IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA
ORLANDO DIVISION

VOTE!, JOSEPHINE POPE, GABRIELLE ADEKUNLE and VICTOR VALENTIN v. CITY OF DAYTONA BEACH and LISA LEWIS	Case No.: 6:25-cv-1980-PGB-RMN

Expert Report of Christopher T. Kenny, Ph.D.

December 22, 2025

Table of Contents

I. Introduction

1. My name is Christopher T. Kenny and I am a Postdoctoral Research Associate at Princeton University. My research focuses on legislative redistricting and the use of census data in the United States. I am a co-Principal Investigator of the Algorithm-Assisted Redistricting Methodology (ALARM) Project. I am an author and the maintainer of the `redist` software in R, which is widely used to conduct redistricting simulation analyses.

2. I have been asked to review Section 5 of the "Expert Report of Sean P. Trende, Ph.D." which provides a series of simulation analyses, and to review the code and data used to generate the results in that section. Further, I was asked to review Section 4 of the Trende Report, with a particular focus on the population transfers in the enacted map from the benchmark map from the 2010 cycle. A short summary of my opinions as to the methods and conclusions in that section are provided below in Section II.

3. Section IV provides a more detailed discussion of issues in the simulation analysis performed. Section V provides a brief review of the population transfers that could have been made from the Benchmark to Enacted districts if core retention was the primary criterion used in the drawing of districts. Finally, Section VI discusses inconsistencies in the input data used in the Trende Report.

II. Summary of Findings and Opinions

4. The core statistical analyses performed by comparing the enacted plan to a set of simulated plans do not follow standard practices in redistricting simulation analyses. Several key details about the design of the simulations are missing in the report. Reviewing the code and data provided, the core design of

the simulations does not conform to the standard approach for adding multiple constraints in redistricting simulations. In particular, the simulations which are described as "forcing the simulations to respect district cores" (Trende Report, p. 31-32) misrepresent the actual simulations performed.

5. Further, the conclusions drawn in the Trende Report misinterpret the results of the simulation analyses that were performed. After presenting figures which obfuscate the location of the enacted plan relative to the simulated plans, the report makes a fundamental error in interpreting the results. It equates failing to reject a null hypothesis with accepting it as true. Rather than claiming that "the map drawer did not rely heavily upon racial data" (Trende Report, p. 29), the correct conclusion is that there is insufficient evidence *in the particular analysis performed* to conclude that the map drawer relied heavily upon racial data.

6. Finally, the core retention numbers demonstrate that simpler choices could have been made to maximize core retention if that was the primary criterion used in drawing districts.

III. Qualifications and Compensation

7. I am a Postdoctoral Research Associate at Princeton University. I work within the Initiative for Data-Driven Social Science and my appointment is in the Department of Politics. My job entails conducting research in the social sciences and offering consulting services to graduate students and faculty on computational methodologies and tools.

8. I received my Ph.D. from Harvard University in Political Science in May 2025. I completed general examinations in American politics and political methodology. As such, I hold an MA in Government. My dissertation, "Drawing

Democracies: Redistricting in America", is available online at https://www.proquest.com/openview/54e1cc8f872e98f37e0e248f70be5159.

9. I have taught courses in political science at the graduate and undergraduate level. I was an instructor for a graduate course in statistical methodology for political scientists. I twice offered a course on redistricting and elections for undergraduate students. In 2022, I was a Pre-Doctoral Fellow at the Election Law Clinic at Harvard Law School. I have also taught various short courses and workshops, including Harvard's "Math Prefresher for Political Scientists," a short course for entering Ph.D. students in Government.

10. My research focuses on the intersection between statistical methodology and American politics, with an emphasis on redistricting and census data. My research has appeared in peer reviewed general science journals, including *Science Advances*, *Scientific Data*, and *PNAS*, and in interdisciplinary journals, including the *Harvard Data Science Review*.

11. My research on census data has focused the effects of privacy protection mechanisms on published counts. This work includes evaluating the privacy protection mechanisms used in the 2020 Census.

12. My research in redistricting has largely focused on the validation of redistricting sampling methods and their application to political science questions. I co-founded and serve as a co-Principal Investigator of the ALARM Project, a research project studying algorithmic redistricting methodologies and their application. In this capacity, I codirect a team of over a dozen researchers studying redistricting algorithms and their applications.

13. As part of my academic research, I have developed software used for research on redistricting and census data. Some notable packages include

`redist` (Kenny et al. 2022), `censable` (Kenny 2022), and `geomander` (Kenny 2023). Dr. Trende used my `redist` software to run the simulations described in his report.

14. I previously wrote an expert report in *Sakhnovsky, et al v. City of Daytona Beach*. I have applied my research in service of the Maryland Redistricting Commission in 2021.[1] I have also applied my research in support of an amici curiae brief in *Alpha Phi Alpha Fraternity, Inc. et al. v. Brad Raffensperger*.[2]

15. My curriculum vitae is attached as Exhibit *A*. This includes a full list of my publications, presentations, teaching experience, and other relevant information on my qualifications.

16. I am being compensated at a rate of $225 per hour.

IV. Analysis of Redistricting Simulations in Section 5 of the Trende Report

17. Below, I detail my opinions based on the simulation analyses performed in Section 5 of the Trende Report. For both sections, I first begin with conclusions drawn in the Trende Report, followed by a discussion of issues I have identified by reviewing the *actual* analyses performed in the supporting code and data.

A. Design of simulations

18. Section 5 of the Trende Report provides a series of simulation analyses. Yet, the description of the simulation design is insufficient to allow for assessment of the methods used. Three simulations are described in minimal detail:

[1] A memo to the commission is available at https://redistricting.maryland.gov/Documents/Library/mcrc-drafts-2021-0913/2021-0913-memo-algorithms-produced-by-Professor-Rodden.pdf.

[2] A copy of the brief is available at https://static1.squarespace.com/static/60a559b59cfc63389f67f892/t/61fdadc3ff205a1aa1bd0ca7/1644015064277/Alpha+Phi+Alpha+Fraternity+v.+Raffensperger+Brief.

a baseline simulation, a simulation with a constraint to keep VTDs together, and a simulation with a constraint to encourage core retention. No information is provided on the parameters used in the sampling process, such as the population deviation threshold, compactness constraints, or other criteria.

19. In my experience, it is standard practice to provide full details on the design of simulations in order to allow for replication and assessment of the methods used. Otherwise, what does it mean to "add a light constraint for precinct boundaries" (Trende Report, p. 28) without further detail?

