FILED 01-12-2024 CLERK OF WISCONSIN SUPREME COURT

#### No. 23AP1399-OA

### In the Supreme Court of Wisconsin

REBECCA CLARKE, RUBEN ANTHONY, TERRY DAWSON, DANA GLASSTEIN, ANN GROVES-LLOYD, CARL HUJET, JERRY IVERSON, TIA JOHNSON, ANGIE KIRST, SELIKA LAWTON, FABIAN MALDONADO, ANNEMARIE MCCLELLAN, JAMES MCNETT, BRITTANY MURIELLO, ELA JOOSTEN (PARI) SCHILS, NATHANIEL SLACK, MARY SMITH-JOHNSON, DENISE SWEET and GABRIELLE YOUNG, PETITIONERS,

GOVERNOR TONY EVERS, in his official capacity; NATHAN ATKINSON, STEPHEN JOSEPH WRIGHT, GARY KRENZ, SARAH J. HAMILTON, JEAN-LUC THIFFEAULT, SOMESH JHA, JOANNE KANE, and LEAH DUDLEY, INTERVENORS-PETITIONERS

v.

WISCONSIN ELECTIONS COMMISSION, DON MILLIS, ROBERT F. SPINDELL, JR., MARK L. THOMSEN, ANN S. JACOBS, MARGE BOSTELMANN, JOSEPH J.
CZARNEZKI, in their official capacities as Members of the Wisconsin Election Commission, MEAGAN WOLFE, in her official capacity as the Administrator of the Wisconsin Elections Commission, ANDRE JACQUE, TIM CARPENTER, ROB HUTTON, CHRIS LARSON, DEVIN LEMAHIEU, STEPHEN L. NASS, JOHN JAGLER, MARK SPREITZER, HOWARD MARKLEIN, RACHAEL CABRAL-GUEVARA, VAN H. WANGGAARD, JESSE L. JAMES, ROMAINE ROBERT QUINN, DIANNE H.
HESSELBEIN, CORY TOMCZYK, JEFF SMITH AND CHRIS KAPENGA, in their official capacities as Members of the Wisconsin Senate, RESPONDENTS,

WISCONSIN LEGISLATURE; BILLIE JOHNSON, CHRIS GOEBEL, ED PERKINS, ERIC O'KEEFE, JOE SANFELIPPO, TERRY MOULTON, ROBERT JENSEN, RON ZAHN, RUTH ELMER and RUTH STRECK, INTERVENORS-RESPONDENTS.

#### EXPERT REPORT OF THOMAS BRUNELL IN SUPPORT OF MAPS PROPOSED BY THE JOHNSON INTERVENORS

Report on Wisconsin Assembly and Senate Maps submitted by the Johnson Intervenors

Thomas L. Brunell, Ph.D.

#### **Executive Summary**

Counsel for the Johnson Intervenors provided me with maps and asked me to provide an analysis of the factors identified by the Court and the Court's expert consultants. I did not participate in drawing the maps. I was informed that the maps were drawn with the primary goals of minimizing county splits, splitting zero towns, achieving a population deviation under 1% and contiguous districts, as this Court has defined contiguity, and then, after those goals were achieved, minimizing city and village splits and maximizing compactness. My review of the maps and the results of my scores confirms that the goals described are met by these maps. My understanding is that the maps were drawn without considering race or the partisan outcomes of districts.

The total number of splits in the maps is very low, compared to the current maps, and they also substantially improve compactness. Below is a summary chart of the main neutral criteria for the Assembly and Senate maps:

	Assei	Assembly			ate
	Proposed Map			Proposed Map	Current Map
Population Deviation	.98%	.76%			.57%
Splits					
- Counties	37	53		29	42
- Towns	1	15		1	7
- Cites & Villages	34*	36		22*	23
- Wards	13*	N/A		9*	N/A
Compactness					
- Reock	.4128	.3582		.3877	.3684
- Polsby	.3472	.2450		.2793	.2268

\* See further discussion below

The map has a modest Republican bias due to the natural political geography in Wisconsin, but no more than would be expected due to that geography. One metric to estimate the effects of the natural political geography of a state, proposed by professor Jon Eguia at Michigan State University, is to treat counties as if they were districts with a fractional number of seats proportional to their population, and then assign those seats to whichever party won that county.<sup>1</sup> Using a composite of six statewide elections from 2016-2020, that methodology estimates that Democrats would win 42.76 Assembly seats. Using that same composite election data, the Johnson Intervenors' map predicts 43 Assembly seats with a Democratic lean. Thus, the Johnson Intervenors' Assembly map is slightly more favorable to Democrats than the natural political geography would predict. For the Senate map, the same methodology predicts 14.25 Democratic seats (based on counties), and the Johnson Intervenors' map predicts 13 Democratic seats, so it is slightly more favorable to Republicans than the natural political geography would predict using this metric.

Regarding majority-minority districts, my understanding is that the Milwaukee area districts which are currently majority-minority were largely left alone (which can be confirmed by examining the maps side by side) since there are no contiguity issues with those districts, other than a few minor changes to eliminate some municipal splits. Even with those minor changes, the Johnson Intervenor maps have the same number of majority-minority districts as the current maps, with a similar makeup as the existing districts. The slight differences are shown in more detail below.

#### I. Professional Background and Experience

I am a tenured Professor of Political Science at the University of Texas at Dallas. I received a Ph.D. in Political Science from the University of California, Irvine in 1997. Currently I serve as the program head for the Public Policy. Political Economy and Political Science program. Previously I served as Senior Associate Dean of Graduate Education for the School of Economic, Political, and Policy Sciences here at the University of Texas at Dallas. In 2020, I was appointed by the Director of the U.S. Census Bureau to serve a three-year term on the Census Scientific Advisory Committee. My teaching and research interests revolve around American elections. I study redistricting, representation, political parties, and the U.S. Congress. I teach classes on Election Law, Redistricting and Racial politics, Campaigns and Elections, and Congress. I have published a book on redistricting and dozens of peer-reviewed articles in the top journals in our field on redistricting, the Voting Rights Act, elections, and representation. I am lead author on two textbooks on American government - the first one is An Introduction to American Government (Brunell et al 2021), and the second is An Introduction to State and Local Government (Brunell et al 2022). I have testified in state and federal courts around the country over the last 20 years in lawsuits involving voting, redistricting, the Voting Rights Act, ballot integrity, absentee ballots, election administration, and signature matching. My most recent work is a book with two co-authors forthcoming with Oxford University Press entitled

<sup>&</sup>lt;sup>1</sup> The original paper contains a more detailed description of this method, which is available at https://papers.srn.com/sol3/papers.cfm?abstract\_id=3335967.

*How Polarization Begets Polarization: Ideological Extremism in the US Congress.* For a full listing of publications and for cases that I have testified in either as an expert at trial or by deposition, please see my cv (attached as Appendix 1).

#### 1. Population Equality

This map equalizes population across all 99 districts to within a tolerance of 0.51% to -0.47% for an overall deviation of 0.98%. The ideal population for these districts is 59,535; the largest deviation is 301 people in district 21 and the largest negative deviation in -283 in district 59.

District	Population	Deviation	Deviation
			%
1	59757	224	0.38%
2	59822	289	0.49%
3	59467	-66	-0.11%
4	59629	96	0.16%
5	59750	217	0.37%
6	59535	2	0.00%
7	59325	-208	-0.35%
8	59362	-171	-0.29%
9	59598	65	0.11%
10	59503	-30	-0.05%
11	59565	32	0.05%
12	59438	-95	-0.16%
13	59375	-158	-0.26%
14	59347	-186	-0.31%
15	59600	67	0.11%
16	59714	181	0.30%
17	59662	129	0.22%
18	59471	-62	-0.10%
19	59320	-213	-0.36%
20	59469	-64	-0.11%
21	59834	301	0.51%
22	59275	-258	-0.43%
23	59366	-167	-0.28%
24	59397	-136	-0.23%

## Table 1. Wisconsin State Assembly Districts Population andDeviations

25	59661	128	0.22%
26	59802	269	0.45%
27	59672	139	0.23%
28	59688	155	0.26%
29	59628	95	0.16%
30	59469	-64	-0.11%
31	59457	-76	-0.13%
32	59605	72	0.12%
33	59704	171	0.29%
34	59601	68	0.12%
35	59426	-107	-0.18%
36	59321	-212	-0.36%
37	59497	-36	-0.06%
38	59399	-134	-0.22%
39	59338	-195	-0.33%
40	59500	-33	-0.05%
41	59753	220	0.37%
42	59449	-84	-0.14%
43	59544	11	0.02%
44	59723	190	0.32%
45	59297	-236	-0.40%
46	59794	261	0.44%
47	59284	-249	-0.42%
48	59786	253	0.43%
49	59805	272	0.46%
50	59611	78	0.13%
51	59361	-172	-0.29%
52	59265	-268	-0.45%
53	59707	174	0.29%
54	59368	-165	-0.28%
55	59643	110	0.19%
56	59432	-101	-0.17%
57	59323	-210	-0.35%
58	59376	-157	-0.26%
59	59250	-283	-0.47%
60	59659	126	0.21%
61	59821	288	0.48%
62	59390	-143	-0.24%
63	59448	-85	-0.14%
64	59553	20	0.03%
65	59522	-11	-0.02%

