

IN THE SUPREME COURT OF OHIO

**LEAGUE OF WOMEN VOTERS OF
OHIO, *et al.***

Petitioners,

v.

**OHIO REDISTRICTING COMMISSION,
*et al.,***

Respondents.

Case No. 2021-1193

**Original Action Filed Pursuant to Ohio
Const., Art. XI and S.Ct.Prac.R. 14.03**

AFFIDAVIT OF CHRISTOPHER WARSHAW

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Warsaw Affidavit.pdf

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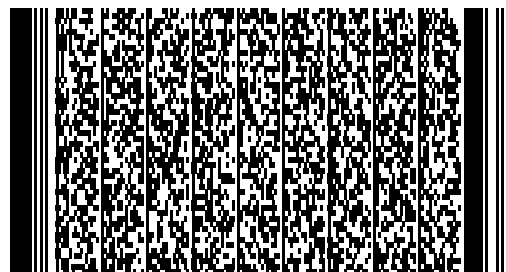
E-Signature Summary

E-Signature 1: Chris Warsaw (CSW)

February 27, 2022 13:33:33 -8:00 [C42894EA13E1] [69.143.174.137]
 warshaw@email.gwu.edu (Principal) (Personally Known)

E-Signature Notary: Theresa M Sabo (TMS)

February 27, 2022 13:33:33 -8:00 [58B8FEEE8A7A] [96.27.183.41]
 tess.sabo@gmail.com
 I, Theresa M Sabo, did witness the participants named above electronically sign this document.



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LEAGUE OF WOMEN VOTERS OF OHIO, et al.,

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Original Action Pursuant to Ohio Const., Art. XI

AFFIDAVIT OF CHRISTOPHER WARSHAW

Franklin County
/ss
State of Ohio

Now comes affiant Christopher Warshaw, having been first duly cautioned and sworn, deposes and states as follows:

1. I am over the age of 18 and fully competent to make this declaration. I have personal knowledge of the statements and facts contained herein.
2. For the purposes of this litigation, I have been asked by counsel for Relators to analyze relevant data and provide my expert opinions.
3. To that end, I have personally prepared the report attached to this affidavit as Exhibit A, and swear to its authenticity and to the faithfulness of the opinions expressed and, to the best of my knowledge, the accuracy of the factual statements made therein.

FURTHER AFFIANT SAYETH NAUGHT.

Executed on 02/27/2022, 2022.

Chris Warshaw
Signed on 2022/02/27 13:33:33 -0000

Christopher Warshaw

Sworn and subscribed before me this 02/27/2022, 2022.



Theresa M Sabo
Signed on 2022/02/27 13:33:33 -0000

Notary Public

Notarial act performed by audio-visual communication



A8C242D0-BE51-47DE-BFE1-8137FA5EA5B0 --- 2022/02/27 13:25:17 -8:00 --- Remote Notary

EXHIBIT A

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An Evaluation of the Partisan Fairness of Ohio's February 24, 2022 State Legislative Districting Plan

Christopher Warshaw*

February 28, 2022

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*Associate Professor, Department of Political Science, George Washington University. warshaw@gwu.edu. Note that the analyses and views in this report are my own, and do not represent the views of George Washington University.

Contents

1	Introduction	1
2	Qualifications, Publications and Compensation	1
3	Summary	2
4	Results	3
4.1	Close Districts on State Senate plan	3
4.2	Close Districts on State House plan	5
5	Conclusion	6

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1 Introduction

My name is Christopher Warshaw. I am an Associate Professor of Political Science at George Washington University. Previously, I was an Associate Professor at the Massachusetts Institute of Technology (MIT) from July 2016 - July 2017, and an Assistant Professor at MIT from July 2012 - July 2016.

I have been asked by counsel representing the League of Women Voters plaintiffs in this case to analyze relevant data and provide my expert opinions about whether the number of close districts in Ohio's enacted February 24, 2022 state legislative districting plans are roughly proportional between the two parties. Specifically, I have been asked to examine:

- The number of seats on each plan where each party is expected to receive between 50 and 51% of the vote.
- The number of seats on each plan where each party is expected to receive between 51 and 52% of the vote.
- Whether both parties have seat shares below 52%.
- If one party does not have seats with expected vote shares below 52%, what is the lowest expected vote share for that party?