20. There are many ways to design simulation analyses and constraints. In particular, my software, `redist`, which Dr. Trende used, provides pre-built functionality to add constraints for keeping VTDs together and for core retention. However, there are multiple functions with different mathematical formulations for many types of constraints, including multiple ways to count administrative splits. Users of the software can also specify any arbitrary custom function to implement a constraint. At a minimum, it would be necessary to specify either (1) a pre-built function and its parameters *or* (2) a specific mathematical formulation and strength, in order to fully describe the simulation design.

21. Similarly, how should we interpret what it means to "add a constraint for core retention, forcing the simulations to respect district cores" (Trende Report, p. 31-32)? There are many techniques for preserving cores. One might use a probabilistic constraint that encourages the sampler to keep certain units together. One might instead use a probabilistic constraint that encourages a certain share of the population of each district to come from a "core" area. One could even formulate a hard constraint which keeps certain units fixed in their

districts. These potential options illustrate the ambiguity in the description provided.

22. Additionally, no diagnostic plots are shown for these simulations to assess if the constraints were successfully implemented. The typical approach is to show plots of the relevant constraint metrics (e.g., number of VTD splits, core retention share) to demonstrate that the sampled plans differ from the baseline simulation in the intended manner. Such diagnostics need not be extensive, but some evidence should always be provided to demonstrate that the simulations are performing as intended. As discussed below, the simulations did not perform as intended.

23. A secondary issue that I encounter is that four sets of results are shown, but only three simulations are described. By comparing the location of outlier points, it appears that Figures 19 and 20 are duplicates of each other. However, the titles for Figures 19, 20, and 21 are identical ("Dotplots, vtd constraint") which makes it hard to ascertain which simulation corresponds to which figure.

24. On December 18, 2025, I was provided with code and data for the simulations. The code only partially resolves the questions raised above and complicates others. The code itself is poorly organized, but I have carefully reviewed it.

25. Perhaps the most important question raised by the provided code is that four sets of simulations are run and outputs are saved, contradicting the report's description of the simulations.

1. Baseline simulation with 50,000 plans (5 independent runs of 10,000 plans each)

2. VTD constraint simulation with 400,000 plans (10 independent runs of 40,000 plans each)
3. Core retention constraint simulation with 400,000 plans (10 independent runs of 40,000 plans each)
4. Core retention constraint simulation with 400,000 plans (10 independent runs of 40,000 plans each) and twice the strength of the simulations described in item 3

26. It is unclear whether the third or fourth set of simulations corresponds to the "core retention" simulation described in the Trende Report. Additionally, no information is provided in the report that would indicate that some simulations include 8-times the number of plans as the baseline simulation or any information to explain why the numbers are chosen.

27. Further, the standard approach for adding multiple constraints in redistricting simulations is to combine them into a single simulation. For example, one might run a simulation with both a VTD constraint *and* a core retention constraint if we believe that both of these criteria are important. Here, the simulations are run separately.

28. Running the simulations separately is an issue because it prevents you from assessing the *joint* effects of multiple criteria. If constraints like those used here interact in non-trivial ways, then running them separately may not provide an accurate picture of the space of plans that satisfy both criteria. It is very hard to know when constraints could work together to change the distribution of summary statistics, like the distribution of the Black Population.

29. As mentioned above, no diagnostic plots are shown. These are not difficult to make, so I've created a set of 4 plots which show core retention across the 4

sets of simulations provided with the Trende Report. I use a relatively simple measure: for each plan, what percentage of people are placed in the same district as in the benchmark plan, after optimally matching the districts? In each of Figure 1, Figure 2, Figure 3, and Figure 4, the red bar shows the core retention of the enacted plan. The histogram shows the distribution of core retention across the sampled plans.

30. First, we see that the baseline simulation has a wide range of core retention values, with a median around 50% and most values sitting between 40% and 60%. Adding a VTD constraint does little to change this distribution, as expected.

31. However, both of the core retention simulations appear to have little effect on core retention. Both simulations have nearly identical distributions of core retention, with extremely similar medians and ranges. This suggests that the core retention constraint is not binding in either case. While these simulations are described as “forcing the simulations to respect district cores” (Trende Report, p. 31-32), the simulations clearly do not do so in any meaningful way.

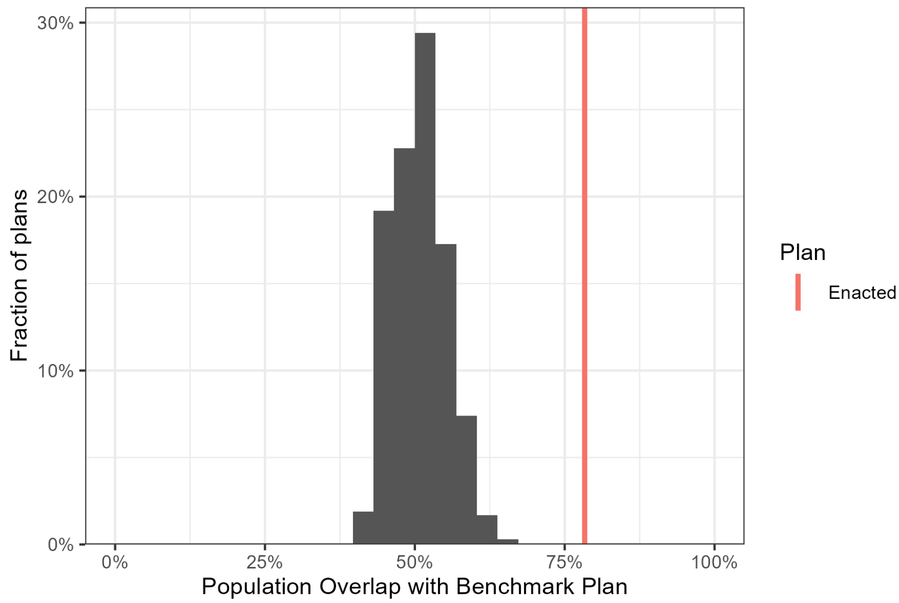

Figure 1: Core retention for the baseline simulations.

