No. 159 MM 2017

IN THE

Supreme Court of the Commonwealth of Pennsylvania

LEAGUE OF WOMEN VOTERS OF PENNSYLVANIA,
CARMEN FEBO SAN MIGUEL, JAMES SOLOMON,
JOHN GREINER, JOHN CAPOWSKI, GRETCHEN
BRANDT, THOMAS RENTSCHLER, MARY ELIZABETH
LAWN, LISA ISAACS, DON LANCASTER, JORDI
COMAS, ROBERT SMITH, WILLIAM MARX, RICHARD
MANTELL, PRISCILLA MCNULTY, THOMAS ULRICH,
ROBERT MCKINSTRY, MARK LICHTY, LORRAINE
PETROSKY,

Petitioners,

v.

THE COMMONWEALTH OF PENNSYLVANIA; THE
PENNSYLVANIA GENERAL ASSEMBLY; THOMAS W. WOLF,
IN HIS CAPACITY AS GOVERNOR OF PENNSYLVANIA;
MICHAEL J. STACK III, IN HIS CAPACITY AS LIEUTENANT
GOVERNOR OF PENNSYLVANIA AND PRESIDENT OF THE
PENNSYLVANIA SENATE; MICHAEL C. TURZAI, IN HIS
CAPACITY AS SPEAKER OF THE PENNSYLVANIA HOUSE
OF REPRESENTATIVES; JOSEPH B. SCARNATI III, IN HIS
CAPACITY AS PENNSYLVANIA SENATE PRESIDENT PRO
TEMPORE; ROBERT TORRES, IN HIS CAPACITY AS
SECRETARY OF THE COMMONWEALTH OF
PENNSYLVANIA; JONATHAN M. MARKS, IN HIS CAPACITY
AS COMMISSIONER OF THE BUREAU OF COMMISSIONS,
ELECTIONS, AND LEGISLATION OF THE PENNSYLVANIA
DEPARTMENT OF STATE,

Respondents.

On Appeal from the Order of the Commonwealth
Court of Pennsylvania, No. 261 MD 2017

BRIEF OF BERNARD GROFMAN AND RONALD KEITH GADDIE AS AMICI CURIAE IN SUPPORT OF NEITHER PARTY

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January 5, 2018

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

STATEMENT OF INTEREST[1]

Amici are political scientists specializing in redistricting,

including the statistical methods used to detect and measure partisan

gerrymandering. *Amici* have served as expert witnesses and

consultants in redistricting cases on behalf of both states and plaintiffs,

Republicans and Democrats. They have published many peer-reviewed

articles on the subject.[2]

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[1] No one other than Amici, their members, or their counsel authored or paid for the preparation of this brief in whole or in part.

[2] Professor Grofman's publications include Bernard Grofman & Gary King, *The Future of Partisan Symmetry as a Judicial Test for Partisan Gerrymandering after LULAC v. Perry*, 6 Election L.J. 2 (2007); Bernard Grofman, William Koetzle & Thomas Brunell, *An Integrated Perspective on the Three Potential Sources of Partisan Bias: Malapportionment, Turnout Differences, and the Geographic Distribution of Party Vote Shares*, 16 Electoral Stud. 457 (1997); Richard G. Niemi, Bernard Grofman, Carl Carlucci & Thomas Hofeller, *Measuring Compactness and the Role of a Compactness Standard in a Test for Partisan and Racial Gerrymandering*, 52 J. of Pol. 1155 (1990); Guillermo Owen & Bernard Grofman, *Optimal Partisan Gerrymandering*, 7 Pol. Geography Q. 5 (1988); Bernard Grofman, Michael Migalski & Nicholas Noviello, *The "Totality of Circumstances Test" in Section 2 of the 1982 Extension of the Voting Rights Act: A Social Science Perspective*, 7 L. & Pol'y 199 (1985); Bernard Grofman, *Measures of Bias and Proportionality in Seats-Votes Relationships*, 9 Pol. Methodology 295 (1983).

Professor Gaddie's publications include Charles S. Bullock, III, Ronald Keith Gaddie, & Justin J. Wert, *The Rise and Fall of the Voting Rights Act* (2016); Charles S. Bullock, III, & Ronald Keith Gaddie, *The Triumph of Voting Rights in the South* (2009); Ronald Keith Gaddie & Charles S. Bullock, III, *From Ashcroft to Larios: Recent Redistricting Lessons from Georgia*, 34 Fordham Urb. L.J. 997 (2007); Ronald Keith Gaddie & Charles S. Bullock, III, *Elections to Open Seats in the U.S. House: Where the Action Is* (2000).

Amici seek to assist the Court in understanding social-science methodologies for identifying and measuring the extent of partisan gerrymanders. They do not take a position on whether, given the particular facts and expert-witness analysis, the Commonwealth Court correctly decided this case. But *amici* firmly believe that partisan gerrymanders are justiciable, and that both state and federal courts are well-equipped to develop and apply judicially manageable standards for assessing the constitutionality of redistricting maps.

Social-science tools now allow courts to diagnose the key elements of partisan gerrymanders with accuracy and precision. These tools distinguish ordinary, acceptable politicking from conduct that rises to the level of unconstitutional discrimination against voters based on their political views. If courts decline to invalidate even egregious partisan gerrymanders, politicians will have free rein to use these same tools to craft maps that violate voters' associational and representational rights, and that prevent voters from having any meaningful influence over their representation—for the course of an entire decennial redistricting cycle and even beyond.

