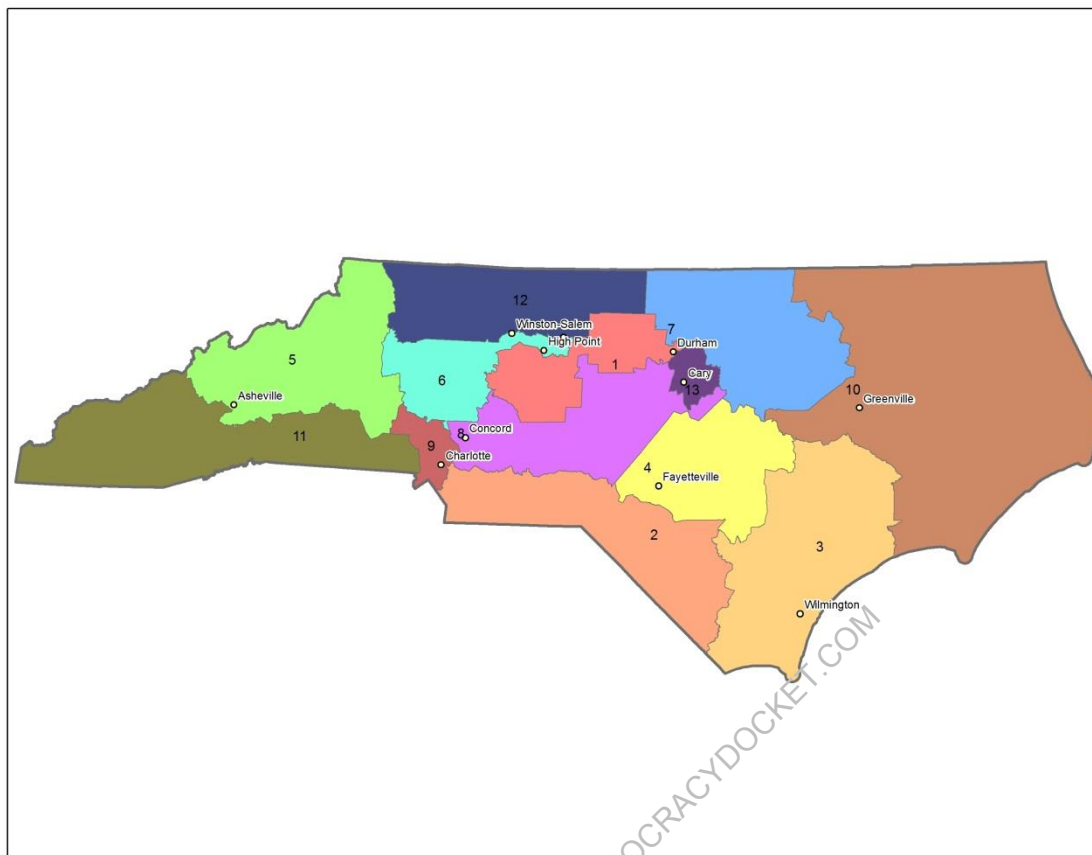


Figure A3. Example Map 8 Illustrating Tradeoffs

Table A3. Map 8 District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	71.5	18.4	10.3	17.0	49.4
2	59.5	23.6	8.9	22.3	49.9
3	72.5	20.3	8.1	18.2	51.6
4	58.5	31.4	11.3	28.9	48.3
5	87.7	6.5	5.9	5.4	<b>53.2</b>
6	65.6	25.5	8.8	23.8	50.2
7	59.3	33.8	7.4	32.2	46.2
8	73.6	17.8	9.9	16.0	<b>53.7</b>
9	55.7	32.6	11.4	29.9	42.4
10	64.3	31.1	4.7	28.9	48.0
11	84.6	9.5	5.3	8.1	<b>56.6</b>
12	75.6	17.7	7.1	16.2	<b>53.9</b>
13	61.5	25.2	10.2	23.1	41.4
% Black is 'Any Part Black' in the redistricting data for 2010. VAP indicates Voting Age Population.					

Compactness	.32
Pop. Mean Dev.	.29
County Splits	42
Efficiency Gap (pct)	7.9
Efficiency Gap	1.0

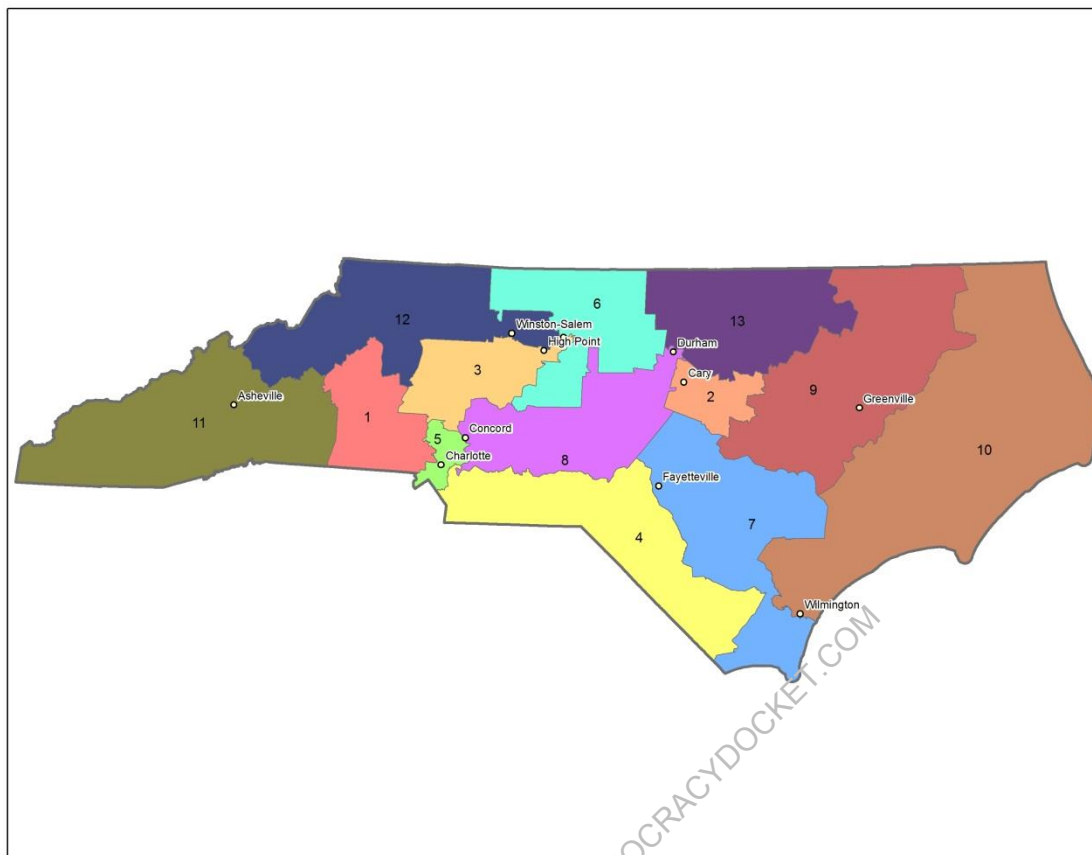


Figure A4. Example Map 9 Illustrating Tradeoffs

Table A4. Map 9 District Characteristics					
District	% White	% Black	% Hispanic	% BlackVAP	% Rep
1	77.3	16.2	6.5	14.2	<b>57.4</b>
2	65.6	22.2	10.2	20.5	46.5
3	69.2	22.4	8.1	20.7	52.6
4	59.7	23.5	8.8	22.1	49.9
5	55.2	32.3	12.2	29.7	42.0
6	73.9	18.9	7.6	17.3	52.1
7	62.4	28.2	10.0	25.5	48.1
8	70.0	19.8	10.7	18.2	48.2
9	54.5	<b>39.2</b>	7.1	<b>36.9</b>	44.7
10	74.5	19.8	6.4	17.7	52.7
11	88.9	5.1	5.5	4.2	51.4
12	78.1	14.6	7.9	13.3	<b>54.5</b>
13	60.6	31.2	8.2	29.4	44.6

% Black is 'Any Part Black' in the redistricting data for 2010.  
VAP indicates Voting Age Population.

Compactness	.31
Pop. Mean Dev.	.73
County Splits	42
Efficiency Gap (pct)	16.6
Efficiency Gap	2.2



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**DECLARATION**

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

Executed on April 3, 2017.

A handwritten signature in black ink, appearing to read "James G. Gimpel", is written over a horizontal line.

James G. Gimpel

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January 2017  
**Curriculum Vitae of James G. Gimpel**  
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**Personal:**

U.S. Citizen; Married, two children.  
Current residence: Columbia, Maryland

**Current Position:**

University of Maryland - College Park.

Full Professor, August 2001-present.

Editor, *American Politics Research*, 2003-2011 (eight years)

Associate Professor with tenure, August 1997-August 2001.

Assistant Professor, January 1992-August 1997.

**Education:**

University of Chicago. Ph.D. Political Science, 1990.  
University of Toronto. M.A. Political Science, 1985.  
Drake University. B.A. with honors. Political Science, 1984.

**Books:**

- ▶ *Our Patchwork Nation: The Twelve Community Types that Make Up Our Nation* (Penguin, 2010) with Dante Chinni.
- ▶ *Cultivating Democracy: Civic Environments and Political Socialization in America* (Brookings Institution Press, 2003) with J. Celeste Lay and Jason E. Schuknecht.
- ▶ *Patchwork Nation: Sectionalism and Political Change in American Politics* (University of Michigan Press, 2003) with Jason E. Schuknecht.
- ▶ *Separate Destinations: Migration, Immigration and the Politics of Places* (University of Michigan Press, 1999).
- ▶ *The Congressional Politics of Immigration Reform* (Allyn and Bacon, 1999) with James R. Edwards, Jr.
- ▶ *National Elections and the Autonomy of American State Party Systems* (University of Pittsburgh Press).
- ▶ *Fulfilling the Contract: The First 100 Days* (Allyn and Bacon, 1996). Published in hardcover under the title: *Legislating the Revolution: The Contract with America in its First 100 Days*.

### Articles in Peer Reviewed Journals:

- ▶ "Inadvertent and Intentional Partisan Residential Sorting." with Iris Hui. *Annals of Regional Science* (2016) 1-28.
- ▶ "Seeking Compatible Neighbors: Partisan Composition, Neighborhood Selection and Residential Sorting." with Iris Hui. *Political Geography*. 48: 4: (2015) 130-142.
- ▶ "Business Interests and the Party Coalitions: Industry Sector Contributions to U.S. Congressional Campaigns." with Frances E. Lee and Michael Parrott. *American Politics Research* 42: 6: (2014) 1034-1076.
- ▶ "Voter Migration and the Geographic Sorting of the American Electorate." with Wendy K. Cho and Iris Hui. *Annals of the Association of American Geographers* 103: 4: (2013) 856-870.
- ▶ "The Distributive Politics of the Federal Stimulus: The Geography of the ARRA of 2009." with Frances E. Lee and Rebecca U. Thorpe. *Political Science Quarterly* 127: 4: (2012) 567-596.
- ▶ "Do Robotic Calls from Credible Sources Influence Voter Turnout or Vote Choice? Evidence from a Randomized Field Experiment." with Daron R. Shaw, Alan Gerber and Donald P. Green. *Journal of Political Marketing* 11: 4: (2012) 241-249.
- ▶ "The Tea Party Movement and the Geography of Collective Action." with Wendy K. Cho and Daron R. Shaw. *Quarterly Journal of Political Science* 7: 2: (2012) 105-133.
- ▶ "GIS and the Spatial Dimensions of American Politics." with Wendy K. Cho. *Annual Review of Political Science*. 15: (2012) 443-460.
- ▶ "What if We Randomized the Governor's Schedule? Evidence on Campaign Appearance Effects from a Texas Experiment." with Daron R. Shaw. *Political Communication* 29: 2: (2012) 137-159.
- ▶ "When War Hits Home: The Geography of Military Losses and Support for War in Time and Space." with Scott L. Althaus and Brittany H. Bramlett. *Journal of Conflict Resolution*. 56: 3: (2012) 382-412.
- ▶ "Ecologies of Unease: Geographic Context and National Economic Evaluations." with Andrew Reeves. *Political Behavior*. 34: 3: (2012): 392-420.
- ▶ "How Large and Long-lasting Are the Persuasive Effects of Televised Campaign Ads? Results from a Randomized Field Experiment." with Alan S. Gerber, Donald P. Green and Daron R. Shaw. *American Political Science Review* 105: 1: (2012) 135-150.
- ▶ "The Political Ecology of Opinion in Big-Donor Neighborhoods." with Brittany H. Bramlett and Frances E. Lee. *Political Behavior*. 33: 4: (2011) 565-600.
- ▶ "Rough Terrain: Spatial Variation in Contributions of Time and Money to an Election Campaign." with Wendy K. Cho. *American Journal of Political Science*. 54: 1: (2010) 74-89.
- ▶ "Media Supply, Audience Demand and the Geography of News Consumption in the United States." with Scott L. Althaus and Anne M. Cizmar. *Political Communication*. 26: 3: (2009) 249-277.
- ▶ "Political Socialization and Reactions to Immigration-Related Diversity in Rural America." with J. Celeste Lay. *Rural Sociology*. 73: 2: (2008) 180-204.
- ▶ "The Check is in the Mail: Interdistrict Funding Flows in Congressional Elections." with Frances E. Lee and Shanna Pearson-Merkowitz. *American Journal of Political Science* 52: 2: (2008) 373-394
- ▶ "Distance-Decay in the Political Geography of Friends-and-Neighbors Voting." with Kimberly Karnes, John McTague and Shanna Pearson-Merkowitz. *Political Geography* 27: 2 (2008) 231-252.

#### Articles in Peer Reviewed Journals (cont'd.):

- ▶ "The Battleground vs. the Blackout States: Behavioral Implications of Modern Presidential Campaigns." with Karen M. Kaufmann and Shanna Pearson-Merkowitz. *Journal of Politics* 69: 3 (2007) 786-797.
- ▶ "Prospecting for (Campaign) Gold." with Wendy K. Cho. *American Journal of Political Science* 51: 2 (2007) 255-268.
- ▶ "Spatial Surges in Arab American Voter Registration." with Wendy K. Cho and Tony Wu. *Political Geography* 26: 3 (2007) 330-351.
- ▶ "Election Year Stimuli and the Timing of Voter Registration." with Joshua J. Dyck and Daron R. Shaw. *Party Politics* 13: 3 (2007) 347-370.
- ▶ "Clarifying the Role of Socioeconomic Status in Political Participation: Policy Threat and Arab American Mobilization." with Wendy K. Cho and Tony Wu. *Journal of Politics* 68: 4 (2006) 977-991.
- ▶ "The Political Geography of Campaign Contributions in American Politics." with Frances E. Lee and Joshua Kaminski. *Journal of Politics* 68: 3 (2006) 626-639.
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- ▶ "Location, Knowledge and Time Pressures in the Spatial Structure of Convenience Voting." with Joshua J. Dyck and Daron R. Shaw. *Electoral Studies* 25: 1 (2006) 35-58.
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- ▶ "The Persistence of White Ethnicity in New England Politics," with Wendy K. Cho. *Political Geography* 23: 8 (2004) 821-832.
- ▶ "Turnout and the Local Age Distribution: Examining Political Participation Across Space and Time." with Irwin L. Morris and David R. Armstrong. *Political Geography* 23:1 (2004) 71-95
- ▶ "Political Participation and the Accessibility of the Ballot Box." with Jason E. Schuknecht. *Political Geography* 22: 4 (2003) 471-488.
- ▶ "A Promise Fulfilled? Open Primaries and Representation." with Karen M. Kaufmann and Adam Hoffman. *Journal of Politics* 65: 2 (2003) 457-476.
- ▶ "Reconsidering Regionalism in American State Politics." with Jason E. Schuknecht. *State Politics and Policy Quarterly* 2: 4 (2002) 325-352.
- ▶ "Political and Demographic Foundations for Sectionalism in State Politics: the Connecticut Case." with Jason E. Schuknecht. *American Politics Research* 30: 2 (2002) 193-213.
- ▶ "Interstate Migration and Electoral Politics," with Jason E. Schuknecht. *Journal of Politics* 62:1 (2001) 207-231.
- ▶ "Prejudice, Economic Insecurity, and Immigration Policy," with Peter F. Burns. *Political Science Quarterly* 115: 2 (2000) 201-225.