			·
66	59490	-43	-0.07%
67	59453	-80	-0.13%
68	59500	-33	-0.05%
69	59272	-261	-0.44%
70	59640	107	0.18%
71	59288	-245	-0.41%
72	59460	-73	-0.12%
73	59659	126	0.21%
74	59567	34	0.06%
75	59309	-224	-0.38%
76	59456	-77	-0.13%
77	59778	245	0.41%
78	59527	-6	-0.01%
79	59646	113	0.19%
80	59514	-19	-0.03%
81	59410	-123	-0.21%
82	59589	56	0.09%
83	59796	263	0.44%
84	59390	-143	-0.24%
85	59570	37	0.06%
86	59333	-200	-0.34%
87	59429	-104	-0.17%
88	59658	125	0.21%
89	59746	213	0.36%
90	59798	265	0.45%
91	59400	-133	-0.22%
92	59707	174	0.29%
93	59546	13	0.02%
94	59379	-154	-0.26%
95	59694	161	0.27%
96	59654	121	0.20%
97	59755	222	0.37%
98	59500	-33	-0.05%
99	59292	-241	-0.40%

#### 2. Political Subdivision Splits

This map splits 37 counties a total of 133 times. The full list is below.

# **Counties (37 splits a total of 133 times):** 1. Barron (3) - 28, 67, 75, 93

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- 2. Bayfield (1) 73, 74
- 3. Brown (7) 1, 2, 4, 5, 6, 88, 89, 90
- 4. Chippewa (3) 67, 70, 74, 93
- 5. Crawford (1) 49, 96
- 6. Dane (12) 37, 43, 46, 47, 48, 50, 51, 76, 77, 78, 79, 80, 81
- 7. Dodge (5) 37, 38, 39, 53, 58, 98
- 8. Eau Claire (1) 68, 91
- 9. Fon du Lac (3) 52, 53, 58, 59
- 10. Iowa (1) 49, 51
- 11. Jackson (1) 68, 69
- 12. Jefferson (4) 31, 33, 37, 39, 98
- 13. Kenosha (4) 32, 63, 64, 65, 66
- 14. La Crosse (2) 69, 94, 95
- 15. Lafayette (1) 49, 51
- 16. Lincoln (1) 85, 87
- 17. Manitowoc (3) 2, 3, 25, 26
- 18. Marathon (5) 6, 70, 72, 85, 86, 87
- 19. Milwaukee (16) 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 23, 82, 84
- 20. Oconto (2) 6, 35, 36
- 21. Oneida (1) 34, 35
- 22. Outagamie (6) 4, 5, 6, 40, 53, 55, 57
- 23. Ozaukee (3) 23, 24, 59, 60
- 24. Pierce (2) 30, 92, 93
- 25. Polk (1) 28, 29
- 26. Portage (4) 40, 41, 71, 72, 86
- 27. Racine (4) 61, 62, 63, 64, 83
- 28. Rock (5) 31, 32, 43, 44, 45, 47
- 29. St. Croix (3) 28, 29, 30, 93
- 30. Sauk (3) 38, 50, 51, 96
- 31. Sheboygan (1) 26, 27
- 32. Walworth (4) 31, 32, 33, 63, 83
- 33. Washington (4) 22, 24, 58, 59, 60
- 34. Waukesha (8) 13, 14, 15, 22, 33, 83, 97, 98, 99
- 35. Waupaca (2) 6, 40, 53
- 36. Winnebago (3) 53, 54, 55, 56
- 37. Wood (3) 42, 69, 70, 72

The map splits 23 cities a total of 54 times.

#### Cities – 21 cities split a total of 53 times.

- 1. Appleton (4) 3, 4, 5, 55, 57
- 2. Eau Claire (2) 67, 68, 91
- 3. Elkhorn (1) 32, 33
- 4. Green Bay (2) 88, 89, 90
- 5. Janesville (2) 31, 44, 45
- 6. Jefferson City (1) 31, 37
- 7. Kenosha (2) 64, 65, 66

- 8. La Crosse (1) 94, 95
- 9. Madison (8) 46, 47, 48, 76, 77, 78, 79, 80, 81
- 10. Menasha (1) 3, 55
- 11. Mequon (1) 23, 24
- 12. Middleton (1) 80, 81
- 13. Milwaukee (15) 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 24, 82
- 14. Muskego (1) 15, 83
- 15. Oshkosh (1) 54, 56
- 16. Racine (2) 61, 62, 64
- 17. Sheboygan (1) 26, 27
- 18. Stanley (1) 67, 70
- 19. Waukesha (1) 97, 99
- 20. West Allis (3) 7, 15, 18, 82
- 21. Wisconsin Dells (2) 38, 42, 50

#### **Town Splits** – There is just one town split three times

1. Madison (3) –48, 76, 78, 80

#### Village Splits – 13 split villages, 14 times.

- 1. Ashwaubenon (1) 2, 88
- 2. Cottage Grove (1) -46, 47
- 3. Germantown (1) -22, 24
- 4. Howard (1) -4, 89
- 5. McFarland (1) 47, 48
- 6. Menomonee Falls (1) 13, 22
- 7. Mount Pleasant (2) 61, 62, 64
- 8. North Prairie (1) 33, 83
- 9. Oregon (1) 43, 47
- 10. Randolph (1) 38, 39
- 11. Salem Lakes (1) 63, 66
- 12. Slinger (1) 24, 58
- 13. Summit (1) 33, 98

\*\* Note: One additional city (Kaukauna) and village (Ontario) show up on a splits report, but, in each case, only one block, with zero people in it, is contained in a different district. Those blocks are in different counties from the rest of the municipality and were kept with their county. Because these blocks contain no people, these two were not counted as splits.

Ward Splits – 13 wards are split, a total of 13 times

- 1. 55009359500005 Howard, Village Ward 5
- 2. 55025480000021 Madison, City Ward 21
- 3. 55025480000023 Madison, City Ward 23
- 4. 55025480000026 Madison, City Ward 26
- 5. 55025480000037 Madison, City Ward 37
- 6. 55025480000105 Madison, City Ward 105
- 7. 55025480000106 Madison, City Ward 106

- 8. 55079530000312 Milwaukee, City Ward 312
- 9. 55079853000015 West Allis, City Ward 15
- 10. 55117729750023 Sheboygan, City Ward 23
- 11. 55117729750024 Sheboygan, City Ward 24
- 12. 55131744000001 Slinger, Village Ward 1
- 13. 55133584000002 North Prairie, Village Ward 2

Another 21 wards show up on a wards splits report, but for each of these, the only blocks in a different district the parties have agreed by stipulation are erroneously labeled and do not count for purposes of wards splits.

- 1. 55025171750003 Cottage Grove, Village Ward 3
- 2. 55025480000001 Madison, City Ward 1
- 3. 55025480000003 Madison, City Ward 3
- 4. 55025480000004 Madison, City Ward 4
- 5. 55025480250003 Madison, Town Ward 3
- 6. 55035223000001 Eau Claire, City Ward 1
- 7. 55035223000003 Eau Claire, City Ward 3
- 8. 55035223000004 Eau Claire, City Ward 4
- 9. 55035223000005 Eau Claire, City Ward 5
- 10. 55035223000006 Eau Claire, City Ward 6
- 11. 55035223000007 Eau Claire, City Ward 7
- 12. 55059392250002 Kenosha, City Ward 2
- 13. 55059392250006 Kenosha, City Ward 6
- 14. 55105378250005 Janesville, City Ward 5
- 15. 55105378250009 Janesville, City Ward 9
- 16. 55117729750001 Sheboygan, City Ward 1
- 17. 55117729750002 Sheboygan, City Ward 2
- 18. 55117729750004 Sheboygan, City Ward 4
- 19. 55133783750001 Summit, Village Ward 1
- 20.55133842500009 Waukesha, City Ward 9
- 21. 55139605000005 Oshkosh, City Ward 5

#### 3. Contiguity

All 99 districts are contiguous. There are various islands that are water contiguous to the following districts: 1, 21, 36, 56, 73, 74, 89, and 90.

#### 4. Compactness

The average Reock score for compactness for these districts is 0.4128, with a standard deviation of 0.104. The range for the Reock scores are from 0.147 to 0.645 with a median score of 0.401. The average Polsby-Popper score for these districts is 0.3471, with a standard deviation of 0.1253. The range for the Polsby-Popper scores are from 0.1176 to 0.6945 with a median score of 0.3262.