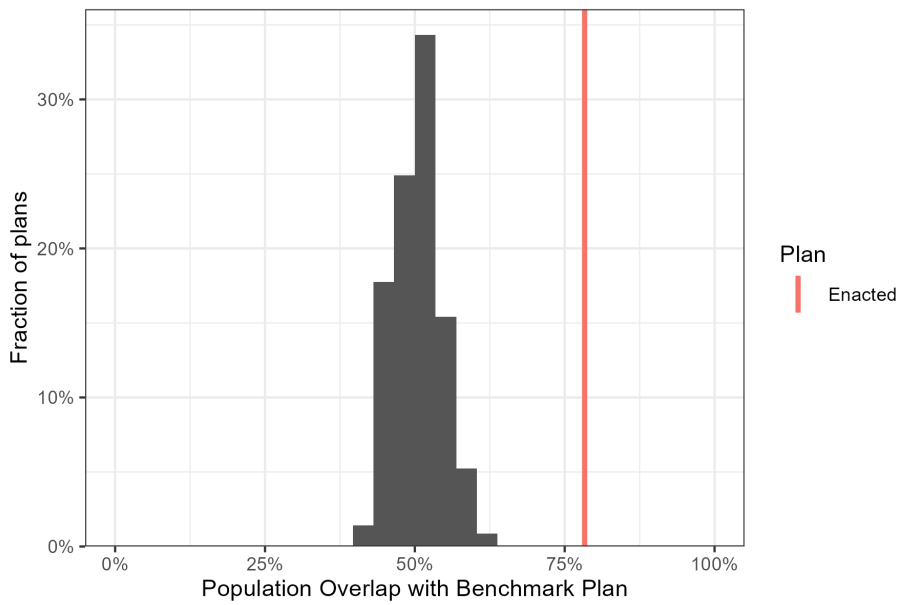

Figure 2: Core retention for the simulations which aim to reduce VTD splits

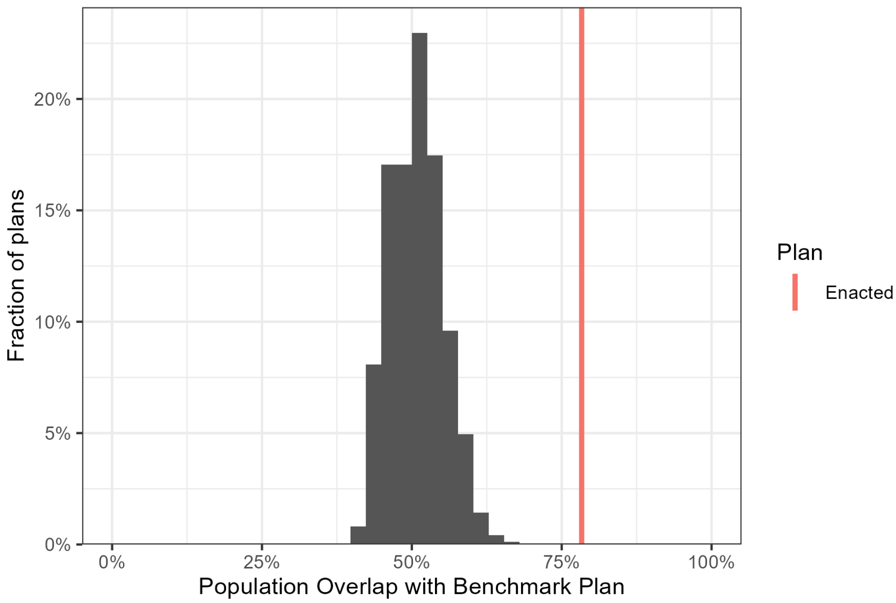

Figure 3: Core retention for the simulations which aim to improve core retention (strength = 1)

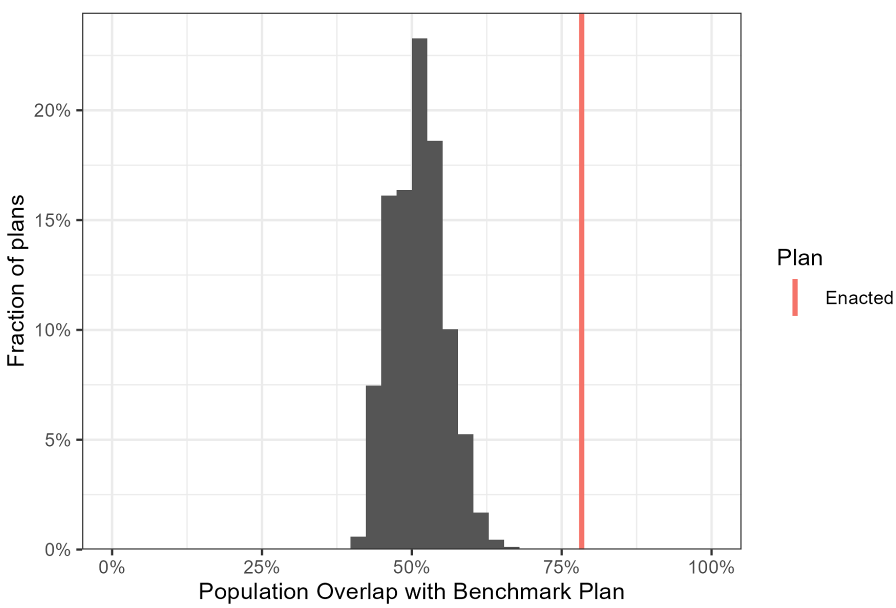

Figure 4: Core retention for the simulations which aim to improve core retention (strength = 2)

32. I stress that these types of checks are standard practice. Strengths in redistricting simulation constraints do not themselves have a clear meaning. A

value of 1 or 2 for a strength parameter does not indicate that the constraint is "light" or "strong" in any absolute sense. Depending on the scenario, a value of 1 could be very strong or very weak in its impact on the outputted plans. The primary way to assess if a constraint is having the intended effect is to check the relevant metrics in the sampled plans.

33. Crucially, the lack of any binding core retention constraint means that *none* of the simulations in the Trende Report meaningfully factor in the relevant criteria. Simulations should always be designed to reflect the criteria of interest, otherwise it is unclear if deviations from a plan being evaluated are due to that omission or other factors. Here, because the core retention constraint is not binding, claims like "if, at a remedial phase, a map drawer were employed to draw maps without respect to race, they would likely produce a map that looks like the Enacted Map" (Trende Report, p. 29) are conjectures without basis in simulation evidence.

34. Put another way, Figures 21-22 of the Trende Report show results from simulations which do not meaningfully incorporate core retention, despite claims to the contrary. Checking "if the result changes under different constraints" (Trende Report, p. 30) is a useful idea, but is not carried out in an effective manner here.