Amicus Bernard Grofman is the Jack W. Peltason Chair of Democracy Studies and Professor of Political Science at the University of California, Irvine. He has frequently served as an expert witness and consultant in redistricting cases, including for the State of Indiana in *Davis v. Bandemer*, 478 U.S. 109 (1986), and for the plaintiffs in *Badham v. Eu*, 694 F. Supp. 664 (N.D. Cal. 1988), *aff'd*, 488 U.S. 1024 (1989). He joined *amicus* briefs on behalf of neither party arguing that partisan gerrymanders are justiciable in *Vieth v. Jubelirer*, 541 U.S. 267 (2004), *League of United Latin American Citizens (LULAC) v. Perry*, 548 U.S. 399 (2006), and *Gill v. Whitford*, No. 16-1161 (U.S. 2017). The U.S. Supreme Court has previously cited Professor Grofman's work (including volumes he edited) in over a dozen cases.[3] His brief in *LULAC* is often credited with introducing the Court to social-science analysis of partisan asymmetry.

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[3] *See Ariz. State Legislature v. Ariz. Indep. Redistricting Comm'n*, 135 S. Ct. 2652 (2015); *Shelby Cty. v. Holder*, 570 U.S. 529 (2013); *LULAC v. Perry*, 548 U.S. 399 (2006); *Vieth v. Jubelirer*, 541 U.S. 267 (2004); *Georgia v. Ashcroft*, 539 U.S. 461 (2003); *Abrams v. Johnson*, 521 U.S. 74 (1997); *Shaw v. Hunt*, 517 U.S. 899 (1996); *Bush v. Vera*, 517 U.S. 952 (1996); *Miller v. Johnson*, 515 U.S. 900 (1995); *Johnson v. De Grandy*, 512 U.S. 997 (1994); *Holder v. Hall*, 512 U.S. 874 (1994); *Shaw v. Reno*, 509 U.S. 630 (1993); *Thornburg v. Gingles*, 478 U.S. 30 (1986); *Davis v. Bandemer*, 478 U.S. 109 (1986).

Professor Grofman has also drawn redistricting plans for federal district courts, nonpartisan commissions, and the U.S. Department of Justice—including as Special Master appointed to redraw Virginia's Congressional District 3 and a county-level districting map in Utah after courts declared them unconstitutional. *Personhuballah v. Alcorn*, 155 F. Supp. 3d 552 (E.D. Va. 2016); *Navajo Nation v. San Juan Cty.*, No. 2:12-CV-00039, 2017 WL 6547635 (D. Utah Dec. 21, 2017). Professor Grofman's *curriculum vitae* is available at https://tinyurl.com/y8ppxmvg.

Amicus Ronald Keith Gaddie is the President's Associates Presidential Professor of Political Science and Executive Faculty Fellow at the University of Oklahoma and an editor of *Social Science Quarterly*. He too has served as an expert witness and consultant in numerous redistricting cases, including for the State of Texas in *LULAC*; the plaintiffs in *Cox v. Larios*, 542 U.S. 947 (2004); and the State of Wisconsin in *Baldus v. Members of Wisconsin Government Accountability Board*, 849 F. Supp. 2d 840 (E.D. Wisc. 2012). He joined Professor Grofman's *amicus* brief on behalf of neither party in *Gill*, No.

16-1161 (U.S. 2017). His *curriculum vitae* is available at

https://tinyurl.com/ya62povt.

INTRODUCTION AND SUMMARY OF ARGUMENT

Modern, computer-driven redistricting now allows the political party in power to craft extremely sophisticated partisan gerrymanders. With advancements in computer technology, map drawers can design district lines so precisely that they simultaneously maximize their party's gains and eliminate most competitive districts—ensuring that the party in power enjoys an electoral advantage that endures for years to come, irrespective of voters' subsequent choices at the polls.

Left unchecked, partisan gerrymandering fundamentally undermines our democracy. It is a basic tenet of fair elections that the parties must play by the same rules. But a partisan gerrymander violates that core principle: Under a successful partisan gerrymander, one party needs fewer votes to win representation than the other party. A partisan gerrymander thus places unequal burdens on voters' opportunity to elect their representatives, based on the party with which they associate. And where the partisan gerrymander renders

election outcomes unresponsive to electoral shifts, only the courts can provide a remedy.

To be precise, partisan gerrymandering occurs when a districting plan penalizes members of the minority party in their ability to translate votes into seats compared to what might be expected from a plan drawn on the basis of neutral principles. But not all partisan gerrymanders are unconstitutional. This Court should again hold that partisan gerrymanders are justiciable, and it should adopt a standard for unconstitutional partisan gerrymandering that requires a showing of three specific elements: partisan asymmetry, lack of responsiveness, and causation.

The first element, partisan asymmetry, is based on the idea that a citizen's representational rights must not turn on the party with which he chooses to affiliate. Unlike a claim that a party is entitled to a specified outcome, such as a number of seats proportionate to its vote share, an asymmetry standard requires only that the parties and their supporters receive equal treatment—that they have equal *opportunity* to translate their votes into representation.

The second element, lack of responsiveness, screens out cases where the political process can provide a remedy. It examines whether a map is responsive to shifts in voters' allegiances. If a map is responsive, then when voters change their allegiances, their representation also changes, making judicial intervention unnecessary. If a map is not responsive, then citizens' votes at the polls do not affect electoral outcomes, and courts may step in.