2 Qualifications, Publications and Compensation

My Ph.D. is in Political Science, from Stanford University, where my graduate training included courses in political science and statistics. I also have a J.D. from Stanford Law School. My academic research focuses on public opinion, representation, elections, and polarization in American Politics. I have written multiple papers that focus on elections and two published articles that focus specifically on partisan gerrymandering. I also have a forthcoming book that includes an extensive analysis on the causes and consequences of partisan gerrymandering in state governments.

My curriculum vitae is attached to this report. All publications that I have authored and published appear in my curriculum vitae. My work is published or forthcoming in peer-reviewed journals such as: the *American Political Science Review*, the *American Journal of Political Science*, the *Journal of Politics*, *Political Analysis*, *Political Science Research and Methods*, the *British Journal of Political Science*, *Political Behavior*, *Science Advances*, the *Election Law Journal*, *Nature Energy*, *Public Choice*, and edited volumes

from Cambridge University Press and Oxford University Press. My book entitled *Dynamic Democracy in the American States* is forthcoming from the University of Chicago Press. My non-academic writing has been published in the *New York Times* and the *Washington Post*. My work has also been discussed in the *Economist* and many other prominent media outlets.

My opinions in this case are based on the knowledge I have amassed over my education, training and experience, including a detailed review of the relevant academic literature. They also follow from statistical analysis of precinct-level data on recent statewide Ohio elections. Specifically, I use precinct-level data on Ohio's statewide elections between 2016-20 from the Voting and Election Science Team (University of Florida, Wichita State University). I obtained these data from the Harvard Dataverse.¹ I merge the precinct-level returns to the proposed plans by assigning precincts to the district that has the greatest overlap with it.²

I have previously provided expert reports in this case, as well as six other redistricting-related cases and several Census-related cases (see my CV for a current list). I am being compensated at a rate of \$325 per hour. The opinions in this report are my own, and do not represent the views of George Washington University.

3 Summary

This report examines whether Ohio's enacted February 24, 2022 state legislative maps appear to meet the criteria in the Ohio Constitution. Specifically, it examines whether the close seats in the plans are roughly proportional between the parties.

It finds that the close seats are not proportional between the parties. Based on the Commission's approach of aggregating the raw votes in elections from 2016-2020, there are 7 state senate districts where Democrats are expected to receive between 50 and 52% of the vote, and no state senate districts where Republicans are expected to win between 50 and 52% of the vote. Moreover, there are 19 state house districts where Democrats are expected to receive between 50 and 52% of the vote and zero-Republican leaning districts in this range. The closest Republican-leaning state senate seat has a 54.3% Republican vote share in the statewide elections from 2016-2020 and the closest Republican-leaning state house seat has a 52.7% Republican vote share. The fact that all of the close seats

1. See <https://dataverse.harvard.edu/dataverse/electionscience>.

2. This approach is slightly different from the one I used in my initial report, which joined precincts to the district where the geographic center of the precinct was located. There is very little substantive difference between the two approaches. But my current approach appears to better match the methodology used by the Commission in its analysis.

are Democratic-leaning and none are Republican-leaning gives the Republican party a substantial advantage in the translation of votes to seats in Ohio.

The disproportionate distribution of the close seats on the February 24 plan is even more extreme than the January 22, 2022 plan that was struck down by the Ohio Supreme Court. Under that plan, there were 14 Democratic-leaning House Seats in the 50-52% range and 5 Senate seats in that range. There was 1 Republican-leaning state senate seat and zero Republican-leaning state house seats in the 50-52% range.

Overall, my analysis echos the findings in my earlier reports. Like the Commission's two earlier plans, the February 24 plan appears to be drawn to favor the Republican political party.

4 Results

In this section, I analyze the proportionality of the close seats on the Commission's February 24 state legislative plans. In order to do this, it is necessary to estimate each party's share of the votes in each district. While the Ohio Constitution clearly states that the past decade of elections shall be used for this analysis, it does not provide guidance on how these elections should be aggregated. For my analysis here, I focus on the approach used by the Commission. Their analysis appears to sum the raw votes in each district for the 9 statewide elections between 2016 and 2020 (see the Commission's Section 8(C)(2) Statement). Based on these summed votes, they determine whether Democrats or Republicans would win each district on a plan.³

