Exhibit D

Expert Report of Dr. Jonathan Rodden

Robinson, et al., v. Ardoin, et al.
Galmon, et al., v. Ardoin, et al.

United States District Court for the Middle District of Louisiana

Jonathan Rodden

September 28, 2023

I. Introduction and Summary

I have been asked to examine the reports of David A. Swanson and Sean P. Trende in this case. Each of these reports is critical of the Remedial Louisiana Congressional Redistricting Plan offered by the plaintiffs, with special attention to District 5. The central claim of Dr. Swanson's report is that "race was the predominant factor used by plaintiffs to draw RCD5" (page 10). He comes to this conclusion largely by discussing a notion of "communities of interest," which leads him to assert that it is inappropriate for seven parishes in northeast Louisiana to be placed in the same district as urban residents further to the south. Mr. Trende's report picks up on the same theme, making the claim that Congressional District 5 in the Remedial Plan combines Black residents from distant population centers, which he suggests makes it similar to districts deemed inadmissible by courts in *Miller v. Georgia* and *LULAC v. Perry*.

I have been asked to evaluate whether the analytical approaches used by the two authors can support their conclusions. My central findings are as follows:

- Dr. Swanson's efforts to use existing maps of cultural and economic regions to determine which parishes should not be placed in the same district are deeply flawed.
    - The maps he selects present a variety of different competing notions of regional "communities of interest," each of which tells a different story about which parishes "belong" together, and as a result, cannot possibly serve as a reliable guide to identifying districts that should be viewed with suspicion.
    - Dr. Swanson promotes the idea that districts should not include multiple cultural or economic "communities of interest." This decision rule is untenable: Purely because of population size and geographic arrangement, rural districts *must* include multiple cultural or economic zones, and urban cultural/economic zones must be divided across multiple districts. As a result, every single district in both the Enacted and Remedial Plan fails Dr. Swanson's test.
    - If anything, Dr. Swanson's proposed cultural and economic zones would appear to make a case *in favor* of District 5 in the Remedial Plan, because the Remedial Plan keeps the northeastern parishes together while pulling a much larger share of the Baton Rouge region into the same district than the Enacted Plan or other recent plans, while also out-performing them in terms of overall compactness.

- Dr. Swanson criticizes CD 5 in the Remedial Plan for crossing sparsely populated wetlands, but it is not possible to draw districts that do not cross these wetlands, and indeed, every version of CD 5 over the last 20 years, including the Enacted Plan, has crossed those same wetlands.
- Dr. Swanson's efforts to create his own "communities of interest" via a clustering algorithm are deeply flawed and cannot generate useful conclusions about parishes that do or do not belong together.
    - His selection of variables is arbitrary and discretionary, allowing him to create virtually any clusters he likes, and he conducts no robustness checks to test the validity of his conclusions.
    - He again promotes an untenable decision rule that a district should not include territory from more than one "cluster." No matter which of his approaches to clustering is consulted, most of the districts in the Enacted Plan fail his test, including Enacted District 5.
    - Dr. Swanson's clustering analysis is of limited value, but, according to its own logic, Lafayette and Baton Rouge *should*, in fact, be included in the same district. The Remedial Plan includes this pairing, while the Enacted Plan does not.
- Mr. Trende's report contains very little analytical content and does not support any conclusions about whether race was improperly considered in the construction of District 5 in the Remedial Plan.
    - He reports that Remedial CD 5 combines Black voters from different population centers. But the same is true of many districts in the Enacted Plan and prior plans. His report contains no analysis that would allow for the conclusion that these populations are especially or inappropriately dispersed in CD 5.
    - He implies that Remedial CD 5 is non-compact but provides no comparative data. I demonstrate that on each of four measures of compactness, it is broadly in the middle of the distribution of compactness scores of all congressional districts enacted in the last 50 years. Further, I demonstrate that the Remedial Plan, if implemented, would be the most compact redistricting plan in Louisiana in the last 50 years.

- Mr. Trende does not provide sufficient data or analysis to support his claim that CD 5 is "similar" to districts in Texas and Georgia that have been overturned in the past.

II. Qualifications and Experience

I am currently a tenured Professor of Political Science at Stanford University and the founder and director of the Stanford Spatial Social Science Lab—a center for research and teaching with a focus on the analysis of geo-spatial data in the social sciences. I am engaged in a variety of research projects involving large, fine-grained geo-spatial data sets including ballots and election results at the level of polling places, individual records of registered voters, census data, and survey responses. I am also a senior fellow at the Stanford Institute for Economic Policy Research and the Hoover Institution. Prior to my employment at Stanford, I was the Ford Professor of Political Science at the Massachusetts Institute of Technology. I received my Ph.D. from Yale University and my B.A. from the University of Michigan, Ann Arbor, both in political science. A copy of my current C.V. is included as Exhibit A. I am being compensated at my usual rate of $550 per hour.

In my current academic work, I conduct research on voting, demographics, geography, and aspects of election administration, including registration, the structure of precincts, redistricting, and methods of voting. Recent papers and books focus on the relationship between the patterns of political representation, geographic location of demographic and partisan groups, and the drawing of electoral districts. I have published papers using statistical methods to assess political geography, balloting, and representation in a variety of academic journals including *Statistics and Public Policy, Proceedings of the National Academy of Science, Science Advances*, *American Economic Review Papers and Proceedings*, the *Journal of Economic Perspectives*, the *Virginia Law Review*, the *American Journal of Political Science*, the *British Journal of Political Science*, the *Annual Review of Political Science*, and the *Journal of Politics.* One of these papers was selected by the American Political Science Association as the winner of the Michael Wallerstein Award for the best paper on political economy, and another received an award from the American Political Science Association section on social networks.

In 2021, I received a John Simon Guggenheim Memorial Foundation Fellowship, and received the Martha Derthick Award of the American Political Science Association for "the best

book published at least ten years ago that has made a lasting contribution to the study of federalism and intergovernmental relations."

I have written a series of papers, along with my co-authors, using automated redistricting algorithms to assess partisan gerrymandering. This work has been published in the *Quarterly Journal of Political Science*, *Election Law Journal*, and *Political Analysis*, and it has been featured in more popular publications like the *Wall Street Journal*, the *New York Times*, and *Boston Review*. I recently authored a book, published by *Basic Books* in June of 2019, on the relationship between political districts, the residential geography of social groups, and their political representation in the United States and other countries that use winner-take-all electoral districts. The book was reviewed in *The New York Times*, *The New York Review of Books*, *Wall Street Journal*, *The Economist*, and *The Atlantic*, among others.

I have expertise in the use of large data sets and geographic information systems (GIS), and conduct research and teaching in the area of applied statistics related to elections. I frequently work with geo-coded voter files and other large administrative data sets, including in recent papers published in the *Annals of Internal Medicine* and *The New England Journal of Medicine.* I have developed a national data set of geo-coded precinct-level election results that has been used extensively in policy-oriented research related to redistricting and representation.