35. Finally, as a minor point, when running a statistical sampling process, such as in the case of redistricting simulations, the standard practice is to set a seed for the random number generator. Random computer processes are not truly random, but instead use complicated algorithms to produce a deterministic sequence that is initialized by a seed value. Setting a seed ensures that the same sequence of "random" numbers is generated each time the code is run.

This is important for reproducibility, as it allows others to replicate the exact same results. No seed is set in the provided code, which means that the results cannot be exactly replicated, but I am grateful that at least the sampled plans themselves were provided.

B. Hypothesis testing

36. Redistricting simulations can be used in various applications, such as exploring what plans could be drawn, accounting for the role of geography in creating biases in districts, or testing particular hypotheses about a given plan. As stated on p. 27 of the Trende Report, redistricting simulations produce "a random sample of maps that mirrors the overall distribution of available maps." In particular, redistricting samplers, such as the Sequential Monte Carlo (SMC) algorithm, provide a way to draw a representative sample from the space of compact, contiguous, and population-balanced districting plans (McCartan and Imai 2023). Additional constraints can be specified in the sampling process to ensure that other criteria of interest are met. This makes them a powerful tool to assess redistricting plans.

37. From my reading of the Trende Report, the simulations provided are intended to test a particular hypothesis: whether race was used in the drawing of districts. In the traditional hypothesis testing framework, we would then state a pair of hypotheses:

1. The null hypothesis: Race was not used as a factor in drawing the districts in the reference plan.
2. The alternative hypothesis: Race was used as a factor in drawing the districts in the reference plan.

38. In the case of redistricting sampling, each plan represents an independent draw from the set of relevant plans. Thus, hypothesis testing is done by testing if the reference plan is different from the set of sampled plans. This often equates to testing if, on some pre-specified dimension, the plan sits outside of the middle 95% of the the null sampled plans.

39. If the data provide sufficient evidence against the null hypothesis, we would reject it in favor of the alternative hypothesis. However, failing to reject the null hypothesis does not imply that we accept it as true.[3]

40. In my opinion, the Trende Report makes a fundamental error in this respect. Page 29 of the Trende Report states:

> As you can see, in the Enacted Map, the racial makeup of the districts falls within the expected range for a race-neutral map at every step. This has two implications. First, it suggests that whatever statements were made, the map drawer did not rely heavily upon racial data.

41. Based on Figures 17, 19, 20, and 21 of the Trende Report, this appears to equate the red dot (for the enacted plan) falling within the 100% range of the simulations as evidence *in favor of accepting the null hypothesis*. The evidence presented cannot demonstrate that "the map drawer did not rely heavily upon racial data." No formal statistical test is provided in the Trende Report.

42. Instead, the evidence only suggests that there is insufficient evidence to reject the null hypothesis. That is, there is insufficient evidence to conclude

[3]This distinction is important and is taught widely in statistical inference courses. For example, Penn State's STAT 462′s online course notes explicitly state: "'Not rejecting' a null hypothesis isn't quite the same as 'accepting' it. All we can say in such a situation is that we do not have enough evidence to reject the null—recall the legal analogy where defendants are not found 'innocent' but rather are found 'not guilty.'" See https://online.stat.psu.edu/stat462/node/253/, as of December 22, 2025.

that the map drawer relied heavily upon racial data *from this analysis*. The two statements are not equivalent. Failing to reject the null hypothesis does not imply that we accept it as true.

43. The Trende Report's visualizations raise additional concerns. In some of the aforementioned figures, the red dots cannot be seen because of the low resolution and large number of points plotted. This limits the ability of the reader to assess if the enacted plan is within the relevant middle 95% range of the simulations.

44. On December 18, 2025, I received a copy of the code and data used to generate the simulations and figures in the Trende Report. Below, I have developed additional visualizations from the 4 sets of sampled plans included in the data. Note that I have not performed any new redistricting sampling.

45. Below, I provide simplified versions of the plots shown in the Trende Report for each of the 4 sets of simulations provided. Each of Figure 5, Figure 6, Figure 7, and Figure 8 demonstrate the same process. For each district, the point shows the median. The thicker line shows the middle 66% of the simulations and the thinner line shows the middle 95% of the simulations. The red horizontal line shows the same statistic for the enacted plan.

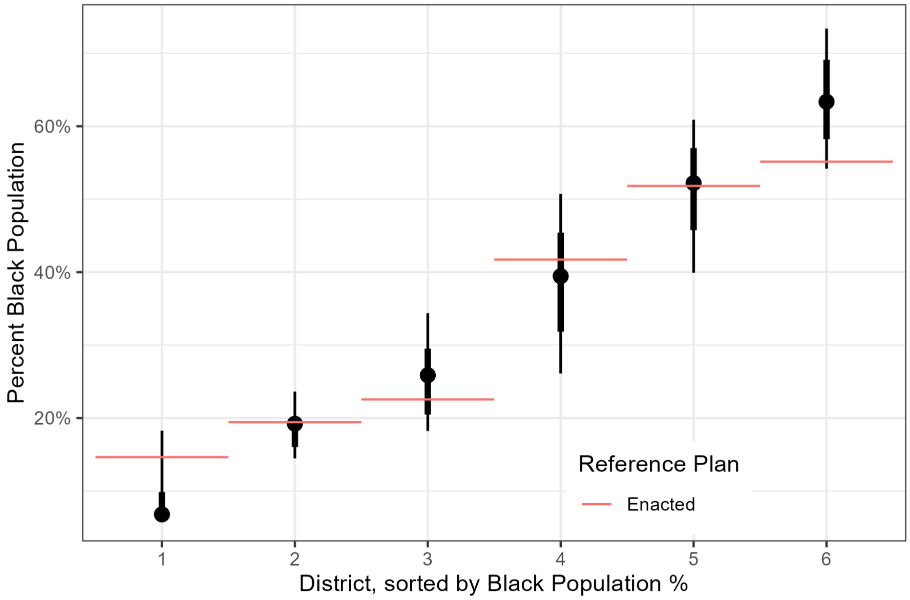

Figure 5: Black Populations for the baseline simulations.