The third element, causation, requires that, to be actionable, a disparate effect on voters—any partisan asymmetry—must be the result of invidious, intentional discrimination against disfavored voters, and not merely the natural byproduct of ordinary districting practices or chance. If the disparate burden on voters cannot be explained by these factors, then intentional partisan gerrymandering can be inferred.

These three elements are derived from Equal Protection and First Amendment principles,[4] and the social sciences offer reliable,

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[4] *See, e.g., Vieth*, 541 U.S. at 314 (opinion of Kennedy, J.) ("First Amendment concerns arise where a State enacts a law that has the purpose and effect of subjecting a group of voters or their party to disfavored treatment by reason of their views. In the context of partisan gerrymandering, that means … where an apportionment has the purpose and effect of burdening a group of voters' representational rights."); *Bandemer*, 478 U.S. at 124 ("[E]ach political group in a State should have the same chance to elect representatives of its choice as any other

transparent, and manageable tools for measuring each. Because each of

these elements reflects a different concept, it is important to recognize

that no one number tells it all. Rather, the Court should adopt a

standard for partisan gerrymandering that makes proof of each of these

three elements required for a successful claim.

The social-science tools for detecting and measuring partisan

gerrymanders—for assessing each of these three elements—have

greatly improved in the last decade. Courts, assisted by competent

experts, can now reliably and accurately identify and measure the

impact of partisan gerrymanders, including determining whether

invidious discrimination is the cause of any disparate burden on one

political party's voters, or whether any disadvantage results instead

from permissible, neutral factors or random chance. Using analytical

tools provided by social scientists, courts can set standards for when

gerrymandering is unconstitutional.

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political group."); *Erfer v. Commonwealth*, 794 A.2d 325, 332 (Pa. 2002) ("[P]olitical
gerrymandering … [involves] intentional discrimination against an identifiable
political group and … an actual discriminatory effect on that group").

ARGUMENT

I. Courts Must Provide A Check On Egregious Partisan Gerrymandering.

Invidious partisan gerrymandering occurs when a political party intentionally redraws district lines to give itself a durable electoral advantage over the party out of power—usually by "packing" voters who affiliate with the opposing party into a few safe districts, or by "cracking" them across multiple districts to dilute their voting power. *See Bandemer*, 478 U.S. at 117 n.6 (explaining "the familiar techniques of political gerrymandering").[5] In so doing, a partisan gerrymander discriminates against voters in their representational rights because of their views and political associations in a way that cannot realistically be ameliorated through the ordinary electoral process.

This discrimination in associational and representational rights has real-world consequences. A voter who supports the disfavored party is denied an equal opportunity to use her vote to affect the

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[5] Other partisan gerrymandering techniques maximize partisan advantage by treating the disfavored party's incumbents disparately. "Hijacking" pairs incumbents of the same party in one district, ensuring that one will not be reelected. "Kidnapping" removes a disfavored incumbent's core supporters from her district, reducing her chances of reelection. ProPublica, *Redistricting, a Devil's Dictionary* (Nov. 2, 2011), https://tinyurl.com/y9uuagw8.

representation of her district. Her vote (and thus her voice) is diluted relative to favored voters, because she is "packed" or "cracked" into a district where she cannot affect the outcome. Similarly, voters from the disfavored party are denied an equal opportunity to affect the partisan composition of the legislature as a whole—meaning the legislative proposals they support are less likely to be introduced, debated, and passed.

There is compelling evidence that the 2010 redistricting cycle yielded partisan gerrymandering of a magnitude that is qualitatively and quantitatively different from what we have seen in the past—as much as three times more partisan bias in congressional maps than in the 2000 redistricting cycle—even when controlling for residential patterns of voters and demographic change. Anthony J. McGann et al., *Gerrymandering in America* 4-5, 97-98 (2016). This increase in the aggressiveness of partisan gerrymanders may be driven in part by the fact that, as a result of the Supreme Court's "signal[] in *Vieth v. Jubelirer* (2004) that it would not intervene …[,] state legislatures did not have to worry about the threat of legal oversight and pushed partisan advantage to its limits" during the 2010 cycle. *Id.* at 174. State

courts' failure to fill this vacuum only exacerbates the problem. *Cf.*

Pap's A.M. v. City of Erie, 812 A.2d 591, 611 (Pa. 2002) ("Pennsylvania

citizens should not have the contours of their fundamental rights under

our charter rendered uncertain, unknowable, or changeable, while the

U.S. Supreme Court struggles to articulate a standard[.]").

Whether courts should intercede is not a matter of one's political

leanings. Whichever party is in power has strong incentives to change

the map to keep itself there. In either case, it is the voters who lose:

Their associational and representational rights are undermined based

upon their political views, and legislators from the favored party are

entrenched in office without regard to changes in voters' preferences.

Courts must serve as a neutral check. Otherwise, politicians will

have every incentive to wield the technological advances we discuss

below to craft ever more egregious partisan gerrymanders. Judicial

abdication would ensure only that officials are selected by the self-

dealing maps they enact, rather than elected by the people they

ostensibly serve—locking into place electoral advantages that are, for

all practical purposes, impervious to changes by the electorate. Absent

judicial intervention, we can expect the 2020 redistricting cycle to yield increasingly blatant partisan gerrymanders.