District	Reock	Polsby-
		Popper
1	0.147	0.1176
2	0.3662	0.2709
3	0.408	0.4927
4	0.3009	0.343
5	0.3415	0.4352
6	0.3245	0.3729
7	0.5358	0.2953
8	0.5885	0.3623
9	0.4328	0.2353
10	0.3775	0.1621
11	0.3803	0.2403
12	0.4675	0.2701
13	0.5101	0.4082
14	0.4244	0.241
15	0.4664	0.4778
16	0.4728	0.3586
17	0.3445	0.2259
17	0.2794	0.1918
10	0.2472	0.1388
20	0.5471	0.5099
20	0.5301	0.5411
22	0.3632	0.4334
23	0.3568	0.2259
24	0.3909	0.3901
25	0.3339	0.2832
26	0.4012	0.4495
27	0.5752	0.6211
28	0.513	0.3902
20	0.39	0.3326
	0.5408	0.3320
30 31	0.6161	
		0.5059
32	0.299	0.3079
33	0.5902	0.3576
34	0.5249	0.4893
35	0.2926	0.2492
36	0.362	0.318
37	0.3795	0.3573
38	0.4139	0.3976
39	0.5422	0.4416
40	0.2286	0.3103
41	0.6367	0.6945
42	0.6453	0.6846
43	0.5405	0.4996
44	0.4777	0.3111

**Table 2**. Reock and Polsby-Popper Compactness Scores by District

45	0.4927	0.4559
46	0.4175	0.3033
47	0.4495	0.2577
48	0.4385	0.1947
49	0.4785	0.5323
50	0.3609	0.2862
51	0.5701	0.5579
52	0.3468	0.3156
53	0.3696	0.287
54	0.4414	0.3735
55	0.2827	0.2876
56	0.4163	0.2916
57	0.4264	0.3896
58	0.3028	0.3167
59	0.4713	0.4267
60	0.3858	0.4568
61	0.3418	0.2017
62	0.3568	0.3676
63	0.295	0.2063
64	0.5022	0.3752
65	0.4631	0.1833
66	0.3378	0.3262
67	0.4223	0.2674
68	0.269	0.2323
69	0.3922	0.2994
70	0.5455	0.4265
71	0.3982	0.3918
72	0.3874	0.2419
73	0.3637	0.3108
74	0.351	0.1697
75	0.5389	0.588
76	0.3233	0.1445
77	0.3571	0.2233
78	0.3602	0.2092
79	0.3998	0.4176
80	0.4678	0.3367
81	0.3049	0.2982
82	0.2853	0.2226
83	0.3892	0.3429
84	0.6162	0.6733
85	0.3615	0.2388
86	0.4251	0.3661
80	0.4647	0.4116
88		
89	0.1729	0.2023
	0.4019	0.2033
90	0.283	0.2155
91	0.5468	0.3642
92	0.2292	0.293
93	0.4089	0.3456

94	0.4028	0.3271
95	0.2944	0.2734
96	0.4849	0.4912
97	0.5559	0.5882
98	0.4564	0.314
99	0.354	0.2984

#### 5. Federal Law Compliance

There are eight majority-minority districts in the Milwaukee area (8, 9, 10, 11, 12, 16, 17, and 18). There are five majority Black districts (11, 12, 16, 17, and 18), two majority Hispanic districts (8 and 9) and one coalition districts (10). The boundaries of five of these districts are identical to those in the current map (8, 9, 10, 11, 16). Three districts (12, 17, 18) were adjusted slightly to eliminate splits for Brown Deer and Wauwatosa. As shown below, these changes create no material difference in the racial composition of these districts:

	Proposed Map		Current N		ıp	
District	Minority	Black	Hispanic	Minority	Black	Hispanic
8	80.16%	11.02%	65.9%	80.16%	11.02%	65.9%
9	69.03%	9.59%	52.97%	69.03%	9.59%	52.97%
10	56.42%	47.19%	5.05%	56.42%	47.19%	5.05%
11	85.52%	73.28%	4.46%	85.52%	73.28%	4.46%
12	72.84%	59.36%	5.25%	70.31%	57.01%	5.24%
16	67.97%	54.13%	7.08%	67.97%	54.13%	7.08%
17	67.36%	58.51%	4.59%	70.9%	61.81%	4.45%
18	67.7%	53.21%	9.61%	63.93%	52.57%	6.32%

#### 6. Political Neutrality

The Assembly map modestly favors Republicans, due to the concentration on keeping communities whole and splits to a minimum.

Table 3. Political Neutrality Measures from DRA for House Districts

Proportional	7.22%	The simple deviation from proportionality using fractional seat shares
Efficiency gap	7.90%	The relative two-party difference in wasted votes
Gamma	8.20%	The fair difference in seats at the map-wide vote share

Seats bias	8.12%	Half the difference in
		seats at 50% vote share
Votes bias	3.06%	The excess votes
		required for half the
		seats
Partisan bias	8.11%	The difference in seats
		between the map-wide
		vote share and the
		symmetrical
		counterfactual share
Global symmetry	3.82%	The overall symmetry of
		the seats-votes curve
Partisan bias rating	37	The combined rating of
		seats bias & votes bias
Declination	16.53°	A geometric measure of
Decimation	10.53	
Mean-median		packing & cracking
Mean-median	3.26%	The average vote share across all districts
		minus the median vote
	- (0/	share
Turnout bias	-0.56%	The difference between
		the map-wide vote share
		and the average district
· · · · · ·		share
Lopsided outcomes	5.78%	The relative two-party
		difference in excess vote
		shares
Proportional seats	50.17	The fractional
1 Toportional seats	30.1/	Democratic seats for the
		map-wide vote share
Geographic seats	40 76	The fractional
Geographic seats	42.76	Democratic seats
		implied by county
Coognaphic hiss	00/	political geography
Geographic bias	7.48%	The bias due to county
		political geography
Map seats	43.02	The fractional
		Democratic seats for the
D 1 1'	(0)	map
Boundary bias	-0.26%	The bias due to district
		lines

#### **Senate Districts**

#### 1. Population Equality

This map equalizes population across all 33 districts to within a tolerance of 0.34% to -0.31% for an overall deviation of 0.65%. The ideal population for these districts is 178,598; the largest deviation is 604 people in district 30 and the largest negative deviation in -560 in district 8.

District	Population	Deviation	Deviation
			%
1	179046	448	0.25%
2	178914	316	0.18%
3	178285	-313	-0.17%
4	178506	-92	-0.05%
5	178322	-276	-0.15%
6	178847	249	0.14%
7	178623	25	0.01%
8	178038	-560	-0.31%
9	179135	537	0.30%
10	178785	187	0.10%
11	178766	168	0.09%
12	178348	-250	-0.14%
13	178234	-364	-0.20%
14	178702	104	0.06%
15	178564	-34	-0.02%
16	178864	266	0.15%
17	178777	179	0.10%
18	178340	-258	-0.14%
19	178398	-200	-0.11%
20	178285	-313	-0.17%
21	178659	61	0.03%
22	178565	-33	-0.02%
23	178225	-373	-0.21%
24	178388	-210	-0.12%
25	178535	-63	-0.04%
26	178761	163	0.09%
27	178570	-28	-0.02%
28	178775	177	0.10%
29	178332	-266	-0.15%

#### Table 4. Wisconsin State Senate Districts Population and Deviations

30	179202	604	0.34%
31	178653	55	0.03%
32	178727	129	0.07%
33	178547	-51	-0.03%

#### 2. Political Subdivision Splits

County Splits - The Senate map splits 29 counties a total of 60 times.

- 1. Barron (3) 10, 23, 25, 31
- 2. Brown (2) 1, 2, 30
- 3. Chippewa (3) 23, 24, 25, 31
- 4. Crawford (1) 17, 32
- 5. Dane (5) 13, 15, 16, 17, 26, 27
- 6. Dodge (3) 13, 18, 20, 33
- 7. Eau Claire (1) 23, 31
- 8. Fon du Lac (1) 18, 20
- 9. Jefferson (2) 11, 13, 33
- 10. Kenosha (2) 11, 21, 22
- 11. La Crosse (1) 23, 32
- 12. Manitowoc (1) 1, 9
- 13. Marathon (2) 2, 24, 29
- 14. Milwaukee (6) 3, 4, 5, 6, 7, 8, 28
- 15. Oconto (1) 2, 12
- 16. Outagamie (3) 2, 14, 18, 19
- 17. Ozaukee (1) 8, 20
- 18. Pierce (1) 10, 31
- 19. Portage (2) 14, 24, 29
- 20. Racine (2) 21, 22, 28
- 21. Rock (2) 11, 15, 16
- 22. St. Croix (1) 10, 31
- 23. Sauk (2) 13, 17, 32
- 24. Walworth (2) 11, 21, 28
- 25. Washington (1) 8, 20
- 26. Waukesha (4) 5, 8, 11, 28, 33
- 27. Waupaca (2) 2, 14, 18
- 28. Winnebago (1) 18, 19
- 29. Wood (2) 14, 23, 24

#### **City Splits** – 13 cities are split a total of 25 times.

- 1. Appleton (2) 1, 2, 19
- 2. Eau Claire (1) 23, 31
- 3. Janesville (1) 11, 15
- 4. Jefferson (1)- 11, 13
- 5. Madison (2) 16, 26, 27
- 6. Menasha (2) 1, 19
- 7. Milwaukee (6) 3, 4, 5, 6, 7, 8, 28

Muskego (1) - 5, 28
 Oshkosh (1) - 18, 19
 Racine (1) - 21, 22
 Stanley City (2) - 23, 24
 West Allis (3) - 3, 5, 6, 28
 Wisconsin Dells (2) - 13, 14, 17

**Town Splits** – There is just one town split, split two times. Madison (2) - 16, 26, 27

Village Splits – 9 are split a total of 9 times.

