IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

WILLIAM WHITFORD, ROGER ANCLAM, EMILY BUNTING, MARY LYNNE DONOHUE, HELEN HARRIS, WAYNE JENSEN, WENDY SUE JOHNSON, JANET MITCHELL, ALLISON SEATON, JAMES SEATON, JEROME WALLACE, and DONALD WINTER,	)))))))	No. 15-cv-421-bbc
Plaintiffs,	)))	
v.	)))	
GERALD C. NICHOL, THOMAS BARLAND, JOHN FRANKE, HAROLD V. FROEHLICH, KEVIN J. KENNEDY, ELSA LAMELAS, and TIMOTHY VOCKE,	))))))	
Defendants.	)	

PLAINTIFFS' POST-TRIAL BRIEF

Peter G. Earle
LAW OFFICE OF PETER G. EARLE
839 North Jefferson Street, Suite 300
Milwaukee, WI 53202
(414) 276-1076
peter@earle-law.com

J. Gerald Hebert
Ruth Greenwood
Annabelle Harless
Danielle Lang
CAMPAIGN LEGAL CENTER
1411 K Street NW, Suite 1400
Washington, DC 20005
(202) 736-2200
ghebert@campaignlegalcenter.org
rgreenwood@campaignlegalcenter.org
aharless@campaignlegalcenter.org
dlang@campaignlegalcenter.org

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Michele Odorizzi
MAYER BROWN, LLP
71 South Wacker Drive
Chicago, IL 60606
(312) 782-0600
modorizzi@mayerbrown.com

Nicholas O. Stephanopoulos
UNIVERSITY OF CHICAGO LAW SCHOOL
1111 E. 60th St., Suite 510
Chicago, IL 60637
(773) 702-4226
nsteph@uchicago.edu

Douglas M. Poland
RATHJE & WOODWARD, LLC
10 East Doty Street, Suite 507
Madison, WI 53703
(608) 960-7430
dpoland@rathjewoodward.com

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INTRODUCTION

At trial, all of plaintiffs' claims about Wisconsin's Act 43 (the "Current Plan") were borne out. The evidence confirmed what defendants have already conceded: that the Plan was enacted with the discriminatory *intent* of disadvantaging Democratic voters because of their political views. The evidence also thoroughly documented the Plan's discriminatory *effect*: an extraordinarily high and durable level of partisan asymmetry in the two elections in which it has been in force. The evidence showed as well that this asymmetry cannot be *justified* by Wisconsin's redistricting requirements or political geography. And as for defendants' contrary analyses, they were exposed as misleading and unable to survive scrutiny.

Beginning with discriminatory intent, the treasure trove of internal documents that the Current Plan's drafters were compelled to disclose proved that they aimed to benefit Republicans and handicap Democrats to an alarming degree. This trove included at least ten draft maps that ratcheted upward the expected number of Republican seats from 49 all the way to 59. The trove also contained at least five sophisticated "S-curves" whose only purpose is to ensure that a gerrymander persists under varying electoral conditions. Oddly, defendants' main response at trial was that the Plan's drafters made too many data errors for their partisanship estimates to be reliable. But it is obvious that a clumsy gerrymanderer still intends to gerrymander. And even though this argument was sprung on plaintiffs without warning, plaintiffs' experts still managed to show that the alleged errors were completely immaterial.

Turning to discriminatory effect, Professor Simon Jackman testified that the efficiency gap represents the culmination of decades of thinking by political scientists about how to conceptualize and measure partisan asymmetry. He also explained the array of analyses he conducted to verify that a plan with a large *initial* efficiency gap will remain durably skewed over its *lifetime*. According to these analyses, it is virtually certain that the Current Plan will

continue to favor Republicans no matter how voter sentiment changes over the rest of the decade. Strikingly, defendants made no effort at trial to impugn Professor Jackman's data or methods. Instead, they relied on the ipse dixit pronouncements of Professor Nicholas Goedert about the efficiency gap. But these assertions were unsupported by *any* empirical work. Their upshot is also that sensitivity testing should be carried out before a plan is invalidated—a position that plaintiffs fully endorse.

With respect to justification, lastly, four kinds of maps demonstrated that the Current Plan's asymmetry is unjustifiable. These are (1) Assembly plans in previous cycles; (2) drafts of the Current Plan; (3) Professor Kenneth Mayer's Demonstration Plan; and (4) Professor Jowei Chen's 200 simulated Assembly maps. *All* of these plans comply with federal and state requirements at least as well as the Current Plan, while exhibiting far lower efficiency gaps. At trial, defendants ignored the first two categories and addressed Professor Chen's simulations only by trying to block their admission. Defendants also launched a number of attacks on the Demonstration Plan that were shown to be unfounded. For instance, they cherry-picked a handful of the map's oddly shaped districts, even though it is stipulated that its districts are *more* compact than the Current Plan's. Similarly, they displayed a few regions where the Demonstration Plan's districts differ from the 2000s map's, even though the Current Plan assigned about *2.5 million* people to new districts, or *seven times* more than was necessary.

Perhaps realizing the cumulative weight of this evidence, defendants' counsel ended his closing statement by asking this Court to hold partisan gerrymandering claims nonjusticiable. Such a holding would indeed doom plaintiffs' case. But such a holding is precluded by Supreme Court precedent, which plainly establishes the justiciability of these claims. And what this Court cannot do directly it should not do obliquely either, by upholding the Current Plan. If *this* Plan is valid—notwithstanding the discriminatory intent that underpinned its enactment, the almost

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unprecedented severity and durability of its partisan asymmetry, and this asymmetry's utter lack

of justification—then no map can possibly be unlawful. If *this* Plan is valid, there might as well

not be a cause of action for partisan gerrymandering at all.

Given the extensive briefing that has already occurred in this case, the parties have

agreed to limit their post-trial briefs to 30 pages and their reply briefs to 15 pages. Accordingly,

this brief focuses on facts and arguments that emerged at trial and that have not been fully

addressed by plaintiffs' earlier submissions.

DISCRIMINATORY INTENT

A.   Plaintiffs Presented Overwhelming Evidence of Discriminatory Intent.

In their pretrial brief, plaintiffs promised the Court that they would validate the *Baldus*

panel's conclusion that "partisan motivation . . . clearly lay behind Act 43." *Baldus v. Wisc.*

Gov't Account. Bd., 849 F. Supp. 2d 840, 851 (E.D. Wis. 2012). This pledge was kept at trial.

The documents admitted into evidence, as well as the testimony from Professor Keith Gaddie,

Adam Foltz, and Tad Ottman, corroborated all five categories of intent evidence that plaintiffs

previously described. Pls.' Pretr. Br. (Dkt. 134) at 5-25. These categories, in brief, are as follows:

1. *Secret Drafting:* The Legislature outsourced the drafting of the Current Plan to two

Republican law firms, ensuring that ordinary rules of legislative transparency would not apply.

Exs. 355-56. A written policy for the "map room" at Michael Best & Friedrich, LLP ("Michael

Best") provided full access only to the Republican legislative leadership and a handful of their

attorneys and aides. Ex. 463; Tr. (I) 74-78.[1] All Republican legislators who reviewed their new

districts with Foltz and Ottman signed secrecy agreements prior to their meetings. Exs. 243-44.

Foltz prepared talking points warning Republican legislators not to discuss the Plan because

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[1] The Roman numeral in all citations to the trial transcript indicates the day of trial. Plaintiffs do not cite the docket numbers of the trial transcripts, but note them here: Tr. (I) (Dkt. 147), Tr. (II) (Dkt. 148), Tr. III (Dkt. 149), Tr. IV (Dkt. 150).

"[p]ublic comment will lead to depositions and being called to the witness stand." Ex. 213.