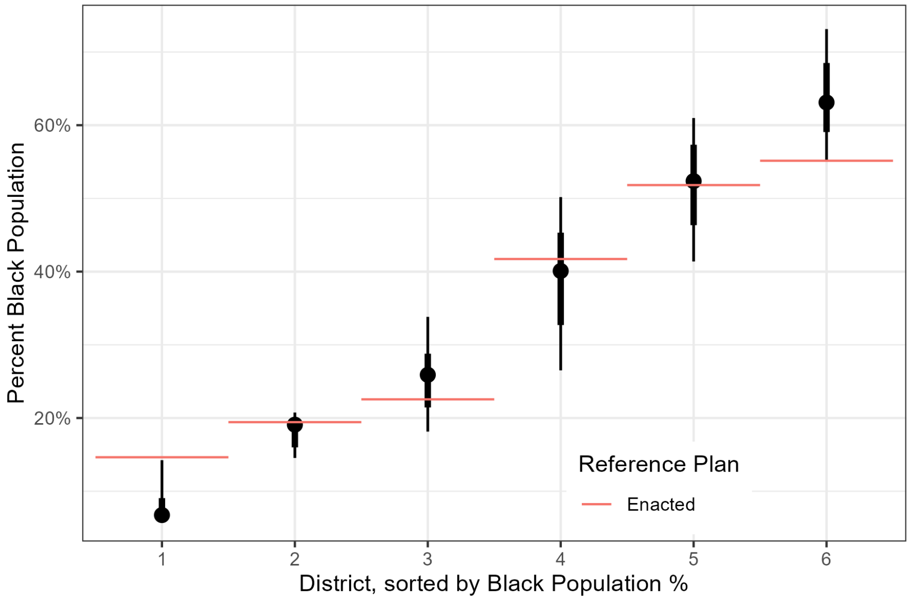

Figure 6: Black Populations for the simulations which aim to reduce VTD splits

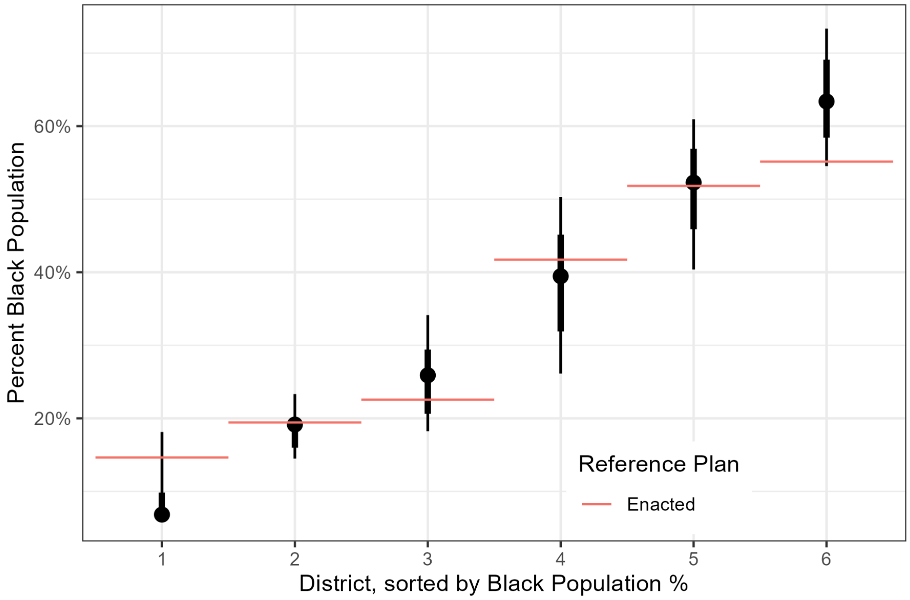

Figure 7: Black Populations for the simulations which aim to improve core retention (strength = 1)

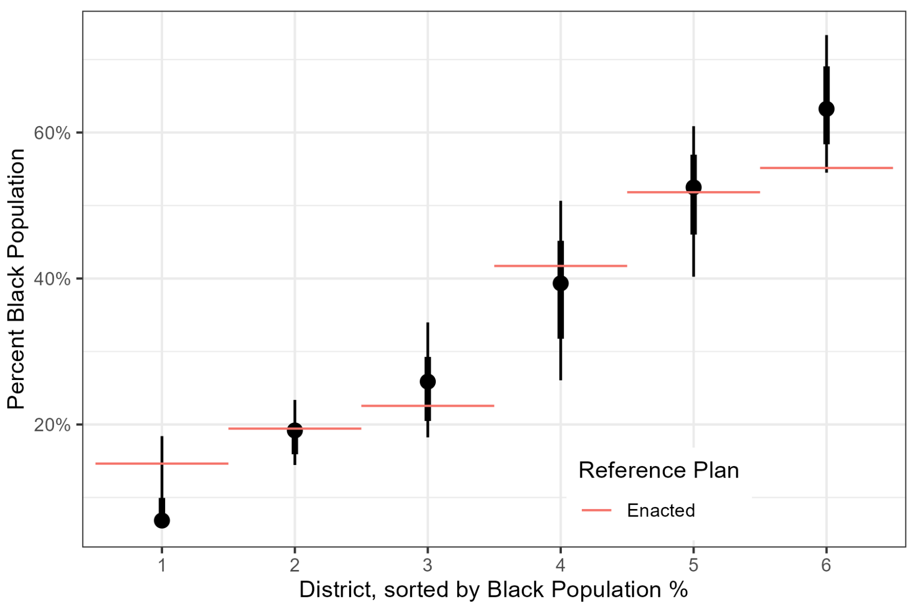

Figure 8: Black Populations for the simulations which aim to improve core retention (strength = 2)

46. As mentioned in the prior section, it becomes clear that the core retention constraint is *not* binding in the simulations. When encouraging core retention

with two different strengths, the results appear nearly identical and are extremely similar to the baseline simulation. This is obfuscated in the Trende Report by the choice to show only dotplots for an atypically large number of simulations.

47. If we take the simulation data at face value, we can also simply describe the patterns observed, rather than testing hypotheses. Below, I focus on the baseline simulations, as the other simulations are quite similar for the reasons described above. Among the simulated plans, 95.5% of plans have a Black Population in the most Black zone that is larger than the most Black zone in the Enacted plan. Further, about 6-in-10 of plans have at least two majority Black zones.

V. Analysis of Core Retention in Section 4 of the Trende Report

48. I have also been asked to review Section 4 of the Trende Report, especially with regard to the core retention numbers from the Benchmark map from the 2010 cycle. Looking to Table 1 of the Trende Report and the Benchmark map, I first see that Benchmark Zones 1 and 6 do not need to be changed to comply with the one-person, one-vote requirement. Each sits within a ±5% deviation and the largest population deviation of the eventually enacted plan. Further, their relative locations on the map would not *require* that they are changed, as the remaining four districts could be adjusted without affecting them.