I have been accepted and testified as an expert witness in a number of election law and redistricting cases: *Romo v. Detzner,* No. 2012-CA-000412 (Fla. Cir. Ct. 2012); *Mo. State Conference of the NAACP* v. *Ferguson-Florissant Sch. Dist.,* No. 4:2014-CV-02077 (E.D. Mo. 2014); *Lee v. Va. State Bd. of Elections,* No. 3:15-CV-00357 (E.D. Va. 2015); *Democratic Nat'l Committee et al. v. Hobbs et al.*, No. 16-1065-PHX-DLR (D. Ariz. 2016); *Bethune-Hill v. Virginia State Board of Elections*, No. 3:14-cv-00852-REP-AWA-BMK (E.D. Va. 2014); *Jacobson et al. v. Lee*, No. 4:18-cv-00262 (N.D. Fla. 2018), *Rivera v. Schwab*, No. 2022-cv-89 (Kan. Dist. Ct. 2022), *Carter v. Chapman*, No. 464 MD 2021, 465 MD 2021 (Pa. Commw. Ct. 2021); *Bennet v. Ohio Redistricting Comm'n*, No. 2021-1198 (Ohio 2021); *Adams v. DeWine*, No. 2021-1428 (Ohio 2021); *Neiman v. LaRose*, No. 2022-0298 (Ohio 2022). In *Carter v. Chapman*, I prepared a congressional redistricting plan for the state of Pennsylvania, which was selected by the Pennsylvania Supreme Court for implementation in 2021 and is currently in use. I also worked

with a coalition of academics to file Amicus Briefs in the Supreme Court in *Gill v. Whitford*, No. 16-1161, and *Rucho v. Common Cause*, No. 18-422. Much of the testimony in these cases had to do with geography, electoral districts, voting, ballots, and election administration.

III. Data Sources

I obtained block-level census data and accompanying shapefiles from the redistricting data produced by the U.S. Census Bureau. I obtained geographic boundaries (shapefiles) of the Remedial Plan from counsel, and of the Enacted Plan and the most recent preceding plan from the redistricting data hub (redistrictingdatahub.org). I obtained digital historical geographic boundary files from a team of researchers at UCLA,[1] and Louisiana parish boundaries and population totals from the United States Census, downloaded from the National Historical GIS (nhgis.org). Assignments of parishes to specific cultural and economic regions and clusters were obtained from Dr. Swanson's report.

IV. Swanson Report

The bulk of Dr. Swanson's report is concerned with the notion of "communities of interest" (COI). Among the traditional criteria often considered by district-drawers is the idea that there are groups with "broadly shared interests and representational needs, including … common ethnic, racial, economic, Indian, social, cultural, geographic, or historic identities, or arising from similar socioeconomic conditions."[2] As Dr. Swanson notes, citing the work of Nicholas Stephanopoulos, these communities are "territorial," and "arise along geographic lines" (page 25). A common approach in the redistricting community is that when one has identified such a group with common representational interests, one should take care to avoid undermining the group's representation when possible. For instance, sensitivity to communities of interest in redistricting might involve making efforts to avoid slicing a Native American reservation or military base or college campus in two, or by avoiding drawing a district line through the middle of a well-known urban

[1] Jeffrey B. Lewis, Brandon DeVine, Lincoln Pitcher, and Kenneth C. Martis. (2013) *Digital Boundary Definitions of United States Congressional Districts, 1789-2012.* [Data file and code book]. Retrieved from https://cdmaps.polisci.ucla.edu on September 22, 2023.

[2] Chen, S., S.-H. Wang, B. Grofman, R. Ober, K. Barnes, and J. Cervas, (2022). Turning Communities of Interest into a Rigorous Standard for Fair Districting. *Stanford Journal of Civil Rights and Civil Liberties*. 18: 101-190. (https://law.stanford.edu/publications/turning-communities-of-interest-into-a-rigorous-standard-for-fair-districting/). Cited in paragraph 34, page 25 in the Swanson report.

neighborhood—especially one with a distinctive ethnic identity (e.g., Chinatown, Little Italy, etc.). One might attempt to keep a corridor of small cities with a similar industrial base, or a pair of neighboring college towns, in the same district.

Dr. Swanson identifies communities of interest in two ways. First, he assembles a series of cultural and economic maps of Louisiana culled from the internet. Second, he leaves aside the geographic aspect of communities of interest and employs a clustering algorithm that divides Louisiana's parishes into two groups based on their similarity on a set of variables culled from the United States Census. Let us consider each in turn.

Maps of Cultural and Economic Regions

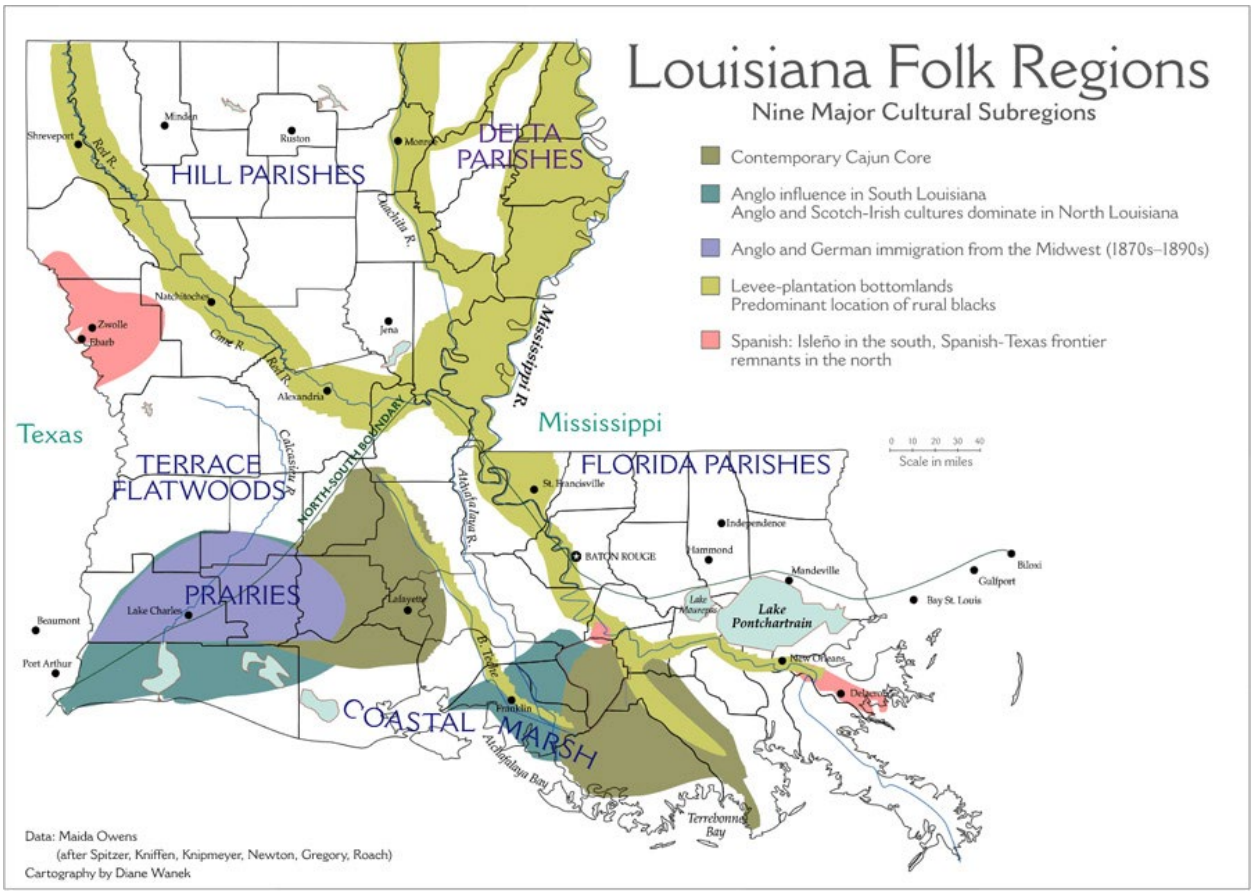
Dr. Swanson attempts to identify regional communities of interest by assembling a series of maps that correspond to various efforts to divide Louisiana into regional groupings. These include:

1. Louisiana Regional Folklore Program (5 regions, p. 26)
2. Tourist regions identified in an advertisement in the Smithsonian Museum Magazine (5 regions, p. 27)
3. Folklife Cultural Regions from the Louisiana Department of Culture, Recreation, and Tourism (8 regions, p. 28)
4. Economic Development Regions according to the Louisiana Economic Development Department (8 regions, p. 29)
5. Cultural regions identified in an earlier expert report filed by Mr. Cooper in a different case challenging Louisiana's state legislative districts (6 regions and 3 sub-regions, p. 31-32).