2. *Exclusion of Democrats:* While Foltz and Ottman met with 58 Republican members of the Assembly and 17 Republican members of the Senate to go over their new districts, they did not meet with a single Democratic legislator. Ex. 73 ¶ 38; Ex. 341 ¶¶ 34-36. While Foltz sent personalized memos to all Republican Assembly members describing their new districts, not a single Democratic Assembly member received such a document. Ex. 342; Tr. (I) 95-99. Indeed, no Democrats even *saw* their new districts until the day Act 43 was introduced.

3. *Use of Partisan Data:* Professor Gaddie was retained by Michael Best to analyze the "political make-up of legislative and congressional districts in Wisconsin." Ex. 169. He created a sophisticated regression model to predict districts' "political potential" based on "prior election indicators of future election performance." Ex. 134. At the ward level, the output of this model had a correlation of 0.96 with the 2004-2006 composite measure of partisanship generated by Foltz, Handrick, and Ottman. Ex. 175. Professor Gaddie also produced a series of S-curves designed to assess how district plans would perform if the statewide vote shifted by up to ten points in each party's direction. Exs. 272-74, 280, 282.

Foltz, Handrick, and Ottman calculated their composite measure by averaging the Republican candidates' vote shares in every statewide election from 2004 to 2010. Ex. 175. Reassured by Professor Gaddie that their measure was almost perfectly correlated with his regression model's output, they used the measure to design and evaluate at least ten draft plans, as well as numerous regional alternatives. Ex. 175; Tr. (I) 49-51; Tr. (II) 9-10. Most of these plans' names involved permutations of "Assertive" or "Aggressive." Most of the plans were analyzed using spreadsheets that listed each district's partisanship score as well as the total numbers of Democratic and Republican seats. Exs. 172, 364, 366, 465, 467; Tr. (I) 63, 65. Ottman created a file, "summaries," that tracked "Good outcomes" and "Bad outcomes" for

Republicans across five draft maps. Ex. 283; Tr. (II) 20-34. Handrick created a file, "summary," that charted similar indicators for a near-final version of the Plan. Ex. 284; Tr. (II) 34-35.

4. *Expected Republican Advantage:* Foltz, Handrick, and Ottman anticipated that Republicans would win 48% to 49% of the statewide Assembly vote. For this *minority* of the vote, they steadily raised the predicted number of Republican seats from 49 under the 2000s map to a *supermajority* of *59* under the Final Map. Exs. 172, 364, 366, 465, 467, 487; Tr. (I) 81-89. The Final Map also slashed the number of competitive districts from 19 to 10. Ex. 172 at 3. Professor Gaddie's S-curves confirm this plunge in responsiveness. Under the 2000s map, Republicans would have won 36 to 64 seats as their statewide vote share shifted by three points in each direction. Ex. 273, tab "Composite." But under the Team Map, this range shrank to *46* to 64 seats, and Democrats were expected to need 54% of the statewide vote to capture an Assembly majority. Ex. 282.

5. *Irregular Enactment:* Days before Act 43 was introduced, Ottman told a Republican-only meeting of legislators, "We have an opportunity and an obligation to draw these maps that Republicans haven't had in decades." Ex. 241; Tr. (II) 41. Ottman also recommended deleting information about the number of counties split by Act 43 "since it doesn't tell a great story." Ex. 362; Tr. (II) 41-42. Only nine days elapsed between Act 43's introduction and its party-line passage by both legislative chambers. Ex. 73 ¶ 42. The process was so rushed because the Republican leadership feared losing control of the Senate in the upcoming recall elections. Tr. (II) 125-26. This haste also necessitated "upending more than a century of practice in Wisconsin," *Baldus*, 849 F. Supp. 2d at 846, and requiring municipalities to design wards that followed the new districts' boundaries. Ex. 331; Tr. (II) 123-25.

B.   **Foltz's Testimony About Data Errors Was Odd and Incorrect.**

Defendants have admitted that Act 43 was enacted with discriminatory intent. Summ. Jdgmt. Op. (Dkt. 94) at 12; Tr. (IV) 283. It is therefore unclear what to make of the intent arguments they raised for the first time at trial, since these arguments are evidently *not* meant to deny that partisan advantage motivated Act 43's passage. Nevertheless, since defendants did present these claims, plaintiffs now address them.

Foltz testified for hours about certain data errors and inconsistencies in files that he, Handrick, Ottman, and Professor Gaddie used during the drafting process. One issue was that the autoBound file that generated the partisanship data for the memos that went out to Republican Assembly members in June 2011 contained nonsensical results for one race: the 2006 gubernatorial contest. Ex. 556; Tr. (I) 120-33, 168-71. Another issue was that the district partisanship scores calculated by Foltz, Handrick, and Ottman using their composite measure sometimes did not match those listed in Professor Gaddie's S-curves. Tr. (I) 133-40, 176-83.

First and foremost, whatever problems afflicted defendants' files have nothing to do with their intent to bolster Republicans and undercut Democrats. Assume that Foltz was right about the autoBound errors. These errors might reduce the composite's reliability, but they have no relation to Foltz's (or any other drafter's) mental state. Similarly, say that Foltz, Handrick, and Ottman's district partisanship scores diverged from Professor Gaddie's. This too presents an interesting data puzzle, but in no way weakens the inference that follows from the S-curves' very existence: that Act 43's authors aimed to give Republicans a large and *durable* advantage.

In any event, the issues identified by Foltz are utterly immaterial. First, the issues did *not* extend to the ward level, which is the level at which the composite measure was actually calculated. The 2006 gubernatorial data is impeccable in the original ward-level file. Ex. 225, WRK32586 Responsive Spreadsheets Deduplicated, "Wisconsin_Election_Data.xlsx" (columns

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CE-CH, MR-MS); Tr. (II) 13-14. Second, as Professor Mayer explained, even in the autoBound file, the 2006 governor's race is the *only* one out of seventeen statewide contests with any anomalies. The other sixteen races have perfectly sound results. Ex. 486; Tr. (II) 194-99. Third, as Professor Jackman found, if the composite measure is recalculated without the 2006 gubernatorial data, the updated metric has a correlation of 0.999 with the initial one. That is, the flawed and the fixed measures are substantively *identical*. Ex. 492; Tr. (III) 241-42.

And fourth, while it is difficult to compare Foltz, Handrick, and Ottman's partisanship scores with Professor Gaddie's at the district level, owing to variations in how the S-curves were constructed, the scores can be rigorously compared at the ward level. Professor Gaddie carried out exactly this comparison, and summarized his results as follows: "The[] expected GOP open seat assembly vote using the equations correlates at .96 with the 2004-2010 composite . . . . This seems to pretty much wrap[] up the partisanship measure debate." Ex. 175; Tr. (II) 188-89. It also wraps up defendants' tendentious argument about their own data.

C.   Ottman's Testimony About Drafting the Plan Was Irrelevant and Incredible.

Defendants' other odd trial tactic, given their concession that Act 43 was enacted with discriminatory intent, was to challenge the evidentiary categories that established its drafters' improper motive. Ottman testified, among other things, that secrecy and partisan exclusion are common in redistricting, Tr. (II) 51, 53, 59-61, that he paid attention to traditional criteria, Tr. (II) 78-79, 83-90, 102-06, that it is better for districts to be drawn before wards, Tr. (II) 92-94, and that partisan advantage was merely one of several factors he took into account, Tr. (II) 97-102, 106-09.[2] Much of his testimony, though, was either irrelevant or incredible.

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[2] Ottman also testified that he, Foltz, and Handrick presented the legislative leadership with alternatives for various *regions* of the State, as opposed to full statewide options. Tr. (II) 94-99. But that their gerrymander was constructed piece by piece, not in one fell swoop, in no way detracts from its egregiousness. Foltz and Ottman further testified that their composite measure was retrospective rather than prospective. Tr. (I) 47, 57-58; Tr. (II) 106-07. This is literally true in that the metric averaged past election results. But the only conceivable reason for the

Starting with the irrelevancies, even if parties in full control of the state government often design maps in secret and without input from the opposing party, this hardly means that discriminatory intent is absent. What it actually means is that the *Bandemer* plurality was right that, when a single party has unified control over redistricting, "it should not be very difficult to prove that the likely political consequences of the reapportionment were intended." *Davis v. Bandemer*, 478 U.S. 109, 129 (1986) (plurality opinion).