49. Below, I have reformatted the core retention numbers provided in the Trende Report into Table 1. Each row shows an entry in the table for a given district in the Benchmark map. Each column shows the number of people from that Benchmark district who are assigned to each Enacted district.

Table 1: Population transfers from Benchmark districts to Enacted districts

			Enacted District					
	Benchmark	Bench. Pop.	1	2	3	4	5	6
	1	11,424	9,035	0	1,766	623	0	0
	2	9,958	0	8,641	1,317	0	0	0
	3	9,708	0	2,427	7,281	0	0	0
	4	15,304	3,345	0	0	10,428	1,531	0
	5	13,442	0	632	0	506	10,179	2,125
	6	11,642	0	0	1,218	0	0	10,424
Total	—	—	12,380	11,700	11,582	11,557	11,710	12,549
Deviation	—	—	3.92%	−1.79%	−2.78%	−2.99%	−1.70%	5.34%

50. To understand where population came from in the Enacted districts, we can read down the columns. To see where population went from the Benchmark districts, we can read across the rows. The "Total" summary row shows the total number of people placed in each Enacted district. The "Deviation" row shows the percent population deviation of each Enacted district from the ideal population. For completeness, the "Bench. Pop." column shows the total population of each Benchmark district. All numbers are contained in or computed directly from the numbers in the Trende Report's Table 1.

51. Looking to Table 1, if a decision was made to alter Zones 1 and 6, both are under the target population. Each could take on substantial, additional population without exceeding the largest population deviation of the eventually enacted plan, which would keep the entirety of their existing populations together. Instead, Benchmark Zones 1 and 6 both lose population to other districts.

52. Benchmark Zone 4 is substantially above the population target. If core retention was the primary driver of the redistricting process, I would expect that it would lose population to other districts. It does lose population, as is required by law. However, it loses more population than is necessary, as it gains back population from Zones 1 (which again, did not need to change at all) and 5 in the Enacted Zone 4.

53. Given that Benchmark Zones 4 and 5 are both above the population target and are adjacent, I would expect larger changes in Zone 5 to move population towards the coast. However, as mentioned in the prior paragraph, it *gives* population to Zone 4 in the Enacted map. It gives a similar amount of population to Zone 2 and substantially more to Zone 6.

54. I find the particular pattern of population transfers surprising. There is no question that populations must be moved to achieve population equality. Yet, many of the populations moved are neither the simplest, nor the most straightforward choices to achieve that goal while maximizing core retention. Rather, the preexisting districts were disrupted much more than necessary.

55. Section 4.1 of the Trende Report provides one possible story that takes the Enacted map and describes the population transfers that were made on a district-by-district basis. Naturally, once a plan is drawn, it is easy to describe what changes were made. This does not mean that these changes were the simplest or most straightforward choices to achieve the population equality required by law.

VI. Inconsistencies in Input Data

56. Finally, while reviewing the maps, it appears that the definitions of the city vary between plots within the Trende Report. All blocks discussed in this section are highlighted in yellow in Figure 9.

57. For example, Figure 1 of the Trende Report shows a map of the city including a large block in the southwest corner of the city. This block (GEOID 121270832072065) has a population of 24. However, in Figure 2 of the Trende Report, this block is not included within the city boundaries. Comparing to the City of Daytona Beach website, it appears that this block is split and should not be included.[4] It covers Tiger Bay and the area to its west.

58. By reviewing the underlying data and code, I can confirm that Block 121270832072065 is included in the simulation analyses conducted in the Trende Report.[5] Similarly, it is included in the assessment of compactness and population deviation.

59. In reviewing this portion of the map, I can also see that a smaller block (GEOID 121270832072038) is included in all analyses. This block is split, but the housing units within the block sit outside of the city limits between Old Deland Road and Volusia Avenue.

[4]See https://codb.maps.arcgis.com/apps/webappviewer/index.html?id=978efde73df54db498054ea6a3770059 for an interactive map, as of December 19, 2025.

[5]For the purposes of this report, I have taken all numbers as given. As such, these numbers are included in Table 1.

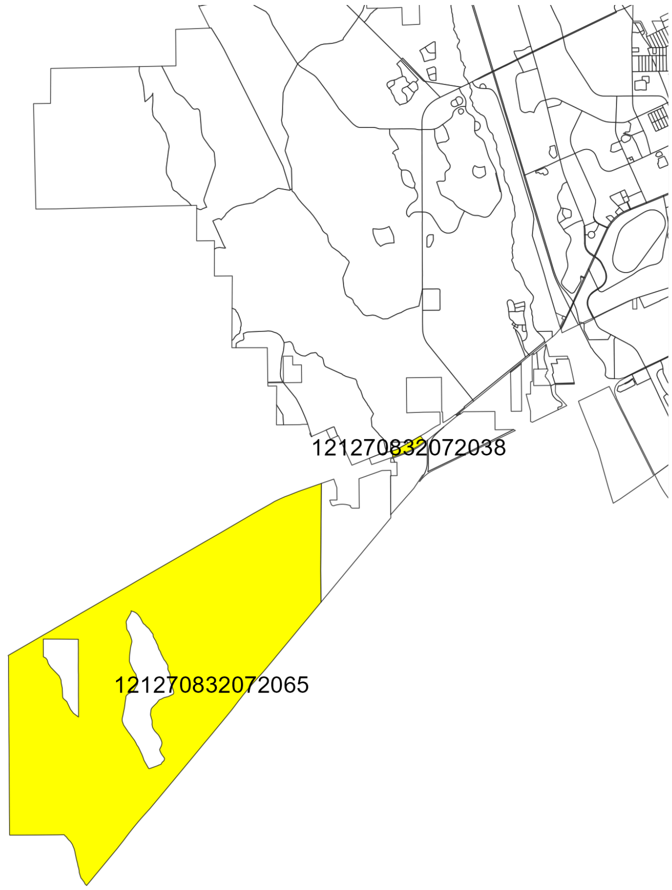

Figure 9: A block-level map zoomed into the southwest corner of the city. Blocks discussed in Section VI are highlighted in yellow. Text over these blocks show their Census Bureau GEOID.