Dr. Swanson appears to have assembled these maps from a google search for Louisiana regions. However, such a search also reveals many other regional configurations. He does not explain how he selected some configurations for inclusion in his report and not others. Notably, some of these configurations include northeast Louisiana and Baton Rouge in the same region. For example, one of the highest-ranked results of a Google search for "map Louisiana regions,"

displayed in Figure 1, comes from https://www.louisianafolklife.org/lt/creole_maps.html.[3] Another example is a map from the Louisiana Department of Wildlife and Fisheries.[4]

Figure 1: Louisiana Folk Regions



Dr. Swanson's claim is that it is inappropriate to draw congressional districts that combine different regional communities of interest. However, one need only examine the variety of notions portrayed in these maps to begin to understand the futility of this approach. For example, consider the seven Northeast Louisiana parishes that take center stage in Dr. Swanson's report: Morehouse, East and West Carroll, Richland, Franklin, Madison, and Tensas, which are displayed in Figure 2 below to provide a point of reference.

[3] Accessed on September 26, 2023.

[4] https://www.wlf.louisiana.gov/page/deer-research-and-management. Accessed on September 26, 2023.

Figure 2: Northeast Louisiana Parishes in Dr. Swanson's Report

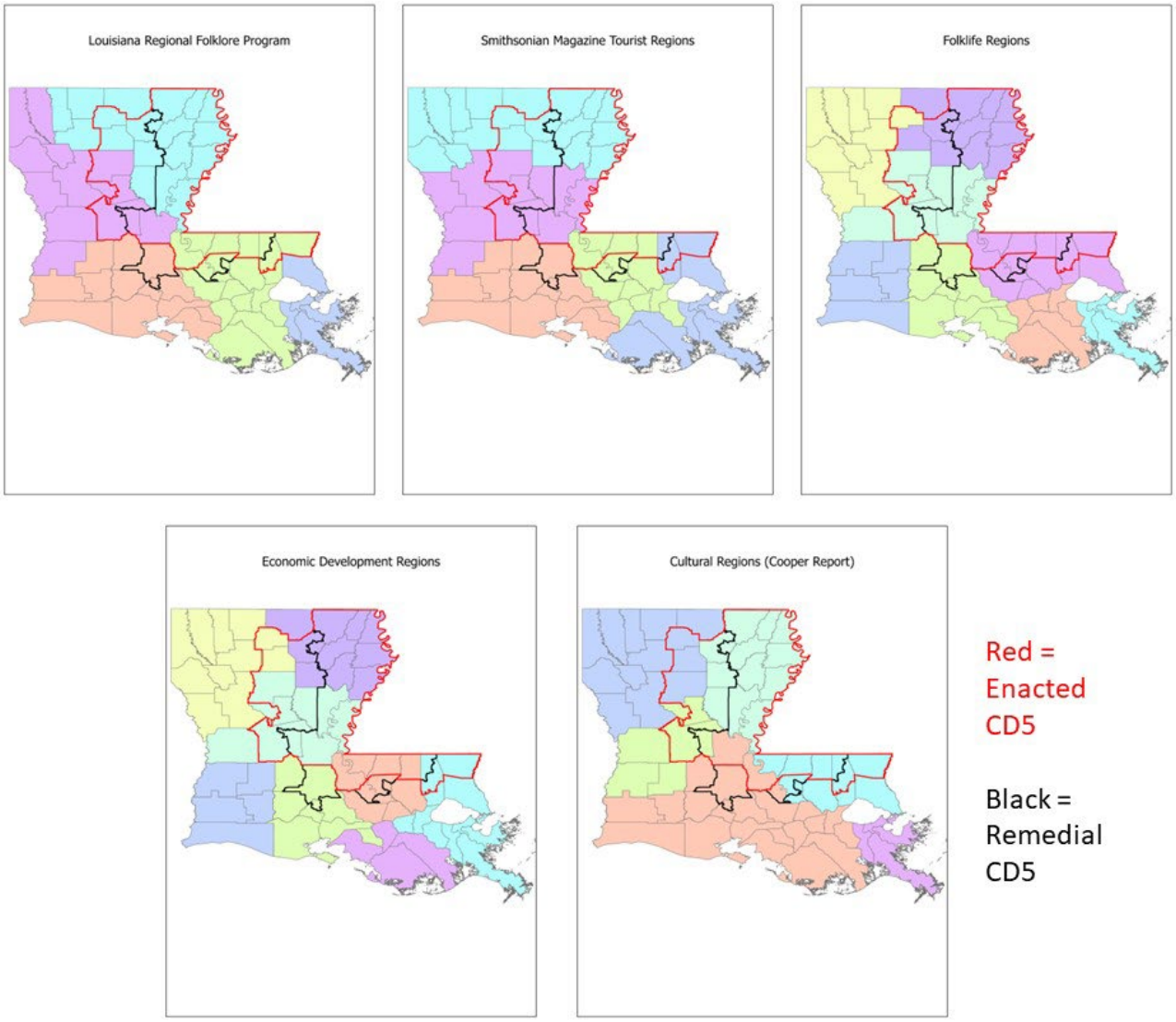
I have ascertained the parish assignments from the visual displays in Dr. Swanson's report, and I reproduce each of his cultural or economic regions in Figure 3. I also overlay the boundaries of CD 5 in the Remedial Plan (in black) and in the Enacted Plan (in red).

In the Louisiana Folklore Program map, the Northeast Louisiana parishes that are the focus of his report are part of a region that extends west almost to the Red River. In the tourist regions from the Smithsonian Museum Magazine, these parishes are part of a region that extends all the

way to the western border, but no further south than Tensas Parish. In the Folklife approach, their cultural region also stops at Tensas Parish, but extends no further west than Jackson Parish. With the Economic Development approach, their cultural region extends only to Union Parish, whereas with the cultural regions identified by Mr. Cooper, their cultural region does not include Union Parish, but extends much further south.

Agreement on the designation of regions is no better in the southern part of the state. As a result, these maps cannot possibly provide a guide about which parishes do not "go together." One would draw completely different conclusions about what types of districts should draw suspicion depending on which notion of communities of interest one was drawing from. There are simply too many competing notions in these maps, and Dr. Swanson makes no effort to argue that one approach is a more important guide than another.