Similarly, even if Ottman and his fellow drafters considered traditional redistricting criteria and weighed them against the pursuit of partisan advantage, this merely establishes that partisan gain was not their *only* goal. But plaintiffs do not claim that Act 43's authors literally sought to maximize the number of Republican seats, or that they completely neglected traditional criteria. Indeed, any intent standard that would require such a showing is precluded by Supreme Court precedent. *See LULAC v. Perry*, 548 U.S. 399, 416 (2006) (opinion of Kennedy, J.) (rejecting sole-intent test); *Vieth v. Jubelirer*, 541 U.S. 267, 284 (2004) (plurality opinion) (rejecting predominant-intent test). Rather, plaintiffs' contention is that Act 43's authors aimed to benefit Republicans and handicap Democrats. And Foltz and Ottman themselves repeatedly admitted this point, testifying that they used their composite measure of partisanship when designing districts. Tr. (I) 47, 49-51, 61; Tr. (II) 13-14, 33, 96-97, 106.

Likewise, even if there are plausible policy reasons to design districts before wards, these reasons had nothing to do with Act 43's toppling of a century-old tradition. To the contrary, the sole explanation for the switching of the usual sequence was the imperative to enact Act 43 in July 2011, before the Senate recall elections imperiled Republican control of the Legislature. Tr. (II) 124-26, 129-32.

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metric's *creation* was to predict districts' future performance. And in fact, the metric had a correlation of *0.98* with Professor Mayer's 2012 open seat estimates. Ex. 10; Tr. (II) 186, 207-09.

Turning from the irrelevant to the incredible, several aspects of Ottman's testimony were contradicted by record evidence and thus not believable. First, his statements that partisan advantage was just one criterion among many were belied both by the rigor with which Act 43's drafters scrutinized partisan data—which far exceeded the attention they paid to any other factor—and by the sheer scale of the edge they hoped to give to Republicans. The Final Map predicted that Republicans would win a *minority* of the statewide vote, but a 59-seat *supermajority* of the Assembly. Ex. 172 at 3. Professor Gaddie's final S-curve also predicted that Democrats would need 54% of the statewide vote to capture an Assembly majority. Ex. 282.[3]

Second, Ottman's statements about partisanship were frequently evasive or untrue. He testified that he was unsure what plan names using "Assertive" or "Aggressive" meant, Tr. (II) 17-18, 30-32, 99, even though Foltz made clear that they referred to a strong Republican advantage, Tr. (I) 65, 67-68. He testified that his "TadMayQandD" plan included more Republican seats than the Final Map, Tr. (II) 109-110, but in fact it had two *fewer* seats with Republican partisan scores above 50%, Exs. 172 at 3, 477, 487; Tr. (II) 126-28. And he testified that he did not provide senators with partisan data about their districts, Tr. (II) 108, but in fact his notes for every single meeting compared the senators' old and new districts in terms of election results, Ex. 242.

Third, while plaintiffs do not dispute that traditional criteria played *some* role in Act 43's drafting, Ottman's comments about their significance were overstated. No traditional criteria were mentioned in the memos that Foltz sent to Assembly members or the notes that Ottman prepared for his meetings with senators. Ex. 242; Tr. (I) 95-98. No analyses of contiguity, compactness, or political subdivision splits were saved until the end of the line-drawing process,

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[3] Ottman's testimony about Professor Gaddie's S-curves also highlighted Foltz's lack of credibility on the issue. Foltz testified that the S-curves were not printed and were not discussed with the legislative leadership. Tr. (I) 72-73. But both Ottman and Professor Gaddie made clear that the S-curves *were* printed and *were* in the room during the meeting with the leadership. Ex. 161 at 130-31; Tr. (II) 19-20, 24:13-21.

after the map had been essentially finalized. Tr. (I) 154; Tr. (II) 84. When Ottman assessed population deviation, he did so by grouping districts by party. Ex. 363. And as noted earlier, Ottman advocated deleting the (very large) number of counties split by Act 43 from a presentation to the Legislature "since it doesn't tell a great story." Ex. 362; Tr. (II) 41-42.

Lastly, the Court's questioning exposed additional irregularities in Act 43's enactment that contradicted Ottman's whitewashed account. The Court asked about the Senate recall elections that began in July 2011. Tr. (II) 128-29. In response, it emerged that the imminence of these elections is what prompted legislative action on redistricting months ahead of schedule and in contravention of the usual order of ward and district design. Ex. 361; Tr. (II) 129-32. The Court also asked about the provision of funds to the parties to pay for redistricting counsel. Tr. (II) 61. In reply, the Court learned that in 2010, when the Democrats had control of the state government, they allocated funds to *both* parties to pay for representation. Tr. (II) 55-57, 117-19. But as soon as the Republicans took control in 2011, they terminated funding for the Democrats' counsel while simultaneously retaining Michael Best (which had previously represented the Republicans) on behalf of the *entire* Legislature. Exs. 355-57; Tr. (II) 57-61, 119-23. Thus far from being "fairly typical," as Ottman self-servingly put it, Tr. (II) 116:22, Act 43's enactment was marked by unprecedented haste, sequencing, and funding of counsel.

DISCRIMINATORY EFFECT

A.   Plaintiffs Presented Overwhelming Evidence of Discriminatory Effect.

Proceeding to the discriminatory effect prong of plaintiffs' test, Professor Jackman testified about the measures of partisan symmetry used by political scientists and what these metrics reveal about the Current Plan. He explained that the efficiency gap improves on the previous state-of-the-art measure—partisan bias—because it avoids the need to simulate counterfactual tied elections. Ex. 325B; Tr. (III) 159-61, 177-79, 191-97. He also described the

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highly symmetric historical distribution of the efficiency gap and its surge to record heights in the current cycle. Exs. 35, 56; Tr. (III) 197-204. He further discussed the array of analyses he conducted to investigate whether plans with large initial efficiency gaps are likely to remain durably skewed over their lifetimes. These analyses included a historical comparison of plans' initial and average efficiency gaps, Ex. 90; Tr. (III) 209-12, and sensitivity testing for all plans currently in effect, Ex. 95; Tr. (III) 215-24. The analyses all confirmed the reasonableness— indeed, the conservatism—of a 7% efficiency gap threshold. Tr. (III) 208-09, 284-86.

Applying these tools to the Current Plan, Professor Jackman testified that it exhibited efficiency gaps of -13% in 2012 and -10% in 2014. Ex. 69; Tr. (III) 225. It also exhibited partisan biases of -13% in 2012 and -12% in 2014. Ex. 329; Tr. (III) 230-31. These scores mean that the Plan was more asymmetric in its first two elections than any map *in the country* between 1972 and 2010. Ex. 35; Tr. (III) 225-27. The scores also mean that the Plan is likely to exhibit an average efficiency gap of -10% over its lifetime—among the worst ever recorded. Ex. 90; Tr. (III) 232-33. In Professor Jackman's words, it would take an "unprecedented political earthquake" for the Plan ever to lose its pro-Republican skew. Tr. (III) 232.

