No. 18-422

In the
Supreme Court of the United States

ROBERT A. RUCHO, ET AL.,
Appellants,
v.

COMMON CAUSE, ET AL.,
Appellees.

On Appeal from the United States District Court for the Middle District of North Carolina

BRIEF OF 27 ELECTION LAW, SCIENTIFIC EVIDENCE, AND EMPIRICAL LEGAL SCHOLARS AS *AMICI CURIAE* IN SUPPORT OF APPELLEES

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INTEREST OF *AMICI CURIAE*[1]

Amici are 27 scholars of election law, scientific evidence, and empirical legal methods at law schools and universities throughout the United States. We have no personal interest in the outcome of this case (except to the extent that it may affect our electoral influence as individual voters), but we have a professional interest in seeing that the law relating to the application of scientific and statistical evidence develops in a way that supports and encourages methodologically sound practices.

Counsel for amici Andrew Chin is a mathematician and legal scholar who has been a national leader in the application of advanced mathematical techniques to problems in patent, Internet, antitrust, securities, administrative, and election law. He has been a Professor of Law at the University of North Carolina at Chapel Hill since 2001, and previously taught mathematics at Texas A&M University, computer science at King's College London, and public policy at the University of Texas at Austin. He earned a J.D. from Yale Law School in 1998 and a D.Phil. in mathematics from the University of Oxford on a Rhodes Scholarship in 1991.

SUMMARY OF ARGUMENT

In enacting the 2016 Plan under the mistaken assumption that "a political gerrymander" was *per se*

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[1] Pursuant to Supreme Court Rule 37.6, counsel for *amici* represents that he authored this brief in its entirety and that none of the parties or their counsel made a monetary contribution intended to fund the preparation or submission of this brief. Counsel of Record for all parties have filed letters reflecting their blanket consent to the filing of *amicus* briefs with the Clerk.

legal, the defendants drew at least ten of the Common Cause plaintiffs into districts whose partisan composition was highly atypical of districts drawn in pursuit of legitimate districting objectives. This packing and cracking deliberately muted the normal effects of any actual or potential efforts by these voters to influence election outcomes by switching parties or splitting tickets during the life of the plan. The defendants thereby created a discriminatory arrangement of the electoral system in which each packed or cracked plaintiff's disfavored partisan affiliation, while mutable in principle, was frozen in practical effect.

Part I of this brief explains how two of plaintiffs' experts, Jonathan Mattingly and Jowei Chen, applied recent advances in computer technology and the mathematical sciences to demonstrate the atypicality of the plaintiffs' districts in the 2016 Plan. Mattingly's and Chen's analyses of thousands of computer-generated compliant maps showed, *inter alia*, that the defendants merely complied with their stated legitimate redistricting criteria as constraints and did not pursue them as objectives. In so doing, Mattingly and Chen provided the necessary factual predicates for a judicially manageable framework that does not turn on a finding of excessive or predominant partisan considerations, but on whether the challenged plan was the result of the actual pursuit of legitimate districting objectives. Their analyses also accounted for and excluded each of the alternative explanations for disparate partisan performance that supported this Court's rejection of the discriminatory effects tests proposed in *Bandemer*, *Vieth*, and *LULAC*. For these reasons, the Panel's findings of vote dilution as to at least ten of

the Common Cause plaintiffs are reliably supported by Mattingly's and Chen's analyses and warrant deference.

Part II of this brief explains why the legislative defendants' mere compliance with legitimate redistricting criteria as constraints cannot immunize their intentional packing and cracking from equal protection liability. Given the ever-increasing effectiveness of computational technology in enabling mapmakers to maximize partisan advantage while maintaining such compliance, traditional districting criteria can meaningfully limit partisan gerrymandering only when the mapmakers actually pursue them as objectives. The defendants relinquished any claim to a safe harbor from equal protection liability when they drew districts that belied any actual pursuit of traditional districting principles and other legitimate legislative criteria as objectives. By using past election results and empirical knowledge of the limited range of cross-election variation at the precinct and VTD level in North Carolina, the defendants engineered district boundaries that would render cross-election voting variations ineffectual in each packed or cracked district for the life of the 2016 Plan, thereby consistently degrading the influence of each packed or cracked plaintiff on the political process as a whole. For these reasons, the Panel's findings of vote dilution in violation of the Equal Protection Clause as to at least ten of the Common Cause plaintiffs warrant affirmance.

ARGUMENT

I. The Panel's findings of vote dilution are supported by reliable district-specific

and/or residence-specific evidence of individual harm.

As Justice Kennedy foresaw in *Vieth v. Jubelirer*, 541 U.S. 267 (2004), advances in computer technology and the mathematical sciences have delivered the statistical tools with which the law can finally catch up to the technology of gerrymandering. *See id.* at 312 (Kennedy, J., concurring in the result) ("[T]hese new technologies may provide new methods of analysis that make more evident the precise nature of the burdens gerrymanders impose on the representational rights of voters and parties.").

In the instant case, computer-aided statistical analyses present this Court for the first time with robust measurements of statewide and district-level partisan skew that control for the state's specific legislative redistricting criteria and political geography. *See* Moon Duchin, *Gerrymandering Metrics: How to Measure? What's the Baseline?* at 5 https://arxiv.org/abs/1801.02064 (Jan. 6, 2018) (explaining that "[t]he great strength of this method is that it is sensitive to the particularities, legal and demographic, of each state that it is used to analyze," including "North Carolina's 'whole county provision'" and "populations … clustered in highly asymmetrical ways"). These analyses have produced reliable district-specific and residence-specific evidence to support at least ten of the Panel's district-level findings of individual vote dilution injuries.

A. While a vote dilution injury from partisan gerrymandering is specific to, and evidenced by, the boundaries and composition of the voter's district, evidence of such an injury may also be

specific to the voter's place of residence within the district.

In *Gill v. Whitford*, 138 S.Ct. 1916 (2018), this Court addressed the Article III standing of twelve Democratic voters to bring constitutional equal protection challenges to Wisconsin's 2011 legislative districting plan based on statewide and district-level theories of vote dilution through "packing" and "cracking."[2] *See id.* at 1923-24. Only four of the twelve plaintiffs had specified in the complaint that their district had been packed or cracked, *id.* at 1924, with two alleging that they lived in a packed district and two alleging that they lived in a cracked district. *See* Complaint at 7-8, ¶¶ 20, 23, 24, 26, *Whitford v. Gill*, 218 F.Supp.3d 837 (W.D. Wis. 2016).