- 1. Ashwaubenon (1) 1, 30
- 2. Howard (1) 2, 30
- 3. Menomonee Falls (1) 5, 8
- 4. Mount Pleasant (1) 21, 22
- 5. North Prairie (1) 11, 28
- 6. Oregon (1) 15, 16
- 7. Salem Lakes (1) 21, 22
- 8. Slinger (1) 8, 20
- 9. Summit (1) 11, 33

\*As with the Assembly map, a splits report also shows splits for the City of Kaukauna and the Village of Ontario. These were not counted for the same reasons described above.

#### Ward Splits – 9 wards are split.

- 1. 55009359500005 Howard, Village Ward 5
- 2. 55025480000021 Madison, City Ward 21
- 3. 55025480000023 Madison, City Ward 23
- 4. 55025480000026 Madison, City Ward 26
- 5. 55025480000037 Madison, City Ward 37
- 6. 55079530000312 Milwaukee, City Ward 312
- 7. 55079853000015 West Allis, City Ward 15
- 8. 55131744000001 Slinger, Village Ward 1
- 9. 55133584000002 North Prairie, Village Ward 2

An additional 12 wards show up on a wards splits report, but for each of these, the only blocks in a different district the parties have agreed by stipulation are erroneously labeled and do not count for purposes of wards splits.

- 1. 55025480000001 Madison, City Ward 1
- 2. 55025480000003 Madison, City Ward 3
- 3. 55025480000004 Madison, City Ward 4
- 4. 55025480250003 Madison, Town Ward 3
- 5. 55035223000001 Eau Claire, City Ward 1
- 6. 55035223000003 Eau Claire, City Ward 3
- 7. 55035223000004 Eau Claire, City Ward 4

- 8. 55035223000005 Eau Claire, City Ward 5
- 9. 55035223000006 Eau Claire, City Ward 6
- 10. 55035223000007 Eau Claire, City Ward 7
- 11. 55133783750001 Summit, Village Ward 1
- 12. 55139605000005 Oshkosh, City Ward 5

#### 3. Contiguity

All 33 districts are contiguous. There are several water contiguous islands throughout the state connected to districts 1, 7, 12, 19, 25, and 30.

#### 4. Compactness

The average Reock score for compactness for these districts is 0.3877, with a standard deviation of 0.0908. The range for the Reock scores are from 0.1417 to 0.5893 with a median score of 0.3866. The average Polsby-Popper score for these districts is 0.2793, with a standard deviation of 0.0832. The range for the Polsby-Popper scores are from 0.0988 to 0.4575 with a median score of 0.2664.

District	Reock	Polsby-
		Popper
1	0.1417	0.0988
2	0.2978	0.2424
3	0.3657	0.2235
4	0.3341	0.2052
5 6	0.5893	0.3469
	0.4051	0.1978
7 8	0.3187	0.2531
8	0.401	0.3328
9	0.2943	0.3342
10	0.4037	0.3878
11	0.5822	0.344
12	0.378	0.3455
13	0.3787	0.2393
14	0.3742	0.4182
15	0.3879	0.4575
16	0.4785	0.227
17	0.4532	0.3367
18	0.4275	0.251
19	0.3607	0.2545
20	0.4478	0.2971
21	0.2385	0.1776
22	0.4777	0.3548
23	0.3046	0.1748
24	0.298	0.3134

#### Table 5. Compactness Scores for Senate Districts

25	0 5275	0.1765
25	0.5375	, ,
26	0.3651	0.2028
27	0.4161	0.2664
28	0.3489	0.2395
29	0.4232	0.4015
30	0.4295	0.1563
31	0.3866	0.2763
32	0.4124	0.3449
33	0.3347	0.3384

#### 5. Federal Law Compliance

There are two majority Black districts (4 and 6) in the Milwaukee area. As noted above, three of the component Assembly districts were unchanged from the current map, while three were adjusted slightly to eliminate splits. These changes do not meaningfully change the racial composition of these districts, as shown below:

	Pr	oposed N	Лар	C	urrent Ma	p
District	Minority	Black	Hispanic	Minority	Black	Hispanic
4	71.13%	59.54%	4.93%	 70.29%	58.76%	4.93%
6	67.68%	55.27%	7.09%	67.6%	56.13%	5.97%

#### 6. Political Neutrality

The map moderately favors Republicans due to the goals of keep communities whole and minimizing the number of splits.

Proportional	10.78%	The simple deviation from proportionality using fractional seat shares
Efficiency gap	11.46%	The relative two-party difference in wasted votes
Gamma	12.09%	The fair difference in seats at the map-wide vote share
Seats bias	11.93%	Half the difference in seats at 50% vote share

Votes bias	3.53%	The excess votes
		required for half the
		seats
Partisan bias	11.88%	The difference in seats
		between the map-wide
		vote share and the
		symmetrical
		counterfactual share
Global symmetry	4.59%	The overall symmetry of
		the seats-votes curve
Partisan bias rating	27	The combined rating of
		seats bias & votes bias
Declination	21.34°	A geometric measure of
		packing & cracking
Mean-median	4.73%	The average vote share
		across all districts
		minus the median vote
		share
Turnout bias	-0.38%	The difference between
		the map-wide vote share
		and the average district
T 11 .		share
Lopsided outcomes	6.63%	The relative two-party
		difference in excess vote
		shares
Drop ortional goats	16 =0	The fractional
Proportional seats	16.72	Democratic seats for the
Coographia goata	14.05	map-wide vote share The fractional
Geographic seats	14.25	Democratic seats
		implied by county
		political geography
Geographic bias	7.48%	The bias due to county
ocographic blas	/.40/0	political geography
Map seats	13.17	The fractional
map scars	13.1/	Democratic seats for the
		map
Boundary bias	3.30%	The bias due to district
Doundary Mus	J.J.V.V	lines
		11100

Dated: January 11, 2024

Thomas Brunell, Ph.D.

Appendix 1 – Brunell CV

Thomas L. Brunell Professor of Political Science School of Economic, Political and Policy Sciences The University of Texas at Dallas 800 W. Campbell Road Richardson, TX 75080 972-883-4963 tbrunell@utdallas.edu

#### Education

Ph.D., 1997 Political Science, University of California, IrvineM.A., 1993 Political Science, University of California, IrvineB.A., 1991 Political Science, University of California, Irvine

#### **Employment History**

The University of Texas at Dallas, Program Head for Political Science and Public Policy Political Economy, 2019-present.

The University of Texas at Dallas. Professor, 2009-present.

The University of Texas at Dallas, Senior Associate Dean, 2010-2012.

The University of Texas at Dallas, Director of Graduate Studies, Political Science Program 2007-2010.

The University of Texas at Dallas. Associate Professor, 2005-2009.

Northern Arizona University. Assistant Professor of Political Science, 2003-2005.

Binghamton University, SUNY. Assistant Professor of Political Science, Fall 1999–2003.

American Political Science Association Congressional Fellow, 1998–1999.

#### **Grants and Awards**

"Nursing in the Field: Vector-borne Illness Prevention and Detection Among Migrant and Seasonal Farmworkers." Co-PIs: Sarah Maxwell and Thomas Brunell. \$50,000 from the Rita & Alex Hillman Foundation.

Visiting Fellowship, Australian National University, \$10,000, Summer 2014

Visiting Fellowship, University of Sydney, United States Studies Centre and The Election Integrity Project, \$10,000, Winter 2013.

EPPS Advisory Board Grant, \$5,000 for research on Redistricting. 2014.

Intramural Grants Program, Northern Arizona University. \$5,000 for a study on the impact of redistricting on House elections. Summer 2004.

Deans Workshop Grant, "Methods and Politics," \$3000, 2002-2003, with David Clark, David Rueda and Wendy Martinek.

Deans Workshop Grant, "Democratic Institutions, Preference Aggregation and World Politics," \$4000, 2001-2002, with David Clark and Patrick Regan.

Dean's Research Semester Award. Binghamton University, 2001-2002.

American Political Science Association Congressional Fellowship, 1998–99

Order of Merit. Outstanding Graduate Scholarship. School of Social Sciences, University of California, Irvine, 1996-1997

University of California Regents Dissertation Fellowship, Spring 1997.

Scaife Foundation Fellowship to attend ICSPR summer statistical program, 1993.