Figure 3: Cultural and Economic Maps of Louisiana from Dr. Swanson's Report, with Overlays of CD 5 Boundary from Remedial and Enacted Plans



More importantly, some of the regions are so small that they *must* be combined with multiple additional regions in order to create a congressional district, and others—above all, those covering the southeastern part of the state—are far too large to create a single district, and must be subdivided, with the remaining portions joining other districts. In fact, every single district in both

the Enacted Plan and the Remedial Plan contains multiple cultural or economic regions according to most of Dr. Swanson's proposed community of interest maps.[5]

Dr. Swanson argues that "East Baton Rouge Parish should not be included in proposed plans involving proposed RCD5 that include East Carroll Parish and its six neighboring parishes" (page 42) because they are not part of the same "COI grouping." But according to Dr. Swanson's classification rule, District 5 in the Enacted Plan also fails; District 5 in the Enacted Plan contains four folklore regions, four tourist regions, three folklife regions, four economic development regions, and three of the cultural regions identified in the Cooper report. In sum, Dr. Swanson's approach would cast suspicion on virtually any congressional redistricting plan, including the Enacted Plan that he appears to endorse. The maps presented in Dr. Swanson's report simply cannot be used to identify any specific combinations of parishes as inappropriate.

In spite of their disagreements, these maps do agree on some places that are always viewed as part of the same regional community. For instance, in each of these five maps, the seven northeast parishes identified by Dr. Swanson are placed in the same region. These seven parishes are also kept together in both Enacted District 5 and Remedial District 5. But the combined population of these parishes amounts to around 93,000—only 12 percent of what is necessary to create a congressional district. No matter how one draws the districts in Louisiana, these parishes will need to be combined with other regions, and in order to reach the population threshold, the district will need to include some urban areas. For instance, Enacted CD 5 combines the northeastern parishes with cities to the west (Monroe and Ruston), south (Alexandria) and far southeast (Hammond).

Another set of parishes that is always together in each of the cultural and economic maps highlighted by Dr. Swanson is Pointe Coupee, West Feliciana, East Feliciana, St. Helena and both of the Baton Rouge parishes (displayed in Figure 4 for reference). Each of the cultural or economic groupings displayed in Figure 3 above envisions these parishes as part of a greater Baton Rouge region.[6]

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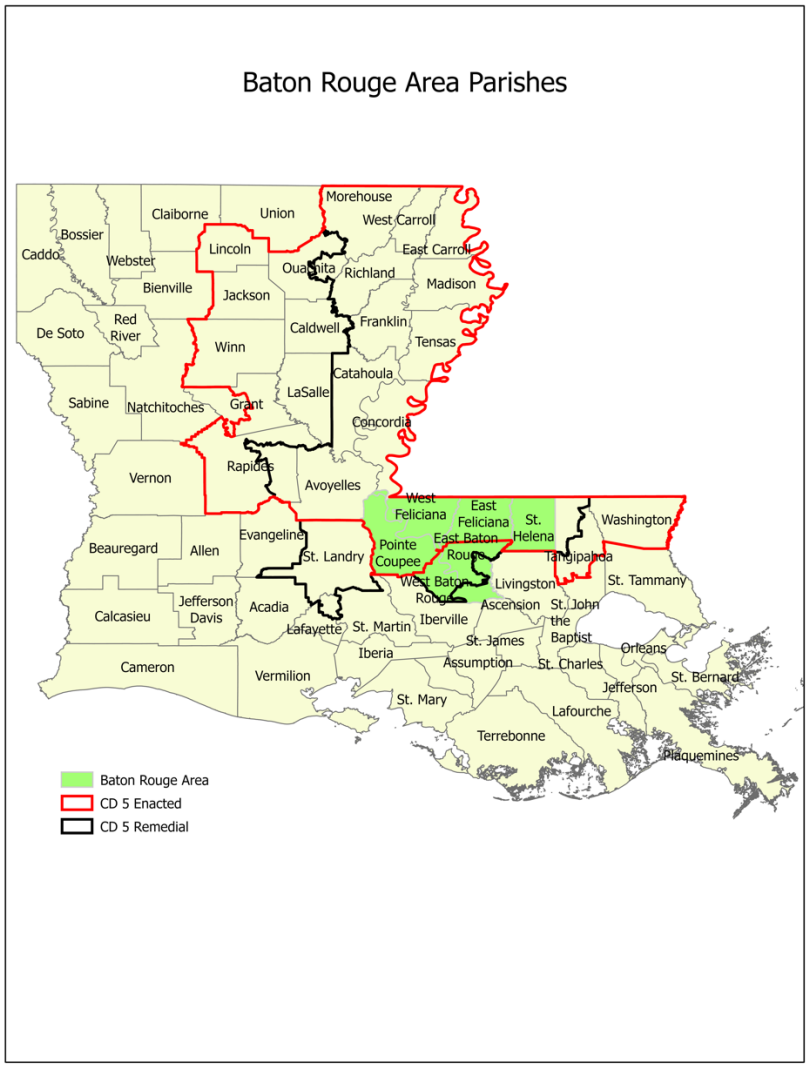
[5] Every district in the Enacted Plan contains multiple folklife and economic development regions. All of the districts of the Enacted Plan contain multiple folklore, tourist, and Cooper cultural regions except for District 3.

[6] The only exception is the Cooper cultural map, which draws a dividing line at the Mississippi River.

Figure 4: Baton Rouge Area Parishes



These parishes together account for around 544,000 people, which is 71 percent of the population necessary to create a district. Except for a part of East Baton Rouge Parish, the Remedial Plan keeps these parishes together. In fact, back when Louisiana had seven districts and prior to significant rural population loss, this region was kept together in a single district from 1997 to 2012 (see the first two panels of Figure 5 below). The remedial plan is consistent with Louisiana's earlier tradition of keeping much of the Baton Rouge region together, while also holding together the seven parishes of the northeast identified by Dr. Swanson.

Figure 5: Louisiana Congressional Districts, 1997 to Present

In contrast, the Enacted Plan carves Baton Rouge out from its cultural or economic community of interest and combines it with New Orleans via a narrow corridor. It is unclear why Dr. Swanson objects to the bulk of Lafayette and Baton Rouge being in the same district, since these cities are closer together than Baton Rouge and New Orleans, whose pairing in the Enacted Plan Dr. Swanson seems to endorse.

In fact, Dr. Swanson's analysis provides no basis for his apparent preference for the Enacted Plan over the Remedial Plan. Already in the 2002 round of redistricting, the Northeast Louisiana-based District 5 started to expand southward into more densely populated areas to

compensate for population loss (see Figure 4 above). This continued in the 2012 round of redistricting, when the district ventured further south and included a narrow strip extending all the way to the eastern border. The Enacted 2022 plan kept the same configuration again but extended this strip a little further to the south to account for further population loss. Remedial District 5 keeps this same basic structure, but it does not extend quite so far to the west, and not quite so far to the east. Rather, it extends a bit further to the south, and in so doing, not only keeps the northeast parishes together, but also keeps much more of the Baton Rouge region intact. Dr. Swanson does not explain why he believes it is superior to extend the district all the way east to Washington Parish and the Mississippi border rather than south in a way that keeps more of the Baton Rouge region together.