This Court held that only these four plaintiffs' district-level claims satisfied the injury-in-fact element of the standing requirement. *Gill*, 138 S.Ct. at 1930. It characterized the cause of an individual's vote-dilution injury as district-specific, insofar as "[t]he boundaries of the [voter's] district, and the composition of its voters, determine whether and to what extent a particular voter is packed or cracked." *Id.* Accordingly, this Court found that the four plaintiffs had adequately "pleaded a particularized burden" from vote dilution by virtue of alleging that they "live in districts where Democrats like them have been packed or cracked," and remanded the case to allow them "to prove concrete and particularized injuries using evidence… that would

[2] "'Packing' refers to the practice of filling a district with a supermajority of a given group or party. 'Cracking' involves the splitting of a group or party among several districts to deny that group or party a majority in any of those districts." *Vieth v. Jubelirer*, 541 U.S. 267, 286 n.7 (2004) (plurality opinion).

tend to demonstrate a burden on their individual votes." *See id.* at 1934.

The *Gill* Court also described a vote diluted by packing or cracking as "carry[ing] less weight than it would carry in another, hypothetical district." *Id.* at 1931. The dilutionary harms from packing or cracking may therefore also manifest themselves in residence-specific ways, as any hypothetical redrawing will retain some but not all of a packed or cracked district's voters, depending on their places of residence within the district.

In the instant case, plaintiffs presented robust statistical evidence that served as a reasonable basis for the Panel to "distinguish [the 2016 Plan] from the results of legitimate districting objectives, including those objectives that take into account political data or permissible partisan considerations." *See Common Cause v. Rucho*, 318 F.Supp.3d 777, 851-52 (M.D.N.C. 2018). As the following sections I.B and I.C describe, Professor Mattingly's and Professor Chen's statistical analyses (1) support the same conclusion that the defendants merely complied with their stated legitimate redistricting criteria as constraints and did not pursue them as objectives, and (2) provide reliable district-specific and residence-specific evidence, respectively, of vote dilution injuries in a total of ten congressional districts.

B. Professor Mattingly's analysis provides (1) a robust statistical basis for inferring that the defendants merely complied with their stated legitimate redistricting criteria as constraints and did not pursue them as objectives, and (2) reliable district-specific evidence to support the

Panel's findings of vote dilution injuries in Districts 1, 4, 9, 12 and 13.

Professor Jonathan Mattingly's statistical analysis addresses, *inter alia*, the question of whether the partisan performance of each district in North Carolina's 2016 Congressional Redistricting Plan ("2016 Plan") in the 2012 and 2016 general elections was typical of districts drawn in compliance with legitimate redistricting criteria. *See Common Cause*, 318 F.Supp.3d at 872. To investigate this question, Mattingly's team used a randomized Markov chain Monte Carlo ("MCMC") algorithm to generate a large sample from the set of all possible North Carolina congressional redistricting plans (without purporting to propose any particular plan as a remedial alternative). *Id.* at 871.[3] They then eliminated plans that failed to meet specified thresholds for contiguity, population equality, compactness, county and voting tabulation district ("VTD") splits, and Black voting age population distribution ("ensemble selection criteria"), leaving an ensemble of 24,518 compliant plans. *See id.*

Mattingly analyzed the partisan performance of the 2016 Plan and each of the ensemble maps using results from the 2012 and 2016 congressional general elections. *See id.* at 871. This analysis showed that

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[3] Mattingly's team had already developed the techniques used in his study of the 2016 Plan long before the plan was enacted. *See* Jonathan C. Mattingly & Christy Vaughn, *Redistricting and the Will of the People*, https://arxiv.org/abs/1410.8796 (Oct. 29, 2014) (using MCMC algorithm to generate a sample of North Carolina congressional redistricting plans and analyzing their partisan performance); Sachet Bangia, *Quantifying Gerrymandering: 2012 House Election*, http://services.math.duke.edu/~sb337/gerrymandering/NC.html (2015) (presenting district-level outlier analysis).

the 10-3 Republican advantage resulting from the 2016 Plan was an extreme statistical outlier: more than 99.6% and 99.3% of the ensemble maps would have produced a closer result from the precinct-level partisan vote shares in 2012 and 2016, respectively, and none would have yielded more Republican seats. *See id.* at 871-72.

Mattingly's ensemble analysis also revealed that the partisan performance of the 2016 Plan was highly atypical at the district level. *See id.* at 872. In particular, the 2012 and 2016 Democratic vote shares in the three districts that elected Democratic candidates (Districts 12, 4, and 1) were extremely high outliers in comparison with the respective distributions of vote shares in the three most Democratic-leaning districts in the ensemble. *See id.* at 872-73; JA351; JA360. Also, the 2012 and 2016 Democratic vote shares in Districts 9 and 13 were extremely low outliers in comparison with "the equivalent districts in the ensemble." 318 F.Supp.3d at 872; JA351; *see also* JA360 (also showing District 2 as an extreme outlier in 2016); Trial Tr. I, at 71:13-72:2 (reporting Mattingly's testimony that none of the ensemble maps had as few Democratic votes in the fourth, fifth and sixth most Democratic districts combined as Districts 9, 2 and 13 had in the 2016 Plan). In terms of partisan performance, ensemble maps typically had three relatively balanced but safe Republican districts with a 40% to 45% Democratic vote share in the 2016 congressional general election, but the 2016 Plan had six such districts. *Compare* 318 F.Supp.3d at 873 (Figure 1) *with id.* at 885 (noting defendants' expert's testimony characterizing a 10% [55%-45%] margin as a threshold for a safe seat).

Mattingly followed generally accepted scientific practices for estimating the distribution of a descriptive statistic over a finite but incalculably vast probability space. *See* Moon Duchin, *Geometry v. Gerrymandering*, 319 SCI. AM. 48, 51-52 (Nov. 2018) (describing MCMC as the "industry standard used across scientific domains for [this] colossal task"). In this context, Mattingly's work has been part of a remarkable convergence of mathematical scholarship on the idea of using a large, randomly-generated set of compliant plans as a normative baseline for detecting and measuring the effects of partisan gerrymandering. *See generally* Gregory Herschlag *et al.*, *Quantifying Gerrymandering in North Carolina* at 7-8, https://arxiv.org/pdf/1801.03783 (Jan. 9, 2018) (surveying early and current literature on "[p]ossible methods for generating the ensemble of redistricting plans"); *cf. Gonzalez v. City of Aurora, Ill.*, 535 F.3d 594, 599-600 (7th Cir. 2008) (Easterbrook, C.J.) (opining that if racial gerrymandering plaintiffs had submitted 1,000 computer-generated "random, race-blind" maps showing that the challenged plan was an outlier with respect to the number of "'Latino effective' districts … [t]hen a court might sensibly conclude that [defendants] had diluted the Latino vote by undermining the normal effects of the choices that Aurora's citizens had made about where to live.").