At the Court's request, Tr. (III) 220-23, Professor Jackman carried out sensitivity testing for the Current Plan specifically (rather than all maps in use nationwide), and then shared his results. He found that if the statewide vote in Wisconsin shifted by up to five points in either party's direction, the Plan's efficiency gap would vary from -7% to -13%. Ex. 495; Tr. (III) 243-47. The Plan would also exhibit an average efficiency gap of roughly -11% over this range. Ex. 495. This analysis validates Professor Jackman's historical comparison of maps' initial and

average efficiency gaps, Ex. 90, and Professor Mayer's sensitivity testing, Ex. 117, both of which yield nearly identical predictions for the Plan.[4]

B.   Trende's Overinclusive/Underinclusive Critique Is Meritless.

Notably, defendants made no effort at trial to criticize Professor Jackman's data or methods. To the contrary, they stipulated to the reliability of his imputations for uncontested races, Tr. (IV) 161-62,[5] and their own experts gushed about their admiration for him, Tr. (IV) 94, 210. Unable to attack his work directly, these experts resorted to a mixture of legal arguments and incomplete empirics. As most of these points have been covered thoroughly in prior briefing, plaintiffs respond here only to the ones that were aired most fully at trial.

Starting with Sean Trende,[6] his main critique was that a 7% efficiency gap threshold is allegedly both overinclusive and underinclusive. It is supposedly overinclusive because it is sometimes exceeded by plans enacted by courts, commissions, or divided governments. And it is supposedly underinclusive because it is sometimes *not* exceeded by plans thought by pundits to have been enacted with discriminatory intent. Ex. 126 ¶¶ 106-31; Tr. (IV) 75-79, 84-86.

There are several gaping holes in this argument. First, it ignores the other two prongs of plaintiffs' test: discriminatory intent and justification. A plan designed by a commission, a court, or divided government would *not* have been designed with discriminatory intent, and so would not be in jeopardy no matter how large its efficiency gap happened to be. Similarly, a plan that

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[4] Also at the Court's request, Professor Jackman answered certain questions about his use of the presidential vote. He explained that the presidential vote is extremely highly correlated with election results at other levels. He also clarified that he only used the presidential vote to make imputations for *uncontested* races. Whenever races were *contested*, he used their actual results to calculate the efficiency gap. Tr. (III) 234-40.

[5] Defendants thus disowned Trende's attempt to question Professor Jackman's imputations. Ex. 126 ¶¶ 132-39; Tr. (IV) 79-80. And rightly so. This attempt was based on a complete misunderstanding of Professor Jackman's methods. Professor Jackman did not "substitute[] presidential vote share from a similar district" when faced with an uncontested race, Ex. 126 ¶ 133, but rather relied on the outputs of two sophisticated regression models.

[6] Plaintiffs reiterate their position that Trende is unqualified to be an expert in this case and that his opinions should be excluded. Plaintiffs' responses to Trende's opinions only highlight their unreliability.

was enacted *with* discriminatory intent, but that did not exhibit a large efficiency gap, would be valid for the opposite reason. It would satisfy the test's first prong but not its second one.

Second, Trende improperly assumes that discriminatory intent and discriminatory effect must always coincide. But they are separate inquiries, and the Supreme Court has criticized their conflation for decades. In *Gaffney v. Cummings*, 412 U.S. 735, 753 (1973), the Court observed that if districts are drawn without electoral data, "this politically mindless approach may produce . . . the most grossly gerrymandered results." In *Bandemer*, likewise, the plurality found discriminatory intent but *not* discriminatory effect in the Indiana plan at issue. 478 U.S. at 141-42 (plurality opinion). The plurality also warned that it is "inappropriate" for intent and effect "to be considered together without regard for their separate functions or meaning." *Id.* at 142.

Third, Trende's critique applies not just to the efficiency gap but also to *any* measure of partisan symmetry that is based on actual election results. Any such metric will sometimes be large when discriminatory intent is absent and small when it is present. But in that case, Trende's position is simply that partisan gerrymandering cannot be gauged, which is not a tenable stance given that it remains a viable cause of action.

Lastly, Trende's efficiency gap calculations are so riddled with errors as to be utterly unreliable. He focuses on congressional plans even though this case involves only state legislative redistricting. Ex. 83 at 23; Tr. (IV) 120. He ignores the academic literature's advice that only plans with at least eight districts be analyzed. Ex. 83 at 24-25; Tr. (IV) 120-21. He also disregards the literature's advice that congressional efficiency gaps be converted from percentage points to seats in order to reflect the varying size of states' House delegations. Ex. 83 at 24-25; Tr. (IV) 122-23. And most glaringly, when faced with uncontested races, he simply

plugs in presidential election results. Tr. (IV) 127. As Professor Jackman put it, "[t]his is an exceptionally crude method" that "no competent social scientist" would employ. Ex. 83 at 25.[7]

C.   Professor Goedert's Various Critiques Are Meritless.

Turning to Professor Goedert, one new argument he raised at trial was that the seat-vote responsiveness of congressional elections has declined from 2 to about 1.5 in the last two decades. Tr. (IV). 160. The inference meant to be drawn from this data point is presumably that a responsiveness of 1.5 diverges from the responsiveness of 2 that is implied when the efficiency gap is calculated using the simplified method and is exactly equal to zero.

However, it emerged in cross-examination that, in fact, neither congressional nor state legislative responsiveness has deviated substantially from 2 in the last two decades. Professor Goedert conceded that published work has found a congressional responsiveness of 2.20 since 1992 and 2.19 since 2002. Tr. (IV) 224. Professor Goedert also admitted that Professor Jackman calculated a state legislative responsiveness of 2.18 since 1992 and 2.11 since 2002. Tr. (IV) 225. Professor Goedert's own 1.5 figure has not appeared in print, and seems to be attributable to his rudimentary imputation strategy for uncontested races. In violation of the professional norm, "[w]here a candidate ran completely unopposed," he simply "assigned that candidate's party 100% of the vote." Ex. 132 at 3.

Professor Goedert also argued that certain legitimate goals might justify a responsiveness above or below 2. For example, a State might wish to draw more competitive districts, which are associated with a higher level of responsiveness. Similarly, a State might want to implement proportional representation, which requires a responsiveness of exactly 1. Tr. (IV) 164-70.

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[7] Trende's only other claim that relates to the country as a whole is that its political geography has trended in a pro-Republican direction since the 1990s. This claim is based exclusively on maps of Virginia and the West South Central region showing which party's presidential candidate won each county in each year. Ex. 126 ¶¶ 66-70; Tr. (IV) 45-48. Plainly, binary county-level data for a random smattering of states cannot support any inference about changes in the country's political geography. Tr. (IV) 100-04.

However, competitiveness is a redistricting criterion in only *one* State (Arizona), and proportional representation is not a factor in *any*. National Conference of State Legislatures, "Redistricting Law 2010," Sept. 29, 2009, at 172-217, available at www.nonprofitvote.org/documents/2011/02/redistricting-law-2010.pdf. Additionally, a State that designed its districts to be competitive or to achieve proportional representation would *not* have designed them with discriminatory intent, and so would not have violated the first prong of plaintiffs' test. Analogously, under the test's third prong, any large efficiency gap could be justified by the State's pursuit of competitiveness or proportional representation.

Professor Goedert further observed that the efficiency gap can vary from election to election as the seats and votes won by parties change. A plan's efficiency gap in a good Democratic year might differ from its efficiency gap in a neutral year or in a good Republican year. For this reason, Professor Goedert advocated "some sort of robust sensitivity testing," and complained that "as far as I know the plaintiffs haven't actually presented any sort of proposed legal standard for sensitivity testing." Tr. (IV) 176:8, 176:25-177:2.

Several responses are in order to this criticism. First, it is not based on *any* actual analysis of the efficiency gap. Professor Goedert did not calculate a single state house plan's efficiency gap. Nor did he carry out a single examination of the measure's variation over time or place. Instead, he resorted to bald assertions unsubstantiated by any of his own work. *See Cummins v. Lyle Indus.*, 93 F.3d 362, 369 (7th Cir. 1996) (cautioning that expert witnesses must "adhere to the same standards of intellectual rigor that are demanded in their own professional work").