4.1 Close Districts on State Senate plan

First, I analyze the proportionality of the close seats on the Commission's February 24 state senate plan. Figure 2 shows the district-level vote shares using the aggregation approach used by the Commission. Based on this aggregation approach, there are 15

3. As I discussed in my previous report, it is important to note that there are three important weaknesses of this approach. First, it only includes three election years. Moreover, it implicitly overweights the 2018 election cycle, since six of the nine election contests in this composite occurred during this cycle. This was a very strong election year for Democrats. So this is likely to over-estimate Democratic performance in future elections. This could be addressed by weighting each election year equally or including the 2012 and 2014 election years to capture the full range of elections over the past decade. Third, the Commission's approach yields a single, deterministic estimate of the winner of each district. So a district that one party is projected to win by .01% of the vote would count the same as one they are projected to win by 10%. In reality, however, the district where one party is projected to win by .01% is likely to be won by each party about half the time. In my previous report, I discussed other approaches that address these weaknesses.

districts (45% of the seats) where Democrats win at least 50% of the votes in the statewide elections and 18 districts (55% of the seats) where Republicans win at least 50% of the votes in the statewide elections. At first glance, this appears to be roughly proportional with the two parties' statewide vote shares.

However, the close districts are extremely disproportionate. There are 7 districts where Democrats are expected to receive between 50 and 52% of the vote, and no districts where Republicans are expected to win between 50 and 52% of the vote. In those 7 close Democratic-leaning districts, Democrats are only likely to win a little more than half the time. So, in the average election, Republicans will win far more than 55% of the seats on this plan.

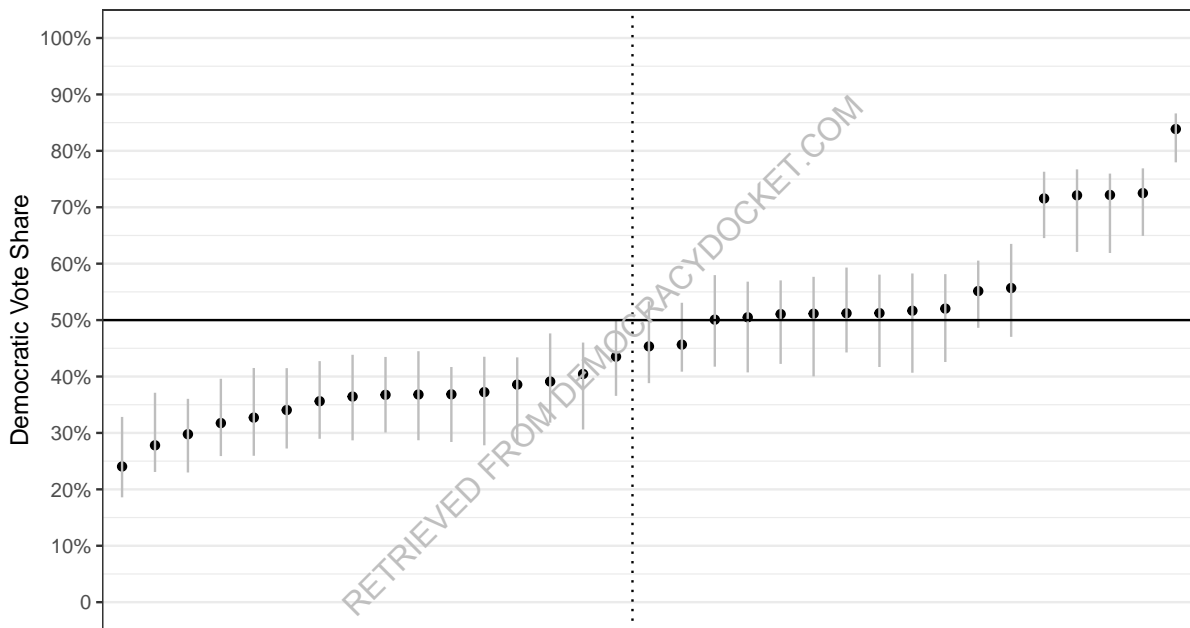


Figure 1: Expected Democrat Vote Shares

Figure 2: District-level Vote Shares on Commission's Revised State Senate plan based on the aggregation approach used by the Commission. The vertical lines around each dot show the range of statewide election results in that district. The dotted line shows the number of seats required for the majority.