Mattingly validated this ensemble analysis internally with a comprehensive battery of sensitivity tests in which he studied the effects of widely varying each of the ensemble selection criteria and the scoring criteria on which the Markov transition probabilities were based. *See* 318 F.Supp.3d at 872 (citing Trial Tr. I, at 85:9-86:24).

His results proved robust under all of these variations with respect to both the 2012 and 2016 congressional general election results, which the Panel found to be a representative range of observations for demonstrating "the imperviousness of the 2016 Plan's partisan advantage to changes in candidates and the political environment." *See id.* at 874.[4] He also validated his analysis externally by comparing it with a demonstration plan that had been independently "drawn by a bipartisan group of retired North Carolina judges who served as a simulated nonpartisan districting commission," *id.* at 871 n.27. The judges' plan exhibited partisan performance both statewide and at the district level that was typical of the ensemble. *See id.* at 873 (Figure 1). Finally, Mattingly showed that small, localized boundary perturbations consistently resulted in maps whose partisan performance was "very, very different" from that of the 2016 Plan, demonstrating that the "2016 Plan was 'specifically tuned' to achieve a pro-Republican 'partisan advantage.'" *See id.* at 873-74.

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[4] As Mattingly's "'signature' of gerrymandering" graph demonstrates, the ensemble analysis reveals the persistence of the 2016 Plan's packing and cracking effects across an even wider range of variations in the statewide political environment than those spanned by the 2012 and 2016 congressional general election results. For example, the characterization of individual districts as packed or cracked relative to the ensemble remains stable even when a uniform swing is assumed to shift the entire graph up or down by a significant amount. *See Common Cause*, 318 F.Supp.3d at 873 (Figure 1); *see also id.* at 806 (quoting defendants' expert Thomas Hofeller's testimony that in his experience, "the underlying political nature of the precincts in the state does not change no matter what race you use to analyze it.").

Within the analytical framework of statistical inference, Mattingly's robust ensemble and validation analyses established a reasonable basis for rejecting any of (1) the ensemble selection and scoring criteria, or (2) a wide range of variations on those criteria, or (3) any other set of nonpartisan criteria, as sufficient explanations for the 2016 Plan's partisan performance. *See generally* David H. Kaye & David A. Freedman, *Reference Guide on Statistics*, *in* FEDERAL JUDICIAL CENTER, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 240-57 (3d ed. 2011) (describing the analytical framework of statistical inference and hypothesis testing).

In a redistricting challenge where the legislative defendants had asserted that the enacted map had been drawn in pursuit of some stated set of legitimate objectives, Mattingly's statistical analysis would provide a method by which a court could reliably test that assertion. In the instant case, however, the defendants' publicly stated redistricting objectives were based on the legally incorrect propositions that "a political gerrymander" is *per se* legal, *see Common Cause*, 318 F.Supp.3d at 808 (citation omitted) ("Representative Lewis 'acknowledge[d] freely that this would be a political gerrymander,' which he maintained was 'not against the law.'"), and that achieving the maximum possible number of Republicans in the state's congressional delegation is a legitimate redistricting objective. *See id.* at 850-51 (citing *Arizona State Legislature v. Arizona Indep. Redistricting Comm'n*, 135 S. Ct. 2652, 2658 (2015); *Reynolds v. Sims*, 377 U.S. 533, 578-79 (1964)) ("[T]he Supreme Court's acceptance of state legislatures' reliance on partisan considerations and political data for certain purposes does not

establish that a state legislature may pursue any partisan objective, as Legislative Defendants contend. In particular, the Supreme Court has never recognized that a legislature may draw district lines for the purpose of diminishing or minimizing the voting strength of supporters of a particular party or citizens who previously voted for representatives of a particular party — the legislative action challenged here."); *cf. Cooper v. Harris*, 137 S.Ct. 1455, 1472 (2017) (rejecting the District 1 drawn in 2011 by Hofeller at Sen. Rucho's and Rep. Lewis's direction as "a racial gerrymander whose necessity is supported by no evidence and whose *raison d'etre* is a legal mistake").

The Panel thus discerned that Mattingly's ensemble selection and scoring criteria described the range of legitimate redistricting criteria more accurately than the defendants' efforts to characterize openly invidious partisan discrimination as a legitimate objective. *See Common Cause*, 318 F.Supp.3d at 872 (finding that Mattingly's ensemble selection and scoring criteria "reflect[ed] traditional redistricting criteria … and nearly all non-partisan criteria adopted by the Committee"); *id.* at 874 (finding that the ensemble's plans "conformed to traditional redistricting criteria and the non-partisan criteria adopted by the Committee."). In this context, Mattingly's statistical tests establish a reasonable basis for rejecting the hypothesis that the legislature pursued any of its stated legitimate redistricting criteria as objectives rather than merely complying with them as constraints. *See id.* at 874 ("[W]e agree with Dr. Mattingly's conclusion that the 2016 Plan's pro-Republican bias is not attributable to a legitimate redistricting objective, but instead reflects

an intentional effort to subordinate the interests of non-Republican voters.").

Accordingly, Mattingly's extreme outlier analysis of the 2016 Plan at the district level, *see id.* at 872-73, provides a robust statistical basis for excluding cross-election variation, political geography and compliance with legitimate legislative criteria as alternative explanations for atypical partisan performance. *See infra* section I.D; *see also supra* note 4 (noting the persistence of the 2016 Plan's S-shaped "signature of gerrymandering" curve under significant cross-election variation). From this evidence, it was reasonable for the Panel to infer that the legislature's pursuit of Republican partisan advantage as an objective had the effect of packing or cracking the individual plaintiffs and other Democratic voters in at least five congressional districts. *See* 318 F.Supp.3d at 902-03 (District 1, packed); *id.* at 908 (District 4, packed); *id.* at 916-17 (District 9, cracked); *id.* at 921-22 (District 12, packed); *id.* at 923 (District 13, cracked).

C. Professor Chen's analysis provides (1) a reasonable basis for inferring that the defendants merely complied with their stated legitimate redistricting criteria as constraints and did not pursue them as objectives, and (2) reliable residence-specific evidence to support the Panel's findings of vote dilution injuries in Districts 1, 2, 3, 8, 9, 10, 11, and 12.