Second, Professor Goedert did not challenge (or even engage with) any of the elaborate durability analyses conducted by Professor Jackman. These analyses showed that the vast majority of the variation in the efficiency gap arises *between* rather than *within* plans. Tr. (III) 213-15. They showed that a 7% efficiency gap threshold is associated with a confidence rate of

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roughly 95%. Ex. 66; Tr. (III) 286-88. They showed that a plan with an initial efficiency gap of

7% is highly likely to exhibit a large average efficiency gap of the same sign. Ex. 90; Tr. (III)

209-12. And they showed that if current plans with large efficiency gaps were subjected to

dramatic electoral shifts, their partisan skews would remain largely unchanged. Ex. 95; Tr. (III)

215-22. None of this work was in any way undercut by Professor Goedert's testimony.

Third, Professor Goedert's argument sweeps too broadly. *All* measures of partisan

symmetry that are derived from actual election results change from election to election—

including his own metric of bias, which is functionally identical to the efficiency gap in most

circumstances. Tr. (IV) 222-23, 232. If this variation is enough to doom the efficiency gap, then

there can be no valid measure of partisan symmetry. But that, again, is not an available legal

position as long as partisan gerrymandering remains a legitimate cause of action.

And fourth, apparently unbeknownst to Professor Goedert, plaintiffs have embraced his

suggestion that sensitivity testing be incorporated into their test. Professor Jackman carried out

the most extensive sensitivity testing on record, shifting the statewide vote by up to five points in

either direction for all plans currently in effect. Ex. 95; Tr. (III) 215-22. Professor Mayer

examined how the Current Plan and the Demonstration Plan would perform if Wisconsin

experienced the largest Democratic or Republican waves in a generation. Exs. 116-17; Tr. (II)

221-31. And in their pretrial brief, plaintiffs stated clearly that "the Court could also require

durability to be demonstrated using sensitivity testing." Pls.' Pretr. Br. (Dkt. 134) at 51. They

elaborated that if a plan's "asymmetry would disappear in other electoral settings, then it is a

more transient plan attribute—and one that is less supportive of judicial intervention." *Id.*

D.   Counsel's Argument About District Shape Is Precluded by Precedent.

Defendants' counsel made a further claim in his opening and closing statements that is

best discussed at this juncture. This is that plaintiffs' test is flawed because it does not require

districts to be bizarrely shaped or otherwise noncompliant with traditional criteria in order to find a constitutional violation. Tr. (I) 24; Tr. (IV) 282-83. This claim is directly precluded by Supreme Court precedent. It also fails because plaintiffs' test *does* include a prominent place for traditional criteria in its justification prong.

In *Vieth*, Justice Souter advanced a standard whose essential element was that a district "paid little or no heed to . . . traditional districting principles." 541 U.S. at 348 (Souter, J., dissenting). Whatever the appeal of this idea, it was rejected by an outright majority of the Court. *See id.* at 295-98 (plurality opinion); *id.* at 308 (Kennedy, J., concurring in the judgment). In *Bandemer*, likewise, Justice Powell opined that the "most important" factor should be "the shapes of voting districts and adherence to established political subdivision boundaries." 478 U.S. at 173 (Powell, J., concurring in part and dissenting in part). His position was also rebuffed by a majority of the Court. Indeed, the plurality explicitly "disagree[d] . . . with [his] conception of a constitutional violation" because noncompliance with traditional criteria does "not show any actual disadvantage beyond that shown by the election results." *Id.* at 139-40 (plurality opinion).

Not only is defendants' preferred approach legally unavailable, it is also bad policy. Thanks to advances in redistricting technology, it is easy to design plans whose districts are highly compact and respectful of political subdivisions—but very asymmetric in their partisan consequences. Professor Chen's algorithm, for instance, can be programmed to generate maps with attractive districts *and* large efficiency gaps. Defendants' approach would thus insulate plans from judicial review even if their intent and effect were every bit as discriminatory as those of less aesthetically pleasing maps. This is a road that is rightly blocked.

In any event, traditional criteria do play a role in plaintiffs' test. As in the racial gerrymandering context, odd district shape may be probative evidence of discriminatory intent. *See, e.g.*, *Miller v. Johnson*, 515 U.S. 900, 913 (1995) ("bizarreness . . . may be persuasive

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circumstantial evidence that race . . . was the legislature's dominant and controlling rationale").

Additionally, compliance with traditional criteria is the most likely justification that a State may

offer for a highly asymmetric plan. *See, e.g.*, *Brown v. Thomson*, 462 U.S. 835, 844 (1983);

Mahan v. Howell, 410 U.S. 315, 326 (1973). If the asymmetry is actually explained by the

State's effort to follow traditional criteria, then the plan would be valid under plaintiffs' test.

JUSTIFICIATION

A.   Plaintiffs Presented Overwhelming Evidence of Unjustifiability.

The final issue that was addressed at trial is whether the Current Plan's large and durable

partisan skew can be justified by Wisconsin's political geography or legitimate redistricting

objectives. Plaintiffs presented evidence about four different kinds of district plans, all of which

confirm that the skew is unjustifiable.

First, Wisconsin's Assembly maps in previous decades all complied with traditional

criteria at least as well as the Current Plan, but exhibited far smaller efficiency gaps. The Plan

actually splits more counties than any other map in Wisconsin's history (58 compared to 51 in

the 2000s, 47 in the 1990s, 41 in the 1980s, 49 in the 1970s, and 0 in the 1960s and earlier). Joint

Pretr. Rpt. (Dkt. 125) at ¶ 221. The Plan's average efficiency gap in the 2012 and 2014 elections

was also -11.5%, compared to averages of -7.6% in the 2000s,[8] -2.4% in the 1990s, -1.9% in the

1980s, and -0.3% in the 1970s. Ex. 122; Tr. (III) 224-25.

Second, four of the draft plans prepared by Foltz, Handrick, and Ottman had predicted

efficiency gaps smaller than the Final Map's -12.4%. These were Joe Basemap Basic (-5.4%),

Joe Basemap Assertive (-9.4%), Tad MayQandD (-10.4%), and Joe Assertive (-11.4%). Exs.

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[8] Moreover, the relatively large (though still much smaller) average efficiency gap of the 2000s map may be attributable to the court "following [the] direction" of the Republican intervenors' expert in designing the districts. Ex. 348; Tr. (II) 39-40.

364, 366, 465, 487; Tr. (I) 80-89. If the Current Plan's own authors were able to create several more symmetric maps, then the Plan's asymmetry cannot possibly be justified.

Third, Professor Mayer testified without rebuttal that his Demonstration Plan at least matches the Current Plan in terms of total population deviation, compliance with the Voting Rights Act ("VRA"), compactness, and political subdivision splits. Joint Pretr. Rpt. (Dkt. 125) at ¶¶ 226, 197, 198; Tr. (II) 176-179. For this reason, defendants have conceded that the two maps are "equivalent" with respect to "traditional districting" criteria. Defs.' Pretr. Br. (Dkt. 133) at 26. But the Demonstration Plan's efficiency gap is only -2.2% using 2012 election results, or almost ten percentage points less than the Current Plan's -11.7%. Ex. 27; Tr. (II) 179-82.

And fourth, Professor Chen randomly generated 200 Assembly maps for Wisconsin. Every one of them complied with the one-person, one-vote rule and the VRA. Every one also kept intact more counties than the Current Plan, preserved more municipalities, and featured more compact districts. Ex. 156 at 5-8; Tr. (II) 262-63. And most importantly for present purposes, every one exhibited a far smaller efficiency gap as well. In fact, fully 144 of the 200 maps had efficiency gaps within 3% of zero, and 46 of them had efficiency gaps no more than 1% away from perfect symmetry. Exs. 156-60; Tr. (II) 262-64.

B.   Defendants' Attacks on the Demonstration Plan Are Unfounded.

One of defendants' most surprising tactics in this case has been to aim *all* of their fire at Professor Mayer's Demonstration Plan. They have not even attempted to argue that Wisconsin's past Assembly maps, Foltz, Handrick, and Ottman's draft maps, or Professor Chen's 200 simulated maps fail to establish the unjustifiability of the Current Plan's asymmetry. This omission means that even if defendants' attacks on the Demonstration Plan were to succeed, three other kinds of evidence would still prove the same point: that there is no legitimate explanation for the Current Plan's asymmetry. But the attacks are unsuccessful.