#### Articles in Peer Reviewed Journals (cont'd.):

- ▶ "Contemplating Congruence in State Party Systems," an author-meets-critic exchange focusing on my 1996 book on state elections. *American Politics Quarterly* 27: 1 (1999) 133-140.
- ▶ "Self-Interest, Symbolic Politics and Attitudes Toward Gun Control," with Robin M. Wolpert. *Political Behavior* 20:3 (1998) 241-262.
- ▶ "Packing Heat at the Polls: Gun Ownership as a Politically Salient Trait in State and National Elections," *Social Science Quarterly* 79:3 (1998) 634-648.
- ▶ "Information, Recall and Accountability: The Electorate's Response to the Clarence Thomas Nomination," with Robin M. Wolpert. *Legislative Studies Quarterly* 22:4 (1997) 515-525.
- ▶ "Candidate Character vs. the Economy in the 1992 Election," with Kathryn M. Doherty. *Political Behavior* 19:3 (1997) 213-222.
- ▶ "Forecasts and Preferences in the 1992 Presidential Election," with Diane Hollern Harvey. *Political Behavior* 19:2 (1997) 157-175.
- ▶ "Opinion-Holding and Public Attitudes Toward Controversial Supreme Court Nominees." with Robin M. Wolpert. *Political Research Quarterly* 49: 1 (1996) 163-176.
- ▶ "Rationalizing Support and Opposition to Supreme Court Nominations: The Role of Credentials." with Robin M. Wolpert. *Polity* 28: 1 (1995) 67-82.
- ▶ "Understanding Court Nominee Evaluation and Approval: Mass Opinion in the Bork and Thomas Cases." With Lewis S. Ringel. *Political Behavior* 17: 1 (1995) 135-153.
- ▶ "District Conditions and Primary Divisiveness in Congressional Elections." with Paul S. Herrnson. *Political Research Quarterly* 48: 1 (1995) 117-134.
- ▶ "Reform-Resistant and Reform-Adopting Machines: The Electoral Foundations of Urban Politics 1910-1930," *Political Research Quarterly* 46: 2 (1993) 371-382.

#### Chapters in Edited Books:

- ▶ "Sampling for Studying Context: Traditional Surveys and New Directions." in R. Michael Alvarez and Lonna Atkeson, eds. *Oxford Handbook of Polling and Polling Methods*. (New York, NY: Oxford University Press, 2016).
- ▶ "State Politics and Political Culture." in Joshua J. Dyck and Richard G. Niemi, eds. *Guide to State Politics and Policy*. (Washington, DC: CQ Press, 2013)
- ▶ "Political Socialization and Religion." with Shanna Pearson-Merkowitz. in Corwin Smidt, ed. *The Oxford Handbook of Religion and Politics* (New York: Oxford University Press, 2009).
- ▶ "Policies for Civic Engagement Beyond the Schoolyard." With Shanna Pearson-Merkowitz. in Peter Levine and James Youniss, eds. *Engaging Young People in Civic Life*. (Nashville, TN: Vanderbilt University Press, 2009).
- ▶ "Accounting for the Urban-Rural Gap in American Electoral Politics." With Kimberly A. Karnes. in Laura Olson and John C. Green, eds. *Beyond Red State, Blue State: Voting Gaps in American Politics* (Upper Saddle River, NJ: Prentice Hall, 2007).



### Chapters in Edited Books (cont'd.):

- ▶ “The Geography of Electioneering: Campaigning for Votes and Campaigning for Money.” with Frances E. Lee. in John Samples and Michael McDonald, eds. *The Marketplace of Democracy: Electoral Competition and American Politics* (Washington, DC: Brookings Institution Press, 2006).
- ▶ “Political Environments and the Acquisition of Partisanship.” with J. Celeste Lay. in Alan Zuckerman, ed. *The Social Logic of Politics* (Philadelphia, PA: Temple University Press, 2005).
- ▶ “The Politics of Election Reform in Maryland.” with Joshua J. Dyck, in Daniel Palazzolo and James W. Ceasar, eds. *Election Reform: Politics and Policy* (Lanham, MD: Lexington Books, 2004).
- ▶ “The Structure of Public Support for Gun Control: The 1988 Battle Over Question 3 in Maryland,” with Robin M. Wolpert. in John Bruce and Clyde Wilcox (eds.) *The Changing Politics of Gun Control* (Lanham, MD: Rowman & Littlefield, 1998).
- ▶ “Equilibrium Cycles in Grassroots Mobilization and Access,” in Paul S. Herrnson, Ronald Shaiko and Clyde Wilcox (eds.) *The Interest Group Connection* (Chatham, NJ: Chatham House, 1998).
- ▶ “The Rise and Demise of a Lead PAC,” in Robert Biersack, Paul S. Herrnson and Clyde Wilcox (eds.) *Risky Business: PAC Decisionmaking and Strategy in 1992*. (Armonk, NY: M.E. Sharpe, 1994). 56-62.
- ▶ “Congress and the Coordination of Public Assistance,” in Edward T. Jennings and Neal Zank (eds.) *Welfare System Reform*. (Westport, CT: Greenwood Press, 1993). 33-42.

### Grants and Awards:

- ▶ Hoover Institution, National Fellowship 2012-2013.
- ▶ Knight Foundation Grant, 2007-2011, \$60,000 (by contract via D. Chinni).
- ▶ CIRCLE via The Pew Charitable Trusts, 2004-2005, \$35,000.
- ▶ CIRCLE via The Pew Charitable Trusts, 2002-2003, \$33,000.
- ▶ Ahmanson Community Trust Foundation, 2001-2003, \$100,000.
- ▶ William T. Grant Foundation Research Grant, 2001-2003, \$102,000.
- ▶ John M. Olin Foundation Policy Studies Grant, 1998, \$30,000.
- ▶ Visiting Fellow, Congress Assessment Project, Washington, DC, 1995, \$7,000.
- ▶ Summer Research Award, Graduate Research Board, University of Maryland, 1995, \$4,500.
- ▶ University of Chicago Graduate Fellowship 1986-1990.

### Magazine Articles, Opinion Editorials, Book Reviews:

- "Where are the Working Class Republicans and Is There Something the Matter with Them?" *Extensions: A Journal of the Carl Albert Congressional Research and Studies Center*. 2015 (Winter): 6-11.
- "The 12 States of America." with Dante Chinni. *The Atlantic Monthly*. 307: 3 (April 2011): 70-81.
- "Presidential Voting and the Local Variability of Economic Hardship." with Wendy K. Cho. *The Forum*. 7: 1: 1-24.
- "A Political Powerhouse in Search of a Home." with Wendy K. Cho. *Asian American Policy Review*. 17: (2008) 155-161.
- "Etats-Unis Election Présidentielle: Le Dessous des Cartes," *Alternatives Internationionales*. December 2007. 10-14.
- "Pay Attention to Asian American Voters." with Wendy K. Cho. *Politico*. May 28, 2007 Opinion-Editorial posted on-line at <http://www.politico.com/news/stories/0507/4213.html>
- "The Rural Side of the Urban-Rural Gap." with Kimberly A. Karnes. *P.S. Political Science & Politics* 39: 3 (2006) 467-472.
- "The Federalism Flip-Flop: Democrats Now Argue for States' Rights." Opinion Editorial in the *Boston Globe*. Sunday, December 19, 2004, Political Play.
- "Getting out the Asian-Pacific American Vote." with Wendy K. Cho. *Campaigns & Elections*. (July 2004) 44-45.
- "Computer Technology and Getting Out the Vote: New Targeting Tools." *Campaigns & Elections*. (August 2003) 39-40.
- Review of Donald Green, Bradley Palmquist and Eric Schickler. Partisan Hearts and Minds: Political Parties and the Social Identities of Voters. In APSR's *Perspectives on Politics*. (September 2003) 606-607.
- "Setting Different Courses: Along the Potomac, A Political and Philosophical Divide," with Jason E. Schuknecht. Opinion Editorial in *The Washington Post*. Sunday, January 21, 2001, Outlook Section.
- "We Shall Finally Overcome, By Exposure," with Jason E. Schuknecht. Opinion Editorial in *The Baltimore Sun* Wednesday, September 6, 2000, p. 17A.
- Review of George Borjas' Heaven's Door: Immigration Policy and the American Economy. *Political Science Quarterly* 115: 1: (Spring 2000) 145-146.
- "Maryland's Topsy-Turvy Politics: A Step Up for a Party Coming Back to Life," Opinion Editorial in *The Washington Post*. Sunday, October 17, 1998, Outlook Section.
- Review of John Bader's Taking the Initiative. *Political Science Quarterly* 112:4: (Winter 1997-98) 692-693.
- Review of Philip Klinkner's The Losing Parties. *Journal of Politics* 58: (1996) 245-246.
- Review of Ralph Goldman's The National Party Chairmen and Committees. *American Political Science Review* 86: (1992) 237-238.

### Magazine Articles, Opinion Editorials, Book Reviews (cont'd.)

- Review of Mark Bisnow's In the Shadow of the Dome. *American Political Science Review* 85: (1991) 630-631.
- "Congressional Oversight of Welfare and Work." *Public Welfare* 49: (1991) 8-11.

### Research in Progress or Under Review:

- Gimpel, James G. and Iris Hui. 2016. "Discerning Neighborhood Partisanship from a Mere Look Around" Submitted for Review.

### Conference Participation (recent):

- "The Variable Development of Partisanship within the South, 1940-1966." with Nathan Lovin. Paper presented at the annual meeting of the American Political Science Association, September 1-4, 2016, Philadelphia, PA.
- "Recruiting the Best Candidate for the Job: Candidate Dyads and Congressional Election Outcomes." with Kristina Miller and Charles Hunt. Paper presented at the annual meeting of the Midwest Political Science Association, April 8-10, 2016, Chicago, IL.
- "Racial Context as a Stimulus to Campaign Contributing." with James Glenn. Paper presented at the annual meeting of the Midwest Political Science Association, April 8-10, 2016, Chicago, IL.
- "Political Implications of Residential Mobility and Stasis on the Partisan Balance of Locales." with Wendy Cho and Caroline Carlson. Paper presented at the annual meeting of the American Political Science Association, August 28-September 1, 2014, Washington, DC.
- "Political Evaluations of Neighborhoods and their Desirability: Experimental Evidence." with Iris Hui. Paper presented at the annual meeting of the American Political Science Association, August 30-September 1, 2013. Chicago, Illinois.
- "Business Interests and the Party Coalitions: Industry Sector Contributions to U.S. Congressional Campaigns," with Frances Lee and Mike Parrott. Paper presented at the annual meeting of the Midwest Political Science Association, April 12-15, 2012. Chicago, Illinois.
- "Local Age Distributions and Ideological Extremism in American Politics," with Brittany Bramlett. Paper presented at the annual meeting of the American Political Science Association, September 1-4, 2011. Seattle, Washington.
- "The Geography of Tea: Strategic Activism or Expressive Protest?" with Wendy K. Cho and Daron R. Shaw. Paper presented at the annual meeting of the Midwest Political Science Association, March 30-April 3, 2011. Chicago, Illinois.
- "The Distributive Politics of the Federal Stimulus: The Geography of the ARRA of 2009," with Frances E. Lee and Rebecca Thorpe. Paper presented at the annual meeting of the American Political Science Association, September 1-4, 2010. Washington, DC.
- "Migration Decisions and Destinations: Evidence for Political Sorting and Mixing," with Iris Hui. Paper presented at the annual meeting of the Midwest Political Science Association, April 22-22, 2010. Chicago, Illinois.
- "Ecologies of Unease: Geographic Context and National Economic Evaluations." with Andrew Reeves and Wendy Cho. Paper presented at the annual meeting of the American Political Science Association, September 3-6, 2009. Toronto, Ontario.

### Conference Participation cont'd. (recent):

- "When War Hits Home: The Geography of Military Losses and Support for War in Time and Space." with Scott L. Althaus and Brittany H. Bramlett. Paper presented at the annual meeting of the American Political Science Association, September 3-6, 2009. Toronto, Ontario.
- "The Political Ecology of Opinion in Big-Donor Neighborhoods." with Brittany H. Bramlett and Frances E. Lee. Paper presented at the annual meeting of the Midwest Political Science Association, April 2-4, 2009. Chicago, IL.
- "Regional Migration Flows and the Partisan Sorting of the American Electorate." with Wendy K. Cho and Iris Hui. Paper presented at the annual meeting of the Midwest Political Science Association, April 2-4, 2009. Chicago, IL.

### Ph.D. Dissertation:

- Field: American Government. Subfield: Political Behavior
- Title: "Competition Without Cohesion: Studies in the Electoral Differentiation of State and National Party Systems."

Committee: Mark Hansen, Henry E. Brady, Gary Orfield, and J. David Greenstone (deceased)

### Teaching:

- Courses: Campaigns and Elections; American Voting Behavior; Immigrants and Immigration Policy; State Politics; Public Opinion; Statistics, Linear Models; GIS for Social Science Research; Intermediate GIS for Social Science Research; Spatial Statistics.
- Awards: University Excellence in Mentorship and Teaching Award, 1999.  
Panhellenic Association Outstanding Teacher Award, 1994.