Professor Jowei Chen's analysis addresses, *inter alia*, the question of whether the partisan performance of the 2016 Plan reflects the actual pursuit of any of the redistricting committee's adopted criteria other than the partisan advantage

criterion, *see Common Cause*, 318 F.Supp.3d at 808, as redistricting objectives. *See id.* at 874-75. To investigate this question, Chen used a randomized algorithm to generate large sets of plans by successively aggregating adjacent VTDs into districts so as to improve the scores for a redistricting objective at each aggregation step until no more improvement was possible. *See id.* at 874 n.32; Jowei Chen & David Cottrell, *Evaluating Partisan Gains from Congressional Gerrymandering*, 44 ELECTORAL STUDIES 329, 332 (2016).[5] Like Mattingly's analysis, Chen's work has been part of the U.S. mathematical community's convergence on the idea of using a large, randomly-generated set of compliant plans as a normative baseline for detecting and measuring the effects of partisan gerrymandering. *See* Herschlag, *supra*, at 7-8.

Chen generated three sets of 1,000 plans each. *Common Cause*, 318 F.Supp.3d at 874. The first set consisted of maps generated in pursuit of optimal scores for population equality, contiguity, avoiding county and VTD splits, and compactness. *See id.* at 875. The second set consisted of maps generated in pursuit of optimal scores for population equality, contiguity, avoiding county and VTD splits, compactness, and avoiding pairing of incumbents. *See id.* Each of the maps in Chen's first two sets matched or outperformed the 2016 Plan with respect to each of the redistricting committee's adopted nonpartisan criteria. *See id.* The third set consisted of maps generated in pursuit of optimal scores for

[5] Like Mattingly's team, Chen had already developed the techniques used in his study of the 2016 Plan long before the plan was enacted. *See* Chen & Cottrell, *supra*, at 329 (noting article submission date of Dec. 22, 2013).

population equality, contiguity, avoiding VTD splits, and compactness, and scores for avoiding county splits and avoiding pairing of incumbents that were comparable to the corresponding scores for the 2016 Plan. *See id.* at 875-76.

Chen analyzed the partisan performance of the 2016 Plan relative to each of his sets of plans using (1) the seven-election average used by the defendants' expert Thomas Hofeller in creating the 2016 Plan, and (2) the average of results from twenty previous statewide elections presented to the redistricting committee before it voted to approve the 2016 Plan. *See id.* at 806, 809, 874-75. This analysis showed that the 10-3 advantage resulting from the 2016 Plan was atypical in the sense that all 3,000 of the maps in Chen's three sets would have yielded fewer Republican seats from the precinct-level partisan vote shares in past elections under either averaging method. *See id.* at 875-76. The fact that this result was insensitive to the variations in redistricting objectives among the three sets and between two different composites of the committee's adopted political data provided internal validation for Chen's results. *See id.* at 876-77.

To the extent that the first 2,000 maps generated by Chen's randomized, objective-driven algorithm are deemed representative of the range of all maps that could have been drawn with the goal of optimizing the committee's adopted nonpartisan criteria, Chen's analysis establishes a reasonable basis for rejecting the hypothesis that the committee actually pursued any of those criteria as objectives, as opposed to the one omitted adopted criterion: partisan advantage. *See id.* at 876 n.33. Furthermore, Chen's analysis of a further 1,000 maps in his third set of plans

demonstrates that these findings hold regardless of whether or not the 2016 Plan's thirteen county splits and two paired incumbents reflect a purported effort to minimize those criteria. *See id.* at 876.

On remand, Chen provided a supplemental declaration with a residence-specific analysis for the purpose of addressing the standing framework set forth by this Court in *Gill*. *See id.* at 819. Chen located each Common Cause plaintiff's district by place of residence in the 2016 Plan and in each of the 2,000 maps in his first two sets of computer-generated maps. *See id.* at 819 n.9; Exh. B to Brief of the Common Cause Plaintiffs in Response to Order of June 27, 2018 at 2, Dkt. 129-2, *Common Cause v. Rucho*, Civ. No. 16-1026 (M.D.N.C. filed July 11, 2018) ("Second Chen Decl."). Using Hofeller's average of the precinct-level results from seven statewide elections, Chen compared the partisan composition of each plaintiff's district in the 2016 Plan with the partisan compositions of his or her 2,000 computer-generated districts. 318 F.Supp.3d at 819 n.9.[6]

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[6] Chen singled out Plan 2-297 as scoring high with respect to the committee's adopted nonpartisan criteria as well as producing the modal partisan outcome among the 1,000 maps in his second set. *See Common Cause*, 318 F.Supp.3d at 820 n.10. Plan 2-297 also happens to place all but one of the League plaintiffs and all but one of the Common Cause plaintiffs into districts in which their votes would have carried more weight than in the 2016 Plan. *See id.* at 819 ("[I]n all but one of those League members' districts, the votes of those members would have carried more weight" in Plan 2-297); *see id.* at 821-826 (including Plan 2-297 in review of district-specific standing evidence for all Common Cause plaintiffs except in District 4). The Panel cited Plan 2-297 extensively as a comparator in review of district-specific evidence. *See id.* at 901-23 *passim*. But Chen's residence-specific analysis of 2,000 maps provides an even more robust set of comparators for demonstrating

Chen's residence-specific analysis revealed that the 2016 Plan placed eight of the Common Cause plaintiffs into districts with a highly atypical partisan composition. *See id.* at 821 ("all but 3 of the plans … would have placed [the District 1 plaintiff] into a less Democratic leaning district"); *id.* at 821-22 ("over 99 percent … would have assigned [the District 2 plaintiff] to a more Democratic-leaning district"); *id.* at 822 ("over 95 percent … would have placed [the District 3 plaintiffs] in a more Democratic-leaning district"); *id.* at 824 ("over 99 percent … placed [the District 8 plaintiff] in a district that was less heavily tilted in favor of Republicans"); *id.* ("over 97 percent … placed [the District 9 plaintiff] in a more Democratic-leaning district"); *id.* at 825 (emphasis in original) ("*all* 2,000 districting plans … would have placed [the District 11 plaintiff] into a district more favorable to Democratic candidates"); *id.* at 826 ("over 99 percent … placed

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injury-in-fact and discriminatory effect. *See id.* at 820-21 n.11 (defending "the use of Plan 2-297 and Dr. Chen's other 1,999 computer-generated maps as comparators" for showing discriminatory effect).