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Start with defendants' hard-to-follow argument that had Professor Mayer carried out his sensitivity testing for the Demonstration Plan using his open seat estimates (rather than by incorporating incumbency), he would have found that a larger number of seats would have flipped from Democratic to Republican control in the event of a pro-Republican shift in the statewide vote. Tr. (III) 68-101. In his direct examination, Professor Mayer explained why it is inappropriate to conduct sensitivity testing using the open seat estimates. The sole purpose of these estimates is to enable an apples-to-apples comparison between the Demonstration Plan and the Current Plan. If the question is how the Demonstration Plan would perform over the remainder of the decade if certain electoral shifts took place, it is logical to take incumbency into account. This is valuable information that should not be discarded. Tr. (II) 231-32; Tr. (III) 136.

Notably, Professor Mayer's method is consistent with both the academic literature and Professor Jackman's approach. In their work on the efficiency gap, Stephanopoulos and McGhee did not strip out incumbency when carrying out sensitivity testing, but rather took incumbents as they found them. Ex. 141 at 874-75, 889-90. Professor Jackman did the same in his sensitivity testing, using actual election results (not open seat estimates) as his baseline. Ex. 93 at 2; Tr. (III) 215-24. Professor Jackman and Professor Mayer also came to virtually identical conclusions about how the Current Plan would perform under different electoral conditions, thus validating both of their analyses. Exs. 117, 495.

Furthermore, even if sensitivity testing were (improperly) to be conducted using the open seat estimates, it would have to be done for electoral shifts in *both* parties' directions, not just toward the Republicans. Such testing would reveal that almost the same number of districts would flip from Democratic to Republican control in the event of a pro-Republican shift as would flip from Republican to Democratic control in the event of a pro-Democratic shift. Tr. (II) 231-34. This symmetry stems from Professor Mayer's effort to draw a large number of

competitive districts, about half of which would be won by each party in a close election. Tr. (II) 172-74, 234. These, of course, are *desirable* plan attributes, not bases for criticism.

Next, take the cherry-picked districts from the Demonstration Plan that defendants highlighted in the Lake Winnebago area. Tr. (III) 106. The inference that defendants wanted the Court to draw from these districts is that the Demonstration Plan is less compact and splits more political subdivisions than the Current Plan. But when all 99 (rather than just 3) districts are taken into account, the misleading nature of defendants' presentation becomes apparent. It is a stipulated fact that the Demonstration Plan is *more* compact and splits *fewer* political subdivisions than the Current Plan. Joint Pretr. Rpt. (Dkt. 125) at ¶ 226; Tr. (III) 136-37.

Lastly, consider defendants' equally unrepresentative examples of Demonstration Plan districts that pair incumbents or look different from their antecedents in the 2000s map. Tr. (III) 111-12. The point of these examples was presumably to try to justify the Current Plan's asymmetry on the grounds that it pairs fewer incumbents or better preserves prior district cores. But if this was in fact the goal, it was not achieved for several reasons.

First, neither incumbent protection nor the preservation of prior district cores is a redistricting requirement in Wisconsin. The state constitution mandates contiguity, compactness, and respect for county, town, and ward boundaries, but it says nothing about incumbents or prior districts. Wisc. Const. art. IV, §§ 4-5. In similar situations in the one-person, one-vote context, the Supreme Court has refused to credit explanations for large population deviations that were unsupported by state law. In *Kilgarlin v. Hill*, 386 U.S. 120, 123-24 (1967), for instance, the Court rejected Texas's claim that it was following county boundaries because "Texas policy . . . permit[ted] . . . the violation of county lines." In *Chapman v. Meier*, 420 U.S. 1, 25 (1975), likewise, the Court rebuffed North Dakota's defense of political subdivision preservation because "North Dakota policy [neither] requires [n]or favors strict adherence to political lines."

Second, the Current Plan was not actually designed with the aim of minimizing incumbent pairings. It paired *twenty-four* incumbents, far more than was necessary, in order to make the Plan more beneficial to Republicans. Ten of these incumbents (five Democrats and five Republicans) were paired in heavily Republican districts in the hope that the Democrats would be defeated. Ex. 284; Tr. (I) 89-95, 188-90. And when Ottman prepared his notes in advance of the lone public hearing on Act 43, one of the questions he expected was "Why so many pairings?" Ex. 237. His answer, in effect, was that legislative turnover is part of life. "Out of 132 legislators, only 35 remain today in the seats they held in 2000." Ex. 237.

Lastly, the Current Plan was not designed to maintain prior district cores either. Among the hundreds of files on Foltz, Handrick, and Ottman's computers, plaintiffs were unable to find a single one analyzing core retention. Ex. 225. Nor did defendants present any such analysis at trial. Indeed, in the *Baldus* litigation, Professor Mayer determined that, on average, each of the Plan's districts shifted more than *fifty times* more people than was necessary to equalize population. Ex. 580 at 10. He also showed that districts previously represented by Democrats retained only 53.7% of their residents, compared to 66.5% for Republican districts. Ex. 580 at 12. The *Baldus* panel itself echoed these findings, pointing out that while "[o]nly 323,026 people needed to be moved from one assembly district to another," "Act 43 moves more than seven times that number—2,357,592 people." 849 F. Supp. 2d at 849.

C.   Defendants' Claims About Wisconsin's Political Geography Are Wrong.

Defendants' other justification argument is that Wisconsin's political geography naturally favors Republicans. Their various geographic analyses are ultimately irrelevant given the four kinds of district maps that prove that the Current Plan's asymmetry is unjustifiable. How, for instance, could Wisconsin have a significantly pro-Republican geography when the vast majority of Professor Chen's randomly drawn maps exhibit efficiency gaps very close to zero? In any

event, all of defendants' analyses are flawed, and when their mistakes are corrected, they show

that Democrats and Republicans in Wisconsin have similar spatial distributions.

First, Trende testified that Dane and Milwaukee Counties have large and growing pro-

Democratic partisan indices. (The partisan index refers here to a county's presidential vote share

minus the presidential vote share for the country as a whole.) Tr. (IV) 25-26. But it emerged in

cross-examination that Milwaukee's collar counties—Ozaukee, Washington, and Waukesha—

have partisan indices that are every bit as large and pro-Republican. Tr. (IV) 130-32. In fact,

Washington County is more pro-Republican than either Dane or Milwaukee County is pro-

Democratic. Tr. (IV) 132. This is why Trende noted in his direct examination how "jarring" it is

for him "as an elections analyst" to see "how red the Milwaukee suburbs are." Tr. (IV) 43.[9]

Second, Trende testified that maps of Wisconsin displaying each county's partisan index

reveal the State's pro-Republican geographic tilt. Ex. 126 ¶¶ 79-86; Tr. (IV) 39. But when cross-

examined, he conceded that there is no academic precedent for studying political geography by

analyzing counties' partisan indices. Tr. (IV) 102-03. He also admitted that the maps cannot be

used to produce a quantitative measure of spatial distribution, but rather must be "eyeballed" by

observers. Tr. (IV) 106-08. He further agreed that when the maps *are* visually inspected, the

largest partisan cluster in the State is the Republican concentration in Milwaukee's collar

counties, and not Dane or Milwaukee County. Tr. (IV) 109-11.