### Ph.D. Students and Placements

Michael Parrott, member (APSA Congressional Fellow, 2016)  
 Stephen Yoder, chair (Government Accountability Office, 2014)  
 Heather Creek, chair (Pew Research Center, 2013)  
 Daniel Biggers, member (Yale Post-Doc 2012; moved to tt UC-Riverside, 2014)  
 Brittany Bramlett, chair (tt Albright College, 2012, moved to non tt Georgia 2014)  
 Rebecca Thorpe, member (tt University of Washington, 2010)  
 Kimberly Karnes, chair (tt Old Dominion, 2010)  
 Shanna Pearson-Merkowitz, member (tt University of Rhode Island, 2009, tenured)  
 Laurence O'Rourke, chair (ICF Research 2008)  
 Joshua Dyck, chair (tt University of Buffalo, 2006 tenured, moved to UM, Lowell)  
 Laura Hussey, chair (tt University of Maryland, Baltimore County, 2006 tenured)  
 Richard Longoria, chair (tt Cameron University, 2006, moved to Texas A&M Brownsville 2014)  
 Adam Hoffman, member (tt Salisbury University, 2005, tenured)  
 Regina Gray, member (Department of Housing and Urban Development, 2005)  
 J. Celeste Lay, chair (tt Tulane University, 2004, tenured)  
 Atiya Stokes, member (tt Florida State University, 2004, moved to Bucknell, tenured)

#### Ph.D. Students and Placements (cont'd).

Thomas Ellington, member (tt Wesleyan College, 2004, tenured)  
 Timothy Meinke, member (tt Lynchburg College, 2002, tenured)  
 Jason Schuknecht, chair (Westat research consulting, 2001)  
 Constance Hill, member (Birmingham Southern College, 2000)  
 Peter Francia, member (tt East Carolina University, 2000, tenured)  
 Peter Burns, member (tt Loyola University, New Orleans 1999, tenured)  
 David Cantor, member (Lake, Snell, Perry research consulting, 1999)  
 Richard Conley, member (tt University of Florida, 1998, tenured)  
 Susan Baer, member (tt San Diego State, 1998)  
*and six others prior to 1998.*

#### Advanced Training:

- Statistical Horizons Workshop on Big Data and Data Mining. University of Pennsylvania Wharton Business School, Philadelphia, PA, April 2013.
- Summer Workshop on Frontiers of Spatial Regression Analysis. Spatial Analysis Laboratory, University of Illinois, Urbana-Champaign, June 2007.
- Summer Workshop on Point Pattern Analysis, Department of Geography, University of California, Santa Barbara, June 2004.
- Summer Workshop on Distance and Accessibility, Department of Geography, Ohio State University, July 2002.
- Summer Statistics Program, ICPSR, University of Michigan, Ann Arbor, Michigan, June 1994.

#### Service to the Discipline:

- Journal Editor, *American Politics Research*, 2003-2011. During this time, submissions doubled from ~110 per year to over 220 per year; journal submission and operations moved on-line; journal content expanded by 30%, and review times dropped to a mean of 45 total days (sd=17 days).
- Elections and Voting Section Committee to Name Emerging Scholar in American Politics, 2003 and 2007.
- Chair, APSA William Anderson Award Committee to Name the Best Ph.D. Dissertation in State and Local Politics, Federalism and Intergovernmental Relations, 2010.
- Manuscript Reviewer: *American Political Science Review*; *American Journal of Political Science*; *Journal of Politics*; *Political Geography*; *Political Research Quarterly*; *Public Opinion Quarterly*; *Political Psychology*; *American Politics Research*; *Political Behavior*; *Urban Affairs Quarterly*; *Social Forces*; Cambridge University Press, Brookings Institution Press, Johns Hopkins University Press; St. Martin's Press; HarperCollins Publishing; Pearson-Longman Publishing; Greenwood Press; University of Pittsburgh Press; SUNY Press; University of Michigan Press.
- PRQ Outstanding Reviewer Award, 2009-2010

**Departmental Committee Service:**

- 2003-2010 Promotion and Tenure Committees (Karen Kaufmann, Frances E. Lee (twice), Geoffrey Layman, Linda Faye Williams and Irwin Morris)
- 2001-2009 Faculty Supervisor, Maryland State Government Internship Program.
- 2003-2004, 2001-2002; 1998-1999 Faculty Search Committees
- Service includes: Executive Committee; Undergraduate Studies Committee; Graduate Studies Committee; Salary Committee; Conley-Dillon Award Committee; Promotion & Tenure Working Group.

**University and College Service:**

2015-ongoing Advisor to UMD BSOS Dean on College Fundraising and Development  
 2015-ongoing Advisor to UMD Office of Government Relations  
 2015-ongoing Advisor to UMD Office of Institutional Research, Planning and Assessment  
 2014-ongoing Advisor to University Relations Office of Prospect Management and Research  
 2011-2012 Dean's Committee on GIS and Spatial Analysis in the Social Sciences  
 2007-2008 Joint Asian American Studies/Public Policy Faculty Search Committee.  
 2005-2007 Department Representative on UM Faculty Senate  
 2004-2006 Department Representative on College Promotion and Tenure Committee.  
 2000-2005 Chair, Behavioral and Social Sciences Curriculum Committee  
 1999-2001 Behavioral and Social Sciences Academic Council  
 1997-2000 Faculty Senate Campus Parking Advisory Committee

**Research Consulting and Government Work Experience (selected):**

- *Head Start XXI Resource Center, Hammond, Indiana.* GIS and Statistical Consultant to this Head Start Program Serving 1,200 clients in Lake and Porter Counties. October 2003-March 2004.
- *Naugatuck Valley Economic Development Commission.* Adviser to this Connecticut economic development agency drafting an EDA report on the local economic impact of defense downsizing and industrial restructuring in the Northeast. January 1998-May 1998.
- *U.S. Department of Housing and Urban Development.* Office of Policy Development and Research. Policy analyst working in the economics division under Assistant Secretary for Policy Development and Research, John Weicher. June 1991-January 1992.

**Official Expert Testimony (selected):**

- U.S. House of Representatives, Government Reform Subcommittee on Federalism and the Census, Testimony on Immigration-Induced Reapportionment, December 6, 2005.
- U.S. House of Representatives, Small Business Committee, Testimony on Population Mobility and the Rural Economy, May 20, 1997.
- Maryland Commission to Revise the Election Code, Testimony on Third-Party Voting and Registration, November 1996.

### Invited Talks and Speaking Engagements (selected):

- Presentation at Washington University, St. Louis. Department of Political Science. "Incidental and Intentional Partisan Residential Sorting." December 1, 2016.
- Presentation at The Maret School, Washington, DC. "Our Patchwork Nation and the 2016 Election." November 9, 2016.
- Presentation at Bowdoin College, Brunswick, ME. "Big Data and the Political Campaign." February 16, 2016.
- Presentation at American University, National Capital Area Political Science Association Workshop. "Business Interests and the Party Coalitions: Industry Sector Contributions to U.S. Congressional Campaigns." January 7, 2013.
- Conference Participant at Hoover Institution, Legal Immigration Policy Roundtable. Stanford University. Palo Alto, California. October 4-5, 2012.
- Presentation at the University of Maryland Libraries, Speaking of Books Series. "Our Patchwork Nation." College Park, Maryland. October 19, 2011.
- Presentation at University of Iowa, Department of Political Science. "Voter Migration and the Geographic Sorting of the American Electorate." Iowa City, IA. September 30, 2011.
- Keynote Address delivered to the Annual Great Plains Political Science Association Convention. "Economic and Political Socialization: Lessons from Rural America for the Rest of the Nation." Brookings, SD. September 24, 2011.
- Presentation at Stanford University, Hoover Institution. "The Geography of Tea: Strategic Activism or Expressive Protest?" May 19, 2011.
- Presentation at the University of California, Los Angeles, Department of Geography. "New Directions in the Geographic Analysis of Contemporary U.S. Politics." April 22, 2011.
- Presentation at the University of Maryland, School of Public Policy. Tuesday Forum. "Economic and Political Socialization across *Our Patchwork Nation*." November 30, 2010.
- Presentation at University of Kentucky, Department of Political Science. "Voter Migration and the Geographic Sorting of the American Electorate." Lexington, KY. December 3, 2010.
- Presentation at Georgetown University, American Politics Workshop. "The Distributive Politics of the Federal Stimulus." Washington, DC. September 24, 2010.
- Presentation at Christopher Newport University, Conference on Civic Education and the Future of American Citizenship. "Political Socialization Inside and Outside the Classroom." Newport News, VA. February 4, 2010.
- Presentation at the Brookings Institution. "Remarks on Joint Brookings/Kenan Center Immigration Roundtable Proposals and Recommendations." Washington, DC. October 6, 2009.
- Presentation at the University at Buffalo, Department of Political Science Seminar Series. "Regional Migration Flows and Partisan Sorting of the American Electorate." Buffalo, NY. April 17, 2009.
- Presentation at the University of Wisconsin, Madison, American Politics Workshop. "Rough Terrain: Spatial Variation in Political Participation." Madison, WI. March 23, 2009.

**Invited Talks and Speaking Engagements cont'd (selected):**

- Presentation at the University of Texas, Austin, Department of Government. "Immigration and Diversity Attitudes in Rural America." Austin, TX. February 26-27, 2009.
- Presentation at the University of Paris 8, St. Denis. "Political Socialization and Diversity Attitudes." Conference on Immigration and Spatial Concentration in Three Countries. Paris, France. January 15-16, 2009.

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**Expert Report of**  
**James G. Gimpel, Ph.D.**

I am a Professor of Political Science in the Department of Government at the University of Maryland, College Park. I received a Ph.D. in political science at the University of Chicago in 1990. My areas of specialization include political behavior, political geography, geographic information systems (GIS), state politics, population mobility and immigration. Publications include papers in well-regarded peer reviewed political science journals (*AJPS*, *APSR*, *JoP*, *QJPS*), journals in other social science fields, as well as several books relating to the same subjects. I was retained at the rate of \$300 per hour plus costs. My opinions expressed in this case are in no way contingent on the payment of any monies owed to me for my services. My opinions in this report are given within a reasonable degree of professional certainty. Any monies owed to me are not contingent on the outcome of this case.

**Focus of Research and Overview**

On October 24, I was asked by the legislative respondents in this case to respond to the petitioners' expert reports on Pennsylvania's present congressional redistricting plan, passed into law by the Pennsylvania legislature on December 22, 2011, and under which the 2012, 2014 and 2016 congressional elections were carried out. I begin by reviewing the values and redistricting criteria commonly used by state legislatures to draw legislative districts. These criteria are often in conflict with each other, creating challenges for any would-be mapmaker. There is no perfect map that optimizes the value of all of the measures now incorporated into the redistricting process. Automated map drawing might reveal redistricting options much more quickly than a well-trained professional can use GIS software to draw the maps one-at-a-time, but the automated tools still fail to produce a perfect map, insulated from credible legal challenge (Browdy 1990; Cho and Liu 2016). Those charged with the task

of drawing, then approving, district boundaries inevitably weigh some priorities more heavily than others, some criteria must take precedence, and these decisions are inherently value laden and political, not within the capacity of technical expertise to decide. Technical experts can produce a large number of plans to consider, but nothing about their expertise leads inexorably to the conclusion that one plan is best.

The expert reports by the petitioners use a variety of measures to show that the Pennsylvania congressional districts have a Republican advantage, though this could be argued to be an incumbency protection plan, rather than a “Republican” plan, per se. Conflicting criteria are involved in map drawing and the balance of conflicting values creates trade-offs. Among the traditional and widely applied redistricting criteria are the following:

1. Contiguity
2. Equal population across districts
3. Compactness of shape
4. Consistency with past districts
5. Districts should not split county and municipal boundaries
6. Districts should be politically balanced between the parties
7. Some districts should be drawn to ensure descriptive representation of minorities
8. Districts should be composed of persons with a community of interest.
9. Districts should protect incumbents

Extended discussions of the regularity of specific types of conflicts can be found elsewhere (Lowenstein and Steinberg 1985; Cain 1992). Most plainly, the demand for equality of population may limit the shape and compactness of districts. Sparse populations may require enclosure by protruded shapes. Attempting to preserve communities of interest will commonly make it difficult to achieve an

even balance of partisans. Ensuring descriptive representation of minority voters in one or more districts will also make it more difficult to achieve partisan balance in nearby districts (Brace, Grofman and Handley 1987).

The underlying residential patterns in Pennsylvania and many other states also make it very difficult to create competitive districts in some areas. In Philadelphia and its suburbs, for instance, with a significant share of the state's low income and minority population, drawing politically competitive seats that preserve the city as a community of interest will be close to impossible given the electoral groups that presently constitute the two major parties. The same is probably true throughout the northcentral part of the state where rural and small town residents have established histories of identifying with Republicans. The upshot of residential settlement is that some partisan tilt in a Republican direction is going to be the result of a redistricting plan that ensures descriptive representation for the state's racial/ethnic minorities while also ensuring equal population across districts, and the preservation of communities of interest.

In the end, there is no such thing as an unobjectionable map, especially for one containing more than three or four districts. Moreover, the shapes of districts and the calculation of the efficiency gap are not useful tools for detecting partisan intent and do not provide Courts with a manageable standard for identifying unconstitutional gerrymanders. Finally, partisan gerrymandering is not easy to accomplish because across and within cycles there is considerable variation in party inclination and support. Map makers intent on producing anything but the most one-sided majorities for one party or the other face too much uncertainty in states as evenly divided and as closely contested as Pennsylvania. Even the districts that the petitioners single out do not turn out to have steeply lopsided Republican majorities of the kind one might expect from uninhibited partisan map making. Nor are the members of Congress elected to and occupying these districts ideological or immoderate in their political behavior and viewpoints. Evidence at the end of this report will show that Republican

incumbents presently occupying these seats are among the most moderate members of the House Republican Conference. The lines resulting from passage of Act 131 have not resulted in a more polarized Pennsylvania delegation and the incumbents occupying these seats have not been demonstrated to be less responsive to constituents than they were before their elections under the 2011 congressional redistricting plan in Pennsylvania ("2011 Plan"), or than their predecessors were in cases in which they are newly elected.

### **Redistricting Principles in Conflict**

By now it is no secret that the goals of redistricting frequently run counter to one another, creating trade-offs that are impossible to resolve in the absence of a consensus on priorities (Lowenstein and Steinberg 1985; Butler and Cain 1992, Chap 4; Niemi and Deegan 1978). The desirable features of congressional districts encompass both geographic (and geometric) features, as well as those thought to achieve the goal of fairness. Among the familiar geographic aspects are: contiguity and compactness, which need little explanation. To these is frequently added consistency or congruity with past districts, certainly to the extent possible. One would not switch a district from one side of the state to the other, or from a dense core city, to a sparsely settled rural area. In the redistricting process, new map drawing almost always begins with the implicit restrictions imposed by the boundaries of the previous map, not by throwing it out and starting from scratch. This desire for continuity is an important constraint, even if it is "understood" rather than expressly identified in legislative language. In many cases the demand to have districts consistent with past mappings is also in the service of the related aspiration to preserve "territorial community" (Stephanopoulos 2012) or ensuring that a map recognizes and preserves communities of mutual interest (Forest 2004).

Among the fairness criteria are very well established principles such as equality of numbers, or certainly *near* equality. Under redistricting cases since the 1960s, this fairness doctrine has been

interpreted consistent with Section 2 of the 14<sup>th</sup> Amendment to mean equality across the *whole* number of persons; not just those of voting age, those who are registered to vote, or those who identify with a political party. For practical reasons it is sometimes difficult to come by exact equality, but large deviations from equality are not desirable, except in cases in which several small states receive a singular representative in the U.S. House in spite of having considerably fewer people than the average House district elsewhere.

The demand for population equality is often thought of as the most fundamental goal to be met in a new redistricting plan. Population equality with close to zero deviation is the primary requirement a plan must fulfill. But given the uneven population distribution within states, it is challenging to draw compact districts that are also equal in population or equal population districts that fully respect community boundary lines. In many states, mid-sized and larger cities stand out alone among a sea of sparsely populated rural areas and towns that they have traditionally served as a commercial hub and transit center. For a city of considerable size traditionally positioned near the edge of a district, or on a border, there are many circumstances in which it cannot be encompassed whole, within a single district, as would be desirable from a community-of-interest standpoint. Instead it must be divided between two or more districts as a practical measure in compromise to the state's underlying population distribution.