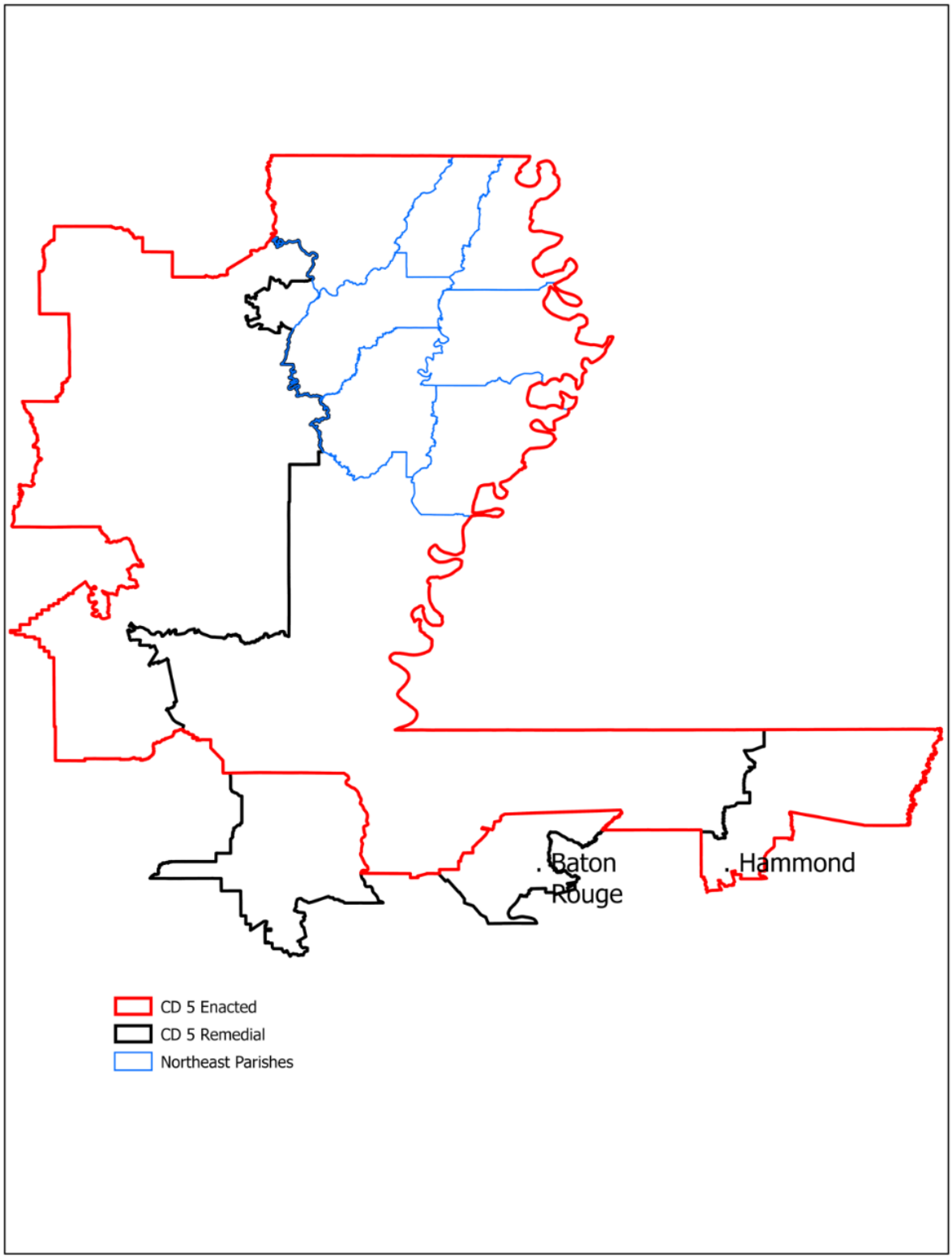
It is also worthwhile to consider the implications of configurations of District 5 for surrounding districts. By picking up population from the south rather than west, and keeping more of the Baton Rouge area together than District 5 in the Enacted Plan, the configuration of District 5 in the Remedial Plan is roughly similar to the Enacted Plan in terms of the compactness of District 5, while allowing for a more compact arrangement of Districts 3 and 4 to the west, and a more compact plan overall (see the bottom two panels of Figure 5 for a visual comparison, and Table 1 below for compactness calculations).

In Section V of his report, Dr. Swanson discusses "population dispersion." He criticizes Congressional District 5 in the Remedial Plan for connecting populated areas via non-populous water and wetland areas without "logical demographic or geographic connective tissues" (page 23, paragraph 32). However, given the large size of U.S. congressional districts and the sparse and relatively small population of Northern Louisiana, it is not possible to draw district lines that do not cross over non-populous wetland areas. Not only does District 5 in the Enacted Plan cross over the same wetland areas, these wetlands have been traversed in every version of District 5 since the 2002 round of redistricting.

Finally, Dr. Swanson uses history to bolster his claim that Baton Rouge, Lafayette, and the northeast parishes do not belong together, pointing out that these specific places have not previously been part of the same congressional district.

But in Louisiana, as the northeast corner of the state depopulates, every new redistricting plan must unavoidably combine this region with other parts of the state and include some more densely populated areas. For instance, District 5 in the Enacted Plan not only includes the cities of Alexandria, Ruston, and Monroe, but it also reaches to the east and includes Hammond with the northeast parishes for the first time in history. Hammond is 45 miles further east than Baton Rouge and adds part of yet another economic development and tourist COI (see Figure 3 above). It was necessary to add significant population to District 5, and it is not clear why it would be superior to reach further east and extract part of Hammond than to do so with the more proximate city of Baton Rouge (see Figure 6 below).

Figure 6: Baton Rouge and Hammond, Louisiana and Enacted and Remedial CD 5



Communities of Interest Based on Clustering Algorithm

In addition to his exploration of economic and cultural maps produced by others, Dr. Swanson experiments with drawing his own communities of interest. To do so, he draws inspiration from recent academic work in which scholars use spatial social and demographic data to find clusters of voters with similar characteristics that can be viewed as "communities of interest" that district-drawers might attempt to keep together. For instance, in a study of New York City, Mollenkopf et al. identify clusters of Afro-Caribbean voters in Queens and Puerto Rican voters in the Bronx.[7] However, Dr. Swanson does something quite different than existing studies. He generates only two clusters for a state with six congressional districts, and claims that any district that includes parts of two clusters should be viewed with suspicion. As noted above, early in his report, he includes territory and geography in his definition of "communities of interest," but here he ignores geography altogether, creating non-contiguous clusters, and ignores the fact that district-drawers attempt to draw compact, contiguous districts.

Dr. Swanson's reasoning for generating only two clusters is perplexing. He claims (paragraph 51) that if two parishes are not in the same cluster with only two clusters, they would also not be in the same cluster if he generated a larger number of clusters that more closely resembles the task of drawing congressional districts. This is not the case. For example, simply arrange 12 parishes in order of population and divide into two clusters. The 6th and 7th most populous parishes will be in different clusters. But if we divide into three clusters based on population, the 6th and 7th most populous parishes would be in the *same* cluster. This logic applies to any type of variable. Dr. Swanson presents no robustness checks to examine whether his claims hold up with different numbers of clusters.