More specifically, on the Commission's February 24 state senate plan there are:

- 2 districts where Democrats are expected to receive between 50 and 51% of the vote.
- 5 districts where Democrats are expected to receive between 51 and 52% of the vote

In contrast, there are:

- no districts where Republicans are expected to win between 50 and 51% of the vote.
- no districts where Republicans are expected to win between 51 and 52% of the vote.
- no districts where Republicans are expected to win between 52 and 53% of the vote.
- no districts where Republicans are expected to win between 53 and 54% of the vote.

4.2 Close Districts on State House plan

In this section, I analyze the proportionality of the close seats on the Commission's February 24 state house plan. Figure 4 shows the district-level vote shares using the aggregation approach used by the Commission. Based on this aggregation approach, there are 45 districts where Democrats win at least 50% of the votes in the statewide elections and 54 districts where Republicans win at least 50% of the votes in the statewide elections. At first glance, this appears to be roughly proportional with the two parties' statewide vote shares.

Just as on the state senate plan, however, the close districts are extremely disproportionate. There are nineteen Democratic-leaning close districts and zero-Republican leaning close districts. In those close Democratic-leaning districts, Democrats are only likely to win a little more than half the time. So, in the average election, Republicans will win far more than 55% of the seats on this plan.

More specifically, on the Commission's February 24 state house plan there are:

- 5 districts where Democrats are expected to receive between 50 and 51% of the vote.
- 14 districts where Democrats are expected to receive between 51 and 52% of the vote

In contrast, there are:

- no districts where Republicans are expected to win between 50 and 51% of the vote.
- no districts where Republicans are expected to win between 51 and 52% of the vote.

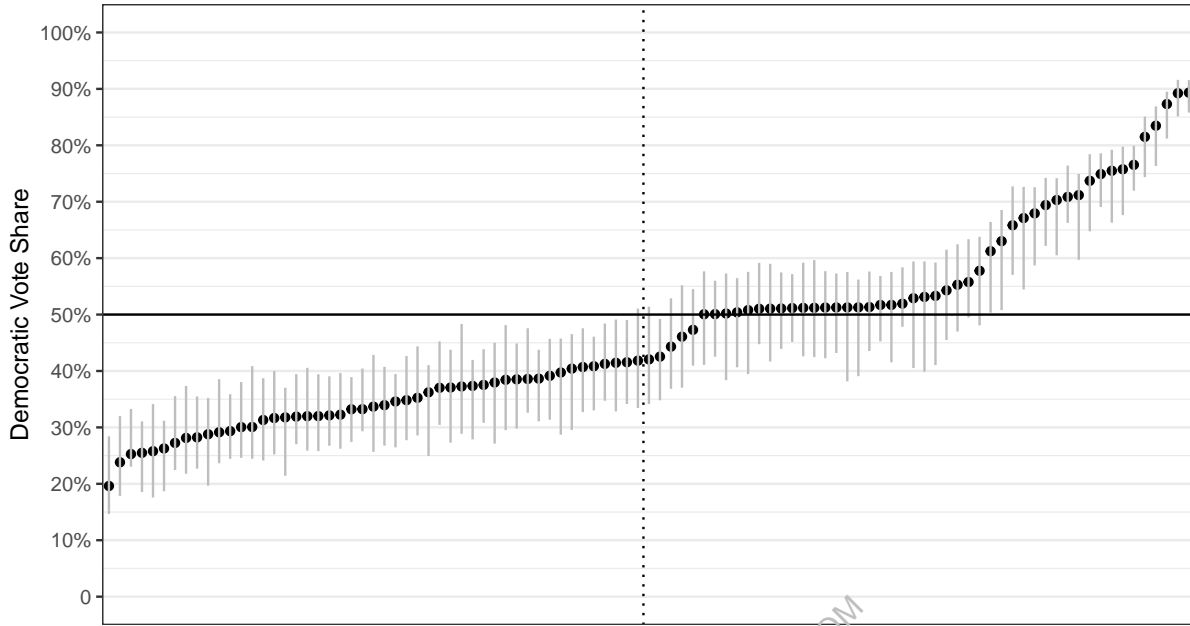


Figure 3: Expected Democrat Vote Shares

Figure 4: District-level Vote Shares on Commission's Revised State House plan based on the aggregation approach used by the Commission. The vertical lines around each dot show the range of statewide election results in that district. The dotted line shows the number of seats required for the majority.