#### Books

Merrill, Samuel III, Bernard Grofman, and Thomas L Brunell. 2023. *How Polarization Begets Polarization: Ideological Extremism in the US Congress*. Oxford: Oxford University Press.

Brunell, Thomas, Robert Lowry, Banks Miller, and Thomas Gray. 2021. *Introduction to American Government*. Toronto: TopHat.

Brunell, Thomas, Robert Lowry, Banks Miller, and Thomas Gray. 2021. *Introduction to State and Local Government*. Toronto: TopHat.

Brunell, Thomas L. 2008. *Redistricting and Representation: Why Competitive Elections are Bad for America*. New York: Routledge.

#### **Journal Articles**

Lublin, David, Lisa Handley, Thomas L. Brunell, and Bernard Grofman. 2020. "Minority Success in Non-Majority Minority Districts: Finding the 'Sweet Spot'". *Journal of Race, Ethnicity, and Politics*. 5: 275-298.

Brunell, Thomas L. and Brett Cease. 2019. "How Do State-Level Environmental Policies Impact the Voting Behavior of National Legislators?" *Social Science Quarterly* 100(1): 289-306.

Brunell, Thomas L. and Bernard Grofman. 2018. "Using US Senate Delegations from the Same State as Paired Comparisons: Evidence for a Reagan Realignment." PS: Political Science & Politics. 51(3): 512-516. Brunell, Thomas L., Bernard Grofman, and Samuel Merill, III. 2016. "Components of Party Polarization in the U.S. House of Representatives." *Journal of Theoretical Politics* 28(4): 598-624.

Brunell, Thomas L., Bernard Grofman, and Samuel Merill, III. 2016. "Replacement in U.S. House: An Outlier-Chasing Model." *Party Politics* 22(4): 427-439.

Brunell, Thomas L., Bernard Grofman, and Samuel Merill, III. 2016. "The Volatility of Median and Supermajoritarian Pivots in the U.S. Congress and The Effects of Party Polarization", *Public Choice*, 166: 183-204.

Bowler, Shaun, Thomas Brunell, Todd Donovan, and Paul Gronke. 2015. "Election Administration and perception of Fair Elections." *Electoral Studies* 38(June): 1-9.

Brunell, Thomas L. and Whitney Ross Manzo. 2014. "The Impact of Cox v. Larios on State Legislative Population Deviations." Election Law Journal 13(3): 351-361.

Merrill, Samuel, III, Thomas L. Brunell, and Bernard Grofman. 2014. "Modeling the Electoral Dynamics of Party Polarization in Two-Party Legislatures." *Journal of Theoretical Politics* 26(4): 548-572.

Stone Sweet, Alec and Thomas L. Brunell. 2013. "Trustee Courts and the Judicialization of International Regimes: The Politics of Majoritarian Activism in the European Convention on Human Rights, the European Union, and the World Trade Organization. *Journal of Law and Courts* 1(1): 61-88.

Brunell, Thomas L. 2012. "The One Person, One Vote Standard in Redistricting: The Uses and Abuses of Population Deviations in Legislative Redistricting. *Case Western Reserve Law Review* 62(4): 1057-1077.

Grofman, Bernard, Thomas L. Brunell, and Scott L. Feld. 2012. "Towards a

Theory of Bicameralism: The Neglected Contributions of the Calculus of Consent." *Public Choice* 152(1-2): 147-161.

Brunell, Thomas L., Bernard Grofman, Samuel Merrill III. 2012. "Magnitude and Durability of Electoral Change: Identifying Critical Elections in the U.S. Congress, 1854-2010. *Electoral Studies* 31(4): 816-828.

Stone Sweet, Alec and Thomas L. Brunell. 2012. "The European Court of Justice, State Non-Compliance, and the Politics of Override." *American Political Science Review* 106(1): 204-213.

Brunell, Thomas L. and Harold Clarke. 2012. "Who Wants Electoral Competition and Who Wants to Win?" *Political Research Quarterly* 65(1): 124-137.

Merrill, Samuel, Bernard Grofman, and Thomas L. Brunell. 2011. "Do British Politics Exhibit Electoral Cycles?" *British Journal of Political Science* 41(1): 33-55.

Smith, David and Thomas L. Brunell. 2010. "Are Special Elections to the U.S. House a General Election Barometer?" *Legislative Studies Quarterly* 35(2): 283-297.

Lublin, David, Thomas L. Brunell, Bernard Grofman, and Lisa Handley. 2009. "Has the Voting Rights Act Outlived Its Usefulness? In a Word 'No'." *Legislative Studies Quarterly* 34(4): 525-554.

Adams, James, Thomas Brunell, Bernard Grofman, and Samuel Merrill, III. 2010. "Why Candidate Divergence Should be Expected to be Just as Great (or even Greater) in Competitive Seats as in Non-Competitive Ones." *Public Choice* 145: 417-433.

Brunell, Thomas L., Chetan Dave, and Nicholas C. Morgan. 2009. "Factors Affecting the Length of Time a Jury Deliberates: Case Characteristics and Jury Composition." *Review of Law & Economics*, 5(1): article 23. Brunell, Thomas L. and Justin Buchler. 2009. "Ideological Representation and Competitive Congressional Elections." *Electoral Studies* 28(3): 448-457.

Brunell, Thomas L. and Bernard Grofman. 2009. "Testing Since Versus Strategic Split-ticket Voting at the Aggregate Level: Evidence from Split House-President Outcomes, 1900-2004." *Electoral Studies*, 28(1): 62-69.

Brunell, Thomas L., Christopher J. Anderson, and Rachel Cremona. 2008 "Descriptive Representation, District Demography, and Attitudes Toward Congress Among African Americans." *Legislative Studies Quarterly*. 33(2): 223-244.

Merrill, Samuel, Bernard Grofman, and Thomas L. Brunell. 2008. "Cycles in American National Electoral Politics, 1854-2006: Statistical Evidence and an Explanatory Model." *American Political Science Review*, 102(1) 1-17.

Thomas L. Brunell. 2006. What to Do about Turnout Bias in American Elections? *The American Review of Politics*, 27(Fall): 255-260.

Brunell, Thomas L. 2006. "Rethinking Redistricting: How Drawing Uncompetitive Districts Eliminates Gerrymanders, Enhances Representation, and Improves Attitudes Toward Congress." *PS: Political Science & Politics*, 39(1) 77-86.

Brunell, Thomas L. 2005. "The Relationship Between Political Parties and Interest Groups: Explaining Patterns of PAC Contributions to Candidates for the U.S. Congress." *Political Research Quarterly*, 58: 681-688.

Solowiej, Lisa, and Wendy Martinek, and Thomas L. Brunell. 2005. "Partisan Politics: The Impact of Party in the Confirmation of Minority and Female Federal Court Nominees." *Party Politics*, 11: 557-577.

Brunell, Thomas L. and John DiNardo. 2004. "A Propensity Score Reweighting Approach to Estimating the Partisan Effects of Full Turnout in American Presidential Elections." *Political Analysis* 12(1): 28-45. Solowiej, Lisa and Thomas L. Brunell. 2003. "The Entrance of Women to the U.S. Congress: The Widow Effect." *Political Research Quarterly* 56(3): 283-292.

Brunell, Thomas L. 2001. "Why There is Still a Controversy About Adjusting the Census." *PS: Political Science & Politics*, 35(1, March): 85.

Brunell, Thomas L. 2001. "Census 2000 – Epilogue." *PS: Political Science & Politics*, 34(4, December): 813-814.

Brunell, Thomas L. 2001. "Science and Politics in the Census." *SOCIETY* 39(1): 11-16.

Brunell, Thomas L. and Amihai Glazer. 2001. "Rational Response to Irrational Attitudes: The Level of the Gasoline Tax in the U.S. States." *The Journal of Policy Analysis and* 

Management 20(4): 761-764.

Brunell, Thomas L. 2000. "Redistricting in the 'Aughts': The Impact of Census 2000. *The American Review of Politics* 21(Winter): 347-366.

Grofman, Bernard, William Koetzle, Samuel Merrill, and Thomas L. Brunell. 2001.

"Changes in the Location of the Median Voter in the U.S. House of Representatives, 1963-1996." *Public Choice* 106:221-232.

Brunell, Thomas L. 2000. "Using Statistical Sampling to Estimate the U.S. Population: The Methodological and Political Debate Over Census 2000." *PS: Political Science & Politics*. 33(4, December): 775-782.

Brunell, Thomas L. 2000. "Rejoinder to Anderson and Fienberg." *PS: Political Science* & *Politics*. 33(4, December): 793-794.

Brunell, Thomas L. 2000. "Making Sense of the Census: It's Political." *PS: Political Science & Politics*. 33(4, December): 801-802.

Stone Sweet, Alec and Thomas L. Brunell. 2000. "The European Court, National Judges, and Legal Integration: A Researcher's Guide to the Data Set on Preliminary References in EC Law, 1958–98." *European Law Journal* 6(2): 117 - 127.