60. Inconsistencies like these can be problematic, as they change the space of possible plans, by changing the range of possible zone populations. In particular, these blocks will always add to the population of the district covering the southwest corner of the city (i.e. Zone 4 in the Enacted map). As the Trende Report relies on a ±5% deviation for its discussion and analyses, such additions can make possible districts appear invalid or impossible districts appear valid. While this may matter less for a single plan, when drawing a large number of simulated plans, such changes are more likely to have an effect.

References

Kenny, Christopher T. 2022. "Censable: Making Census Data More Usable". https://cran.r-project.org/package=censable.

Kenny, Christopher T. 2023. "geomander: Geographic Tools for Studying Gerrymandering". https://cran.r-project.org/package=geomander.

Kenny, Christopher T., Cory McCartan, Ben Fifield, and Kosuke Imai. 2022. "redist: Simulation Methods for Legislative Redistricting". https://alarm-redist.org/redist/.

McCartan, Cory, and Kosuke Imai. 2023. "Sequential Monte Carlo for Sampling Balanced and Compact Redistricting Plans". *The Annals of Applied Statistics* 17 (4): 3300–3323.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct. Executed this 22nd day of December, 2025.

Christopher Kenny

Christopher T. Kenny, Ph.D.

Exhibit A

Cirriculum Vitae of Christopher T. Kenny, Ph.D.

Christopher T. Kenny

Postdoctoral Research Associate
Princeton University

christophertkenny.com
ctkenny@princeton.edu
December 2025

Appointments

Postdoctoral Research Associate, Data-Driven Social Science, Princeton University — 2025

Education

Harvard University

Ph.D. (Government) — May 2025
Dissertation: *Drawing Democracies: Redistricting in America*
Committee: Kosuke Imai (chair), Steve Ansolabehere, Gary King, Nick Stephanopoulos
MA (Government) — May 2021

Cornell University

B.A. (Mathematics and Government) — May 2019

Peer-Reviewed Publications

7. "Evaluating Bias and Noise Induced by the U.S. Census Bureau's Privacy Protection Methods." 2024. **Christopher T. Kenny**, Cory McCartan, Shiro Kuriwaki, Tyler Simko, and Kosuke Imai. *Science Advances.*

6. "Census Officials Must Constructively Engage with Independent Evaluations." 2024. **Christopher T. Kenny**, Cory McCartan, Tyler Simko, and Kosuke Imai. *Proceedings of the National Academy of Sciences of the United States of America.*

5. "Widespread Partisan Gerrymandering Mostly Cancels Nationally, but Reduces Electoral Competition." 2023. **Christopher T. Kenny**, Cory McCartan, Tyler Simko, Shiro Kuriwaki, and Kosuke Imai. *Proceedings of the National Academy of Sciences of the United States of America.*

4. "Comment: The Essential Role of Policy Evaluation for the 2020 Census Disclosure Avoidance System." 2023. **Christopher T. Kenny**, Shiro Kuriwaki, Cory McCartan, Evan T. R. Rosenman, Tyler Simko, and Kosuke Imai. *Harvard Data Science Review.*

3. "Simulated redistricting plans for the analysis and evaluation of redistricting in the United States. 2022. Cory McCartan, **Christopher T. Kenny**, Tyler Simko, George Garcia III, Kevin Wang, Melissa Wu, Shiro Kuriwaki, and Kosuke Imai. *Scientific Data.*

2. "The Impact of the U.S. Census Disclosure Avoidance System on Redistricting and Voting Rights Analysis." 2021. **Christopher T. Kenny**, Shiro Kuriwaki, Cory McCartan, Evan T. R. Rosenman, Tyler Simko, and Kosuke Imai. *Science Advances.*

1. "The Essential Role of Empirical Validation in Legislative Redistricting Simulation." 2020. Benjamin Fifield, Kosuke Imai, Jun Kawahara, and **Christopher T. Kenny**. *Statistics and Public Policy.*

Selected Working Papers

1. "Individual and Differential Harm in Redistricting." Cory McCartan and **Christopher T. Kenny**.
2. "Inequality in Administrative Democracy: Methods and Evidence from Financial Rulemaking." Daniel P. Carpenter, Angelo Dagonel, Devin Judge-Lord, **Christopher T. Kenny**, Brian Libgober, Steven Rashin, Jacob Waggoner, and Susan Webb Yackee.
3. "Redistricting Reforms Reduce Gerrymandering by Constraining Partisan Actors." Cory McCartan, **Christopher T. Kenny**, Tyler Simko, Emma Ebowe, Michael Y. Zhao, and Kosuke Imai.
4. "Any Way You Slice It: Racial Segregation Statistics are Robust to Aggregation Bias." Jacob R. Brown, **Christopher T. Kenny**, and Tyler Simko.
5. "Principles and Partisanship: Explicit Rules Constrain Courts and Lawmakers." **Christopher T. Kenny**.
6. "Gerrymandering and geographic polarization have reduced electoral competition ." Ethan Jasny, **Christopher T. Kenny**, Cory McCartan, Tyler Simko, Melissa Wu, Michael Y. Zhao, Aneetej Arora, Emma Ebowe, Philip O'Sullivan, Taran Samarth, and Kosuke Imai.
7. "bskyr: An R Package to Interact with Bluesky Social." **Christopher T. Kenny**.

Works-in-Progress

1. *Algorithm-Assisted Redistricting Methodology*. Kosuke Imai, **Christopher T. Kenny**, Cory McCartan, and Tyler Simko.
2. "An Individual Causal Framework for Evaluating Electoral Systems." Cory McCartan and **Christopher T. Kenny**.

Fellowships and Awards

Fellowships

Ashford Fellow, Harvard University	2019-2025
Pre-Doctoral Fellow, Election Law Clinic Harvard Law School	2022
V.O. Key Fellow, Department of Government, Harvard University	2019

Awards

Statistical Software Award, Society for Political Methodology (for redist)	2022
Certificate of Distinction in Teaching for Gov 2001	Fall 2021
Herbert Kaufman Award for best paper presented, APSA section for Public Administration for "Inequality in Administrative Democracy"	2021

Data

RPV Near Me. 2023. **Christopher T. Kenny**

50-State Redistricting Simulations. 2022. Cory McCartan, **Christopher T. Kenny**, Tyler Simko, George Garcia III, Kevin Wang, Melissa Wu, Shiro Kuriwaki, and Kosuke Imai.

2020 Redistricting Data Files. 2021. **Christopher T. Kenny** and Cory McCartan.

Other Writing

Trump's proposed snap Census won't get him the seats he wants. The Hill. 2025. With Tyler Simko.