5 Conclusion

Based on my evaluations of the Commission's February 24 enacted plans, I reach the conclusion that the close seats on these plans are not proportionate between the parties. Instead, all the close seats slightly lean toward Democrats. There are no close Republican-leaning seats. This means that Republicans are very likely to win far more than 55% of the seats on both plans. Thus, the new plans appear to have been drawn to favor the Republican Party.

EXHIBIT A
CURRICULUM VITAE

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Christopher S. Warsaw

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Academic Employment

George Washington University, Washington, DC

Associate Professor (2020-present)

Assistant Professor, 2017 - 2020

Massachusetts Institute of Technology, Cambridge, MA

Associate Professor of Political Science (without tenure), 2016 - 2017

Assistant Professor of Political Science, 2012 - 2016

Education

Stanford University, Ph.D., Political Science, 2012

Fields: American Politics, Comparative Politics, and Political Methodology (Statistics)

Stanford Law School, Juris Doctorate, 2011

Williams College, B.A., *magna cum laude*, 2002

Research Interests

American Politics, Representation, Elections, Public Opinion, State & Local Politics, Environmental Politics and Policy, Statistical Methodology

Research

Publications

Book

"Dynamic Democracy: Public Opinion, Elections, and Policy Making in the American States." Forthcoming. University of Chicago Press. (with Devin Caughey)

Peer Reviewed Articles

24. "The Effect of Television Advertising in United States Elections." Forthcoming. *American Political Science Review*. (with John Sides and Lynn Vavreck).

23. "Using Screeners to Measure Respondent Attention on Self-Administered Surveys: Which Items and How Many?" 2021. *Political Science Research and Methods*. 9(2): 430-437. (with Adam Berinsky, Michele Margolis, and Mike Sances)
22. "The Impact of Partisan Gerrymandering on Political Parties." 2020. *Legislative Studies Quarterly*. 45(4): 609-643. (with Nicholas Stephanopoulos)
21. "Fatalities from COVID-19 are reducing Americans' support for Republicans at every level of federal office." 2020. *Science Advances*. (with Lynn Vavreck and Ryan Baxter-King)
20. "Accountability for the Local Economy at All Levels of Government in United States Elections." 2020. *American Political Science Review*. 114(3): 660-676. (with Justin de Benedictis-Kessner)
19. "Politics in Forgotten Governments: The Partisan Composition of County Legislatures and County Fiscal Policies." 2020. *Journal of Politics*. 82(2): 460-475. (with Justin de Benedictis-Kessner)
18. "On the Representativeness of Primary Electorates." 2020. *British Journal of Political Science*. 50(2): 677-685. (with John Sides, Chris Tausanovitch, and Lynn Vavreck)
17. "Geography, Uncertainty, and Polarization." 2019. *Political Science Research and Methods*. 7(4): 775-794. (with Nolan McCarty, Jonathan Rodden, Boris Shor, and Chris Tausanovitch)
16. "Policy Ideology in European Mass Publics, 1981-2016." 2019. *American Political Science Review*. 113(3): 674-693. (with Devin Caughey and Tom O'Grady)
15. "Does Global Warming Increase Public Concern About Climate Change?" 2019. *Journal of Politics*. 81(2): 686-691. (with Parrish Bergquist)
14. "Local Elections and Representation in the United States." 2019. *Annual Review of Political Science*. 22(1): 461-479.
13. "The Ideological Nationalization of Party Constituencies in the American States". 2018. *Public Choice*. Keith Poole Symposium. 176(1-2): 133-151. (with James Dunham and Devin Caughey)
12. "Policy Preferences and Policy Change: Dynamic Responsiveness in the American States, 1936-2014." 2018. *American Political Science Review*. 112(2): 249-266. (with Devin Caughey)
11. "Does the Ideological Proximity Between Candidates and Voters Affect Voting in U.S. House Elections?" 2018. *Political Behavior*. 40(1): 223-245. (with Chris Tausanovitch)
10. "Partisan Gerrymandering and the Political Process: Effects on Roll-Call Voting and State Policies." *Election Law Journal*. December, 2017. 16(4): 453-469. Symposium on Partisan Gerrymandering and the Efficiency Gap. (with Devin Caughey and Chris Tausanovitch)
9. "Incremental Democracy: The Policy Effects of Partisan Control of State Government." 2017. *Journal of Politics*. 79(4): 1342-1358. (with Devin Caughey and Yiqing Xu)
8. "Renewable energy policy design and framing influences public support in the United States." 2017. *Nature Energy*. 2(17107). (with Leah Stokes)
7. "Estimating Candidates' Political Orientation in a Polarized Congress." 2017. *Political Analysis*. 25(2): 167-187. (with Chris Tausanovitch)
6. "The Dynamics of State Policy Liberalism, 1936-2014." 2016. *American Journal of Political Science*. 60(4): 899-913. (with Devin Caughey)
5. "Mayoral Partisanship and Municipal Fiscal Policy." 2016. *Journal of Politics*. 78(4): 1124-1138. (with Justin de Benedictis-Kessner)