Third, Trende testified that while the partisan indices of Wisconsin's Democratic wards

have grown more pro-Democratic since 2002, the partisan indices of its Republican wards have

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[9] Moreover, while the sizeable African American and Latino populations in Milwaukee require the creation of a number of heavily Democratic districts in order to comply with the VRA, these districts do not materially affect the efficiency gap. Districts like these, on the order of 75% Democratic, result in *equal* wasted votes for both sides: 25% surplus Democratic votes and 25% wasted Republican votes. In contrast, the districts that dramatically change the efficiency gap are those that are won by a party with around 55% of the vote. In these districts, the winning party wastes 5% of its vote while the losing party wastes its entire 45%. And in terms of these districts, the Current Plan is extraordinarily lopsided. It features *twenty-five* more districts in the 50% to 60% Republican range than in the equivalent Democratic range. Ex. 15; Tr. (II) 182-85.

stayed constant. Ex. 126 ¶¶ 91-96; Tr. (IV) 53-54. But Trende made several errors in calculating these indices, including using the wrong top-of-the-ticket race in 2006, switching the 2012 and 2014 election results, and failing to make any adjustment for the redrawing of the wards in 2011. Ex. 114 at 5; Tr. (II) 275-76; Tr. (IV) 115. And when Professor Mayer redid Trende's analysis using actual vote shares rather than partisan indices, he found that *both* Democratic and Republican wards have become slightly more partisan since 2002. Specifically, both parties won about 61% of the vote in their wards in 2002, and about 63% in 2014. Ex. 105; Tr. (II) 282-85.

Fourth, Trende testified that as Democratic wards become more partisan, the median distance between them shrinks, while the median distance between Republican wards increases along with their partisanship. Ex. 126 ¶¶ 96-99; Tr. (IV) 62-63. Conceptually, however, it is not the *distance* between wards that matters for redistricting, but rather their *adjacency*. Nearby wards are hard to combine in a district if they are separated by other wards, while distant wards are easy to join if no other wards are in the way. Ex. 114 at 7; Tr. (II) 291-92. Methodologically, Trende made no adjustment for ward size even though Democratic wards are smaller than Republican wards. His results thus merely reflect the fact that smaller wards' midpoints are always closer than those of larger wards. Ex. 114 at 8-9; Tr. (II) 287-291. Trende also used the median rather than the mean distance between wards without explaining his unusual choice. Ex. 114 at 9-10; Tr. (II) 292-93. When Professor Mayer performed the same analysis using the mean distance, his findings contradicted Trende's. That is, the mean distance between *both* Democratic and Republican wards *increased* as they became more partisan. Ex. 106; Tr. (II) 293-295.

Fifth, Professor Goedert testified that his own published models—which show that Wisconsin's congressional plan would have had a small pro-Democratic bias in 2012 and 2014 had it been enacted by a court, a commission, or divided government—should not be considered by the Court. Tr. (IV) 221-24. But he did not dispute the accuracy or reliability of his models'

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predictions. Tr. (IV) 218-20. Nor did he attempt to rebut Professor Mayer's testimony that while Wisconsin's congressional map has many fewer districts than its Assembly map, the *direction* (if not the *size*) of the predicted bias is largely unaffected by the number of districts in the plan. Ex. 110; Tr. (II) 245-46.

Sixth, Professor Goedert testified that the Isolation Index—which exhibits similar values for Democratic and Republican voters in Wisconsin—is not used to analyze political groups and is identical for groups that each make up 50% of the population. Tr. (IV) 192-94. But on cross-examination, he conceded that well-respected scholars *do* use the Isolation Index to study the distribution of Democratic and Republican voters. Ex. 118; Tr. (IV) 202-04. He also admitted that he did not know how to calculate the adjusted form of the Isolation Index that Professor Mayer computed in his rebuttal report. Ex. 114 at 16; Tr. (IV) 204-08. He further agreed that the Isolation Index is the same only for groups that each make up *exactly* 50% of the population, but not in any other case. Tr. (IV) 208-09. And he confirmed that the more sophisticated measure of spatial clustering used by Professor Mayer, Global Moran's I, is unrelated to groups' population shares. Ex. 112; Tr. (III) 3-11; Tr. (IV) 209.

And seventh, Professor Goedert testified that Wisconsin's current wards have a pro-Republican distribution. Ex. 136 at 21-23; Tr. (IV) 180-81. But he was unaware that, for the first time in Wisconsin history, these wards were drawn *after* the Assembly districts and so reflect the districts' bias. Tr. (IV) 241-42. He also recognized that the ward distribution is significantly less skewed in the Republicans' favor than the district distribution. The ward distribution is quite symmetric, while the district distribution exhibits all the telltale signs of gerrymandering: a peak around 42% Democratic, indicative of the cracking of Democratic voters, and a pronounced Democratic tail, indicative of Democratic packing. Ex. 107; Tr. (II) 236-46; Tr. (IV) 237-41.

During the cross-examination of Professor Goedert, the Court asked about the partisan distribution of Wisconsin's wards in the *previous* cycle. Tr. (IV) 253-55. In response, Professor Mayer prepared a density curve that is identical to the one in his rebuttal report, Ex. 107, except that it uses the 2000s (rather than the 2010s) wards and the results of the 2008 (rather than the 2012) presidential election.[10] What it reveals is very interesting. In the crucial region between 40% and 60% Democratic, the 2008 curve is noticeably to the right of the 2012 curve, indicative of greater partisan symmetry. The 2008 curve also has a smaller Democratic tail, indicative of fewer overwhelmingly Democratic wards. The 2008 curve thus confirms what plaintiffs have been saying all along: that by requiring the wards to follow the districts' boundaries in 2011, the Legislature baked the districts' bias into the wards as well. Second Mayer Decl. (Dkt. 154-1) ¶¶ 10-12.

D.   The Court Should Correct Defendants' Misrepresentations of Professor Chen's Work by Admitting His Forthcoming Article.

At the conclusion of the trial, the Court also asked the parties to address the admissibility of Professor Chen's forthcoming article. Tr. (IV) 259. This article, again, confirms the unjustifiability of the Current Plan's asymmetry by randomly generating 200 Assembly maps, all of which are superior to the Plan in terms of traditional criteria and exhibit far lower efficiency gaps. Exs. 156-60. The Court should admit the article because it corrects defendants' misrepresentations of Professor Chen's work and has been in the public domain for months—in marked contrast to the entirely new evidence that defendants sought to introduce at trial.

Throughout this litigation, one of defendants' principal arguments has been that Wisconsin's political geography, not intentional partisan gerrymandering, explains the Current

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[10] Professor Mayer used the same ward-level Legislative Technology Services Bureau ("LTSB") data as stipulated to by the parties per the Court's request, but validated the 2008 data before use. *See* Dkt. 152; Second Mayer Decl. (Dkt. 154-1) ¶¶3-4.

Plan's large and pro-Republican efficiency gap. Defs.' Pretr. Br. (Dkt. 133) at 16-17; Defs.' Br. in Supp. of Summ. Judg. (Dkt. 46) at 26-30; Defs.' Br. in Supp. of Dism. (Dkt. 25) at 24-26. This argument, in turn, is rooted in a 2013 article by Professor Chen and Professor Jonathan Rodden. In this article, Professors Chen and Rodden randomly generated state legislative district maps for twenty states—*not* including Wisconsin—and found that in most (but not all) of these states, Republicans enjoyed an advantage under the simulated maps. Ex. 394. Defendants discussed Professors Chen and Rodden's article in their summary judgment briefing. Defs.' Br. in Supp. of Summ. Judg. (Dkt. 46) at 27. Both of defendants' experts also commented extensively on the article in their expert reports, and testified about it in their depositions and at trial. Ex. 126 ¶¶ 89-90, 126; Ex. 136 at 14, 18, 21; Tr. (IV) 111-12, 243-44.[11] The article therefore forms an essential part of the defense in this case.

In his rebuttal report, Professor Jackman explained why the article does not support the conclusion that the country's political geography favors Republicans. Critically, the maps simulated by Professors Chen and Rodden are not *lawful* because they ignore the Voting Rights Act as well as state redistricting requirements such as respect for political subdivisions and respect for communities of interest. Ex. 83 at 20-21. But there is an even more fundamental problem with defendants' and their experts' reliance on the article. This is that Professor Chen himself has characterized their use of his work as "misleading," and substantiated his claim by applying the exact simulation technique that defendants praise to Wisconsin itself.