II. A Justiciable Partisan-Gerrymandering Claim Requires Proof Of Partisan Asymmetry, Lack Of Responsiveness, And Causation.

Social science now provides tools for determining whether voters have been subjected to durable disparate treatment—as well as for measuring the precise magnitude of any such disparity and for ruling out neutral causes. These tools enable courts to differentiate disparate burdens on representational rights that are merely incidental to ordinary districting processes from those that are the result of intentional discrimination against disfavored voters.

There is growing consensus among social scientists that three discrete concepts are critical to detecting and measuring the extent of an unconstitutional partisan gerrymander: (1) partisan asymmetry, (2) lack of responsiveness of electoral outcomes to voters' decisions, and (3) causation. The Court should adopt a test for unconstitutional partisan gerrymanders that makes proof of each of these elements necessary for a claim. Together, they are key to demonstrating that voters have suffered disparate and durable burdens on their

representational rights because of their political views and associations. They also provide evidence as to whether any differential treatment is intentional or instead is the result of other, neutral factors.

The three elements we propose are not based on an abstract notion of fairness akin to a requirement that seat share equal the party's share of the overall vote. It is a standard of *neutral treatment* of the parties in allocating representational rights. Any disparate burden on voters is measured relative to the baseline created by neutral factors: single-member, winner-take-all elections; compliance with constitutional requirements and the Voting Rights Act; the actual residential patterns of the electorate; map-drawing practicalities like the need for contiguous and compact districts, as well as respect for local subdivisions and communities of interests; and the role of random chance. The standard recognizes that map drawing has "an inevitably political[] element," *Holt v. 2011 Legislative Reapportionment Comm'n*, 38 A.3d 711, 745 (Pa. 2012), while giving courts a means to distinguish and identify those egregious partisan gerrymanders that go above and beyond to invidiously target opposition voters for unequal treatment.

The first element, partisan asymmetry, considers whether and to what degree voters' representational rights have been burdened. The second, lack of responsiveness, considers whether the ordinary political process is able to provide a remedy. And the third, causation, ensures that only invidious, intentional discrimination is actionable, as distinct from disparate effects that are merely the result of neutral factors or chance. No one element is dispositive. Rather, each of these three discrete elements must be assessed separately.

A. Partisan asymmetry means there is a disparate impact on voters based on political affiliation.

1. The first element, partisan asymmetry, speaks to whether there has been a clear and severe disparate impact on a political party and its supporters.[6] It asks whether the map treats similarly situated parties equally: whether voters of each party receive *like opportunity* to capture legislative seats if they comprise a comparable share of the statewide vote.

This standard neither assumes nor requires that a political party is entitled to any particular election outcome. Rather, partisan

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[6] Laymen sometimes use the terms "partisan asymmetry" and "partisan bias" interchangeably. As elucidated below (p.18), however, "partisan bias" typically refers to a specific measure of asymmetry.

symmetry requires only that if we were to "switch the names of the parties that received particular vote outcomes, the seat outcomes would also switch." *The Future of Partisan Symmetry as a Judicial Test for Partisan Gerrymandering after* LULAC v. Perry, 6 Election L.J. 2, 8 (2007). "[I]n other words[,]" it requires "that outcomes not depend on party names." *Id.*

For example, imagine that the "Democratic Party receives an average of 55% of the vote totals in a state's legislative district elections and, because of the way the district lines were drawn, it wins 70% of the legislative seats in that state." *Id.* This "one piece of evidence alone" says nothing about whether any voters have been treated differently based on their political views. *Id.* That turns on whether the result would be different were the shoe on the other foot: If the Republican Party would also have received 70% of the seats in an election in which it garnered an average of 55% of the vote, then there is no disparate treatment. *Id.*

As the foregoing example illustrates, the symmetry standard does not turn on a "failure [to achieve] proportional representation." *Erfer*, 794 A.2d at 333. In a system of proportional representation (used in

many European countries), seats are awarded in proportion to overall vote share—i.e., 30% of the statewide votes would garner about 30% of the legislative seats. *Proportional Representation*, Encyclopedia Britannica (2013 ed.), https://tinyurl.com/y6welcph. The symmetry standard requires no such result.

In fact, mere disproportionality between vote share and seat share does not evidence a partisan gerrymander. The political science is clear: Winner-take-all, single-member district elections—elections in which a plurality of the votes wins the district's seat—do not produce proportionate results, because "in practice they normally give a 'bonus' of varying sizes (above proportionality) in seats to the party that wins a majority of the votes across a state." Grofman & King, *The Future of Partisan Symmetry*, *supra*, at 9; *see also, e.g.*, Samuel S. H. Wang, *Three Practical Tests for Gerrymandering: Application to Maryland and Wisconsin*, 16 Election L.J. 367, 368, 374 (2016). Thus, it is generally not possible to directly infer asymmetry from disproportionality. The symmetry standard "does not require proportionality but only that the disproportionality be the same for both parties." McGann et al., *supra*, at 65-66.