Another aspect of population equality that is frequently passed over in hasty critiques of redistricting maps is the need to reapportion voters into equal sized districts after a seat has been lost, such as in Pennsylvania after the 2011 reapportionment. Seat loss usually follows steady population loss in an area. Ordinarily, however, a region does not lose a full district's worth of citizens in a ten year span, but instead loses a much smaller fraction, perhaps 20-30 percent, perhaps as much as half. With the new redistricting, then, some 500,000 people from the abolished district (approximately 30 percent less than the 710,000 size of current congressional districts) will have to be redistributed among

neighboring districts in the region. The effect will be to require serious and controversial alterations to existing district lines to absorb the excess population from the eliminated district. To maintain population equality, it may well be necessary to parcel out the population among multiple districts since pushing 500,000 voters into a single district would almost certainly create imbalance. Typically, however, all of the districts receiving the population from the abolished district will have to be adjusted.

Fairness also dictates that population growth must be accommodated, not merely population loss. Some may be of the impression that since Pennsylvania lost a seat, there was no population growth to be seen, and none to be accounted for in the 2011 Plan. This is flat wrong, as it turns out that the state's population growth was quite uneven, with an uptick in the Central and Southeastern counties. A district that adds anywhere from 5,000 to 80,000 new residents will have to be altered to maintain its population equality with neighboring districts. Obviously the higher the rate of growth the more boundaries will have to shift, typically contracting to encompass a smaller land area but encompassing greater population density.

Other fairness criteria that must be met include minority descriptive representation, proportionality of seats with votes, and competitiveness of individual elections – presumably assured by drawing districts that encompass approximately even shares of identifiers with the two major political parties. These fairness goals are commonly in conflict with each other, and also with the geometric criteria. Creating a more competitive district involves the uncertain calculation that voters will follow their party registration or their past voting inclinations in future elections. Strong partisans, to be sure, are highly predictable across election cycles, but weaker partisans and independents are not. Encompassing an approximately equal mix of Republicans and Democrats may require some highly distorted boundary drawing, to say nothing of the guesswork involved in estimating the future political tendencies of independents and weak partisans.

Minority descriptive representation is understood to mean that minority, mainly African American and Latino, populations should have a reasonably sure chance to elect someone from their own racial/ethnic group. Minorities should not be spread so thinly across districts that they have no opportunity to elect one of their own through bloc voting. Ensuring that African Americans and Latinos have an ability to elect an African American or Latino candidate, under circumstances of racially polarized voting, has been deemed necessary to achieving this end by assorted judgments under the Voting Rights Act of 1965, as amended in 1982. The challenge in some states, however, is to place ethnic minority voters in sufficiently concentrated pockets to ensure descriptive representation, without hindering the achievement of other important goals. A plan is not permitted to “pack” minorities into super majorities, nor is it permitted to “crack” them into small minority-sized parcels. The ambiguity in much redistricting analysis and criticism is that all redistricting maps involve the grouping and dispersing of populations. Every map with any large number of districts will always reflect some “packing” and “cracking” – perhaps this is why the petitioners have not presented an alternative map. It is far easier to critique someone else’s map, than to draw an alternative map and subject it to critical review.

### **Ambiguity in the Interpretation of Districting Plans**

The attempt to balance descriptive representation and competitiveness presents a clear example in which ambiguity about the terms “packing” and “cracking” become problematic. The report by the petitioners’ expert John J. Kennedy criticizes the 2011 Plan for packing certain populations and cracking others. The problem is that any effort to group politically similar populations can be labeled as packing by this account. Any effort to diversify the population of a district can be conversely derided as cracking. But only two possibilities exist on this continuum between grouping and diversifying a district population.

Any multiple district plan can be critiqued for having moved districts in one direction or the other. One is always either packing or cracking. To respect a community of interest, the author of a map will usually be engaged in grouping (packing). To produce competitive districts, often the opposite will happen and the district will fit the characteristics of having been diversified (cracking) in some way. In this manner, the utility of the concepts of packing and cracking as they might pertain to tests for gerrymandering is eliminated. Any critic of a plan can point to “packing” and “cracking” on a map they happen to dislike. What counts as an acceptable grouping or dispersion of a population is contestable, and the perspective one brings to a map may well influence a critic’s judgment. The reality is that what is commonly called packing is usually essential to serve another redistricting value, while what is known as cracking – the diffusion of a population across more than one district -- may be exactly what is required to serve an alternative value.

A second important point is that certain possibilities for map drawing are constrained once initial districts are drawn with particular values in mind. Given the close association of race and ethnicity with party identification, when African Americans and Latinos are grouped into geographic blocs within districts they are removed from having influence on the outcome of elections in the adjacent districts. The benefit of the majority-minority districts is descriptive representation for black and Latino voters. The cost is that other nearby districts are less likely to be competitive without the presence of those voters to support Democratic candidates. With a sufficiently large minority population share, coupled with multiple districts promoting descriptive representation, the remaining seats could well become safe, or at least *safer*, for the opposing party, distancing the seat share from the vote share. This is the sense in which the goals of descriptive representation and competitiveness come into conflict, and also how descriptive representation and proportionality come into direct conflict.



Principles of fairness also regularly conflict with the requirement to hold together communities of interest that have formed over the course of state history. There is no universal agreement on what makes a community-of-interest, probably because these vary with the unique histories of states and regional communities. These communities of interest are sometimes conceived of as smaller official jurisdictions with well-defined boundaries such as counties or municipalities. By tradition, communities of interest are understood as counties and MCDs (municipalities or Minor Civil Divisions) with the goal of keeping these jurisdictions whole within congressional districts. Such a principle makes sense as counties and municipalities are often governing bodies in their own right, with a county council, a county executive, a clerk, a controller, and a litany of other elected officials. Larger towns and cities also have elected officers; including mayors, controllers, treasurers, city councils and school directors. Moreover, Pennsylvanians, like residents of other states, are known to identify with their counties and towns as places they originate from and dwell. They are not arbitrary lines drawn on a map, but have come to constitute discrete locations with well-recognized qualities, social attachments and affiliations. Place attachments define people who come to believe “they are part of the same coherent entity.” (Stephanopolous 2012, 1385).

Preventing county and municipal splits is not the only possible way to measure the preservation of communities of interest. A state legislature is certainly entitled to look at other criteria. Many communities of interest have an economic thrust, such as ports, military installations, or commercial hubs. Indian reservations and other areas of racial, ethnic and cultural importance may make reasonable claims to having a common interest. These places are frequently without official boundary lines, but are well-known to local residents and officeholders who carry about a unique local expertise an insular map maker will lack. A powerful argument in favor of state legislative involvement in the redistricting process is the impressive amount of local knowledge legislators amass in living out their lives in a particular place, running for office, and serving a particular geographic constituency over a

period of time. A high level of local knowledge is required to develop the kind of following that insulates a legislator from adverse electoral swings. But this same kind of knowledge is what uniquely enables legislators to draw maps encompassing interests known to belong together, as a territorial community, rather than woodenly applying principles that would divide them, hampering the expression of common values and aspirations.

This kind of familiarity recognizes important community-level details unknown and often unknowable to the redistricting consultant; how neighborhoods relate to one another, how roadways and waterways separate communities psychologically not just physically, and other borders that distinguish interests that cannot be easily mapped relying on available boundary files. Typically, a redistricting consultant will gloss over communities of interest, not having the local expertise about what to include and what to discount. A state legislator, however, is apt to know every strip mall; ethnic restaurant; road construction project; pipeline; water tower; neighborhood association; grain elevator; intersection; power plant, and garbage dump. Not all of these features are going to be relevant to drawing boundaries, and clearly not everywhere, which is why a GIS specialist would not be inclined to collect this information on a statewide basis. Drawing upon local knowledge, however, on a district-by-district basis, this kind of information can identify a community of interest invisible to outsiders, but obvious to everyone occupying local ground.

Race-based districts aside, it takes little imagination to understand how achieving competitiveness is frequently at odds with the goal of preserving communities of interest. The anthracite coal region of Northeastern Pennsylvania is well recognized as a historical and cultural region distinctive from the rest of the state. Northwestern Pennsylvania is also distinctive, with a characteristically conservative brand of politics. Given that the politics of the inhabitants of these regions have developed hand-in-hand with their other cultural attributes, it is extremely difficult, if current party allegiances endure, to create a competitive congressional district utilizing the turf lying

wholly outside the city of Erie in District 3. This difficulty also arises in other parts of the state, such as the South Central counties (i.e., Franklin, Adams, York, Cumberland, and Lancaster) given the way political party loyalty has long been expressed in local settlement (Frey and Teixeira 2008).

Finally, fairness criteria are often in conflict with the goal of maintaining stability and continuity in representation – also a longstanding value upheld as a priority in many legislative district maps. Sometimes this value is also known as incumbency protection, and cynically characterized as allowing politicians to pick their voters, but there are principled arguments for wanting to draw districts favorable to the reelection of officeholders. Among them is the desire for continuity in a state’s congressional delegation, perhaps because a state is well served by the accruing seniority of its delegation in the U.S. House of Representatives. A state, through its legislature and governor, is in an authoritative position to decide if the promotion of incumbency through the redistricting process better serves state interests than having seats that can potentially change hands with even tiny shifts in public opinion. Redistricting maps that take the partisan tilt of districts into consideration are usually aimed at the goal of incumbency protection, though it is also unclear from existing research just how much redistricting contributes to promoting incumbency given that incumbents also have other advantages (McCarty, Poole and Rosenthal 2009; Abramowitz, Alexander and Gunning 2006).

### **A Statewide Overview of District Changes**

Experts can examine districts one-by-one, in a kind of static or snap-shot approach, but this manner of analysis misses the interactive and dynamic nature of the way redistricting maps are drawn. Districts need to be considered at least in the context of their entire region, including the adjacent districts, and indeed the entire state. District drawing does not involve the sole consideration of the

shape of a district and its population composition, but how the drawing of that district affects the lines of all the other districts (Tufte 1973, 554). A study that relies on the boundary and shape of single districts lacks a sufficient appreciation for the way in which adding and removing units (precincts, blocks, municipalities, counties) from one district will affect the population of the adjoining ones. Chiefly among the criteria that must be balanced across districts is that they be of equal population size, a principle so fundamental and so crucial that states routinely lose seats from one redistricting cycle to the next when districts lose even small portions of their population. Map makers therefore start with this standard and in interaction with the state's underlying settlement and growth patterns, the goal of creating equal population districts is remarkably determinative of a map's shape, including which communities remain intact and which must be divided.

Table 1 shows how the state's districts from the 2002 map increased/decreased in population by the time of the 2010 census (see also Figure 1). The population losses across districts came from Western Pennsylvania, in and around Pittsburgh, from the 4<sup>th</sup>, 14<sup>th</sup> and 12<sup>th</sup> Districts shaded in gray (see Table 1 and Figure 1). Although the 14<sup>th</sup> district experienced the greatest population losses, it has been a longstanding tradition in the state to award a single seat to Pittsburgh and the greater Allegheny County area. Consequently, the 14<sup>th</sup> district is only marginally changed with some adjustment stretching up the Allegheny River to offset population loss. With only small changes made to the 14<sup>th</sup> District, the 4<sup>th</sup> District and the 12<sup>th</sup> District were quite obvious candidates for a merge, but with adjustments to the boundaries of the adjacent 18<sup>th</sup> and 3<sup>rd</sup> District (compare Figures 2 and 3). The 3<sup>rd</sup> District also lost population, specifically from the northernmost tier (Erie) including from the city of Erie itself, and was adjusted southward to represent the population remaining from the erasure of the 4<sup>th</sup> District. In addition, Butler County is reportedly the only one of the ten westernmost counties that experienced population growth (+5.6 percent from 2000-2010), offering another explanation for the southward shift of the 3<sup>rd</sup> District.

The split in Erie County was implemented primarily to maintain population balance as the district was shifted southward to help absorb the population from the lost district. Erie County is quite sizable, home to an estimated 280,000 people in 2010, with about 101,000 living in the city of Erie itself. There is no way that the 3rd District could shift to the South and encompass all of Erie County while

<b>Table 1. Population Change from 2000 to 2010 within 2002 District Boundaries</b>				
District	Total 2010	Total 2000	Difference 2000-2010	% Change
1	656,523	646,548	9,975	1.5
2	632,980	646,355	-13,375	-2.1
3	639,120	646,311	-7,191	-1.1
4	607,128	646,661	-39,533	-6.1
5	649,941	646,387	3,554	0.5
6	726,487	653,422	73,065	11.2
7	661,602	643,077	18,525	2.9
8	682,876	644,631	38,245	5.9
9	667,255	646,638	20,617	3.2
10	664,666	646,534	18,132	2.8
11	692,451	646,209	46,242	7.2
12	609,710	644,120	-34,410	-5.3
13	679,551	647,858	31,693	4.9
14	575,547	647,092	-71,545	-11.1
15	717,967	642,831	75,136	11.7
16	726,281	641,988	84,293	13.1
17	685,611	646,291	39,320	6.1
18	652,303	647,372	4,931	0.8
19	728,617	646,389	82,228	12.7
Source: U.S. Decennial Census				

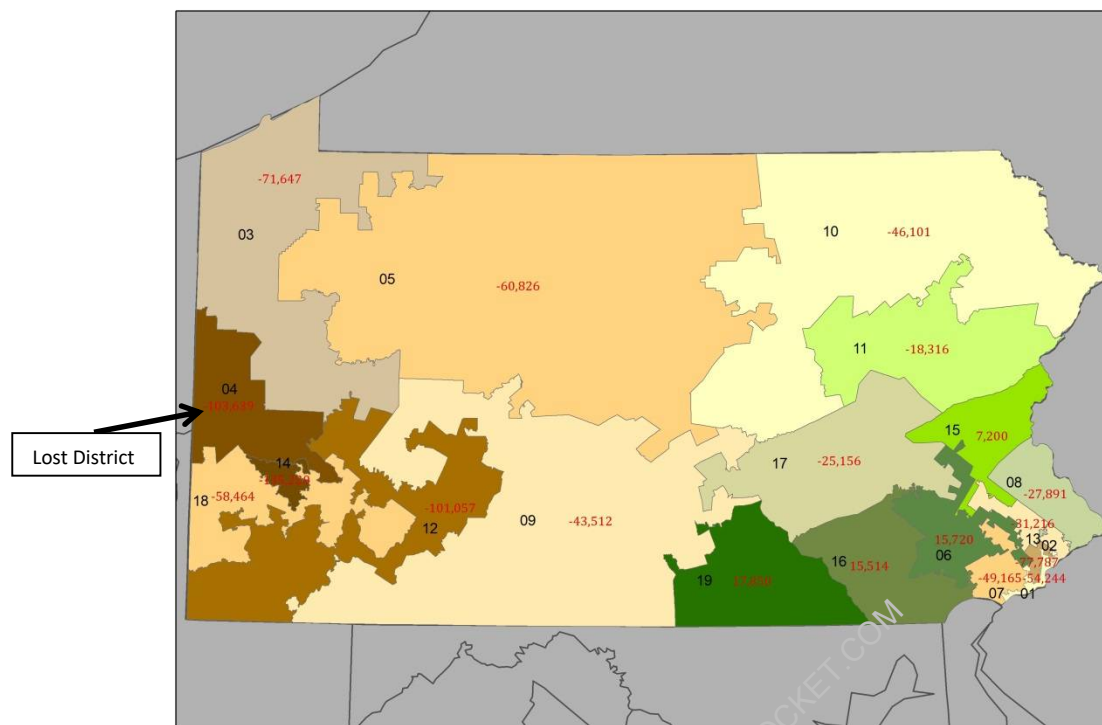


Figure 1. Population Deviation from Target Population Size (710,757) for the 2002 Pennsylvania Districts. (Figures in red shows by how much district population exceeded or fell below target size.)

remaining equal in population with adjacent districts. Erie County is considerably larger than neighboring counties in Western Pennsylvania and dividing them would not have provided the numbers that Erie offered. The decision to divide the city of Erie from smaller towns around it was made to maintain the city as a community-of-interest represented by a single member of Congress. Looking at it from the viewpoint of the 5<sup>th</sup> District to the west, as the 3<sup>rd</sup> District shifted southward, the 5<sup>th</sup> District had to shift westward (and into Erie County), as the boundaries move in a kind of counter-clockwise direction to cover the population no longer represented by the previous 4<sup>th</sup> District.