With respect to Professor Chen's misgivings about defendants' use of his work, he felt strongly enough to write the following in the proposed amicus brief he filed on March 17, 2016:

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[11] Trende actually copied a chart from the article and pasted it into his report. Ex. 126 ¶¶ 89-90. For his part, Professor Goedert argued in his report that "simulating nonpartisan districts," the technique that Professors Chen and Rodden employed but that Goedert did not attempt himself, "would suggest that the asymmetric geographic dispersion of partisans makes it much easier and more natural for even a nonpartisan or bipartisan regime to draw a map biased in favor of Republicans in Wisconsin." Ex. 136 at 18. Both Trende and Professor Geodert expressed similar views in their respective depositions. Ex. 128 at 66-69; Ex. 130 at 48, 154-57, 193-94.

> The Defendants and the Defendants' experts in this litigation have cited Dr. Jowei Chen's published academic research for the proposition that Wisconsin's geographic clustering of Democratic voters, rather than partisan gerrymandering, caused the Republican-favoring efficiency gap observed in the Act 43 State Assembly districting plan. See, e.g., Expert Report of N. Goedert (Doc. No. 51) at 12-13, 18, 21. Defendants' reliance on and interpretation of Dr. Chen's published research troubles Dr. Chen because it does not accurately represent his scholarship on the issue and it is misleading and incorrect both in general and as it relates to Wisconsin in particular.

Ex. 154 at 1. Professor Chen continued:

> Dr. Chen is concerned that his work is being misinterpreted and misapplied by Defendants, and wishes to explain how that is so. Although Dr. Chen had not previously analyzed Wisconsin's Act 43 in his published research, it was a straightforward matter for him to apply his computer simulation methodology and statistical tests developed in his published work to Wisconsin. Those results, attached hereto in Exhibit A, show that Dr. Chen's methods and work actually demonstrate that Act 43's political bias does not arrive solely, or even significantly, from political geography. This is the opposite of Defendants' position on Dr. Chen's work.

Ex. 154 at 3-4.[12]

Accordingly, the question the Court now faces is whether to admit only defendants' inaccurate excerpts of Professors Chen and Rodden's work, or Professor Chen's forthcoming article and Professor Mayer's testimony about it as well. Exs. 156-60; Tr. (II) 257-68. If the latter evidence is not admitted, the Court will be left with only an unrepresentative *portion* of Professor Chen's scholarship—the portion that defendants and their experts have selectively cited, omitting any reference to Professor Chen's more recent analysis. To avoid infecting the record with incomplete and unreliable material, the Court should allow all of the relevant facts into evidence.

This course of action is supported by Federal Rule of Evidence 702, whose underlying goal is to ensure that misleading opinions are not admitted. Rule 702 requires expert testimony to be helpful to the trier of fact to be admissible. *Clark v. Takata Corp.*, 977 F.2d 1042, 1051 (7th Cir. 1999); *United States v. Curry*, 977 F.2d 1042, 1057 (7th Cir. 1992) (observing that "the 'helpfulness factor' under Rule 702 involves consideration [of] whether the expert testimony

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[12] Professor Chen subsequently posted his analysis, Exs. 156-160, on his publicly available University of Michigan website, http://www-personal.umich.edu/~jowei/Wisconsin_Act_43_Analysis.pdf. His analysis has also been accepted for publication by the *Election Law Journal*, where it is forthcoming in 2017.

would be misleading or confusing"). Rule 702 also includes a presumption in favor of completeness, so that the trier of fact may consider *all* pertinent information rather than just a fraction of it. *Baker v. Goldman Sachs*, 669 F.3d 105, 111 (2d Cir. 2012) (noting that "the law of evidence embodies a rule of completeness requiring generally that adversaries be allowed to prevent omissions that render matters in evidence misleading") Both of these tenets support admitting Professor Chen's forthcoming article as well as Professor Mayer's testimony about it. Without them, the Court will lack crucial information about a key issue in the case, and the record will be distorted rather than complete.

Beyond compliance with Rule 702, several more factors point to the admissibility of this evidence. First, in its summary judgment opinion, the Court stated that, "at trial, both sides should be prepared to submit whatever evidence they have to show whether Act 43 can be justified by neutral criteria." Summ. Jdgmt. Op. (Dkt. 94) at 35. Professor Chen's article addresses exactly this point, using defendants' preferred methodology to show that the Current Plan's extreme asymmetry cannot be justified. Second, while it was initially submitted to the Court as an exhibit to an amicus brief, Professor Chen's analysis is now a forthcoming piece of scholarship in a peer-reviewed journal. It is thus indistinguishable from the many other academic excerpts that have been cited in this case.[13] Third, Professor Mayer relied on Professor Chen's article in formulating his own expert opinions, and provided it to defendants prior to his March

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[13] With respect to these other excerpts, the Court is doubtless aware that Professor Mayer's and Professor Jackman's opinions rely heavily on the academic literature, and, in particular, on specific articles identified in their expert reports and trial testimony. Under the Federal Rules of Evidence, the articles themselves are inadmissible hearsay, and so plaintiffs did not seek to move them into evidence. However, *statements* from the articles are admissible under the "learned treatise" exception to the hearsay rule if they are read into evidence. Fed. R. Evid. 803(18). Plaintiffs could therefore have had their experts recite specific statements from each of the articles on which they relied. However, given the volume of these statements, the four days allotted for trial, and the interest of judicial efficiency, plaintiffs instead tendered to the Court copies of the articles along with highlighted statements of particular use to their experts. These statements satisfy Fed. R. Evid. 803(18) because the materials were called to the attention of and relied on by plaintiffs' experts during direct examination. In addition, plaintiffs' experts testified that the publications were reliable authorities. *See, e.g., Tart v. McGann*, 697 F.2d 75, 78 (2d Cir. 1982) (admitting statements from authoritative literature); *Maggipinto v. Reichman*, 607 F.2d 621, 622 n.4 (3d Cir. 1979) (admitting statements from medical texts); 7 Michael J. Graham, Handbook of Fed. Evid. § 803:18 (7th ed. 2011).

30, 2016 deposition. Mayer Dep. (Dkt. 99) at 110:1-16, 138:3-139:17. In this respect as well, the article is identical to all of Professor Mayer's other reliance material.

Fourth, defendants have had ample time to consider and respond to Professor Chen's analysis. By the time of trial, defendants had known about it for more than *two months*. They also questioned Professor Mayer about it at his March deposition. And yet, despite being aware of Professor Chen's work, as well as its presence on plaintiffs' exhibit list, defendants never moved in limine to exclude it. Lastly, it is worth contrasting defendants' objection to Professor Chen's analysis with their own actions at trial, where they sought to introduce into evidence an array of entirely new materials: Isolation Index calculations, Ex. 575, maps of heavily Democratic and Republican wards, Exs. 576-77, updated partisan indices for Democratic and Republican wards, Exs. 578-79, an expert report from an earlier case, Ex. 580, and a pamphlet from the Census Bureau, Ex. 581. None of these materials were even *mentioned* in defendants' pretrial filings—let alone placed in the public record months before trial, addressed in a deposition, or submitted and accepted for scholarly publication.

CONCLUSION

For the foregoing reasons, the Court should hold that the Current Plan is an unconstitutional partisan gerrymander in violation of the First and Fourteenth Amendments.

Respectfully submitted,

s/ Nicholas O. Stephanopoulos
One of the attorneys for plaintiffs

Nicholas O. Stephanopoulos
UNIVERSITY OF CHICAGO LAW SCHOOL
1111 E. 60th St., Suite 510
Chicago, IL 60637
(773) 702-4226
nsteph@uchicago.edu