The scholarly literature has overwhelmingly supported partisan asymmetry as the definition of disparate partisan impact in electoral systems since at least the late 1980s. *See* Grofman & King, *The Future of Partisan Symmetry*, *supra*, at 6 & nn.29-30 (canvassing publications on the subject). Experts in the field of redistricting (including us) recently filed numerous amicus briefs in *Gill v. Whitford*, No. 16-1161 (U.S. 2017), that united in the view that partisan asymmetry is a key element of any partisan-gerrymandering claim. *E.g.*, Br. of Bernard Grofman and Ronald Keith Gaddie, at 12; Br. of Heather Gerken, et al., at 15-17; Br. of Political Geography Scholars, at 11. As these scholars explained, and as elaborated below, measures of asymmetry not only reliably establish whether a map provides an advantage to one party's voters over another, they also identify with precision and transparency the *degree* of the advantage.

2. Social scientists have developed multiple measures of partisan asymmetry that courts and litigants can readily apply. That there are multiple metrics available is a feature, not a flaw. The metrics are fundamentally complementary. Some are more complex in their calculations than others. But they all measure the same thing: the

magnitude of the disparate burden (if any) that a challenged map imposes on a political party and its supporters. And they all converge in conclusions in the face of an egregious partisan gerrymander.

One straightforward measure of partisan asymmetry is partisan bias. It "refers to the degree to which a [map] deviates from partisan symmetry." Grofman & King, *The Future of Partisan Symmetry*, *supra*, at 10. For example, if Party A would receive 60% of the seats with 50% of the statewide vote, but Party B would receive only 40% of the seats with 50% of the statewide vote, there is a partisan bias of 20 percentage points favoring Party A. By multiplying the amount of bias by the number of seats in the map, we can calculate approximately how many seats were impacted—e.g., assuming 100 legislative seats, a 20-point bias would mean the disadvantaged party and its members lost the opportunity to capture 20 seats.

Where elections have occurred under the challenged map, partisan bias can be easily assessed—even without reliance on experts. One way to evaluate whether the parties have like opportunity to translate seats into votes is to adjust their respective vote shares district by district to see how they would fare if the tables were turned:

Imagine Party A won 70% of the seats after garnering 53% of the statewide vote, and Party B received 30% of the seats with 47% of the statewide vote. To simulate the seat shares if instead Party B won 53% of the statewide vote and Party A won 47% of the statewide vote, simply add 6 percentage points (53%-47%) to Party B's vote share in each district and subtract 6 percentage points from Party A's vote share in each district. Then tally up how many seats Party B would have won, and calculate its percentage of total seats. If Party B, now simulated to receive about 53% of the statewide vote, would not receive approximately 70% of the seats, bias is present.

There are more complex models of partisan bias available that, for example, do not assume uniform vote shifts across a state, and that can be accurately assessed for statistical significance—i.e., how confident we are that the observed bias is not due to chance. *Id.* at 10-13 (discussing Andrew Gelman and Gary King, *Estimating the Electoral Consequences of Legislative Redistricting*, 85 J. of the Am. Statistical Ass'n 274 (1990)). Similarly, experts can project past election results

onto new district lines to measure partisan bias. *Id.* at 11.[7] But the

simplified calculation described above not only can help courts

understand the concept of partisan bias, it can serve as a

straightforward check on the plausibility of expert testimony.

Another transparent measure of partisan asymmetry is the mean-

median gap, which has "well-defined mathematical properties." Wang,

Three Practical Tests, *supra*, at 372. It compares each party's actual

vote share in the median district to its average actual vote share across

all districts. If a party's median vote share is lower than its average

vote share, asymmetry is at work. *Id.* This is because "[b]y packing

opposing voters into a small number of districts, the gerrymandering

party holds down the targeted party's vote shares in many districts,

which depresses the target party's median vote share, even while its

average (mean) vote share is unchanged." Amicus Br. of Samuel S.

Wang, *Harris v. Ariz. Indep. Redistricting Comm'n*, No. 14-232 (U.S.

Nov. 2, 2015), at 4. This metric is highly manageable for courts: "It

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[7] This method typically uses one or more recent prior statewide contests to establish the baseline of each party's opportunity to win votes in each district. In the current era of extreme partisan polarization, these statewide contests are typically tightly correlated with congressional vote shares. In any event, any model of voter behavior claimed to be predictive can and should be validated against actual recent election results for elections of the type at issue.

focuses on two observable numerical facts"—the mean and the median—"and subtracts one from the other." Michael D. McDonald & Robin E. Best*, Unfair Partisan Gerrymanders in Politics and Law: A Diagnostic Applied to Six Cases*, 14 Election L.J. 312, 316 (2015). And like partisan bias, it is subject to well-established tests for statistical significance to assess the role of chance, and can be converted into the number of seats impacted. Wang, *Three Practical Tests*, *supra*, at 372.

B. Lack of responsiveness means the ordinary political process cannot provide a remedy.

1. The second necessary element of a partisan-gerrymandering claim is lack of responsiveness. While asymmetry shows a disparate effect on voters' representational rights, that alone is insufficient to demonstrate an improper gerrymander. The responsiveness element asks whether the party out of power can alter its fate by persuading voters to support it in future elections—whether a disparate partisan impact will endure throughout the decade following redistricting or even beyond.[8]

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[8] This concept is sometimes also called "durability."