Plan 2-297 illustrates that an alternative map could be drawn at the *remedial phase* that would address the individual plaintiffs' vote dilution injuries while also improving on the 2016 Plan's performance with respect to the committee's adopted nonpartisan criteria. But the nature and extent of those injuries is more fully demonstrated by Mattingly's district-specific and Chen's residence-specific evidence of discriminatory effect based on large random samples of similarly compliant maps. *See id.* at 901 (describing the "numerous alternative districting plans to prove [the plaintiffs'] partisan vote dilution claims," including "the thousands of computer-generated districting plans created by Dr. Chen and Dr. Mattingly to conform to—and often more effectively advance—the General Assembly's non-partisan districting objectives.").

[the District 12 plaintiff] into a district with fewer likely Democratic voters"); *see also* Second Chen Decl. at 9-10 (reporting that 970 of the first set's 1,000 maps and 985 of the second set's 1,000 maps "placed [the District 10] plaintiff into a more Democratic-leaning district"). This analysis of 2,000 maps establishes a reasonable basis for excluding all of the committee's adopted redistricting criteria other than partisan advantage as an explanation for the atypical partisan composition of at least these eight districts in the 2016 Plan. *See infra* section I.D; 318 F.Supp.3d at 894 (characterizing Chen's finding "with overwhelmingly high statistical certainty that neutral, non-partisan districting criteria, combined with North Carolina's natural political geography could not have produced a districting plan as electorally skewed as the [2016 Plan]" as "strong evidence" of dilutionary effect). From these "numerous alternative maps" including Plan 2-297, *see supra* note 6, it was reasonable for the Panel to infer that the legislature's pursuit of Republican partisan advantage as an objective had the effect of packing or cracking at least these eight Common Cause plaintiffs. *See* 318 F.Supp.3d at 902-03 (District 1, packed); *id.* at 905 (District 2, cracked); *id.* at 906-07 (District 3, cracked); *id.* at 914 (District 8, cracked); *id.* at 916 (District 9, cracked); *id.* at 918 (District 10, cracked); *id.* at 919-20 (District 11, cracked); *id.* at 921 (District 12, packed).

D. Professor Mattingly's and Professor Chen's analyses overcome the analytical infirmities of the tests rejected in *Bandemer*, *Vieth,* and *LULAC*.

In past cases, the analytical difficulty of separating mixed motives has warranted this Court's reluctance

to apply constitutional scrutiny to a legislature's pursuit of partisan objectives when "partisan aims did not guide every line it drew." *See League of United Latin American Citizens v. Perry*, 548 U.S. 399, 418 (2006) (citation omitted) ("Evaluating the legality of acts arising out of mixed motives can be complex, and affixing a single label to those acts can be hazardous… When the actor is a legislature and the act is a composite of manifold choices, the task can be even more daunting."). Disparities between the major parties' statewide shares of votes and seats won could not logically be attributed to constitutional equal protection violations in the face of obvious alternative explanations, including (1) the inherent disproportionality of "winner-take-all, district-based elections," *Davis v. Bandemer*, 478 U.S. 109, 130 (1986); (2) cross-election variation in the political affiliations of voters and the strength of individual candidates that produces "possibly transitory" measurements of partisan performance, *id.* at 140; *Vieth*, 541 U.S. at 287 (plurality opinion); (3) "all the other goals that the map seeks to pursue" that might confound identification of "the predominant motivation behind the entire statewide plan," *id.* at 284-85 (emphasis omitted); and (4) the "'natural' packing effect" of political geography on "political groups that tend to cluster," id. at 290; *see also Gill*, 138 S.Ct. at 1933 (noting defendants' contention that Democrats in lead plaintiff's district are "'naturally' packed due to their geographic concentration").

The inherent disproportionality of a "winner-take-all" election result is one of many reasons why "a failure of proportional representation alone does not constitute impermissible discrimination under the Equal Protection Clause." *Bandemer*, 478 U.S. at

132. Moreover, an equal protection claim based on the mere showing that a plan "can thwart the plaintiffs' ability to translate a majority of votes into a majority of seats" cannot tenably "rest[] upon the principle that groups … have a right to proportional representation." *Vieth*, 541 U.S. at 286, 288 (plurality opinion). In contrast, Mattingly's and Chen's analyses nowhere involve any test of proportional representation or any other *a priori* normative baseline concerning the functional relationship between seats and votes. Their baselines instead are large samples of alternative plans from the astronomical number of plans that could have been drawn in accordance with stipulated sets of legal criteria. These samples have been internally (and in Mattingly's case, externally) validated for representativeness by showings that generating plans under widely varying assumptions has a negligible effect on the quantitative and qualitative conclusions drawn from them. *See supra* sections I.B-C; *see also Gonzalez v. City of Aurora*, Ill., 535 F.3d 594, 599-600 (7th Cir. 2008) (Easterbrook, C.J.) (describing inference of racial gerrymandering from a large set of computer-generated maps and concluding that "[r]edistricting software can not answer all hard questions, but it provides a means to implement a pure effects test without demanding proportional representation.").

Cross-election variation precludes a finding of an equal protection violation based on the results of "a single election" because without more, "a showing of possibly transitory results" does not demonstrate "a history of disproportionate results … in conjunction with strong indicia of lack of political power and the denial of fair representation." *See Bandemer*, 478

U.S. at 139-40; *Vieth*, 541 U.S. at 287 (plurality opinion) (noting that "[p]olitical affiliation … may shift from one election to the next" and "the political party which puts forward an utterly incompetent candidate will lose even in its registration stronghold"). In contrast, Mattingly's and Chen's analyses found consistent results between the 2012 and 2016 congressional general elections, relatively good years for Democrats and Republicans, respectively. *See Common Cause,* 318 F.Supp.3d at 874. Beyond this span of actual election results, Mattingly's district-specific evidence of packing and cracking is robust under significant uniform swing perturbations, *see supra* note 4, and Chen's use of a twenty-election average in addition to Hofeller's seven-election average "reflected a broad variety of candidates and electoral conditions." 318 F.Supp.3d at 877.