Stone Sweet, Alec and Thomas L. Brunell. 2000. "The European Court, National Judges, and Legal Integration." *Swedish Journal of European Law* 3(2):179–192.

Grofman, Bernard, William Koetzle, Michael McDonald, and Thomas L. Brunell. 2000. "A New Look at Split Ticket Outcomes for House and President: The Comparative Midpoints Model." *Journal of Politics* 62(1, February): 35-50.

Brunell, Thomas L. and William Koetzle. 1999. "A Divided Government Based Explanation for the Decline in Resignations from the U.S. Senate, 1834-1996." *Party Politics* 5(October, 4): 497-505.

Brunell, Thomas L. 1999. "Partisan Bias in U.S. Congressional Elections. Why the Senate is Usually More Republican than the House of Representatives." *American Politics Quarterly* 27(July,3): 316-37.

Grofman, Bernard, Samuel Merrill, Thomas L. Brunell, and William Koetzle. 1999. "The potential electoral disadvantages of a catch-all party - Ideological variance among Republicans and Democrats in the 50 U.S. States." *Party Politics* 5(April,2):199-210.

Brunell, Thomas L., William Koetzle, John DiNardo, Bernard Grofman, and Scott L. Feld. 1999. "The R<sup>2</sup> = .93. Where Then Do They Differ? Comparing Liberal and Conservative Interest Group Ratings." *Legislative Studies Quarterly* 24(February,1): 87-99. Merrill, Samuel, Bernard Grofman, Thomas L. Brunell, and William Koetzle. 1999. "The power of ideologically concentrated minorities." *Journal of Theoretical Politics* 11(January,1):57-74.

Brunell, Thomas L. and Bernard Grofman. 1998. "Explaining Divided Senate Delegations 1788-1996: A Realignment Approach." *American Political Science Review* 92(June,2): 391-99.

Stone Sweet, Alec and Thomas L. Brunell. 1998. "Constructing a Supra-National Constitution: Dispute Resolution and Governance in the European Community." *American Political Science Review* 92(March,1): 63-81.

Stone Sweet, Alec and Thomas L. Brunell. 1998. "The European Court and the National Courts: A Statistical Analysis of Preliminary References, 1961-95." *The Journal of European Public Policy* 5(March): 66-97.

Grofman, Bernard, Thomas L. Brunell, and William Koetzle. 1998. "Why Gain in the Senate. But Midterm Loss in the House? Evidence from a Natural Experiment." *Legislative Studies Quarterly* 23(February): 79-89.

Grofman, Bernard, Thomas L. Brunell, and Janet Campagna. 1997. "Distinguishing the Difference Between Swing Ratio and Bias: the U.S. Electoral College." *Electoral Studies* 16(December,4):471-487

Grofman, Bernard, William Koetzle, and Thomas L. Brunell. 1997. "An Integrated Perspective on the Three Potential Source of Partisan Bias: Malapportionment, Turnout Differences, and the Geographic Distribution of Party Vote Shares." *Electoral Studies* 16(December, 4):457-470.

Brunell, Thomas and Bernard Grofman. 1997. "The 1992 and 1996 Presidential Elections: Whatever Happened to the Republican Electoral College Lock?" *Presidential Studies Quarterly* Winter: 134-38.

Wuffle, A, Thomas Brunell, and William Koetzle. 1997. "Death Where is Thy Sting: The U.S. Senate as a Ponce (de Leon) Scheme." *PS:Political Science and Politics* 30 (1): 58-59.

Reprinted in the *Journal of Irreproducible Results* 1999. 44(5-6): 25-26.

Koetzle, William, and Thomas L. Brunell. 1996. "Lip-Reading, Draft-Dodging, and Perot-noia: The 1992 Presidential Campaign in Editorial Cartoons." *Harvard International Journal of Press/Politics* 1(4): 94-115.

#### **Book Chapters and Other Articles**

Brunell, Thomas L. 2020. "Congress," In *An Introduction to American Government*, Toronto: TopHat.

Brunell, Thomas L. 2020. "Elections," In *An Introduction to American Government*, Toronto: TopHat.

Brunell, Thomas L. 2020. "Legislatures," In *State and Local Government*, Toronto: TopHat.

Brunell, Thomas L. 2020. "Congressional Reapportionment". In *Voting and Political Representation in America*, Mark P. Jones, Editor. Santa Barbara, CA: ABC-CLIO, pp 110-112.

Brunell, Thomas L. 2020. "Gerrymandering". In *Voting and Political Representation in America*, Mark P. Jones, Editor. Santa Barbara, CA: ABC-CLIO, pp 249-251.

Adams, James, Thomas L. Brunell, Bernard Grofman, and Samuel Merrill III. 2013. "Do Competitive Districts Necessarily Produce Centrist Politicians." In Advances in Political Economy. Norman Schofield, Gonzalo Caballero, and Daniel Kselman, eds. New York: Springer, pp 331-350.

Wuffle, A, Thomas Brunell, and William Koetzle. 2010. "Death Where is Thy Sting? The Senate as a Ponce (de Leon) Scheme." Eds. Lee Sigelman, Kenneth Newton, Kenneth J. Meier, and Bernard Grofman. Washington D.C.: APSA and ECPR.

Grofman, Bernard and Thomas L. Brunell. 2010. "Redistricting," in *The Oxford Handbood of American Elections and Political Behavior*, ed. Jan E. Leighly. Oxford: Oxford University Press.

Brunell, Thomas L. 2009. "The presidential and congressional election in the USA, November 2008." *Electoral Studies*, 28(4): 322-325.

Brunell, Thomas L. and Bernard Grofman. 2008. "The Partisan Consequences of Baker v. Carr and the One Person, One Vote Revolution," in *Redistricting in Comparative Perspective*, Lisa Handley and Bernard Grofman, eds. Oxford: Oxford University Press.

Brunell, Thomas L. and Bernard Grofman. 2008. "Evaluating the Impact of Redistricting on District Homogeneity, Political Competition, and Political Extremism in the U.S. House of Representatives, 1962-2006." In *Designing Democratic Governments,* Margaret Levi, James Johnson, Jack Knight, and Susan Stokes, eds. New York: Russell Sage Publications.

Grofman, Bernard and Thomas Brunell. 2006. "Extending Section 5 of the Voting Rights Act: The Complex Interaction Between Law and Politics." In *The Future of the Voting Rights Act*, David Epstein, Rodolfo O. de la Garza, Sharyn O'Halloran, and Richard H. Pildes, eds. New York, NY: Russell Sage Publications.

Grofman, Bernard and Thomas Brunell. 2005. "The Art of the Dummymander: The Impact of Recent Redistrictings on the Partisan Makeup of Southern House Seats." In Galderisi, Peter (Ed.) <u>Redistricting in the New Millennium.</u> New York: Lexington Books, pp. 183-199.

Brunell, Thomas L. 2004. "Seeking to Institutionalize a Partisan Electoral Advantage: The Battle Over the Census." *War Stories from Capitol Hill*. Edited by Paul S. Herrnson and Colton C. Campbell. Upper Saddle River, New Jersey: Prentice Hall.

Brunell, Thomas L. 2001. "Congress and the Courts: The Strange Case of Census 2000." In *Congress Confronts the Court*, edited by Colton C. Campbell and John F. Stack, Jr.. Lanham, MD: Rowman and Littlefield Press.

Grofman, Bernard and Thomas L. Brunell. 2001. "Explaining the Ideological Differences Between the Two U.S. Senators Elected from the Same State: An Institutional Effects Model." Galderisi, Peter F., Marni Ezra, and Michael Lyons, eds. *Congressional Primaries and the Politics of Representation*. Lanham, MD: Rowman and Littlefield Press.

#### **Other Publications and Community Involvement**

Op-ed "Democrats should focus on state races this year and save their chips for 2020." Dallas Morning News, July 7, 2018. Co-authored with Paul Diehl.

Quoted in DMN "At 85, Rep. Sam Johnson has rivals' respect — but still has rivals" by Elizabeth Koh, Feb 15, 2016.

Quoted in:

http://www.foxbusiness.com/politics/2016/02/25/last-stand-in-texas-for-cruz-before-super-tuesday.html

Interview for WRLD on Feb 27, March 1, March 2 and thoughout march and april

Interview KRLD on Oct 18 about vote rigging and presidential election

KRLD Oct 25 interview early turnout

Oct 26 Interviewed on Channel 8 news about future of GOP

Appeared on McQuisition television show. May 20, 2012. "Redistricting: Do you Know Who Your Congressman is?"

Newsweek story on special elections

http://www.thedailybeast.com/articles/2011/09/12/david-weprin-vs-bob-turner-therace-to-replace-anthony-weiner.html

Nate Silver story on special elections, NY Times

http://fivethirtyeight.blogs.nytimes.com/2011/09/13/a-guide-to-cutting-throughspecial-election-spin/

Appeared on McQuisition TV Show; local PBS talk show. Two episodes, one on the Tea Party and one on the 2010 Election.