If a map is not responsive, that means that when voters change

their preferences and shift their allegiances from one party to another,

their representation remains unlikely to change—showing that the

politicians have chosen the voters, and not the other way around. In

that circumstance, we can expect partisan asymmetry to endure

regardless of future election outcomes. And when district lines freeze

outcomes in favor of one political view, opposition voters can be

effectively shut out of the political process.[9] In an era of hyperpolarized

politics, politicians are responsive to the views of their own partisans

and not to the electorate as a whole. *See, e.g.*, Br. of Bipartisan Group of

65 Current and Former State Legislators, *Gill v. Whitford*, No. 16-1161

(U.S. 2017), at 16-21; Br. of Bipartisan Group of Current and Former

Members of Congress, *Gill v. Whitford*, No. 16-1161 (U.S. 2017), at 12-

15.

Conversely, high responsiveness suggests that the disparate effect

on voters may not be long-lasting. Rather, ordinary politics remain

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[9] It is highly unlikely that even an invidious partisan gerrymander will yield *no* legislative seats for the disfavored party, because there may be naturally concentrated pockets of opposition strength, *infra*, p.27, and, even without that, a "packing" gerrymandering strategy deliberately creates a small number of safe opposition seats, *supra*, p.9.

responsive to voters' preferences, and if citizens do not like the policies promulgated by their representatives—including the district maps they enact—they can vote them out of office.

A constitutional standard for partisan gerrymanders should require an assessment of electoral responsiveness for three reasons: First, the magnitude of partisan asymmetry and its expected duration can be unrelated. McGann et al., *supra*, at 65. In principle, even large-scale disparities in treatment of the parties and their members can be fleeting.

Second, as Justice O'Connor noted in *Bandemer*, some gerrymanders could potentially be "self-limiting," if map drawers crack voters across multiple districts to create margins of victory so thin that they evaporate in future elections. 478 U.S. at 152 (O'Connor, J., concurring). There is reason to believe that this phenomenon is rare, because partisan polarization combined with computerized map-drawing allows politicians to fashion maps that eliminate meaningful competition for most districts for the foreseeable future. *See, e.g.*, McGann et al., *supra*, at 87; Samuel Issacharoff & Jonathan Nagler, *Protected from Politics: Diminishing Margins of Electoral Competition*

in U.S. Congressional Elections, 68 Ohio St. L.J. 1121, 1122 (2007). In any event, measuring responsiveness will detect "those cases in which a gerrymander[] [was] attempted but … not very well done[.]" Grofman & King, *The Future of Partisan Symmetry*, *supra*, at 13.

Third, requiring that plaintiffs demonstrate that the map is not responsive to voters ensures that courts do not intervene in the political process where it functions properly. If a map does not persistently obstruct competition, voters' remedy lies at the polls, not in the courts. *E.g.*, McDonald & Best, *supra*, at 319 (explaining that the Court "entered the metaphorical political thicket in the 1960s on the question of malapportionment" due to "the practical problem … that popular majorities had no political means to correct the offense").

2. Like partisan asymmetry, responsiveness is readily measurable. When multiple elections have occurred under the challenged map, there is no need to rely on any kind of predictions or even expert testimony to assess responsiveness. If vote shares have changed but seat shares have not, the challenged map lacks responsiveness to electoral shifts.

The degree of responsiveness can also be evaluated by simulating vote shifts in the same manner we estimated partisan bias (p.18-19)— either in simplified form or by experts deploying more sophisticated models subject to statistical-significance testing. By shifting votes in each district and then tallying up how many seats each party would win, we can assess how many seats could change hands if voters changed their allegiances. *See* Grofman & King, *The Future of Partisan Symmetry*, *supra*, at 10. Relatedly, responsiveness is a function of the number of competitive seats in a map—the districts most likely to shift hands with electoral tides. By looking to historical data, we can determine how much voters' preferences have swung in prior elections to identify the full range of realistically possible election outcomes, and then assess which (if any) seats could change hands in response to similar inter-election shifts.

C. Causation means that the partisan asymmetry is a result of intentional, invidious discrimination, not neutral factors or chance.

1. Once we have determined that a map exhibits partisan asymmetry and a lack of responsiveness, we know that there are disparate effects on disfavored voters that are impervious to electoral

tides. But that is still not enough. There is a consensus among social scientists that to determine whether invidious discrimination is the cause of a disparate burden on voters, it is necessary to rule out other potential causes—to assess whether the partisan effects of a plan are attributable, for example, to neutral principles, voters' residential patterns, or sheer random chance. *E.g.*, Wang, *Three Practical Tests*, *supra*, at 374; McDonald & Best, *supra*, at 317; Jowei Chen & Jonathan Rodden, *Cutting Through the Thicket: Redistricting Simulations and the Detection of Partisan Gerrymanders*, 14 Election L.J. 312, 332 (2015). That is, we must compare the map's disparate effects against a neutral baseline—asking whether those effects can be explained by something other than intentional discrimination.

As the U.S. Supreme Court has noted, advantages to one party may occur due to a variety of neutral factors. *See, e.g.*, *Vieth*, 541 U.S. at 289-90 (plurality); *id.* at 308-09 (Kennedy, J., concurring). For example, map drawers must comply with constitutional "one-person, one-vote" and racial nondiscrimination requirements, as well as the Voting Rights Act, and they may seek to draw maps that accord with traditional

districting criteria like contiguity, compactness, and respect for political subdivisions.