The difficulty of "[e]valuating the legality of acts arising out of mixed motives," *LULAC*, 548 U.S. at 418, complicates efforts to identify a "predominant motivation" behind a challenged plan. *See Vieth*, 541 at 285. Despite this, the Panel found that Mattingly's and Chen's analyses both "provide strong evidence that the General Assembly's predominant intent in drawing the 2016 Plan was to dilute the votes of voters likely to support Democratic candidates and entrench the Republican Party in power." *See Common Cause*, 318 F.Supp.3d at 874 (Mattingly); *see also id.* at 876 (Chen). But crucially, Mattingly's and Chen's analyses also demonstrated that the defendants merely complied with their stated legitimate criteria as constraints and did not pursue them as objectives. *See supra* sections I.B-C. In so doing, they provided the necessary factual predicates

for a "judicially manageable framework" that does not "'turn[] on whether partisan interests in the redistricting process were excessive,'" but "distinguishes partisan gerrymandering from the results of legitimate districting objectives, including those objectives that take into account political data or permissible partisan considerations." *See Common Cause*, 318 F.Supp.3d at 851-52 (quoting *Vieth*, 541 U.S. at 316 (Kennedy, J., concurring in the judgment)); *infra* section II.A (describing the significance of the distinction between pursuing objectives and merely complying with constraints in equal protection doctrine).

The asymmetric residential tendencies of different political groups typically produce "'natural' packing effect[s]," *see Vieth*, 541 U.S. at 290 (plurality opinion); *see also Gill*, 138 S.Ct. at 1933, that can confound the use of the efficiency gap and other partisan symmetry measures in quantifying the effects of partisan gerrymandering.[7] Both Mattingly and Chen, however, developed their analytical methods with the express purpose of controlling for the effects of political geography on the measurement and evaluation of partisan performance. *See*

[7] Even so, differential causal inferences in this context are well within the competence of a trial court. *See, e.g.*, *Whitford v. Gill*, 218 F.Supp.3d at 921, 924 (finding that "Wisconsin's political geography … affords the Republican Party a natural, but modest, advantage in the districting process," but "cannot explain the magnitude" of the partisan advantages observed in 2012 and 2014); c*f. Wood v. Textron, Inc.*, 807 F.3d 827, 832 n.4 (7th Cir. 2015) (quoting FEDERAL JUDICIAL CENTER, REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 214 (1994)) ("A differential etiology is a process-of-elimination approach to determining a subject's cause of injury. Under this method, an expert 'considers all relevant potential causes of the symptoms and then eliminates alternative causes.'").

Mattingly & Vaughn, *supra* note 3, at 2 ("It might be that in North Carolina the [partisan asymmetry] would happen in any redistricting which balances the representation of the urban with the rural or the beach with the mountains, and each with the Piedmont. Maybe the vast majority of reasonable districts which one might draw would have these issues due to the geography of the population's distribution. We are left asking the basic question: 'How much does the outcome depend on the choice of districts?'"); Jowei Chen & Jonathan Rodden, *Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures*, 8 Q. J. POL. SCI. 239, 247-48 (2013) (finding that "migration, sorting, and residential segregation … has left the Democrats with a more geographically concentrated support base than Republicans" resulting in partisan asymmetry, and "seek[ing] to estimate the electoral bias that would emerge under hypothetical districting plans that are not intentionally gerrymandered"). Since all of Mattingly's and Chen's computer-generated plans overlay the same political geography as the 2016 Plan, many exhibited partisan effects from natural packing and cracking similar to those in the 2016 Plan, while deliberately packed and cracked districts in the challenged plan had no counterpart among the computer-generated plans. *Compare id.* at 256 (finding in a study of computer-generated Florida congressional and legislative plans that "at least some pro-Republican bias" was typical) *with Common Cause*, 318 F.Supp.3d at 872-73 (reporting Mattingly's district-level findings of the 2016 Plan's atypicality); *id.* at 821-26 (reporting Chen's district-level findings of the 2016 Plan's atypicality). Accordingly, the Panel found that both Mattingly's and Chen's analyses account for and

exclude North Carolina's political geography as an explanation for the 2016 Plan's atypical partisan performance and discriminatory effects. *See id.* at 897.

E. The Panel's weighing and admission of the statistical evidence are entitled to great deference.

In making its findings of vote dilution, the Panel reviewed voluminous district-specific and residence-specific statistical evidence, *see Common Cause*, 318 F.Supp.3d at 901-23, as well as "five different types of [statewide] statistical analyses performed by three different experts all reach[ing] the same conclusion," *id.* at 895.[8]

The Panel's weighing of this statistical evidence is entitled to deference under the clear error standard of review. *See Anderson v. Bessemer City*, 470 U.S. 564, 573-74 (1985) ("If the district court's account of the evidence is plausible in light of the record viewed in its entirety, the court of appeals may not reverse it even though convinced that had it been sitting as the trier of fact, it would have weighed the evidence differently."). Great deference is especially warranted

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[8] In addition to Mattingly's and Chen's analyses, the plaintiffs presented Professor Simon Jackman's analysis comparing the 2016 Plan's measured efficiency gap with estimates of efficiency gaps observed in 512 congressional elections between 1972 and 2016. *See Common Cause*, 318 F.Supp.3d at 885-87. A full review of the inferential power of Jackman's analysis is beyond the scope of this brief. Counsel for *amici* has previously described to this Court how a similar analysis by Jackman supported various causal inferences in *Gill*. *See* Brief of 44 Election Law, Scientific Evidence, and Empirical Legal Scholars as *Amici Curiae* in Support of Appellees, *Gill v. Whitford*, No. 16-1161 (filed Sept. 1, 2017); *see also supra* note 7 (describing one such causal inference).

with respect to the Panel's weighing of statistical evidence. *See Soria v. Ozinga Bros., Inc.*, 704 F.2d 990, 994 n.6 (7th Cir. 1983) (citing *Dothard v. Rawlinson*, 433 U.S. 321, 338 (1977) (Rehnquist, J., concurring)) ("Moreover, especially where statistical evidence is involved, great deference is due the district court's determination of whether the resultant numbers are sufficiently probative of the ultimate fact in issue.").

The Panel's decisions regarding the admissibility of scientific evidence in this case are also entitled to wide deference. *See General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) ("We hold, therefore, that abuse of discretion is the proper standard by which to refer a district court's decision to admit or exclude scientific evidence."); *United States v. Abel*, 469 U.S. 45, 54 (1984) ("A district court is accorded a wide discretion in determining the admissibility of evidence under the Federal Rules.").

II. In this age of computationally intensive redistricting, the legislative defendants' mere compliance with legitimate redistricting criteria as constraints cannot immunize their intentional packing and cracking from equal protection liability.