The shift of the 5<sup>th</sup> District to the West required the adjustments made to the 10<sup>th</sup>, 11<sup>th</sup>, 17<sup>th</sup> and 15<sup>th</sup> in the Northeast, and arguably the 6<sup>th</sup> in the Southeast, once the 15<sup>th</sup> was resized. As Table 1 shows, the 6<sup>th</sup>, 11<sup>th</sup> and 15<sup>th</sup> also gained population, though the 11<sup>th</sup> still remained below ideal size (Figure 1). Each of these districts required boundary adjustments to ensure equality. In the South Central region, the fastest growing locations were in the 16<sup>th</sup> and the 19<sup>th</sup> – the latter was renamed the

new 4<sup>th</sup> District in the 2011 Plan (for reference see Figures 1 and 2). The loss of just one seat, in the far western part of the state, in spite of rather modest population losses there, resulted in a chain reaction of significant boundary shifts throughout the rest of Pennsylvania. The differential levels of population growth in Eastern Pennsylvania also had to be accommodated.

One crucial aspect of the state's political development should be reckoned with as the 2011 plan is compared with the previous one. Changes in the balance of party registration have followed the population growth in some areas and decline in others. Across the state, Republican electoral prospects were strong throughout the decade leading up to 2011. Even so, Republican registration has declined in many Districts. Democrats have not always benefitted in direct proportion to GOP losses because an increasing number of voters are registering as unaffiliated. The increase in unaffiliated registration, and the gulf between electoral performance and party registration, speaks to the fluidity of partisanship, a subject to be addressed in more detail later.

The figures in Table 2 for a number of Districts that the petitioners complain were "packed" with Democrats instead simply gained Democratic registrants in the intervening years. Or, alternatively, Republican registration dropped in these areas, important facts that the petitioners' reports fail to mention. Table 2 presents figures for change between 2001 and 2011 viewed from within the 2001 districts, so the differences are not as a result of boundary drawing, but because the underlying population became more Democratic in its political preference. This is true in Districts 1 and 2, in Philadelphia, where Democratic registration increased by 35,000 and almost 17,000 well before the 2011 maps were drawn. In four districts shaded in gray, Democratic Party registration dropped. When the petitioners complain about Democratic "cracking" or dispersion, they fail to account for the possibility that in the districts, precincts and blocks where more Republicans emerge in 2011 it is because Republican registration increased in the previous decade, as in the District 12 area, and in the vicinity of the abolished District 4.

<b>Table 2. Change in Democratic Party Registration, 2001-2011 within the 2002 Congressional Districts</b>			
District	Dem Reg 2011	Dem Reg 2001	Difference 2000-2010
1	346,581	311,034	35,547
2	372,293	355,379	16,914
3	186,424	183,897	2,527
4	209,030	225,120	-16,090
5	157,822	146,457	11,365
6	208,509	150,254	58,255
7	179,037	115,515	63,522
8	204,662	165,614	39,048
9	145,482	139,273	6,209
10	164,947	149,696	15,251
11	237,691	220,289	17,402
12	225,118	255,891	-30,773
13	227,883	185,832	42,051
14	307,221	337,671	-30,450
15	222,307	177,110	45,197
16	151,632	106,783	44,849
17	173,607	134,772	38,835
18	232,032	244,376	-12,344
19	162,974	128,250	34,724
Source: Pennsylvania Secretary of State			

The petitioners' experts uniformly ignore alternative explanations for the composition of the 2011 map that result from underlying growth and change in population subgroups including major voting blocs. In their rush to conclude that partisan intent motivated the creation of the 2011 map, the petitioners' experts ignore the exigencies and constraints created by population growth and secular, district-specific trends in Republican and Democratic electoral strength. Most pointedly, they ignore the elimination of the previous 4<sup>th</sup> District and the attendant complications that followed from trying to parcel out more than 500,000 Pennsylvanians among nearby districts while meeting the ideal size of 710,767 residents each. More detailed district level analysis follows:



## District 1

District 1 can be described as a “minority influence” district, in the sense that the minority population is a sufficiently large number to exert influence in an election, although not always a controlling influence (Kousser 1992; Pildes and Niemi 1993). This district was originally expanded into Delaware County in 1991 to address requirements of the Voting Rights Act so this is not a new development as the petitioners’ expert, Professor Kennedy, appears to suggest. The district kept those areas and expanded to pick up additional population as Philadelphia’s numbers continued to decline relative to other areas in the state. Notably, Philadelphia’s Latino population is encompassed by this district as a community of interest. To make this district competitive, Republican voters would have to be added from Delaware County, while minority voters would have to be divided between two or more districts. The 2011 Plan divides the city of Chester because of its sizable population (34,000 in 2010). The minority population declines because the district had to incorporate additional population to meet population size requirements. Adding Republican areas would further dilute minority influence, generating the opposite complaint from the petitioners.

The Kennedy report complains about an appendage of the District that extends from the city of Chester outward to encompass Swarthmore College and other nearby (Democratic) boroughs. He interprets this to mean that these Democratic voting areas were “packed” into District 1 out of partisan intent. One gets the impression elsewhere from the Kennedy report that if Swarthmore would have been divided up among two or more districts he would reflexively conclude that it was cracked out of partisan intent. An alternative interpretation of the present District 1 configuration is that planners sought to preserve Swarthmore as a distinctive community of interest. Not every college community in the state can be accommodated in this way, but it is consistent with the multiple goals of redistricting to accommodate geographic interests whenever possible.

**District 2**

This district was redrawn to exclude Cheltenham Township, which voted overwhelmingly Democratic in the 2010 U.S. Senate race. Lower Merion is entirely in this District except for parts of one precinct that were removed to meet population requirements. Professor Kennedy suggests that the district was packed with Democrats, but this is an overstatement. The district is geographically surrounded by very Democratic areas and gained 16,914 Democratic registrants over the previous decade, while losing 20,525 Republicans. Very distorted line drawing would be required to reach the nearest Republican concentrations. The district's political leaning simply reflects the underlying patterns of political inclination and population change in the area.

**District 3**

As indicated in the summary above, the major development here was the shift southward to incorporate populations that were in the eliminated district (see Figures 1 and 2). Notably, in the 2001 map, Armstrong, Butler, Mercer, Venango and Warren Counties were split, and these county splits were eliminated in the 2011 map. Crawford was also split in the 2001 map. The question then arises as to why Erie County should be treated as a whole, while the other counties are split? What makes more sense, to make one split of 50,000 people, or 10 splits of 5,000 each, or 20 splits of 2,500 each? These trade-offs constitute the reality confronted by map makers in the effort to achieve population balance.

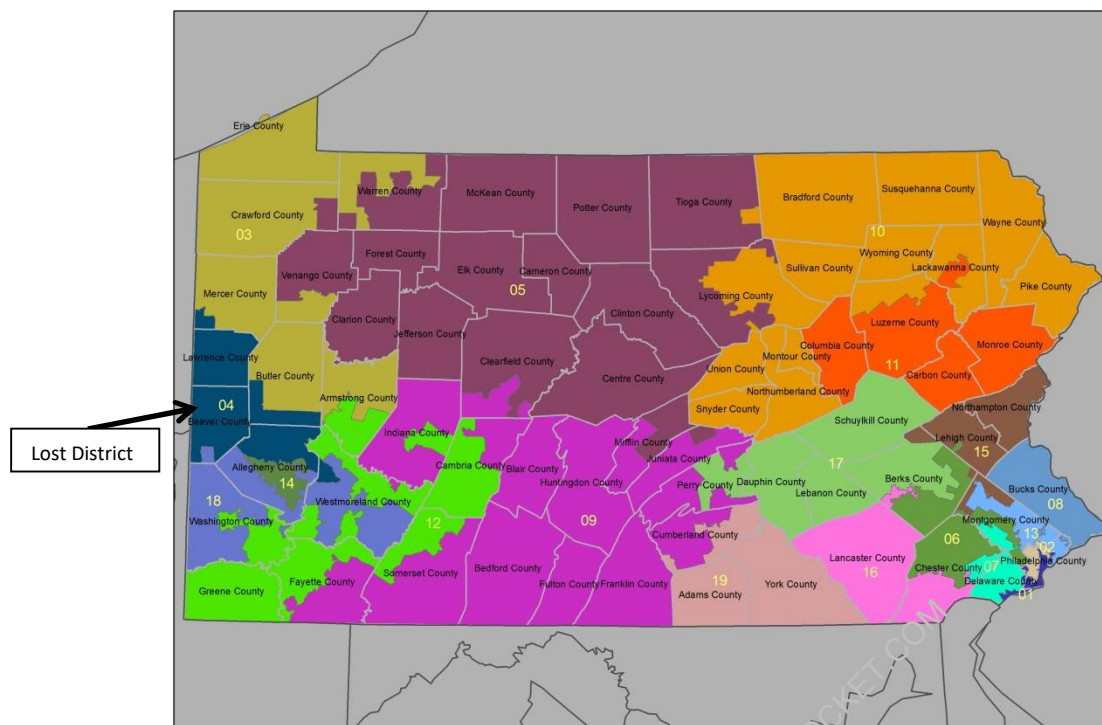


Figure 2. 2001 Pennsylvania Congressional Districts

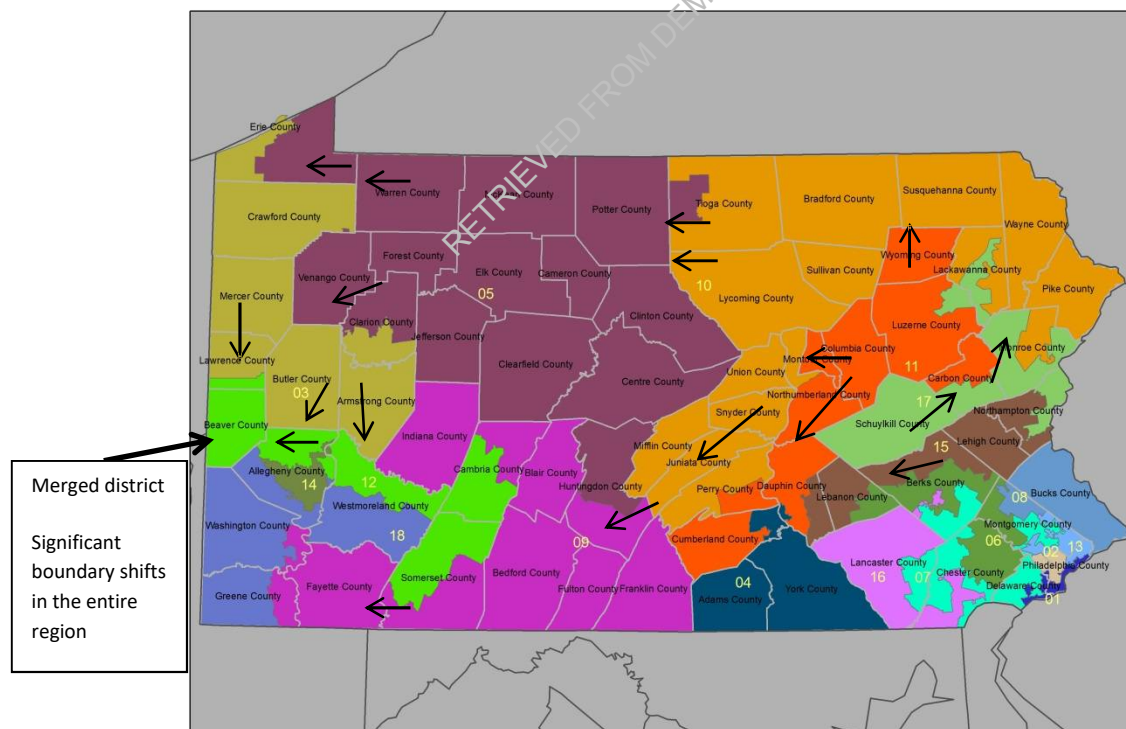


Figure 3. 2011 Pennsylvania Congressional District, (arrows show direction of major boundary shifts)

The new 3rd District does not extend as far south as Allegheny County. The 2011 Plan made Butler County whole, but the 3rd District has extended into Butler County since the 1991 map. The Kennedy report also fails to notice that a majority of Erie County's registered Democratic voters remain in District 3 (63 percent) and were not moved to District 5. The Kennedy report speculates that there were Democratic voters in Mercer County who had to be counterbalanced elsewhere. Mercer County is a reliably Republican area where GOP candidates have frequently carried all but a few of the 48 municipalities. There was no thought of a need to counterbalance or isolate Mercer's Democratic population when the 3<sup>rd</sup> District boundaries were redrawn.

In summary, a critic of the 2011 Plan can complain about the Erie metro having been divided, but keeping city and suburbs together in this case would result in considerable population imbalance between these two districts that would be more difficult to make up elsewhere. To be sure, one might have drawn the boundary in a slightly different place across Erie County, but making the split within the city most certainly would have produced complaints opposite to the ones the petitioners are now airing. In the end, readers of the petitioners' accounts obtain the impression that any dividing line will generate an objection.

#### **District 4**

This is the previous District 19, as shown in Figure 1. As Table 1 shows, the population of the 19<sup>th</sup> District grew substantially between 2001 and 2010, exceeding targeted population size (see Figure 1), necessitating a contraction of boundaries. Dauphin County and Harrisburg are divided to maintain population equality across the multiple districts that converge in this area. Harrisburg and the adjacent suburbs in Dauphin County constitute a sizable population center (Harrisburg is about 49,800; the balance of Dauphin County adds another 224,000) and it sits at the intersection of a number of districts

that encompass rural areas and small towns, as in the northwest. To achieve population balance across Districts 4, 11 and 15 necessitates a split of Dauphin County because of its large and dense population.

Encompassing Dauphin County entirely within one of these districts, though desirable from one standpoint, would almost certainly make it difficult to maintain equality of population across them. As in the case of Erie, there may be room to argue about exactly where the divisions cut through the county, but separating just two Harrisburg precincts from the rest is not a drastic split. The Kennedy report greatly exaggerates the extent to which Harrisburg was divided; making it sound like it was cracked down the middle. In reality, the division was quite limited.

#### **District 5**

As indicated above, the boundaries of District 5 were adjusted westward to accommodate the shift of District 3 to the south (see Figure 2). In the adjustment, Armstrong, Warren, Venango and Crawford Counties are kept whole but they had been split in the previous plan.