To generate his clusters, Dr. Swanson chose a set of 14 variables from the census and used a k-means clustering algorithm to find the two clusters of parishes that minimized the within-cluster sum of squared deviations. That is, his approach attempts to find two groupings of parishes that are as similar to one another based on this group of 14 variables. As an initial matter, his basis for choosing these 14 variables over any others is unclear. Additionally, he appears not to have

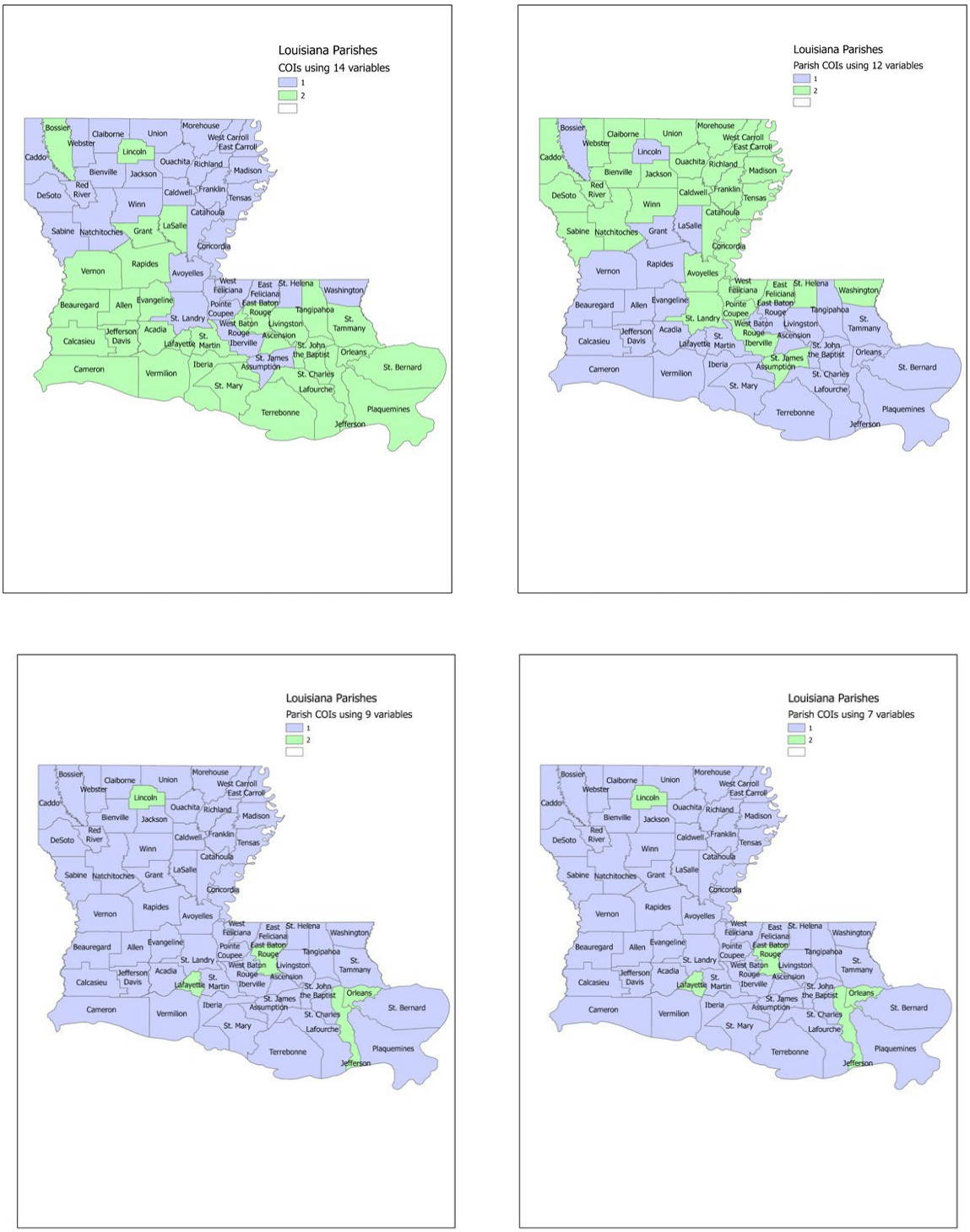
[7] Mollenkopf, J, J. Pereira, and S. Romalewski (2013). Communities of Interest and City Council Districting in New York, 2012-2013. A Report Prepared for the New York City Districting Commission by the Center for Urban Research at the Graduate Center, City University of New York.

instructed the algorithm to pay attention to geographic proximity or population equality, both of which are generally considered traditional districting principles. For reasons that he does not explain, Dr. Swanson then repeats this exercise with 12 variables, dropping two variables related to employment. Next, without explanation, he drops some additional variables, leaving him with nine variables. Finally, he drops two additional variables related to migration, again without explanation, leaving him with seven. Using the parish assignments to clusters outlined in Appendix 7 in his report (p. 54-62), in Figure 7, I present maps of his clusters.

The maps produced with 14 variables and 12 variables are identical. This indicates that employment variables were not very important in determining the clusters in the initial map, most likely because these variables were highly correlated with other variables, and hence provided little additional information. Likewise, the maps using nine and seven variables are identical, indicating that the dropped migration variables were highly correlated with other variables that determined the parish assignments in the nine-variable exercise.

However, by comparing the 14- and 12-variable maps with the 9- and 7-variable maps, one can appreciate the discretion involved in selecting variables and generating clusters. Different variables generate completely different maps. By deciding what variables to include, Dr. Swanson can create virtually any clusters he likes. Without a principled and rigorous way of deciding which variables to include, his approach is arbitrary and without meaning. His selection of variables also preordains certain outcomes. For instance, he included population density in each of these exercises. That is, he asked the algorithm to find places that are as similar as possible in terms of population density. That choice guarantees that the algorithm will not classify the cities of Lafayette and Baton Rouge as belonging to the same cluster as the more sparsely populated northeast parishes.

Figure 7: Maps of Swanson's Clusters



The same is true of his inclusion of education (percent with a Bachelor's degree or higher) in each of his clustering approaches. The most educated parishes are Orleans (38% of population

25 years and older with a Bachelor's degree or higher), East Baton Rouge (37%), Lincoln (35%), St. Tammany (34%), and Lafayette (33%). The northeastern parishes are among those with the lowest levels of college attendance. The importance of population density and education are laid bare in the 7- and 9-variable clusters, where one cluster is simply a group of five disconnected, far-flung, but relatively dense and educated parishes (Orleans, Jefferson, East Baton Rouge, Lafayette, and Lincoln), and the other cluster is the rest of the state.

As with the cultural and economic regions discussed above, Dr. Swanson adopts an untenable decision rule: districts spanning more than one cluster should be viewed with suspicion. Because his approach pays no attention to district size or geography, most districts in most realistic redistricting plans would not pass his test. For instance, with his 14- and 12-variable approaches, Enacted District 5 is a mishmash containing some parishes of his rural, less college-educated cluster, and three non-contiguous fragments of the more urban cluster. Likewise, Enacted Districts 2, 4, and 6 contain fragments of both clusters. With the 9- and 7-variable approaches, only a single district in the Enacted Plan passes Dr. Swanson's test (CD 4).

Dr. Swanson's report focuses primarily on the question of whether East Baton Rouge "belongs" with the parishes of the northeast. It should be noted that his analysis does nothing special to focus on those parishes. It simply examines data for all 64 parishes, and there is no reason to believe that the clustering for any set of parishes is more accurate or appropriate for one set of parishes than any other set.

Dr. Swanson's clustering exercise is of little value and contains no objective analysis that can serve as a guide for which cities or parishes belong together in the same congressional district. However, if we *do* take his clusters seriously, it is not at all clear that they bolster the central claims in his report. In contrast with claims made elsewhere in the report that Lafayette and Baton Rouge do not belong together, each of his clustering approaches places them in the same cluster.