Pursuit of these neutral objectives may produce inadvertent advantages to one party. For example, there is some evidence that "political groups that tend to cluster (as is the case with Democratic voters in cities) [c]ould be systematically affected by what might be called a 'natural' packing effect," *Vieth*, 541 U.S. at 290 (plurality)—although new empirical evidence indicates that this effect has been overstated. *See* McGann et al., *supra*, at 135. Similarly, compliance with the Voting Rights Act has spillover effects on a district's partisan makeup. *See* Charles S. Bullock, III, & Ronald Keith Gaddie, *The Triumph of Voting Rights in the South* 343 (2009). Partisan asymmetry could also occur by random chance in the map-drawing process.

Partisan asymmetry that is merely a side effect of legitimate objectives within the redistricting process or that is naturally occurring does not evidence actionable invidious discrimination. Any constitutional test for partisan gerrymandering will thus have to rule out these causes of asymmetry and isolate the degree of asymmetry that is "unrelated to the [legitimate] aims of apportionment," or to

residential patterns or chance. *Vieth*, 541 U.S. at 313 (Kennedy, J., concurring).

2. Due to "advance[s]" in the "field of information technology," *Erfer*, 794 A.2d at 333, there are now extremely accurate, reliable methods of doing so. Vastly improved computing power permits experts to create hundreds (or even millions) of computer-generated alternative maps. These computer-generated maps enable experts to identify the precise quantum of disparate treatment that is "man-made"—the product of deliberate efforts of the party in power to penalize the opposition—as distinct from the level of disparity that may be produced by the effects of ordinary districting practices, voters' residential patterns, or chance. Specifically, the alternative maps are produced subject to the requirement that they satisfy all neutral districting criteria to at least the same extent as the challenged plan, establishing a neutral benchmark against which to measure the challenged plan.

This methodology enables us to establish to a high degree of statistical certainty whether a given quantum of asymmetry is explainable by something other than invidious intent. It also allows us to assess whether the challenged map is a statistical outlier with

respect to partisan asymmetry, or any other quantifiable criteria for evaluating the map—such as population deviations, compactness, contiguity, or respect for political subdivisions. *See, e.g.*, Br. of Eric S. Lander, *Gill v. Whitford*, No. 16-1161 (U.S. 2017), at 19, 26-29.[10] Moreover, because the alternative maps take as a given the actual human geography of the state, any amount of asymmetry that naturally results from residential patterns will be reflected in the alternative maps, which can also be programmed to preserve intact communities of interest or districts required by the Voting Rights Act. *See, e.g.*, Br. of Political Geography Scholars, *Gill v. Whitford*, No. 16-1161 (U.S. 2017), at 7, 12-13 & nn.10-11.

We can thus quantify and rule out any conceivable justification for deviations from partisan symmetry—a necessary endeavor whether neutral districting criteria are codified in state law or not. After all, antidiscrimination claims require evaluating legitimate explanations for apparently discriminatory treatment, whether or not the affirmative

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[10] To determine whether the challenged map is a statistical outlier, it is not necessary to generate every conceivable iteration of district lines. Rather, this methodology typically relies on the well-established statistical concept of "sampling"—using a representative sample to determine characteristics of the whole population. *Id.* at 18; *see also id.* at 23-25.

pursuit of those legitimate goals is legally required. *Cf., e.g.*, *Raleigh Wake Citizens Ass'n v. Wake Cty. Bd. of Elections (RWCA)*, 827 F.3d 333, 344 (4th Cir. 2016) ("The point is not that the simulated plans are legally required, but rather that they help demonstrate what might explain the population deviations in the enacted plan."); *Bazemore v. Friday*, 478 U.S. 385, 398-402 (1986) (using statistical analysis in Title VII case to rule out potential neutral reasons for racial disparities in salaries); *Castaneda v. Partida*, 430 U.S. 482, 492-95 (1977) (in challenges to grand-jury selection, "the burden … shifts to the State to rebut" "the presumption of discrimination raised by [a] statistical showing").

Political scientists have developed several variations on this methodology—with minor differences in how the random-map generation algorithm operates, what inputs are used, and how they are prioritized. *E.g.*, Chen & Rodden, *supra*; Wendy Tam Cho et al., *A Reasonable Bias Approach to Gerrymandering: Using Automated Plan Generation to Evaluate Redistricting Proposals*, 59 William & Mary L. Rev. (forthcoming 2018), https://tinyurl.com/y9dmlcsu; Jonathan Mattingly et al., *Quantifying Gerrymandering*,

https://tinyurl.com/yc4cvxkg (last visited Jan. 4, 2018). But these nuances do not call into question the soundness of this methodology as a whole. Indeed, courts are already relying on it in the one-person-one-vote context. *See RWCA*, 827 F.3d at 344 (holding district court "clearly and reversibly erred in rejecting Dr. Chen's expert testimony" that a challenged population deviation was the product of partisan bias—testimony based on "a computer randomly draw[ing] five hundred redistricting plans").

3. We have focused here on aiding the Court in understanding the social-science tools for isolating the causes of partisan asymmetry—a means of inferring whether a disparate effect on voters was intentionally imposed. This is not, however, to say that nonstatistical evidence of intent is irrelevant. For example, even setting aside questions of legislative privileges, legislators' publicly available statements can evidence an intent to maximize partisan advantage. So too can the shifting of blocs of voters between districts to "pack" or "crack" them, or the disparate treatment of incumbents. Deviations from the ordinary legislative process, such as secrecy, limited debate, or

party-line voting in the enactment of the map are also relevant.[11] And

although invidious partisan gerrymanders may often look visually

"pretty" while still maximizing partisan advantage, contorted district

lines and disregard for traditional districting criteria are surefire

signals that partisan gerrymandering is afoot, even if not themselves

illegal.