#### **District 6**

The 6<sup>th</sup> District grew by 73,000 voters between 2001 and 2010 (see Table 1) and also gained 58,255 Democratic registrants (see Table 2). In the 2001 map, it contained parts of Berks, Chester and Montgomery counties. The 15<sup>th</sup> District was shifted to the East in 2011 (as was the 17<sup>th</sup>) and this resulted in adjustments to the 6<sup>th</sup> District as parts of it were moved to the 15<sup>th</sup>. The 6<sup>th</sup> wound up incorporating parts of Lebanon and Berks Counties that were more similar to the areas it maintained. The Kennedy report fails to note that Reading had been split in the 2001 map. In the 2011 map Reading is made whole and included in the 16<sup>th</sup> District. The petitioners interpret this move in the most negative possible light, as “packing,” but had Reading been divided they would have complained that it had been “cracked.”

**District 7**

Congressional District 7 did gain population from 2001 to 2010. It also gained Democratic registrants over the same period. In spite of its often noted non-compact shape, it is politically competitive according to party registration figures with only a slim Republican majority reported below (see Table 8). One would think that if partisan intent were the overriding factor in determining the shape of this district the map makers could have made it a much safer bet for Republican candidates than it is now. The most densely populated part of the district in Delaware County is substantially continuous with the boundaries of the previous district. This House seat should draw able competitors from both political parties.

**District 8**

Bucks County is not sufficiently populous to warrant a single congressional district even with the population growth in the district from 2001 to 2010. To meet population equality requirements one of the adjacent counties must be split. Previously, the district included parts of Philadelphia and a piece of Montgomery. The 2011 map eliminated the extension into Philadelphia and included a larger section of Montgomery, creating only two county splits from what had been three. This version of the district is also consistent with history. The 8<sup>th</sup> has included parts of Montgomery since 1971 and the only time it had extended into Philadelphia was in 2001. Prior to 1971, Lehigh County was included with Bucks County to form the 8<sup>th</sup> District.

**District 9**

In 2001, the number of county splits was reduced from 9 to 6 even though the District had to shift westward to accommodate the seat loss. This is why the 9<sup>th</sup> no longer encircles Mifflin, Juniata, Perry and Cumberland Counties. Republicans gained ground over the decade measured in terms of

party registration. The 9<sup>th</sup> District drawn in 2001 (see Figure 1) gained 16,000 Republican voters from 2001 to 2011, while Democrats lost about 6,200. As it was redrawn in 2011, the Democratic losses from the previous decade were reduced to about 2,200 and the Republican registration gains remained about the same, not an outcome one would expect from a purely partisan line drawing process.

### **District 10**

With the 9<sup>th</sup> District moving out of Mifflin, Juniata, Perry and Cumberland Counties, District 10's boundaries were shifted to fill in this territory (see Figure 2). This District has gradually expanded its geographic reach as Pennsylvania has lost House seats, moving from 25 in 1971, to 21 in 1991, down to 18 in 2011. With the boundary adjustments, the number of county splits here was reduced from 5 to 4.

### **District 11**

The Kennedy report complains that this district does not include the cities of Scranton and Wilkes-Barre. The 2001 map is the only time District 11 incorporated both Scranton and Wilkes-Barre extending back to 1931. Remarkably, this District was drawn to split only 4 municipalities out of 224, but the Kennedy report's slanted exaggeration makes it sound far more sinister.

As far as the geographic expanse of the district, Representative Barletta has been more than accommodating to his constituents, opening four district offices 9 to 5 weekdays, and meeting constituents for casework in additional offices throughout the district on a part-time basis. Many members of Congress serve in Districts far more expansive than the 11<sup>th</sup> with great competence and professionalism. A district of this expanse is not an obstacle to representation, nor it is indicative of a partisan gerrymander, or many representatives in states lying to the west would be judged ineffectual and incompetent.

## District 12

As noted above, the 2011 reapportionment required the elimination of one seat. Past practice has been to merge adjacent districts so that two incumbents compete for the remaining seat, and usually they are of the same political party. The new 12<sup>th</sup> district is drawn to encompass large sections of the abolished 4<sup>th</sup> District and the previous 12<sup>th</sup> District, both of which experienced population loss in the intercensal period (see Table 1). Contrary to the characterization in the Kennedy report, there was nothing especially “meticulous” or “calculating” about it given that the 14<sup>th</sup> District – Pittsburgh and the bulk of Allegheny County – was to remain substantially unaltered. A Republican now occupies this seat, but it *was certainly not constructed as a safe Republican seat*. The figures in Table 8 (below) show that Republican registration was only 37.4% at the time it was drawn, compared with 52.9% for Democrats. Democrats have lost registrants in the area encompassed by the previous District 12, as Table 2 indicates, but unaffiliated ranks have grown faster than Republicans. The conclusion to be drawn is that the district is competitive, and may well move back to Democratic hands at some point in the near future.

## District 13

This district had to be considered on a block-by-block basis to meet equal population requirements and to adjust for the growth in the Philadelphia suburban population. The previously drawn 13<sup>th</sup> District also grew by 42,000 Democratic registrants, while Republicans declined by 47,000. At the time of 2011 creation, the redrawn 13<sup>th</sup> District had a significant Democratic edge with 58 percent of the registrants, but it is not so lopsided so as to be uncontestable, even though the Democratic incumbent went unchallenged in 2016. In spite of its non-compact shape, Democrats were not excessively grouped (“packed”), nor were they unduly scattered (“cracked”).



## District 14

The Kennedy report complains that municipalities are split in this district. In fact, only *four* are split, all to achieve population balance. Township splits were reduced from 12 in the 2001 map to 4 in 2011, a substantial improvement. Because this district lost 71,500 people, both Republican and Democratic registrants, over the course of the decade, it was expanded along the Allegheny River adding some small boroughs. These particular towns form more of a community-of-interest than adding suburban areas further away. This district encompasses many river communities on both sides of the Ohio and Allegheny Rivers. It is about as safely Democratic as it was before the redistricting.

## District 15

As noted above, District 15 was adjusted westward as other district boundaries were shifted in that direction. From 1930 to 1970 Lehigh and Bucks County combined to form the 8<sup>th</sup> District. Northampton County was part of the 15<sup>th</sup> District that included Carbon and Monroe Counties – the former a coal county, the latter known for tourism in the Pocono Mountains. The economic diversity in the district has some history.

When Lehigh and Northampton Counties were combined in the 1971 map, the Democrats held the seat for six terms, but Republicans have held it for sixteen thereafter. Contrary to the impression conveyed in the Kennedy report, 79% of the population of Lehigh and Northampton counties remains in the 15<sup>th</sup> District indicating substantial continuity with the past

The city of Bethlehem is characterized by Kennedy as having been “cracked.” It is not cracked. Four census blocks in a single ward were removed for population equality purposes and placed into District 15.

The District is also mischaracterized by Kennedy as “extremely Republican.” At the time it was drawn, it was 46 percent Republican by registration, and 39 percent Democratic. By no one’s standard

is this “extremely” Republican. Republican registration declined there between 2001 and 2011.

Judging by the close balance of party registration, this district should regularly draw viable candidates from both parties.

### **District 16**

Reading is singled out in the Kennedy report as having been “packed” into the 16<sup>th</sup> District. First, the city is made whole as a community-of-interest in the 2011 map, whereas in the 2001 map it had been divided. Arguably this change results in improved representation for Reading, not diluted.

Furthermore, the reality of District 16’s construction is more complicated than Kennedy’s misinformed characterization. Population growth in the 1990s formed suburban settlements around Reading as transportation networks into the city improved. In the 2001 map, Reading was in a district that included expansive farmlands and encompassed the coal counties of Schuylkill and Northumberland, two counties that have little in common with Reading.

The Latino population in this area is also growing quickly. The Route 222 corridor connecting the city of Lancaster and Reading, on its way north to Allentown, is considered a Hispanic boom area. District 16 was drawn along Route 222 in a manner that joins up the Hispanic population of southern Chester County and the Coatesville area.

Kennedy complains that Cumru township is split. But it is divided this way because it is noncontiguous. Placing all of Reading in one district and all of Cumru in another district will unavoidably result in a split township.

### **District 17**

District 17 encompasses an area historically anchored in the anthracite coal region: Schuylkill, Carbon, Luzerne and Lackawanna Counties. The district shifted to the northeast partly because the 11<sup>th</sup>

and 10th District boundaries shifted north and west (see Figure 2). As indicated above in the discussion of District 15, the city of Bethlehem is not “cracked”. Four census blocks in the 17<sup>th</sup> ward were removed to establish population equality. The 17<sup>th</sup> tipped in a Democratic direction (55 percent) at the time of its creation but not overwhelmingly so (Table 8).

### **District 18**

Like the other Districts in Western Pennsylvania, the 18<sup>th</sup> District’s boundaries underwent a major shift to accommodate the seat loss. In the 2011 map, District 18 splits fewer townships than the previous map, though the same number of counties. In spite of the boundary shifts, the District shows a modest Democratic registration edge of 53 percent at the time it was drawn (Table 8). If the intent was to draw a truly safe Republican district, then 53 percent falls well short of this goal. The 18<sup>th</sup> District should draw lively and vigorous challengers from both political parties, and if it does not, it is not because of the way the lines have been drawn.

### **Summary of District Analysis**

The burdensome task for Pennsylvania map makers in 2011 was how to rebalance the population of districts when one seat had been removed in response to a modest population loss, leaving more than 500,000 voters to be distributed across the remaining districts. This simply could not be done without some significant boundary alterations. The changes made in Western Pennsylvania, in turn had a ripple effect on boundaries further away, clearly in the Northeast, but also in the South Central regions. The stringency of the equal population criteria makes it surprisingly difficult to balance populations when a map maker is forced to move populations in pieces, by blocks and precincts, rather than individuals. Under the constraint of minimizing split municipalities and counties, and the demand to draw districts largely continuous with the way they were drawn in the previous map, along with other

considerations, the room to maneuver is not nearly as free and expansive as the petitioner's experts imagine. Perhaps this is why none of them have presented an alternative map.

Critics of legislative districting plans regularly complain when counties, towns and other communities of interest are split by district boundaries as in the image of neighborhoods cut up to look like Swiss cheese. One simple gauge of preserving communities of interest used by map makers in many states is to keep counties and towns wholly within districts, rather than dividing them. But compact shapes do not always preserve communities of interest.

As for the plan Pennsylvania presently has in place, it does have the very desirable quality of having minimized county and municipality splits from the previous plan. Analysis conducted by GIS experts in the state legislature indicate that the number of total splits in counties dropped from 42 to 39, and, more remarkably, the number of total splits in municipalities dropped from 97 to 73 (see Table 3). Not only were the total number of splits reduced, but the number of counties and municipalities with any split at all was reduced, from 29 to 28 for counties and from 94 to 68 for municipalities. These are not easy achievements under the constraints posed by Pennsylvania's underlying population settlement, the demand for equal population districts, and the other goals of the redistricting process.

<b>Table 3. Total Splits in Counties and Municipalities Under Recent Pennsylvania Redistricting Plans</b>			
Plan Year	1992	2002	2011
Counties	27	42	39
MCDs (Municipalities)	17	97	73
Source: PA General Assembly Legislative Data Processing Center			

The present Pennsylvania district shapes can be understood deploying alternative explanations not considered by the petitioner's experts, none of which go to extreme partisanship, but remain entirely consistent with the multiple goals of the redistricting process. In some cases, non-compact districts are necessary to ensure that a politically balanced district can be drawn. The petitioners desire competitive districts across the state, but drawing 11, 12 or more *compact* competitive districts is not at all a straightforward task in Pennsylvania, which is perhaps why neither the Kennedy report nor the other reports offer an alternative plan.

### **Variations in Partisanship within Districts**

Partisan advantages are not always as enduring or permanent as the petitioners' experts want to claim. Averages taken across a large number of elections and offices obscure the variability of political results within them. Certainly party identity is a valuable piece of information to have about a voter, but there is a reason why political scientists prefer to place voters on a seven-point scale, ranging across the following values: Strong Democrat, Democrat, Lean Democrat, Independent, Lean Republican, Republican and Strong Republican (Carsey and Layman 2006; Lewis-Beck, Jacoby, Norpoth and Weisberg 2008). The behavior and patterns of party support and loyalty across these categories are variable, predicting the propensity to vote at all, and to cast a ballot for the opposing party. Even in a highly polarized era there is crossover voting reported in every major election, especially among partisans whose identities are less anchored in issue congruence with their usually preferred party (Hillygus and Shields 2008). Campaigning does turn out to matter as political parties and candidates adapt to the composition of districts, emerging to run competitive elections in redrawn districts. Political scientists do not fully understand persuasion, but it is observed in every election as voters cast ballots in support of candidates who are not of the same party as themselves.

For evidence germane to Pennsylvania, we might consider the behavior of the state's voters grouped into the present eighteen congressional constituencies as they vote for different offices in the very same general election. Table 4 shows results from the 2016 general election, with the Republican and Democratic percentage of party registrants captured in the columns headed "R Reg" and "D Reg". The columns headed "D Max" and "R Max" contain the maximum percentage across the listed offices for each of the Republican and Democratic parties. So, for example, the maximum Republican vote across these offices in District 1 was 20% in the U.S. Senate race. The far right columns headed "Dif R" and "Dif D" simply reflect the difference between the party registration percentage and the maximum Republican and Democratic percentages across offices. In District 1, R Reg=15.2, and R Max=20.0. In turn,  $15.2 - 20.0 =$  the Dif R figure of -4.8.