4. "Dynamic Estimation of Latent Opinion Using a Hierarchical Group-Level IRT Model." 2015. *Political Analysis*. 23(2): 197-211. (with Devin Caughey)
3. "Representation in Municipal Government." 2014. *American Political Science Review*. 108(3): 605-641. (with Chris Tausanovitch)
2. "Measuring Constituent Policy Preferences in Congress, State Legislatures and Cities." 2013. *Journal of Politics*. 75(2): 330-342. (with Chris Tausanovitch)
1. "How Should We Measure District-Level Public Opinion on Individual Issues?" 2012. *Journal of Politics*. 74(1): 203-219. (with Jonathan Rodden)

Editor Reviewed Articles in Journals and Law Reviews

4. "A preference for constant costs." 2020. *Nature Climate Change*. News & Views. 10: 978-979
3. "Public Opinion in Subnational Politics." 2019. *Journal of Politics*. 81(1): 352-363. Editor reviewed for Symposium on Subnational Policymaking. (with Devin Caughey)
2. "Spatial variation in messaging effects." 2018. *Nature Climate Change*. News & Views. April, 2018.
1. "Business as Usual? Analyzing the Doctrinal Development of Environmental Standing Doctrine since 1976." 2011. *Harvard Law and Policy Review*. Volume 52. (with Gregory Wannier).

Book Chapters

5. "Elections and Parties in Environmental Politics." 2020. *Handbook on U.S. Environmental Policy*. David Konisky, ed. (with Parrish Bergquist)
4. "Latent Constructs in Public Opinion." 2018. *Oxford Handbook on Polling and Polling Methods*. R. Michael Alvarez and Lonna Atkeson, ed. Oxford: Oxford University Press.
3. "The Application of Big Data in Surveys to the Study of Elections, Public Opinion, and Representation." 2016. *Data Analytics in Social Science, Government, and Industry*. R. Michael Alvarez, ed. Cambridge: Cambridge University Press.
2. "The Political Economy of Expropriation and Privatization in the Oil Sector." 2012. *Oil and Governance: State-Owned Enterprises and the World Energy Supply*. David G. Victor, David Hults, and Mark Thurber, eds. Cambridge: Cambridge University Press.
1. "Democratization and Countermajoritarian Institutions: The Role of Power and Constitutional Design In Self-Enforcing Democracy." 2012. *Comparative Constitutional Design*. Cambridge: Cambridge University Press. (with Susan Alberts and Barry R. Weingast).

Policy Reports

1. "Reforming Baltimore's Mayoral Elections." 2020. Abell Foundation Report.
<https://www.abell.org/publications/reforming-baltimores-mayoral-elections>

Articles Under Review

- "The Effect of Fox News Channel on U.S. Elections: 2000-2020" (with Elliott Ash, Sergio Galletta, and Matteo Pinna)
(Invited to revise and resubmit at the *American Political Science Review*)
- "Moderates" (with Anthony Fowler, Seth Hill, Jeff Lewis, Chris Tausanovitch, Lynn Vavreck)
(Invited to revise and resubmit at the *American Political Science Review*)

"Partisan Polarization in the Mass Public in South Korea and the United States"

"How Partisanship in Cities Influences Housing Policy" (with Justin de Benedictis-Kessner and Dan Jones)

Works in Progress

"Electoral Accountability for Ideological Extremism in American Elections" (with Devin Caughey)

"Gerrymandering in Local Governments" (with Yamil Valez)

"When Mass Opinion Goes to the Ballot Box: A National Assessment of State Level Issue Opinion and Ballot Initiative Results" (with Jonathan Robinson and John Sides)