Quoted in an Associate Press article "Vulnerable House Dems declare their independence," by Cristina Silva, September 25, 2010.

Appeared on *Think* with Krys Boyd on KERA Channel 13 (Dallas) talking about my book.

I wrote the feature op-ed for the Dallas Morning News on June 3, 2008.

http://www.dallasnews.com/sharedcontent/dws/dn/opinion/viewpoints/stories/DNbrunell\_03edi.ART.State.Edition1.45fe223.html

Quoted extensively in a Huffington Post story by Tom Edsall on political cycles.

http://www.huffingtonpost.com/2008/06/24/obama-rides-the-wave n 108848.html

Appeared on local radio station (KRLD 1080 am) as a guest political commentator for a 3 hour election wrap up program for the Texas presidential primary election, March 4, 2008.

Was one of four invited speakers, including one member of Congress, at North Central Texas College's 2nd Annual Conference on American Leadership, April 12, 2008, where I spoke about redistricting and representation.

My research on cycles in American electoral politics was featured on Discovery's website <u>http://dsc.discovery.com/news/2008/03/13/political-cycles.html</u>

Quoted in Pittsburgh Tribune Review on Thursday March 27 about jury deliberations. <u>http://www.pittsburghlive.com/x/pittsburghtrib/news/cityregion/s\_559258.html</u>

Quoted in Philadelphia Inquirer on Wednesday April 2 about jury deliberations. <u>http://www.philly.com/philly/news/local/17215627.html</u>

My research with Patrick Brandt involving predicting the 2006 Congressional elections was quoted extensively in an article U.S. News and World Report.

Wrote an op-ed for Newsday (New York) on the impact of timing of events for presidential elections. Published 1/4/04. This was reprinted in the Dodge City Daily Globe (Kansas) on 1/8/04 and in the Chattanooga Times Free Press (Tennessee) on 1/25/04.

Spoke to Pi Sigma Alpha meeting on the Presidential Primary Process, February 2004.

Delivered a speech to the League of Women Voters of Broome and Tioga Counties entitled "Redistricting after Census 2000: Playing Political Hardball." September 25, 2001

Appeared as an hour long guest on NPR's "Talk of the Nation" to discuss the decennial census. March 7, 2001.

Stone Sweet, Alec and Thomas L. Brunell. 2000. "The European Court, National Judges, and Legal Integration: A Researcher's Guide to the Data Set on Preliminary References in EC Law, 1958–98." Working paper. Robert Schuman Centre for Advanced Studies. European University Institute.

Brunell, Thomas L. and Amihai Glazer. 1999. "Evidence for the Irrationality of Governmental Policy." Working paper, Center for the Study of Democracy, U.C. Irvine.

Stone Sweet, Alec and Thomas L. Brunell. 1997. "The European Court and the National Courts: A Statistical Analysis of Preliminary References, 1961-95." Working paper 14/97, Jean Monnet Center, Harvard Law School.

Appeared on News Channel 34 (ABC) on 11/12/00 discussing the process by which we amend the constitution.

Appeared on Fox 40 on election night 11/7/00 as an analyst discussing the election.

Appeared on WBNG TV (CBS) on 11/2/00 discussing voter fatigue.

Appeared on News Channel 34 (ABC) on 11/2/00 discussing the Electoral College.

Quoted in Press and Sun-Bulletin on 10/14/00 in an article about the 26th district Congressional election in New York.

Appeared on WBNG TV (CBS) with students in my class discussing the second Clinton/Lazio debate, 10/8/00.

Appeared on News Channel 34 (ABC) discussing Presidential debate, 10/4/00

Appeared on News Channel 34 (ABC) discussing Presidential debate, 10/3/00

Appeared on News Channel 34 (ABC) discussing the 2000 NY Senatorial primary, 9/12/00.

Appeared on WBNG TV (CBS) News discussing the 2000 presidential primaries. March 7,2000.

Appeared on WBNG TV (CBS) News discussing Census 2000 and its likely impact on

New York. January 20, 2000.

Appeared on WBNG TV (CBS) and News Channel 34 (FOX) talking about turnout in local elections. October 2, 1999.

Brunell, Thomas L. "Accurate Census Count Vital for New York." The Press & Sun–Bulletin. July 25, 1999. Page 6E.

#### **Invited Talks**

Census 2020

Triple Play: Election 2018, Census 2020, and Redistricting 2021. Conference at University of Houston, Dec. 7 2018

Census 2020 and Redistricting

Common Cause Democracy Works Summitt

Philadelphia, May 21, 2018

Keynote on Redistricting

North Carolina State Political Science Associate Meeting. Raleigh, NC Feb 23, 2018

**Reforming Redistricting** 

Political Discourse Conference, University of Iowa, December 4, 2015

"The Impact of Competitiveness on Attitudes Towards Government, a Comparative Perspective." Australian National University, August 21, 2015.

"Asymmetrical Polarization in the U.S. Congress" Australian National University, July  $14^{\rm th},$  2015.

"Population Deviations: A Subtle Form of Gerrymandering in the U.S. States" March 2014, The University of Sydney, Electoral Integrity Project.

"The Uses and Abuses of Population Deviations in State Legislative Redistricting." Case Western Law School, November 4, 2011.

Why Electoral Competition is Bad for America

Political Science Department at Duke University. February 10, 2009.

"Why We Need Fewer Competitive Elections in the U.S. House of Representatives." Department of Government, University of Texas, Austin, January 27, 2006.

"Why Fewer Competitive Elections are Better in Single Member District Electoral Systems." May 27, 2005, Nuffield College, Oxford University.

"Parsing Sincere Versus Strategic Interest Group Behavior: Explaining Patterns of Hard Money Contributions to Candidates for the U.S. Congress." January 9, 2003, Dept. of Political Science UC Riverside.

"Party Polarization and Divided Government." American Politics Research Group, University of North Carolina, Chapel Hill. December 1, 2000.

"The Politics of Census Taking in the United States. Nuffield College, Oxford University, September 28, 1999.

"The Statistical Adjustment of the 2000 U.S. Census. The George Washington University, June, 1999.

#### **Conference Activity**

"Assessing Proportionality as a Standard for Redistricting" Presented at the Annual Meeting of the Western Political Science Association, San Diego, CA, April 2019.

"Assessing Proportionality as a Standard for Redistricting" Presented at the Annual Meeting of the Southern Political Science Association, Austin, TX, January 2019.

"Do Environmental State Policies Impact National Legislators' Voting Behavior?"

T. Brunell and B. Cease. Presented at American Political Science Association, San Francisco, August 3-Sepember 3, 2017

"Democratic Renewal: The Positive Effects of Elections on Voters Attitudes Towards Government." T. Brunell, S. Bowler, T. Donovan, J. Karp

Presented at Southern Political Science Association, San Juan, Puerto Rico, January 7-10, 2016.

"State Election Administration and Voters' Perceptions of Electoral Integrity."

T. Brunell, S. Bowler, T. Donovan, P. Gronke

Presented at State Politics and Policy Conference, Sacramento, CA

"Electoral Engineering and the Representation of Underrepresented Groups"

Elin Bjarnegard, Thomas L. Brunell, and Par Zetterberg

Annual Meeting of American Political Science Association, San Francisco, August 2015

"Median and Supermajoritarian Pivots in Congress and Conditional Party Government" Thomas L. Brunell and Samuel Merrill, III

Annual Meeting of American Political Science Association, San Francisco, August 2015

"Election Reforms and Perceptions of Fair Elections." Shaun Bowler, Thomas Brunell, Todd Donovan, and Paul Gronke State Politics and Policy Conference, Sacremento CA, May 2015.

"Replacement Effects and the Slow Cycle of Ideological Polarization in the U.S. House." Presented at the Annual Meeting of the American Political Science Association, Washington D.C., September 2010. "Putting Critical Elections in Historical Perspective"

Thomas L. Brunell, Samuel Merrill III, and Bernard Grofman

Midwest Political Science Association Annual Meeting. Chicago, IL April 2-5, 2009.

"Do Special Elections Foretell the Results of General Election Outcomes in the U.S. House of Representative." Thomas L. Brunell and David Smith

Midwest Political Science Association Annual Meeting. Chicago, IL April 2-5, 2009.

"Who Wants Electoral Competition and Who Wants to Win?" With Harold Clarke. Presented at the Annual Meeting of the Midwestern Political Science Association,

Chicago, April, 2008.

"The Impact of Electoral Competitiveness on Voters's Attitudes Toward Government: Evidence from the U.S., Great Britain, and Canada." With Elizabeth Clausen.

Presented at the Annual Meeting of the Western Political Science Association, Las Vegas, NV, March 2007.

"The Impact of Electoral Competitiveness on Voters's Attitudes Toward Government: Evidence from the U.S., Great Britain, and Canada." With Elizabeth Clausen

Presented at the Annual Meeting of the Midwestern Political Science Association, Chicago IL, April 2007.