What is notable about the differences is that they are quite substantial, in the double digits in 13 of the 18 districts for Republicans. Differences for Democrats are not as high, but exceed 5 points in 8 of the 13 districts. Generally, Republican candidates do far better in most districts than their party registration figures suggest. In the aforementioned District 9, Republicans outperformed their party registration by as much as 21 points. In District 17, lying northeast of Allentown, Republicans outperformed their registration percentage by a maximum of 19 points. In District 18, on the opposite end of the state, Republicans outperformed their registration percentage by a maximum of 17 points. This clearly suggests substantial independence from partisanship, enough to indicate that party registration is a very imperfect indicator of partisan preference in actual elections. Though it is certainly true that turnout levels vary across these districts, the gaps between party registration and party performance in elections cannot solely be attributed to differences in voter turnout. If some

**Table 4. 2016 Vote Percentages for Various Offices by Congressional District, and Comparison to Party Registration Figures**

District	R% Pres	D% Pres	R% AttGen	D% AttGen	R% Treas	D% Treas	R% Aud	D% Aud	R% US Sen	D% US Sen	R Reg	D Reg	R Max	D Max	Dif R	Dif D
1	18.2	79.4	18.5	81.5	16.8	80.6	18.4	78.8	20.0	78.7	15.2	73.2	20.0	81.5	-4.8	-8.3
2	7.6	90.4	9.5	90.5	9.3	88.4	10.1	87.5	10.6	88.4	8.3	80.3	10.6	90.5	-2.2	-10.2
3	60.6	34.7	59.3	40.6	52.5	41.0	53.7	40.0	58.9	41.0	44.9	42.5	60.6	41.0	-15.7	1.5
4	58.2	36.9	60.8	39.1	55.6	37.6	52.0	42.5	58.5	37.6	48.0	36.6	60.8	42.5	-12.8	-5.8
5	61.7	33.1	60.8	39.1	55.6	37.6	55.9	37.1	59.4	37.6	47.0	38.6	61.7	39.1	-14.7	-0.4
6	47.6	48.0	52.5	47.5	48.5	46.5	51.1	43.6	52.1	46.5	43.8	39.6	52.5	48.0	-8.7	-8.4
7	46.8	49.2	52.0	48.0	49.7	47.1	52.4	44.0	53.1	47.1	49.0	36.5	53.1	49.2	-4.1	-12.6
8	48.1	47.8	49.9	50.1	48.8	48.3	51.2	45.6	52.5	48.3	41.8	42.1	52.5	50.1	-10.7	-8.0
9	69.3	27.0	64.3	35.6	57.8	35.5	58.6	35.4	63.8	35.5	48.6	40.1	69.3	35.6	-20.8	4.5
10	65.5	29.9	64.5	35.3	58.2	34.7	60.0	33.5	61.9	34.7	52.3	33.6	65.5	35.3	-13.2	-1.7
11	59.8	36.0	57.6	42.3	51.3	42.5	51.5	42.5	56.6	42.5	45.5	41.1	59.8	42.5	-14.3	-1.4
12	58.5	37.8	56.1	43.8	49.0	45.1	48.0	46.8	56.4	45.1	41.2	46.6	58.5	46.8	-17.3	-0.2
13	31.7	65.3	31.0	69.0	30.8	67.0	33.9	63.7	35.6	67.0	27.0	60.0	35.6	69.0	-8.6	-9.0
14	30.6	66.0	29.5	70.5	24.2	69.4	22.8	71.7	29.6	69.4	18.6	67.8	30.6	71.7	-12.0	-3.8
15	51.7	44.2	52.3	47.7	48.5	46.2	50.5	44.3	53.3	46.2	39.5	43.9	53.3	47.7	-13.8	-3.8
16	50.5	43.8	54.8	44.9	50.4	42.7	50.8	42.7	52.9	42.7	44.8	39.3	54.8	44.9	-10.0	-5.6
17	53.1	43.0	48.0	51.9	42.1	51.9	44.3	49.9	47.9	51.9	34.1	52.0	53.1	51.9	-18.9	0.1
18	57.9	38.4	56.1	43.8	49.6	45.0	47.8	47.3	56.2	45.0	41.1	46.8	57.9	47.3	-16.8	-0.5

Source: Percentages calculated from election returns provided by the Pennsylvania Secretary of State.

portion of the variability is accounted for by differences in turnout it only proves that the decision to turn out to vote or to abstain is itself a substantively important decision that contributes to the variability of a party's performance. Moreover, voter turnout is a behavioral outcome that is mutable to campaign effort (Green and Gerber 2015).

Several interesting examples from Table 4 also show Democratic candidates outperforming their district registration figures in the 2016 elections. In District 2, including Philadelphia and some of its suburbs, Democrats performed up to 10 percent better than a strict accounting by party registration would predict, giving nearly 91 percent of their vote to the Democratic candidate for Attorney General. No doubt it helped that the Democratic candidate, Josh Shapiro, was from Montgomery County, buoyed by a friends-and-neighbors vote. Even so, there are other examples. In District 7, Democratic registration was about 37 percent at the fall closing date, but Hillary Clinton won the district with 49.2 percent of the vote. In District 13, covering parts of Philadelphia and Montgomery County, Democratic registration was at 60 percent, but the Democratic candidate for State Auditor won 69 percent of the vote, and Hillary Clinton won 65 percent.

These are comparisons biased against finding big differences because all of these elections are taking place at the same time, in November 2016. There are no comparisons in Table 4 across election years, which would reveal even larger deviations from what could be described as party normality. The upshot is that party registration is a valuable predictor of vote choice, but it is not unchanging, or all-controlling.

At the voter level, political scientists have long known that party identification as recorded in surveys does not explain the entirety of self-reported vote choice (Campbell, Converse Miller and Stokes 1980). There is even some discrepancy between party identification and party registration. For instance, in the 2016 Cooperative Congressional Election Survey of Pennsylvanians, conducted by the Palo Alto based firm, *YouGov*, comparing three-point party identification to party registration yields the



cross-tabulation reported in Table 5. About 16 percent of the state's Republican registrants tell survey researchers that they identify as independents. Among Democratic registrants, about 11 percent identify themselves as independents and another 2 percent report they are really Republicans, offsetting the 2 percent of Republicans who really identify as Democrats. Without question party registration is probably the best predictor of party identification available, but even then there is not a perfect association.

<b>Table 5. Association Between Party Registration and Party Identification for Pennsylvanians, 2016</b>				
Party Label	Democratic	Unaffiliated	Republican	Total
Democrat	86.7	8.3	2.4	43.3
Independent	11.4	85.3	16.1	22.3
Republican	2.3	6.3	81.5	34.4
Total	1,145	300	960	2,405
$\chi^2=2,600.9$ ; $p \leq .0001$ $\phi=1.01$ ; $p \leq .0001$ Source: 2016 YouGov Cooperative Congressional Election Study, Pennsylvania				

<b>Table 6. House Vote Preference and 7-Point Party Identification in Pennsylvania, 2016</b>								
Party Label	Strong Dem	Not Strong Dem	Weak Dem	Ind	Weak Rep	Not Strong Rep	Strong Rep	Total
Dem	90.8%	73.0%	80.9%	37.3%	7.2%	6.1%	3.3%	43.8%
Rep	9.2%	27.0%	19.1%	62.7%	92.8%	93.9%	96.7%	56.2%
N=2,097	553	270	141	153	180	345	455	2,097
$\chi^2=1,270.6$ ; $p \leq .0001$ $\phi=.778$ ; $p \leq .0001$ Source: 2016 YouGov Cooperative Congressional Election Study, Pennsylvania								

Not surprisingly, when it comes to vote choice for various offices, the differences between party identification and candidate preference are more striking, especially when we consider the ambivalence of weak and leaning partisans – identifiers who sometimes call themselves independents but are still registered with one of the two major parties. Table 6 (above) shows a cross-tabulation of 7-point party identification, including the weaker identifiers, with voter preference in the 2016 U.S. House elections in Pennsylvania. *Strong* Democrats and Republicans reliably prefer to vote for candidates of their party. But those who are *less* strong show greater tendency to defect, particularly on the Democratic side. An estimated 27 percent of the Democrats who are “not strong” preferred Republican candidates, according to these data. Republicans were less inclined to defect overall, although even six percent of the “not strong” Republicans preferred a Democratic candidate. The conclusion to be drawn from voter self-reports of party identity is that partisan voting blocs cannot be identified, measured, and diluted in the same manner as racial voting blocs. Partisanship is not the type of durable identity that one finds attached to race and ethnicity.

### **Partisanship and the Variability of the Efficiency Gap in Pennsylvania**

Various redistricting experts have promoted the efficiency gap as a measure of proportionality between seats and votes, upholding that measure as an important standard by which to evaluate existing and proposed maps (Stephanopoulos and McGhee 2015). In the view of proponents, redistricting plans should exhibit a match between votes earned and seats won -- proportionality. A low score on the efficiency gap ensures that a properly balanced plan is in place.

Numerous criticisms have been advanced to show that the efficiency gap is a flawed measure (Cho 2017; Chambers, Miller and Sobel 2017; Cover 2017). Among these weaknesses are the non-comparability of the measure across states and points in time; that the measure is sensitive to the size of the legislative delegation; that the measure is sensitive to the political data used to compute it; and

that the measure does not capture the concept of “partisan fairness” in the way proponents claim (Cho 2017). Below I will focus my attention on *one* of these criticisms consistent with my discussion of the mutability of partisanship in the foregoing pages; namely, that the measure is sensitive to the political data used to calculate it.

Because the efficiency gap is calculated using measures of partisan loyalty, and these measures fluctuate as voters change their minds, as turnout changes, and as political tides ebb and flow, a particular plan may have very different efficiency gap scores across a short span of time, or even at the very same time if we gauge party loyalty across offices that are voted on in the same general election. This raises the question of which measure really represents the true political identity of the electorate. Over the lifetime of a particular redistricting plan, the size of the efficiency gap can vary widely, as partisan tides raise the prospects for one party or the other. The data presented in Table 7 show the efficiency gap calculation varies for the present Pennsylvania plan for each office, even for the same election year. For a plan containing 18 US House seats, a greater than two seat advantage is considered imbalanced enough to reject a plan. This means that for Pennsylvania’s present map, values of the gap greater than 11 indicate a defective plan.

In Table 7, I also calculate a gap for the party registration balance only to show what gap would emerge if all voters voted and cast ballots strictly according to their party registration. Even across the 2012-2016 period, the gap ranges from 4.2 to 17 (with positive values indicating a Republican advantage). The gaps do vary in magnitude to a Democratic advantage of -7.3 in the 2012 Attorney General’s race. Although it is true that the efficiency gap exceeds 11 in most elections appearing in Table 7, certainly there are instances where the gap falls well below that level. Viewed over the last decade, election returns in Pennsylvania suggest that the Republican tide has been gradually rising across the state as a secular trend, not that something specifically about the 2011 plan suddenly improved Republican prospects. Under this same 2011 plan, we could well see this tide recede in the

Table 7. Efficiency Gaps Calculated Across Offices for Pennsylvania Under the 2011 Redistricting Plan, 2006-2016.					
2016		2014		2012	
Party	17.7	Party	9.3	Party	4.2
US House	14.0	US House	11.2	US House	18.0
President	15.9	Governor	15.4	President	22.2
Atty General	19.5			Atty General	-7.3
Treasurer	28.9			Treasurer	25.5
Auditor	27.4			Auditor	25.6
US Senate	26.3			US Senate	9.2
2010		2008		2006	
Party	2.7	Party	2.9	Party	5.2
US House	9.5	US House	-1.1	US House	9.9
Governor	20.0	President	7.8	Governor	7.5
US Senate	5.9	Atty General	16.9	US Senate	-11.5
		Treasurer	-6.1		
		Auditor	-12.2		
Source: Author’s Efficiency Gap calculations from data provided by the Pennsylvania General Assembly Legislative Data Processing Center					

<b>Table 8. 2009 and 2010 Party Registration Percentages Calculated within 2011 Congressional Districts</b>				
2011 District	R % Reg 2009	D % Reg 2009	R % Reg 2010	D % Reg 2010
1	18.32	72.57	18.17	72.38
2	9.20	81.51	9.28	81.10
3	41.05	48.29	41.54	47.49
4	46.89	39.46	46.92	39.01
5	44.99	43.03	45.05	42.54
6	44.57	40.21	44.31	40.03
7	51.86	35.49	51.43	35.55
8	42.21	43.14	41.97	42.99
9	42.28	47.80	42.61	47.15
10	50.24	37.11	50.39	36.75
11	43.75	44.69	43.87	44.24
12	37.02	52.92	37.36	52.30
13	30.47	58.37	30.09	58.22
14	17.55	71.76	17.66	71.14
15	39.12	45.93	39.19	45.64
16	46.31	39.46	45.95	39.51
17	32.20	55.93	31.92	56.06
18	36.40	53.33	36.82	52.64
Source: Author's calculations based on aggregating 2009 and 2010 precinct data to 2011 Congressional District boundaries. Blue shaded cells indicate Districts in which Democrats were at least a plurality of total registrants.				

2018 and 2020 elections, resulting in a declining gap, or lopsided Republican wins may well increase it. Neither of those results would be the consequence of a redrawn map. In this connection, we should also note that when the present Pennsylvania map was drawn, Democrats held the majority or plurality of party registrants in 12 of the 18 seats (67% of the total), as shown in Table 8 shaded in blue.

Since there is no certain way to assign voters to one of the two major parties; and with the voters moving in and out of the electorate, and voters changing their minds regularly enough to alter their political classification, the efficiency gap calculation is too undependable to be a guide. After all, who is being unjustly denied a voice in Pennsylvania? Is it the Democratic Party's registrants in the

state? Is it the Democrats who voted for Auditor or Treasurer? Or the particular group of people who voted for Hillary Clinton, regardless of their party identification? (Chambers, Miller and Sobel 2017, 30). Twenty thousand African American voters in District 2 will be twenty thousand African American voters in District 7. But if a group of twenty thousand Republicans in District 2 becomes a group of thirteen thousand Republicans and seven thousand Democrats in District 7, it is absurd to say that the quality of the Republican Party's statewide representation was affected positively or negatively (Rush 2000, 250). If the identification of the group depends upon the district in which they happen to reside, or the candidates they happen to face, then this is not an identity group in the first place. Racial groups are enduring, but a constituency's partisanship is not.

### **Minority Descriptive Representation and Competitiveness**

Among other mandates, the Pennsylvania legislature labored to produce the 2011 Plan under the requirement that they provide for minority descriptive representation, following the precedent set by previous plans. This is a serious constraint on the placement of congressional district boundaries in Southeastern Pennsylvania. Philadelphia is home to a substantial African American population (44% in 2015) with a sizable Hispanic population (14%). Adjacent Delaware County was reported to be 22% African American and 4% Hispanic.<sup>1</sup> This extent of minority population concentration dictates that for any plan to be insulated from legal challenge as a violation of minority voting rights, the Philadelphia metro area should receive at least one seat highly likely to elect a minority member of Congress, and probably another with significant minority influence. The current plan reflects this reality, as District 1 is 36 percent African American and District 2 is 56 percent African American.

The legislature could certainly have drawn more African Americans into District 2 than it did. The inevitable criticism had they done this would be that a greater degree of "packing" is in excess of

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<sup>1</sup> As reported in Census Quickfacts, based on 2016 estimates.  
<https://www.census.gov/quickfacts/fact/table/delawarecountypennsylvania/PST045216>, accessed 11/15/17.

what is needed to obtain descriptive representation for minorities. In reality, it is not clear just what the appropriate population percentage should be given the uncertainty of black turnout across Democratic primaries and election cycles. Any less than 56 percent and petitioner's experts would surely complain that the black population was being unlawfully "cracked." In the face of these uncertainties, 56 percent is probably the narrowest acceptable threshold to avoid legal challenge.

Once these two districts were drawn, any map maker then faces the challenge that having removed large and reliably Democratic populations from the map, politically balanced districts will be difficult to draw in nearby areas in Eastern Pennsylvania. By removing the precincts from the concentrated minority voter locations encircled by Districts 1 and 2, it becomes far more challenging to produce three, four or five competitive districts nearby. An investigator need not remove the precincts just from Districts 1 and 2, in particular. Removing clusters of contiguous high population African American precincts from other parts of Pennsylvania will make it harder to amalgamate adjoining areas so that they reflect political evenness, much less a Democratic tilt. Levitt (2016, 2) makes the same point about Arizona's congressional districts: competitive seats are hard to create if map makers also care about minority representation.

### **Competitiveness and Compact Shape**

The standards to utilize to create a competitive district are confusing and unclear (Alexander and Prakash 2008). Partisanship and competitiveness cannot be judged simply by measuring the balance of party registration or voting in a district, as has been suggested in various reports by petitioners. The present understandings that rely on vote percentages for the major parties fail to offer any local baseline for what an acceptable distribution of partisanship should be. For a party decisively in the minority in a location such as Republicans in the city of Philadelphia, creating one or two competitive districts will require an intensely partisan effort. Some districts would rarely be

competitive given the underlying concentration of the population settled there (Levitt 2016). Given the current distribution of partisans in the densest parts of Allegheny County, the district there probably should not be highly competitive. Not surprisingly, Districts 1, 2 and 14 are all considered safe Democratic districts in the 2011 plan. A competitive map in these locales would reveal evidence of the ugliest kind of partisan map-drawing at work, turning the usual indicators for partisan bias and competition on their heads. Shape is once again a most unhelpful guide to the map maker's intent.