"Inequalities in Participation, Voting, and Representation in Local Governments" (with Justin de Benedictis-Kessner and John Sides)

"The Ideology of State Party Platforms " (with Justin Phillips and Gerald Gamm)

Non-Academic Writing

"Here are six big takeaways from the 2020 elections." *Washington Post*. November 7, 2020. (with Emily Thorson)

"TV ads still win elections. And Democrats are buying a lot more of them." *Washington Post*. October 28, 2020. (with John Sides and Lynn Vavreck)

"How Local Covid Deaths Are Affecting Vote Choice." *New York Times*. July 28, 2020. (with Lynn Vavreck)

"Allowing Only Older Americans to Vote by Mail Leads to Severe Racial Disparities." *Election Law Blog*. July 1, 2020.

"A coronavirus recession would hurt all kinds of Republican candidates – not just Trump." *Washington Post*, Monkey Cage. March 18, 2020. (with Justin de Benedictis-Kessner).

"The Supreme Court is deciding a gerrymandering case. Here's the social science that the Justices need to know." *Washington Post*, Monkey Cage. June 1, 2019.

"New research shows just how badly a citizenship question would hurt the 2020 Census." *Washington Post*, Monkey Cage. April 22, 2019. (with Matt Barreto, Matthew A. Baum, Bryce J. Dietrich, Rebecca Goldstein, and Maya Sen)

"G.O.P. Senators Might Not Realize It, but Not One State Supports the Health Bill." *New York Times*. June 14, 2017. (with David Broockman)

Invited Talks

2021-2022: American University

2020-2021: University of Maryland; Stony Brook University

2019-2020: Princeton; UC Berkeley

2018-2019: Stanford; Northeast Political Methodology Meeting at NYU; University of Maryland

2017-2018: USC PIPE Symposium on Studying Subnational Policy Making; BYU; University of Chicago Conference on Political Polarization

2016-2017: University of Virginia; UCLA

2015-2016: Washington University in St. Louis; Texas A&M; Arizona State University Conference on Campaigns, Elections and Representation

2014-2015: Yale; Columbia; Duke

2013-2014: Princeton; Boston University; Rochester University

2012-2013: MIT American Politics Conference; Columbia Representation Conference; Princeton Media & Politics Conference; Annual Meeting of the Society for Political Methodology

Grants

Russell Sage Foundation, 2019-2021 (\$119,475)

GW UFF, 2019-2020 (\$14,433)

MIT Elections Lab, 2019-2020 (\$14,000)

Jeptha H. and Emily V. Wade Award, 2014-2016 (\$59,686)

MIT Energy Institute (MITEI) Seed Grant, 2014-2016 (\$137,147)

MIT SHASS Research Fund, 2012-2014 (\$8,734)

Software

dgo: Dynamic Estimation of Group-Level Opinion. 2017. R package. <https://CRAN.R-project.org/package=dgo>. (with James Dunham and Devin Caughey)

Awards and Honors

OVPR Early Career Scholar at George Washington University, 2019.

APSA award for best journal article on State Politics & Policy in 2016.

Award for best paper on State Politics & Policy at the 2014 American Political Science Conference.

Graduate Fellowship, Dept. of Political Science, Stanford University, 2006-2012

David A. Wells Prize in Political Economy for Best Undergraduate Economics Thesis, Williams College, 2002

Phi Beta Kappa, Williams College, 2002

Teaching Experience

Instructor:

Measurement Models (Graduate-level) (GW), 2020

Political Representation (Graduate-level) (GW), 2019

Elections (GW), 2018, 2019, 2021

Multi-level and Panel Models (Graduate-level) (GW), 2017, 2018, 2019, 2021

Public Opinion (GW), 2017
American Political Institutions (Graduate-level) (MIT), 2014, 2016
Public Opinion and Elections (MIT), 2016
Energy Policy (MIT), 2013
Democracy in America (MIT), 2013, 2014
Constitutional Law & Judicial Politics (MIT), 2013, 2015
Making Public Policy (MIT), 2012, 2014

Teaching Assistant:

Introduction to American Law (Stanford University), 2010
Judicial Politics and Constitutional Law (Stanford University), 2009
Political Economy of Energy Policy (Stanford University), 2008
Introduction to International Relations (Stanford University), 2008
Introduction to Public Policy (Stanford University), 2007
Introduction to Econometrics (Williams College), 2002