Computational advances have by now largely overwhelmed the capacity of traditional districting criteria to discipline the pursuit of partisan advantage. See *Gill v. Whitford*, 138 S.Ct. 1916, 1941 (2018) (Kagan, J., concurring) ("New redistricting software enables pinpoint precision in designing districts. With such tools, mapmakers can capture every last bit of partisan advantage, while still meeting traditional districting requirements (compactness, contiguity, and the like)…. The

technology will only get better, so the 2020 cycle will only get worse."). [9] In *Vieth*, however, Justice Kennedy expressed the hope that these same computational advances could eventually enable the law to catch up to the technology of gerrymandering. 541 U.S. at 312-13 (Kennedy, J., concurring in the judgment).

In holding open the future possibility of a justiciable standard for equal protection review of a partisan gerrymandering challenge, Justice Kennedy duly noted that "great caution is necessary when approaching this subject" and that the suspect-classification jurisprudence involved in racial gerrymandering cases is "quite a different matter." *Vieth*, 541 U.S. at 307. He also observed that the Court in *Gaffney v. Cummings* had emphatically declined to prohibit the use of partisan classifications in redistricting. *See id.* at 307 (quoting *Gaffney*, 412 U.S. 735, 752 (1973)) ("It would be idle, we think, to contend that any political consideration taken into account in fashioning a reapportionment plan is sufficient to invalidate it."). Accordingly, Justice Kennedy offered the guidance that liability for partisan gerrymandering "must rest on something more than the conclusion that political classifications were applied. It must rest instead on a conclusion that the classifications, though generally permissible, were applied in an invidious manner or in a way unrelated to any legitimate legislative *objective*." *Vieth*, 541 U.S. at 307 (emphasis added).

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[9] Indeed, if the Court were to hold partisan gerrymandering nonjusticiable, it is difficult to see *any* basis upon which future courts could rein in departures from traditional districting criteria, such as the drawing of non-contiguous districts.

Notably, Justice Kennedy's guidance gives no warrant to mere compliance with traditional districting criteria as *constraints* incident to the pursuit of illegitimate or invidious legislative objectives (even less so to mere compliance with "some traditional criteria but not others," *see Vieth*, 541 U.S. at 296 (plurality opinion)). As the *Vieth* plurality recognized, mere compliance with traditional districting criteria is insufficient to prevent legislators from diluting the votes of particular citizens on a partisan basis. *See id.* at 298 (plurality opinion) ("[I]t certainly cannot be that adherence to traditional districting factors negates any possibility of intentional vote dilution…. [P]acking and cracking, whether intentional or no, are quite consistent with adherence to compactness and respect for political subdivision lines."); *see also* Duchin, *Geometry v. Gerrymandering*, *supra*, at 50 ("The problem [with compactness criteria] is that the outline of a district tells a very partial and often misleading story. On one hand there can certainly be benign reasons for ugly shapes…. On the other hand districts that are plump, squat and symmetrical offer no meaningful seal of quality.").

Computer technology has long been instrumental and has become ever more effective in enabling mapmakers to maximize partisan advantage while maintaining compliance with traditional districting criteria. *See, e.g.*, *Wells v. Rockefeller*, 394 U.S. 542, 551 (1969) (Harlan, J., dissenting) ("The fact of the matter is that the rule of absolute equality is perfectly compatible with 'gerrymandering' of the worst sort. A computer may grind out district lines which can totally frustrate the popular will on an overwhelming number of critical issues."); *Karcher v.*

Daggett, 462 U.S. 725, 752 (1983) (Stevens, J., concurring) ("Since Justice Harlan wrote [in *Wells*], developments in computer technology have made the task of the gerrymanderer even easier."); *Vieth*, 541 U.S. at 312 (Kennedy, J., concurring in the judgment) (describing technology as a "threat" that could increase "the temptation to use partisan favoritism in districting in an unconstitutional manner"); *id.* at 364 (Breyer, J., dissenting) ("[T]he political advantages of a gerrymander may become ever greater in the future" due to "enhanced computer technology"); *Gill*, 138 S.Ct. at 1941 (Kagan, J., concurring) ("[M]apmakers can capture every last bit of partisan advantage, while still meeting traditional districting requirements (compactness, contiguity, and the like).").

Given these computational developments over half a century with more to come, mere compliance with legal requirements can no longer logically be accorded significance in adjudicating the intent and effect of redistricting decisions. As in racial gerrymandering cases, "'traditional districting principles,' which include 'compactness, contiguity, and respect for political subdivisions,' … 'may serve to defeat a claim that a district has been gerrymandered,'" *see Vieth*, 541 U.S. at 336 (Stevens, J., dissenting) (quoting *Shaw v. Reno*, 509 U.S. 630, 647 (1993)), but only to the extent the mapmakers have pursued them as objectives. The defendants relinquished any claim to a safe harbor from equal protection liability when they designed districts that belied any actual pursuit of traditional districting principles and other legitimate legislative criteria as objectives.

A. Legislatures can avoid equal protection challenges by publicly stating and actually pursuing legitimate redistricting objectives.

The doctrinally significant distinction between pursuing redistricting objectives and merely complying with redistricting constraints establishes at least one "comprehensive and neutral principle[] for drawing electoral boundaries," *Vieth*, 541 U.S. at 306-07 (Kennedy, J., concurring in the judgment): The best way for legislatures to avoid partisan gerrymandering challenges is by actually pursuing their publicly stated legitimate redistricting criteria as objectives, not merely complying with them as constraints incident to the pursuit of undisclosed, illegitimate, or invidious objectives.[10] Even absent the defendants' own public statements and other direct evidence of their invidious partisan intent, *Common Cause*, 318 F.Supp. at 868-70, Mattingly's and Chen's robust statistical analyses would reveal that partisan advantage was the only adopted redistricting criterion that they pursued as an objective in the drafting of the 2016 Plan, while merely maintaining compliance with all of the other adopted criteria and legal requirements as constraints. *Compare supra* sections I.B-C *with* 318 F.Supp.3d at 882 (reviewing legislative defendants' public statements signifying intent to achieve "the maximum partisan advantage that could be obtained

[10] The distinction is not one of "motivation," as legislatures are necessarily "motivated" by force of law to comply with any traditional districting requirements. *See LULAC*, 548 U.S. at 420 (noting that "when a legislature redistricts pursuant to its decennial constitutional duty… [it] is then immune from the charge of sole motivation").

without risking that the [*Cooper v.*] *Harris* court would 'throw' the plan out as perpetuating the constitutional violation.").