"Time to Deliberate: Factors Affecting the Length of Jury Deliberations" With Chetan Dave and Nicolas Morgan. Presented at the Annual Conference on Empirical Legal Studies, New York Law School, November 2007.

"Move to the Center or Mobilize the Base? Effects of Political Competition, Voter Turnout, and Partisan Loyalties on the Ideological Convergence of Vote-Maximizing Candidates in Two-Party Competition." With Bernard Grofman, Sam Merrill, and Jim Adams. Presented at the Annual Meeting of the American Political Science Association, Philadelphia, PA August 30 - September 3, 2006.

"Rethinking Redistricting: How Drawing Districts Packed with Partisans Improves

Representation and Attitudes Towards Congress." Presented at the Annual Meeting of the American Political Science Association, Washington, DC, September 1-4, 2005.

"Evaluating the Political Effects of Partisan Gerrymandering." With Bernard Grofman.

Presented at the Annual Meeting of the American Political Science Association, Washington, DC, September 1-4, 2005.

"The Impact of Primary Type on Competitiveness of U.S. Congressional Primary Elections." Presented at the Annual Meeting of the American Political Science Association, Chicago, IL, September 1-5, 2004.

"The Relationship Between Descriptive Representation of African Americans in Congress and Attitudes Toward Government." With Rachel Cremona and Chris Anderson, presented at The Annual Meeting of the Midwestern Political Science Association, Chicago, IL, April 14-17, 2004.

"Do National Tides Affect Governors?: Midterm Loss in Gubernatorial Elections ." With Robin Best, presented at The Annual Meeting of the Midwestern Political Science Association, Chicago, IL, April 14-17, 2004.

"The Relationship Between Parties and Interest Groups: Explaining Interest Group Donations." Presented at the Annual Meeting of the American Political Science Association, Boston, MA August 26-September 1, 2002.

"The Entrance of Women into the U.S. Congress: The Widow Effect." with Lisa Solowiej. Presented at the Annual Meeting of the Southern Political Science Association. Atlanta, GA November 7-10, 2001.

"Before Election Day: The Effect of Timing of Elections in U.S. Presidential and Congressional Elections." Presented at the Annual Meeting of the American Political Science Association, San Francisco, CA August 30-September 2, 2001.

"Ideological Swing Districts in the U.S. House of Representatives," with A.J. Quackenbush. Presented at the Annual Meeting of the American Political Science Association, San Francisco, CA August 30-September 2, 2001.

"The Effect of District Diversity on Party Loyalty Voting in the U.S. Congress." Presented at the Annual Meeting of the Western Political Science Association, Las Vegas, March 15-17, 2001.

"Explaining the Proportion of Split House-President Outcomes, 1900-1996," with Bernard Grofman and Samuel Merrill. Presented at the Annual Meeting of the Public Choice Society, San Antonio, Texas, March 9-11, 2001.

"Congress and the Courts: The Strange Case of the Census." Florida International University, Miami, Florida. April 7-9, 2000. Conference on Congress and the Courts.

"The Link Between Primary Type and Representation in the U.S. Senate." Presented at the 1999 Annual Meeting of the American Political Science Association, Atlanta GA.

"The Power of Ideologically Concentrated Electorates." Presented at the 1997 Annual Meeting of the American Political Science Association, Washington D.C, August 28-31.

"Rethinking the Link Between District Diversity and Electoral Competitiveness." Presented at the 1997 Annual Meeting of the American Political Science Association, Washington D.C, August 28-31.

"Comparing Electoral Competition, Responsiveness, and Change in the House and Senate: The Senate Really is Different." Presented at the 1997 Annual Meeting of the Southwestern Social Science Association, New Orleans, March 26-30.

"Explaining the Ideological Differences Between the Two U.S. Senators Elected from the Same State: An Institutional Effects Model," with Bernard Grofman. Presented at the 1997 Annual Meeting of the Public Choice Society, San Francisco, March 21-23.

"The Power of Concentrated Ideological Minorities," with Bernard Grofman and William Koetzle. Presented at the 1997 Annual Meeting of the Public Choice Society, San Francisco, March 21-23. "Why Do Voters Split Their Tickets? A Comparative Midpoints Approach," with Bernard Grofman, Michael McDonald, and William Koetzle. Presented at the 1997 Annual Meeting of the Public Choice Society, San Francisco, March 21-23.

"Explaining Divided Senate Delegations 1788-1994, A Realignment Approach." Presented at the 1996 Annual Meeting of the American Political Science Association, San Francisco, August 28 - September 1, 1996.

"Toward a Realignment-Based Theory of Divided Senate Delegations" presented at 1995 Western Political Science Association Meeting, San Francisco, March 1996. And at the 1996 Annual Meeting of the Public Choice Society, Houston, Texas, April 1996.

"Split-ticket Voting and Divided Government" with Bernard Grofman, Michael McDonald, and William Koetzle. Presented at the Conference on Strategy & Politics, Center for the Study of Collective Choice, University of Maryland, April 14, 1996.

"Comparing Midterm Elections in the U.S. House and Senate," with William Koetzle and Bernard Grofman. Presented at the 1996 Annual Meeting of the Public Choice Society, Houston, Texas, April, 1996.

"Explaining Seat Change in the United States Senate, 1922-1994," with William Koetzle.

Presented at the 1995 Midwestern Political Science Association Annual Meeting in Chicago, Illinois, April 1995.

"Lip-Reading, Draft-Dodging, and Perot-noia: The 1992 Presidential Campaign in Editorial Cartoons," with William Koetzle. Presented at the 1994 Western Political Science Association Annual Meeting in Albuquerque, New Mexico, March 1994.

#### **Teaching Experience**

Introduction to U.S. and Texas Government

Political Parties and Interest Groups

American Political Institutions Race and Redistricting Congress Campaigns and Elections Statistics Computer Based Research in Social Science Graduate seminar in American Politics Graduate seminar in Electoral Systems Graduate seminar in American Political Institutions Graduate seminar in Comparative Institutions Graduate seminar in Election Law and Electoral Systems

#### **Service & Professional Activities**

2013-14 Executive Committee, Political Science, UT Dallas

2010-2012 Senior Associate Dean, in charge of graduate studies for the School of Economic, Political, and Policy Sciences.

2007-2010 Associate Program Head and Director of Graduate Studies, Political Science, UT Dallas.

2005-2007 Executive Committee, Political Science, UT Dallas.

2006 American Politics search committee, UT Dallas.

2003-2005 Faculty Senate, Northern Arizona University.

2000-2001 Faculty Senate, Binghamton University.

2000-2001 Graduate Committee, Department of Political Science, Binghamton University.

2000-2001 American Politics Search Committee, Binghamton University.

1999-2000 American Politics Search Committee, Binghamton University.

1999-2000 Graduate Committee, Department of Political Science, Binghamton University.

Reviewer, National Science Foundation, American Political Science Review, American Journal of Political Science, Journal of Politics, Legislative Studies Quarterly, Journal of Theoretical Politics, American Politics Review, National Science Foundation, Public Choice, Political Research Quarterly, Electoral Studies, British Journal of Political Science, Journal of European Public Policy, European Journal of Political Research, and Party Politics.

#### **Ph.D Students**

Patrick Muenks, faculty at UT Dallas Misty Parker, faculty at Del Mar College Paul Collins, faculty at University of North Texas Billy Monroe, faculty at Stephen F. Austin State College Walt Borges, faculty at UNT Dallas David Smith Whitney Manzo, faculty at Meredith College Adrianna Smith

#### **Redistricting and Litigation Experience**

Texas Congressional, 2001, testified in state court Pennsylvania Congressional, 2002, testified in state and federal court Alabama Congressional, 2002, testified in federal court Alaska State Legislative, 2002 testified in state court Virginia State Legislative (wrote a report but did not testify), 2001 Nevada State Legislative (Guy v. Miller), 2011 testified in state court New Mexico State Legislative (Egolf v. Duran), 2011 testified in state court Colorado Congressional (Moreno v. Gessler), 2011 South Carolina Congressional (Backus v. South Carolina), 2012 testified in federal court North Carolina Congressional and Legislative (Dickson v. Rucho), 2012 Florida Congressional (Romo v. Detzner) Alabama Legislative (ALBC v. Alabama), 2013 testified in federal court South Dakota Voting Rights Act case (Brooks et al. v. Gant et al.), 2014 Galveston County Texas (Petteway et al. v. Galveston County), 2016 Kern County Districting (Luna v. County of Kern), 2017 Ohio Congressional (Ohio A. Philip Randolph Institute v. Smith), 2018 Michigan Congressional (League of Women Voters Michigan v. Johnson), 2018 Florida Signature Matching (DNC Servs. Corp., v. Lee), 2019 North Carolina Congressional (Common Cause v. Lews), 2019 Oregon Congressional (Clarno et al v. Fagan), 2021 Maryland Congressional (Parrot v. Lamone), 2022 Arkansas Absentee Ballot (League of Women Voters of Arkansas v. Thurston), 2023