V. Trende Report

Mr. Trende's report provides a series of descriptive observations about the boundaries of District 5 in the Remedial Plan. Like Dr. Swanson, Mr. Trende provides no alternative Louisiana congressional plans for comparison, and no discussion of the geographic and demographic

constraints facing a district-drawer in Louisiana. As a result, it is difficult to ascertain whether Mr. Trende's observations reveal something about the geography of Louisiana or the specific intentions of those drawing the districts. Mr. Trende does not offer any analysis or opinions beyond description.

Mr. Trende concludes: "The Proposed Remedial Fifth District is not centered on a single concentration of Black voters," but rather, combines "Black residents of voting age from geographically distant population centers" (page 45). Mr. Trende does not provide any quantitative measures of dispersion or engage in any analysis of what a set of districts with "less dispersed" Black populations might look like.

Next, Mr. Trende reports Polsby-Popper and Reock compactness scores for District 5. He seems to imply that these numbers indicate that District 5 in the Remedial Plan is non-compact, but he does not place the numbers in any relevant context. In order to more comprehensively assess compactness, I have assembled shapefiles (spatial boundary files) for the Remedial Plan, the Enacted Plan, and every redistricting plan that has been implemented in Louisiana over the last 50 years (since the 1972 round of redistricting). This provides me with nine redistricting plans and a total of 64 districts.[8] In addition to the Polsby-Popper and Reock scores, for each enacted congressional district since 2003, I also calculate two additional commonly used compactness metrics: the Convex Hull and Schwartzberg scores.[9] These scores are all presented in the appendix to this report.

With this comparison set, the compactness of District 5 in the Remedial Plan is clearly in the middle of the pack. For the Polsby-Popper score and the Schwarzberg measures, the value for District 5 in the Remedial Plan is around the 40th percentile of the values for all the districts in all

[8] The enacted redistricting plans include those in place from 1973 to 1982, 1983 to 1984, 1985 to 1992, 1993 to 1994, 1995 to 1996, 1997 to 2002, 2003 to 2012, 2013 to 2020, and the current Enacted Plan. Note that from 1973 to 1992, these plans contained 8 districts. From 1993 to 2012, they contained 7 districts, and thereafter, they contained 6 districts.

[9] The Polsby-Popper score is the ratio of the area of the district to the area of a circle whose circumference is equal to the perimeter of the district. The Reock score is the ratio of the area of the district to the area of a minimum bounding circle that encloses the district's geometry. The Convex Hull score is the ratio of the area of the district to the area of the minimum convex polygon that can enclose the district's geometry. The Schwartzberg score is the ratio of the perimeter of the district to the circumference of a circle whose area is equal to the area of the district. Each of these scores falls within a range of 0 to 1, and a score closer to 1 indicates a more compact district.

these plans. For the Convex Hull measure, it is around the 30th percentile value. The Reock score of Remedial District 5 is almost exactly the median value for this comparison set. In short, there is no basis for characterizing Remedial District 5 as an especially non-compact district.

In Table 1 below, I present the average compactness score for each plan according to each metric, with the average score for the Remedial Plan displayed at the bottom. For the entire period since the early 1970s, I have highlighted the most compact plan according to each measure.

Table 1: Average Compactness Scores for Louisiana Redistricting Plans, 1973-2023

	Polsby-Popper	Reock	Convex Hull	Schwartzberg
1973-1982	0.166	0.358	0.684	0.366
1983-1984	0.131	0.338	0.662	0.320
1985-1992	0.144	0.337	0.641	0.350
1993-1994	0.066	0.311	0.552	0.230
1995-1996	0.106	0.310	0.618	0.297
1997-2002	0.219	0.393	0.708	0.424
2003-2012	0.153	0.365	0.651	0.362
2013-2020	0.145	0.356	0.610	0.365
Current Enacted	0.144	0.370	0.621	0.367
Remedial Plan	0.199	0.399	0.712	0.441

Not only is the Remedial Plan more compact than the Enacted Plan on every measure, on three of the four measures, it is in fact more compact than *any* plan enacted in Louisiana in the last 50 years. Only on the Polsby-Popper metric did the Remedial Plan come in second, surpassed only by the 1997-2002 plan.

Mr. Trende implies that District 5 in the Remedial Plan is unusually elongated, remarking that it takes four hours to drive from the northeast corner of the state to Lafayette. But to get from the northeast corner of the state to the eastern reaches of Louisiana in Enacted CD5 without leaving the state, one needs to drive four hours south to Baton Rouge, and then another two hours east to the Mississippi border. Moreover, the drive from one end of Enacted District 4 to the other is also around four hours.[10]

Finally, Mr. Trende concludes his report with an abrupt turn away from Louisiana. He provides some descriptive information about District 25 in the 2004 Texas Redistricting Plan, as well as District 11 in the 1992 Georgia Redistricting Plan. He has selected these plans, it appears, because they were struck down by courts as racial gerrymanders. He suggests that these maps are "similar" to District 5 in the Louisiana Remedial Plan.

It is not clear how he draws this conclusion, however, as he conducts no quantitative or qualitative analysis beyond his impressionistic descriptions of maps. And the compactness scores he does examine do not support his conclusion that Remedial District 5 (.38 Reock score) is equivalent to the Texas's District 25 (.13 Reock score) or Georgia's District 11 (Mr. Trende does not report compactness scores for Georgia, but I have calculated a.17 Reock score). It is difficult to compare compactness scores of specific districts in different states in different years, but even if we were to engage with this analysis, the Reock score for Remedial District 5 in Louisiana is more than twice as high as the Reock scores of the other districts. Additionally, the Texas and Georgia districts involve longer, narrower corridors, and as Mr. Trende points out, longer distances and drive times. Mr. Trende makes no comparisons of county, municipal, or vote tabulation district (VTD) splits, violations of traditional redistricting principles, or other factors typically examined in considerations of racial gerrymandering.

VI. Conclusion

The key claims in these reports cannot be supported by the analyses presented therein. Neither Dr. Swanson's cultural and economic maps, his clustering exercise, nor other assorted critiques and observations in his report generate any basis for his sweeping conclusion that race

[10] I obtain estimated drive times using Google Maps during periods of normal traffic.

was the "predominant factor used by plaintiffs to draw RCD5" (page 10). Likewise, Mr. Trende's largely descriptive analysis provides no compelling reasons to conclude that District 5 in the Remedial Plan can be compared in any meaningful way with districts that have been ruled unlawful by federal courts in the past.