Repeatedly, however, the petitioners' expert reports rely on the non-compact shape of a district to draw a completely contestable inference about partisan intent. Districts 12 and 9 are faulted for cracking Democratic constituencies for partisan ends but the net result is to create competitive districts judged by criteria accessible to the map makers at the time. Even the much criticized District 7 contained a 51% (see Table 8) Republican majority by registration at the time of its creation, an edge hardly considered an unassailable party fortress by campaign professionals. District 15 did not have a Republican edge according to party registration estimates at the time of its creation, but instead had a Democratic plurality (45-46%, see Table 8). Districts 17 and 18 both maintain Democratic majorities according to party registration figures in 2009 and 2010, though not insurmountable ones. Some extension outward from the cores of these districts was required to make them more competitive. Shape compactness will undermine competitiveness in many locations on the Pennsylvania map. Obtaining any large share of competitive districts in Pennsylvania will require extensions outward from larger towns and cities out to less densely settled territory, much as the current map shows.

In summary, the 2011 Pennsylvania map is a completely reasonable response to the multiple and contradictory demands of the redistricting process, including that of descriptive representation, preservation of communities of interest, the fundamental requirement for equal population, and the desire to maintain compactness of shape. Even political competitiveness is preserved across a large number of districts, at least gauged at the time the maps were drawn by the balance of party



registrants. Remove descriptive representation and it is considerably easier to even out the balance of party identifiers across Eastern Pennsylvania's congressional districts (Levitt 2016; Nakao 2011). Draw a district that contains all of Harrisburg and it becomes considerably more difficult to equalize the population across the adjacent districts. Under existing law, map makers are not free to sketch in the boundaries in order to satisfy only a single demand or priority.

### **Are the Officeholders More Extreme after the 2011 Plan?**

The petitioners' complaint and the expert report authored by Christopher Warshaw make a point of arguing that the officeholders elected from plans such as the 2011 Plan are political extremists, and that they cannot obtain proper representation from such immoderate candidates, leading to the conclusion that partisan map drawing is a primary cause of institutional failure.

In this brief section, I will argue that the evidence for the extremism of the Pennsylvania delegation is unconvincing, and that there is considerable evidence that the Pennsylvania delegation isn't extreme at all. In fact, Pennsylvania has a long tradition of electing practical, level-headed and ideologically moderate officeholders to Congress who pride themselves on constituency service. Unlike members elected from states further south, they are usually not at the front of the ideological battle lines in Washington. Moreover, their election and reelection under the 2011 redistricting plan has not changed their sensible posture, nor is it likely to during the remaining years it is in place.

Roll call voting data based on recorded votes are commonly used to gauge political extremism, as they are in the petitioners' original complaint, as well as in the expert report by Warshaw. These are not helpful measures, regardless of how widely they've been used and misused by political scientists. Measures such as the DW-Nominate scores are so general that they conflate party line voting on trivial measures with no policy content (e.g., procedural votes) with truly divisive ideological votes on substantive themes such as abortion rights, immigration control, defense spending and tax reform. The

best that can be said for such scores is that they measure some loyalty to a party and a member's tendency to vote with their party's majority, but they say little or nothing about ideological polarization.

There are measures by individual interest groups that may come closer to gauging what is meant by political extremism in the ideological or policy sense. These are based on specific votes selected by the group to represent their ideological agenda. They are also based on questionnaires that members fill out detailing their positions on specific issues important to the group. There are numerous examples of these specialized group ratings or scorecards, from organizations on the left, the right, and center, but I will take up seven of them here all representing conservative causes with different issue orientations. I choose the conservative groups on purpose because it is the threat posed by increasing ideological conservatism in the Pennsylvania delegation that the petitioners appear to fear most. The group scorecard/ratings are:

1. The American Conservative Union (Positions Score) 2011, 2016
2. The American Conservative Union (Lifetime Score) 2011, 2016
3. Eagle Forum (Positions Score) 2011, 2016
4. Heritage Foundation Action (Positions Score) 2011, 2016
5. The Club for Growth (Positions Score) 2011, 2016
6. Gun Owners of America 2011, 2016
7. Numbers USA (Positions) 2011, 2016

Like any voting or interest group scores, the ratings for any two years are not strictly comparable because the same issues are not considered every year. The fact of that difference, however, should constitute a test for differences that would be biased *in favor* of finding a significant difference before and after redistricting, not against it. If we find that there is no difference between the 2011 rating and the 2016 rating, then it would be especially remarkable given that the exact nature of the immigration, or gun rights, or tax reform issues before Congress will change. Finally, it's also important to note that there are several membership changes between 2011 and 2016: Matt Cartwright replaces Tim Holden in District 17; Brendan Boyle replaces Allison Schwartz in District 13; Keith Rothfus replaces Mark Critz in District 12, representing not only a member change, but a change in

party control; Scott Perry replaces Todd Platts in District 4, the former District 19; and Jim Gerlach is replaced by Ryan Costello in District 6. All of these changes would predict that we should see major differences in the scores between 2011 and 2016 too!

Amazingly, what we find in the paired sample t-test of difference in means is that across these 126 pairings of scores listed in Appendix Table A.1, there is no statistically significant difference between scores in the two years (*Mean difference*=1.45; *SE*=2.31; *t*=.628; *p*≤0.531). The biggest difference occurs in the party switch in District 12 from Critz to Rothfus. To be sure, this is a substantively large shift in a more conservative direction with this change in party control. But aside from this difference, even with the *intraparty* changes in membership included, the differences do not become greater from 2011 to 2016. The Pennsylvania delegation is not becoming more conservative as a result of redistricting.

Finally, note in Table A.1. that the substantive scores for Republicans in the districts the petitioners complain about most are very moderate on the 0-100 scale. The occupants of these seats: Patrick Meehan in the 7<sup>th</sup>; Ryan Costello in the 6<sup>th</sup>; Mike Kelly in the 3<sup>rd</sup>; Bill Schuster in the 9<sup>th</sup>; and others – are not earning ratings way out on the extremes by these high profile conservative interest groups. None of these incumbents are recognized as leading right-wingers in the Republican Conference on Capitol Hill. They may look conservative to liberal extremists active in Democratic Party politics in Pennsylvania, but by objective standards they are not even close to the conservative extreme. The complaint that the 2011 Plan has generated some rightward lurch in the Pennsylvania delegation is not justified by the facts.

## Conclusion

Redistricting plans have to satisfy many goals, and they always do this imperfectly because the goals are in conflict. A district that preserves a territorial community quite well is likely to be politically lopsided on a number of other measures because proximity promotes homogeneity of interest.

Conversely, competitive districts could well be disruptive of communities if they have to go out of their way to incorporate diverse interests.

Responsiveness, or “efficiency,” is not the preeminent goal of redistricting any more than other values that could be elevated. Just as there are reasonable arguments for creating more competitive districts, there are equally reasonable arguments for desiring lower turnover in leadership. Some argue quite reasonably for representatives who will ignore the short-run impulses and protests of constituents in favor of policy that will serve the longer-term interests of the state. Expertise and seniority in Congress are also valuable resources in exercising oversight, and advocating on behalf of a state’s voters. From this standpoint, having new and inexperienced leaders trading office in every election is not better than having a stable group of representatives in place to address the long-term interests of Pennsylvanians on Capitol Hill. Some would even insist that the U.S. House of Representatives is, by design, supposed to be a continuing and highly stable body, not subject to the whims of each new administration. The myriad conflicting redistricting criteria highlighted at the beginning of this report were all in place to make the Act 131 map what it is. In its inevitably imperfect balance of contradictory demands there are many aspects of the 2011 map that could be different than they are. But that does not mean that the map is unacceptable, or that it is unfairly partisan in inspiration or result.

All maps are imperfect, objectionable to someone. Representational gaps abound. Minority parties; independent voters; women; Catholics; coal miners; people of Dutch ancestry, and many other identity groups fail to find representation in the legislature proportional to their voting presence in elections. Some popularly elected legislative body has to be awarded the authority to adjudicate among these contending claims and priorities. These state legislators may well try to advantage themselves by drawing districts favorable to their reelection, but those legislators can also be defeated because voters come to disapprove of this practice. Voters, in the end, have control over whether there are competitive elections.

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## Appendix

<b>Table A.1. Conservative Interest Group Scorecards or Ratings for the Pennsylvania Delegation in 2011 and 2016</b>			
<b>Member Name</b>	<b>Rating or Scorecard Name</b>	<b>Score 2011</b>	<b>Score 2016</b>
Brady 1	American Conservative Union - Positions	0	6
	American Conservative Union - Lifetime Score	6	4
	Eagle Forum - Positions	38	14
	Heritage Action for America - Positions (House Only)	11	16
	The Club for Growth - Positions	1	0
	Gun Owners of America	0	0
	NumbersUSA - Positions	28	10
Fattah 2	American Conservative Union - Positions	0	3
	American Conservative Union - Lifetime Score	2	12
	Eagle Forum - Positions	15	13
	Heritage Action for America - Positions (House Only)	0	16
	The Club for Growth - Positions	2	0
	Gun Owners of America	0	0
	NumbersUSA - Positions	21	10
Kelly 3	American Conservative Union - Lifetime Score	80	70
	American Conservative Union - Positions	80	72
	Eagle Forum - Positions	61	73
	Heritage Action for America - Positions (House Only)	57	67
	The Club for Growth - Positions	54	71
	Gun Owners of America	75	90
	NumbersUSA - Positions	57	71
Platts/Perry 4	American Conservative Union - Positions	48	96
	American Conservative Union - Lifetime Score	72	96
	Eagle Forum - Positions	53	100
	Heritage Action for America - Positions (House Only)	52	85
	The Club for Growth - Positions	48	91
	Gun Owners of America	75	90
	NumbersUSA - Positions	86	89
Thompson 5	American Conservative Union - Lifetime Score	85	71
	American Conservative Union - Positions	68	84
	Eagle Forum - Positions	69	46
	Heritage Action for America - Positions (House Only)	48	49
	The Club for Growth - Positions	48	62
	Gun Owners of America	75	10
	NumbersUSA - Positions	57	38
Gerlach/Costello 6	American Conservative Union - Positions	52	20
	American Conservative Union - Lifetime Score	62	29
	Eagle Forum - Positions	64	33
	Heritage Action for America - Positions (House Only)	47	33
	The Club for Growth - Positions	48	35
	Gun Owners of America	93	90
	NumbersUSA - Positions	71	24
Meehan 7	American Conservative Union - Positions	52	32
	American Conservative Union - Lifetime Score	52	46
	Eagle Forum - Positions	53	40
	Heritage Action for America - Positions (House Only)	38	36
	The Club for Growth - Positions	42	42
	Gun Owners of America	75	50
	NumbersUSA - Positions	57	38
Table continued			



<b>Table A.1. Conservative Interest Group Scorecards or Ratings for the Pennsylvania Delegation in 2011 and 2016 (continued)</b>			
Fitzpatrick 8	American Conservative Union - Lifetime Score	57	47
	American Conservative Union - Positions	64	39
	Eagle Forum - Positions	53	46
	Heritage Action for America - Positions (House Only)	52	40
	The Club for Growth - Positions	43	42
	Gun Owners of America	75	40
	NumbersUSA - Positions	71	30
Shuster 9	American Conservative Union - Lifetime Score	92	72
	American Conservative Union - Positions	75	82
	Eagle Forum - Positions	100	100
	Heritage Action for America - Positions (House Only)	65	53
	The Club for Growth - Positions	54	58
	Gun Owners of America	75	80
	NumbersUSA - Positions	57	71
Marino 10	American Conservative Union - Lifetime Score	84	86
	American Conservative Union - Positions	84	72
	Eagle Forum - Positions	53	73
	Heritage Action for America - Positions (House Only)	71	61
	The Club for Growth - Positions	60	60
	Gun Owners of America	75	80
	NumbersUSA - Positions	71	91
Barletta 11	American Conservative Union - Lifetime Score	76	64
	American Conservative Union - Positions	76	72
	Eagle Forum - Positions	53	61
	Heritage Action for America - Positions (House Only)	47	50
	The Club for Growth - Positions	47	59
	Gun Owners of America	75	70
	NumbersUSA - Positions	93	93
Critz/Rothfus 12	American Conservative Union - Positions	16	84
party change	Concerned Women for America - Positions	33	92
	Eagle Forum - Positions	46	93
	Heritage Action for America - Positions (House Only)	0	79
	The Club for Growth - Positions	12	81
	Gun Owners of America	25	80
	NumbersUSA - Positions	57	83
Schwartz/Boyle 13	American Conservative Union - Positions	0	9
	American Conservative Union - Lifetime Score	3	8
	Eagle Forum - Positions	7	14
	Heritage Action for America - Positions (House Only)	10	14
	The Club for Growth - Positions	6	0
	Gun Owners of America	0	70
	NumbersUSA - Positions	29	1
Doyle 14	American Conservative Union - Positions	8	15
	American Conservative Union - Lifetime Score	17	0
	Eagle Forum - Positions	23	13
	Heritage Action for America - Positions (House Only)	0	14
	The Club for Growth - Positions	12	0
	Gun Owners of America	0	10
	NumbersUSA - Positions	21	10
Table continued			

<b>Table A.1. Conservative Interest Group Scorecards or Ratings for the Pennsylvania Delegation in 2011 and 2016 (continued)</b>			
Dent 15	American Conservative Union - Lifetime Score	63	59
	American Conservative Union - Positions	52	40
	Eagle Forum - Positions	46	85
	Heritage Action for America - Positions (House Only)	38	29
	The Club for Growth - Positions	46	59
	Gun Owners of America	75	70
	NumbersUSA - Positions	57	8
Pitts 16	American Conservative Union - Lifetime Score	96	96
	American Conservative Union - Positions	84	93
	Eagle Forum - Positions	100	53
	Heritage Action for America - Positions (House Only)	90	65
	The Club for Growth - Positions	76	89
	Gun Owners of America	100	80
	NumbersUSA - Positions	57	30
Holden/Cartwright 17	American Conservative Union - Positions	37	4
	American Conservative Union - Lifetime Score	28	7
	Eagle Forum - Positions	45	13
	Heritage Action for America - Positions (House Only)	43	12
	The Club for Growth - Positions	8	0
	Gun Owners of America	0	10
	NumbersUSA - Positions	57	10
Murphy 18	American Conservative Union - Lifetime Score	73	70
	American Conservative Union - Positions	76	76
	Eagle Forum - Positions	53	60
	Heritage Action for America - Positions (House Only)	61	46
	The Club for Growth - Positions	69	10
	Gun Owners of America	75	80
	NumbersUSA - Positions	79	13
Sources: Project Vote Smart and Group Websites.			
Notes: Several members left Congress at the end of 2016, including Pitts, Fitzpatrick and Schwartz. Fattah and Murphy have recently resigned their seats. Fitzpatrick's seat is now occupied by his brother.			