Legitimate redistricting criteria need not be completely nonpartisan: political considerations are permissible and perhaps even inevitable. See *Gill*, 138 S.Ct. at 1926 (quoting *Gaffney*, 412 U.S. at 752-53) ("[D]istricting 'inevitably has and is intended to have substantial political consequences'"); *Vieth*, 541 U.S. at 307 (Kennedy, J., concurring in the judgment) (noting that political classifications are "generally permissible"). Nor have political classifications been recognized as suspect. See *Bandemer*, 478 U.S. at 151-52 (O'Connor, J., concurring in the judgment) (explaining that major parties lack "the traditional indicia of suspectness" in that they are not "vulnerable to exclusion from the political process by some dominant group"); *Vieth*, 541 U.S. at 287 (plurality opinion) ("Political affiliation is not an immutable characteristic, but may shift from one election to the next; and even within a given election, not all voters follow the party line."); *id.* at 307 (Kennedy, J., concurring in the judgment) (citations omitted) ("Race is an impermissible classification. Politics is quite a different matter.").

Nevertheless, when legislators use partisan criteria to identify particular citizens whose votes are susceptible to dilution through packing or cracking, a legislative decision to draw those citizens into a district with the purpose and effect of promoting such a packed or cracked outcome raises colorable equal protection concerns. See *Gill*, 138 S.Ct. at 1934 (declining to direct dismissal where individual plaintiffs have alleged that they "live in districts

where Democrats like them have been packed or cracked"). Such deliberate legislative manipulation of a district's electoral outcome, *see Common Cause*, 318 F.Supp.3d at 941 (quoting *Cook v. Gralike*, 531 U.S. 510, 526 (2001) (internal citation omitted)) (concluding that "the 2016 Plan amounted to a successful 'attempt[] to "dictate election outcomes"'"), is not rationally related to any conceivable state interest in accordance with the legitimating "'core principle of republican government,' namely, 'that the voters should choose their representatives, not the other way around.'" *Arizona State Legislature*, 135 S. Ct. at 2677 (quoting Mitchell N. Berman, *Managing Gerrymandering*, 83 TEX. L. REV. 781, 781 (2005)).

B. A factfinder may reasonably infer from robust statistical evidence of a district's packing or cracking that the drawing of the district's boundaries has arranged "the electoral system in a manner that will consistently degrade a voter's or a group of voters' influence on the political process as a whole."

Partisan gerrymandering violates the Equal Protection Clause "when the electoral system is arranged in a manner that will consistently degrade a voter's or a group of voters' influence on the political process as a whole." *Bandemer*, 478 U.S. at 132. The adjudication of a district-level vote dilution claim "focuses on the opportunity of members of the group to participate in party deliberations in the slating and nomination of candidates, their ability to register and vote, and hence their chance to directly influence the election returns and to secure the attention of the winning candidate." *Id.* at 133. In

this context, evidence of vote dilution "must be supported by evidence of continued frustration of the will of a majority of the voters or effective denial to a minority of voters of a fair chance to influence the political process." *Id.*

Both packing and cracking, as evidenced by a district's consistently atypical partisan performance, dilute the votes of an opposing party's voters by "undermining the normal effects of the choices that [voters] had made about where to live." *See Gonzalez*, 535 F.3d at 600. As this Court has recognized in the racial gerrymandering context, "dilution of … group voting strength may be caused by the dispersal of [the group] into districts in which they constitute an ineffective minority of voters or from the concentration of [the group] into districts where they constitute an excessive majority." *Thornburg v. Gingles*, 478 U.S. 30, 46 n.11 (1986); *see also Gill*, 138 S.Ct. at 1933-34 (declining to dismiss four plaintiffs who had pleaded a particularized vote dilution injury, two from packing and two from cracking, and remanding for trial on both theories).

Drawing a voter into a district with the objective of minimizing the effectiveness of the voter's party in converting votes into seats irrespective of wide variations in cross-election conditions is a direct assault on that voter's "chance to directly influence the election returns and to secure the attention of the winning candidate," *Bandemer*, 478 U.S. at 133. This is true even when the district, engineered for partisan advantage, complies with legitimate redistricting criteria. *See Vieth v. Jubelirer*, 541 U.S. at 298.

The instant case exemplifies all of the above principles. At least ten of the Common Cause

plaintiffs proved, through direct evidence and robust statistical evidence, that their districts had been drawn with the purpose and effect of degrading their votes and the votes of other district residents who defendants had predicted would likely support a Democratic candidate based on past election results. *See supra* sections I.B-C; *Common Cause*, 318 F.Supp.3d at 878-89. Relying on those past election results and empirical knowledge of the limited range of cross-election variation at the precinct and VTD level in North Carolina, 318 F.Supp.3d at 878, the defendants intentionally and effectively packed or cracked each of these ten plaintiffs into a district where he or she and other Democratic voters "constitute an ineffective minority… [or] an excessive majority," *Gingles*, 478 U.S. at 46 n.11. This safely ensured the defendants' intended electoral outcome in each packed or cracked district, *see Common Cause*, 318 F.Supp.3d at 902-23 *passim* (reviewing district-specific evidence of vote dilution through, *inter alia*, the deliberate drawing of atypically "safe" districts), rendering cross-election voting variations ineffectual there for the life of the 2016 Plan. *See id.* at 895 ("[T]he discriminatory effects intended by the 2016 Plan's architects and predicted by Dr. Mattingly's analyses—the election of 10 Republicans by margins that suggest they will retain their seats throughout the life of the plan—in fact occurred."); *see also* Thomas Wolf & Peter Miller, *How the GOP Gerrymander Blocked the Blue Wave in NC*, NEWS & OBSERVER (Nov. 12, 2018) ("[D]espite an extraordinary year, [Democrats] netted just three of the state's 13 congressional seats — the same as in 2014 and 2016. That happened because a promising Democratic wave crashed against one of the country's most extreme gerrymanders.").

In deliberately muting the effects of cross-election variation, the defendants effectively barred Democratic voters in each packed or cracked district from "directly influenc[ing] the election returns and … secur[ing] the attention of the winning candidate," *Bandemer*, 478 U.S. at 133, at least by the means of "shift[ing] from one election to the next" or voting against "an utterly incompetent candidate" that give political affiliation its mutable character. *See Vieth*, 541 at 287. The defendants thereby created an abnormal and discriminatory arrangement of the electoral system in which each packed or cracked plaintiff's disfavored partisan affiliation, while mutable in principle, was frozen in practical effect, "consistently degrad[ing the plaintiff's] … influence on the political process as a whole." *Bandemer*, 478 U.S. at 132.

CONCLUSION

The Panel's findings of vote dilution in violation of the Equal Protection Clause, at least as to the Common Cause plaintiffs in Districts 1, 2, 3, 4, 8, 9, 10, 11, 12, and 13, should be affirmed.

Respectfully submitted,

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