Expert Report in Sakhnovsky, et al v. City of Daytona Beach, Case No. 2024 10140 CICI. 2024.

Redistricting Process Reform in *The University of Chicago Center for Effective Government's Democracy Reform Primer Series*. 2024. With Steve Ansolabehere.

Alpha Phi Alpha Fraternity, Inc. et al. v. Brad Raffensperger, Amici Curiae Brief of Fair Districts Georgia and Election Law Clinic in Support of Plaintiffs. 2021. With the Election Law Clinic at Harvard Law School.

Maryland Congressional District Memo. 2021. With Jonathan Rodden.

Software

R packages for redistricting

redist: *Simulation Methods for Legislative Redistricting*. 2022. **Christopher T. Kenny**, Cory McCartan, Benjamin Fifield, and Kosuke Imai. [CRAN]

redistmetrics: *Redistricting Metrics*. 2022. **Christopher T. Kenny**, Cory McCartan, Benjamin Fifield, and Kosuke Imai. [CRAN]

geomander: *Geographic Tools for Studying Gerrymandering*. **Christopher T. Kenny**. 2022. [CRAN]

redistverse: *Easily Install and Load Redistricting Software*. **Christopher T. Kenny** and Cory McCartan. 2023. [CRAN]

alarmdata: *Download, Merge, and Process Redistricting Data*. Cory McCartan, **Christopher T. Kenny**, Tyler Simko, Michael Zhao, and Kosuke Imai. 2022. [CRAN]

redistio: *Interactive Redistricting*. **Christopher T. Kenny** and Cory McCartan. 2024.

ei: *Ecological Inference*. Gary King, Molly Roberts, Shusei Eshima, and **Christopher T. Kenny**. 2022.

R packages for working with Census Data

PL94171: *Tabulate P.L. 94-171 Redistricting Data Summary Files*. Cory McCartan and **Christopher T. Kenny**. 2022. [CRAN]

censable: *Making Census Data More Usable*. **Christopher T. Kenny**. 2021. [CRAN]

tinytiger: *Lightweight Interface to TIGER/Line Shapefiles*. **Christopher T. Kenny** and Cory McCartan. 2022. [CRAN]

cvap: *Citizen Voting Age Population*. **Christopher T. Kenny**. 2022. [CRAN]

ppmf: *Read Census Privacy Protected Microdata Files*. **Christopher T. Kenny**. 2021. [CRAN]

baf: *Block Assignment Files*. **Christopher T. Kenny**. 2024. [CRAN]

apportion: *Apportion Seats*. **Christopher T. Kenny**. 2023. [CRAN]

R packages for plotting

dots: *Dot Density Maps*. **Christopher T. Kenny**. 2022. [CRAN]

ggredist: *Scales, Geometries, and Extensions of* 'ggplot2' *for Election Mapping*. Cory McCartan and **Christopher T. Kenny**. 2022. [CRAN]

crayons: *Color Palettes from Crayon Boxes*. **Christopher T. Kenny**. 2023. [CRAN]

palette: *Color Scheme Helpers*. **Christopher T. Kenny**. 2024. [CRAN]

flexoki: *Inky Color Schemes*. **Christopher T. Kenny**. 2025. [CRAN]

R packages interfacing with API services

bskyr: *Interact with Bluesky Social*. **Christopher T. Kenny**. 2023. [CRAN]

congress: *Access the Congress.gov API*. **Christopher T. Kenny**. 2022. [CRAN]

feltr: *Access the Felt API*. **Christopher T. Kenny**. 2023. [CRAN]

gptzeror: *Identify Text Written by Large Language Models using GPTZero*. **Christopher T. Kenny**. 2023. [CRAN]

planscorer: *Score Redistricting Plans with PlanScore*. **Christopher T. Kenny** and Michal Migurski. 2022. [CRAN]

Other R packages

divseg: *Compute Diversity and Segregation Indices*. **Christopher T. Kenny**. 2021. [CRAN]

jot: *Jot Down Values for Later*. **Christopher T. Kenny**. 2022. [CRAN]

name: *Tools for Working with Names*. **Christopher T. Kenny**. 2022. [CRAN]

opengraph: *Process Metadata from the Open Graph Protocol*. **Christopher T. Kenny**. 2024. [CRAN]

typr: *Write and Render Typst Documents*. **Christopher T. Kenny**. 2025. [CRAN]

manifesto: *Create Project Manifest Files*. **Christopher T. Kenny**. 2025.

Teaching

Harvard University

Gov 97: Drawing Democracies: Elections and Redistricting in America	2023, 2024
Math Prefresher for Political Scientists. (PhD-level)	2022
Gov 2001: Quantitative Social Science Methods I. (PhD-level)	2021

Senior Thesis Advisees

Yusuf Mian: *The Census and Barriers to Representation: The Impact of Census Racial Classification on Arab American Political Representation*	2025
Luke Kolar: *Election Cycling: Quantifying the Impact of Bike Infrastructure on Local Elections and Democracy*	2024

Presentations

Conferences

Society for Political Methodology	2022 - 2025
Midwest Political Science Association	2023 - 2025
Southern Political Science Association	2025
Workshop on the future of anonymization of the US Decennial Census	2024
American Political Science Association	2023 - 2024
posit::conf	2024
The Institute for Operations Research and the Management Sciences	2022
Toronto Workshop on Reproducibility	2022
Redistricting Algorithms, Law, and Policy Conference	2021
Harvard American Politics Conference	2020

Seminars

Princeton R Group	Fall 2025
Applied Statistics Workshop, IQSS, Harvard University	Fall 2021, Fall 2024
American Politics Research Workshop, Harvard University	Fall 2021, Spring 2021, Fall 2022, Fall 2023, Fall 2024
Political Economy Workshop, Harvard University	Fall 2024
Race and Ethnic Politics Workshop, Harvard University	Fall 2024
Graduate Political Economy, Harvard University	Spring 2021

Referee Service

American Journal of Political Science, Journal of Politics, Political Analysis, Quarterly Journal of Political Science, Election Law Journal, IEEE Transactions on Privacy, rOpenSci, Nature: Scientific Data

Departmental Service

Webmaster, Graduate Student Association, Department of Government, Harvard University	2020 - 2022

Related Work

Freelance Political Consultant, Election Data Desk, CBS News	2024 -
Research Assistant, Prof. Kosuke Imai, Harvard University	2020 - 2021
Research Assistant, Prof. Dan Carpenter, Harvard University	2020