Graduate Advising

George Washington University:

Alex Beck (Dissertation committee chair)
Dickson Su (Dissertation committee chair)
Kerry Synan (Dissertation committee co-chair)
Jared Heern (Dissertation committee member)
Colin Emrich (Graduates in 2021, Dissertation committee member)

Massachusetts Institute of Technology:

Leah Stokes (Graduated in 2015, Dissertation committee member)
Krista Loose (2016, Dissertation committee member)
Tom O'Grady (2017, Dissertation committee member)
Justin de Benedictis-Kessner (2017, Dissertation committee member)
Alex Copulsky (2017, Masters thesis committee member)
James Dunham (2018, Dissertation committee member)
Parrish Bergquist (2018, Dissertation committee member)
Meg Goldberg (2019, Dissertation committee member)

University Service

George Washington University:

Member, Academic Program Review Committee, Sociology Dept., 2021
Coordinator, Graduate Political Science Admissions Committee, 2019-2020
Coordinator, American Politics Workshop, 2018-2020
Member, Methods Exam Committee, 2017-2020
Member, Graduate Political Science Admissions Committee, 2018-2019

Massachusetts Institute of Technology:

Member, Energy Education Task Force, 2012-2017
Parking and Transit Committee, 2013-2017
Member, Graduate Political Science Admissions Committee, 2013-2015
Faculty Fellow, Burchard Scholars, 2013-2015

Stanford University (as graduate student):

President, Stanford Environmental Law Society, 2009-2010
Executive Board Member, Stanford Environmental Law Society 2008-2010
Member, University Committee on Graduate Studies, 2007-2009
Member, University Library Committee, 2007-2008
President, Political Science Graduate Students Association, 2007-2008

Professional Service

Reviewer: American Political Science Review, American Journal of Political Science, Journal of Politics, Political Analysis, Political Behavior, Econometrica, Quarterly Journal of Political Science, Legislative Studies Quarterly, Political Research Quarterly, American Politics Research, British Journal of Political Science, Journal of Law and Courts, Public Opinion Quarterly, Political Science Research and Methods, State Politics and Policy Quarterly, Journal of Experimental Political Science, Nature Climate Change, Urban Affairs Review, Journal of Health Politics, Policy and Law, Perspectives on Politics, Review of Economics and Statistics, Cambridge University Press

Member, Best Dissertation Committee, Urban Politics Section of the American Political Science Assoc., 2021

Member, Program Committee, Midwest Political Science Association Conference, 2020

Lead Organizer, Local Political Economy APSA Pre-Conference at George Washington University, 2019

Member, Planning Committee, Cooperative Congressional Election Study (CCES), 2018

Member, Best Paper Committee, State Politics Section of the American Political Science Assoc., 2018

Editorial Board, Journal of Politics, 2017-18

Executive Committee, Urban Politics Section of the American Political Science Association, 2015-2017

Organizing Committee, Conference on Ideal Point Models at MIT, <http://idealpoint.tahk.us>, 2015

Member, Best Paper Committee, Urban Politics Section of the American Political Science Assoc., 2015

Consulting

Partisan Gerrymandering:

Expert, *League of Women Voters of Michigan vs Michigan Independent Citizens Redistricting Commission* (2022), State House Districts

Expert, *League of Women Voters of Ohio v. Ohio Redistricting Commission* (2021), Congressional districts

Expert, *League of Women Voters of Ohio v. Ohio Redistricting Commission* (2021), State Legislative Districts

Expert, *League of Women Voters vs. Kent County Apportionment Commission* (2021)

Expert, *APRI et al. v. v. Smith et al.* (2018-2019)

Expert, *League of Women Voters of Michigan v. Johnson* (2018-2019)

Expert, *League of Women Voters of Pennsylvania v. the Commonwealth of Pennsylvania* (2017-18)

Census:

Expert, *La Union del Pueblo Entero , et al. v. Trump*, Effect of Excluding Undocumented Immigrants from Census on Apportionment (2020)

Expert, *Common Cause et al. v. Trump*, Effect of Excluding Undocumented Immigrants from Census on Apportionment (2020)

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Consultant, *Abell Foundation*, Report on Potential Institutional Reforms for Baltimore's City Elections

Community Service

PlanScore: Social Science Advisory Team (2020-2021)

Sierra Club: National Board of Directors (2009-2015)