III. Our Proposed Three-Element Standard Is Judicially Manageable.

1. When partisan asymmetry, lack of responsiveness, and

causation are each shown, that is sufficient to establish intentional

discrimination against voters based on their political views and

associations that is unlikely to be remedied by the political process.

Beyond that, whether courts should nonetheless tolerate some degree of

entrenched, intentional discrimination before they will intercede is a

question for judges, not social scientists. The question of "how much

partisan dominance is too much," *LULAC*, 548 U.S. at 420 (opinion of

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[11] Party-line voting, or these other criteria, should be viewed in the totality of the circumstances. Incumbent members of the disadvantaged party may have incentives to support a districting plan that affords them a safe seat or a congressional seat that they might run for in the future.

Kennedy, J.), is fundamentally a legal one for courts to decide; social scientists provide metrics, courts specify standards.

The available social-science tools are, moreover, well-suited to measuring the kind of threshold requirements adopted in other election-law contexts. For example, the Court could require the plaintiffs to establish that at least one seat now lost to partisan gerrymandering could be gained in a remedial plan. *Cf. Bartlett v. Strickland*, 556 U.S. 1, 26 (2009) (adopting, in Voting Rights Act § 2 case, threshold requirement that plaintiffs demonstrate a "geographically compact group of minority voters [that] could form a majority in a single-member district"). Alternatively, the Court could set a threshold level of partisan bias that triggers judicial scrutiny, using historical data to identify a threshold amount of bias that is atypical or egregious. *Cf. Brown v. Thomson*, 462 U.S. 835, 842 (1983) ("Our [one-person-one-vote] decisions have established … that a [state legislative] apportionment plan with a maximum population deviation under 10% falls within this category of minor deviations" that are generally not actionable).

2. But the Court need not adopt a mechanistic test, especially at the outset. Rather, the precise contours and evidentiary proofs required

can be fleshed out on a case-by-case basis—with the benefit of insights

gained from experience, the aid of competent experts, and the "crucible

of adversarial testing on which [courts] usually depend." *Maslenjak v.*

United States, 137 S. Ct. 1918, 1931 (2017) (Gorsuch, J., concurring).

Indeed, that is how the jurisprudence has evolved with respect to

every other justiciable redistricting claim. For example, as this Court

has itself explained, one-person-one-vote "jurisprudence, … evolved

through case-specific challenges." *Holt*, 38 A.3d at 741; *id.* at 738-42.

First, the U.S. Supreme Court held such claims justiciable in *Baker v.*

Carr, 369 U.S. 186 (1962). Then, in *Reynolds v. Sims*, 377 U.S. 533

(1964), it announced "the two concepts of 'one person, one vote' and the

'equal population principle,'" *Holt*, 38 A.3d at 740—without specifying

which of various proposed metrics would be used to evaluate compliance

with that standard. Instead, it allowed "[l]ower courts [to] work out

more concrete and specific standards for evaluating state legislative

apportionment schemes in the context of actual litigation." *Reynolds*,

377 U.S. at 578. The standards and specific proofs required in Voting

Rights Act and racial-gerrymandering claims evolved in the same

incremental fashion—as they have in antidiscrimination law more

broadly. *See* Br. of Heather Gerken, et al., *Gill v. Whitford*, No. 16-1161 (U.S. 2017), at 8-12. In all of these contexts, experts developed multiple different metrics for analyzing whether the judicially pronounced standard was met; in none did courts pronounce at the outset that a particular mathematical tool or finding was required.

3. Once courts adopt a legal standard for partisan-gerrymandering claims, it will be relatively straightforward for competent experts to provide their assessments of whether that standard is met in a given case. As explained above (§ II), three concepts we have identified— partisan asymmetry, lack of responsiveness, and causation—together capture whether disfavored voters have suffered disparate and durable burdens on their representational rights because of their political views and associations. And the analytical tools for evaluating each have dramatically improved since cases like *Erfer*, *Bandemer*, *Vieth*, and *LULAC*. While the methodology will continue to improve, future advances are likely to be incremental only—the equivalent of adding a further decimal point to an already precise figure—and will not materially alter the calculus.

Finally, the three concepts—partisan asymmetry, lack of responsiveness, and causation—are intuitive and the methods for measuring them transparent. Indeed, they are arguably more so than, say, the statistical methods that courts routinely rely on in Voting Rights Act cases to infer how racial minorities vote. *See generally* Bernard Grofman, *A Primer on Racial Bloc Voting Analysis, in The Real Y2K Problem: Census 2000 Data and Redistricting Technology* (N. Persily ed. 2000). The Court can thus be confident that if it adopts our three-element standard for partisan gerrymandering, courts will be able to apply it coherently and consistently across cases.

CONCLUSION

For the foregoing reasons, this Court should again hold that partisan-gerrymander claims are justiciable, and it should adopt a standard that makes partisan asymmetry, lack of responsiveness, and causation necessary elements of such a claim.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Per Pa.R.A.P. 531(b)(1)(i) and 531(b)(3), I hereby certify that this Brief contains 6,986 words, exclusive of the supplementary matter as defined by Pa.R.A.P. 2135(b).

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CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing with the Supreme Court of the Commonwealth of Pennsylvania by using the appellate PACFile system on January 5, 2018.

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