Appendix A
Compactness Scores for Louisiana Congressional Districts,1972-Present

	District: 1	2	3	4	5	6	7	8
Polsby-Popper								
1973-1982	0.003	0.171	0.008	0.212	0.208	0.333	0.236	0.157
1983-1984	0.003	0.036	0.008	0.204	0.213	0.242	0.209	0.133
1985-1992	0.149	0.058	0.003	0.243	0.253	0.250	0.071	0.126
1993-1994	0.092	0.043	0.004	0.013	0.061	0.052	0.196	
1995-1996	0.158	0.042	0.005	0.040	0.214	0.097	0.188	
1997-2002	0.181	0.050	0.004	0.266	0.282	0.507	0.241	
2003-2012	0.171	0.055	0.004	0.207	0.130	0.235	0.271	
2013-2020	0.161	0.057	0.316	0.160	0.100	0.074		
Adopted	0.159	0.058	0.291	0.157	0.124	0.075		
Remedial	0.220	0.170	0.210	0.285	0.097	0.212		
Convex Hull								
1973-1982	0.394	0.679	0.613	0.685	0.823	0.861	0.761	0.652
1983-1984	0.393	0.616	0.646	0.681	0.829	0.721	0.748	0.664
1985-1992	0.528	0.516	0.489	0.679	0.837	0.711	0.711	0.658
1993-1994	0.599	0.456	0.528	0.248	0.652	0.584	0.798	
1995-1996	0.642	0.464	0.535	0.451	0.821	0.606	0.810	
1997-2002	0.643	0.480	0.507	0.783	0.884	0.875	0.783	
2003-2012	0.633	0.493	0.515	0.712	0.693	0.755	0.754	
2013-2020	0.673	0.383	0.802	0.614	0.573	0.618		
Adopted	0.709	0.383	0.791	0.609	0.599	0.636		
Remedial	0.715	0.662	0.750	0.845	0.556	0.743		
Reock								
1973-1982	0.182	0.262	0.354	0.325	0.602	0.425	0.431	0.285
1983-1984	0.182	0.184	0.350	0.321	0.607	0.334	0.416	0.309
1985-1992	0.310	0.196	0.223	0.320	0.610	0.326	0.401	0.307
1993-1994	0.432	0.184	0.251	0.128	0.388	0.293	0.503	
1995-1996	0.377	0.183	0.271	0.126	0.369	0.299	0.542	
1997-2002	0.376	0.190	0.254	0.372	0.552	0.566	0.437	
2003-2012	0.423	0.213	0.258	0.383	0.414	0.457	0.405	
2013-2020	0.461	0.179	0.400	0.344	0.369	0.380		
Adopted	0.502	0.179	0.376	0.336	0.377	0.450		
Remedial	0.374	0.269	0.486	0.562	0.338	0.364		

Schwartzberg

1973-1982	0.050	0.413	0.091	0.460	0.456	0.577	0.485	0.396
1983-1984	0.050	0.188	0.092	0.451	0.461	0.492	0.457	0.364
1985-1992	0.385	0.242	0.054	0.493	0.503	0.500	0.266	0.355
1993-1994	0.304	0.208	0.067	0.112	0.246	0.228	0.443	
1995-1996	0.397	0.204	0.068	0.200	0.463	0.311	0.434	
1997-2002	0.426	0.223	0.066	0.516	0.531	0.712	0.491	
2003-2012	0.413	0.234	0.067	0.455	0.360	0.484	0.521	
2013-2020	0.401	0.238	0.562	0.401	0.316	0.272		
Adopted	0.399	0.241	0.539	0.396	0.353	0.273		
Remedial	0.469	0.413	0.459	0.534	0.311	0.461		

Appendix B
Jonathan Rodden
Curriculum Vitae

Jonathan Rodden

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Education

Ph.D. Political Science, Yale University, 2000.

Fulbright Scholar, University of Leipzig, Germany, 1993–1994.

B.A., Political Science, University of Michigan, 1993.

Academic Positions

Professor, Department of Political Science, Stanford University, 2012–present.

Senior Fellow, Stanford Institute for Economic Policy Research, 2020–present.

Senior Fellow, Hoover Institution, Stanford University, 2012–present.

Director, Spatial Social Science Lab, Stanford University, 2012–present.

W. Glenn Campbell and Rita Ricardo-Campbell National Fellow, Hoover Institution, Stanford University, 2010–2012.

Associate Professor, Department of Political Science, Stanford University, 2007–2012.

Fellow, Center for Advanced Study in the Behavioral Sciences, Palo Alto, CA, 2006–2007.

Ford Career Development Associate Professor of Political Science, MIT, 2003–2006.

Visiting Scholar, Center for Basic Research in the Social Sciences, Harvard University, 2004.

Assistant Professor of Political Science, MIT, 1999–2003.

Instructor, Department of Political Science and School of Management, Yale University, 1997–1999.

Publications

Books

Why Cities Lose: The Deep Roots of the Urban-Rural Divide. Basic Books, 2019.

Decentralized Governance and Accountability: Academic Research and the Future of Donor Programming. Co-edited with Erik Wibbels, Cambridge University Press, 2019.

Hamilton's Paradox: The Promise and Peril of Fiscal Federalism, Cambridge University Press, 2006. Winner, Gregory Luebbert Award for Best Book in Comparative Politics, 2007; Martha Derthick Award for lasting contribution to the study of federalism, 2021.

Fiscal Decentralization and the Challenge of Hard Budget Constraints, MIT Press, 2003. Co-edited with Gunnar Eskeland and Jennie Litvack.

Peer Reviewed Journal Articles

The Great Recession and the Public Sector in Rural America, 2023, *Journal of Economic Geography* https://doi.org/10.1093/jeg/lbad015.

How Social Context Affects Immigration Attitudes, 2023, *Journal of Politics* 85(2): 372-388 (with Adam Berinsky, Christopher Karpowitz, Zeyu Chris Peng, and Cara Wong).

Homicide Deaths Among Adult Cohabitants of Handgun Owners in California, 2004 to 2016: A Cohort Study, 2022, *Annals of Internal Medicine* 175(5): 804-811 (with David M. Studdert, Yifan Zhang, Erin E. Holsinger, Lea Prince, Alexander F. Holsinger, Garen J. Wintemute, and Matthew Miller).

Policies to Influence Perceptions about COVID-19 Risk: The Case of Maps. 2022, *Science Advances* 8(11): 1-9 (with Claudia Engel and Marco Tabellini).

Polarization and Accountability in COVID Times, 2022, *Frontiers in Political Science* January 19, 2022 (with Pablo Beramendi).

Who Registers? Village Networks, Household Dynamics, and Voter Registration in Rural Uganda, 2021, *Comparative Political Studies* 55(6), 899–932, https://doi.org/10.1177/00104140211036048 (with Romain Ferrali, Guy Grossman, and Melina Platas).

Partisan Dislocation: A Precinct-Level Measure of Representation and Gerrymandering, 2021, *Political Analysis* 30(3), 403-425, doi:10.1017/pan.2021.13 (with Daryl DeFord Nick Eubank).

Who is my Neighbor? The Spatial Efficiency of Partisanship, 2020, *Statistics and Public Policy* 7(1):87-100 (with Nick Eubank).

Handgun Ownership and Suicide in California, 2020, *New England Journal of Medicine* 382: 2220-2229 (with David M. Studdert, Yifan Zhang, Sonja A. Swanson, Lea Prince, Erin E. Holsinger, Matthew J. Spittal, Garen J. Wintemute, and Matthew Miller).

Viral Voting: Social Networks and Political Participation, 2020, *Quarterly Journal of Political Science* 163: 265-284, (with Nick Eubank, Guy Grossman, and Melina Platas). Winner, *Political Ties Award* for the best paper on the subject of political networks.

It Takes a Village: Peer Effects and Externalities in Technology Adoption, 2020, *American Journal of Political Science* 64(3): 536-553, (with Romain Ferrali, Guy Grossman, and Melina Platas). Winner, 2020 Best Conference Paper Award, American Political Science Association Network Section.

Assembly of the LongSHOT Cohort: Public Record Linkage on a Grand Scale, 2019, *Injury Prevention* 26: 153-158 (with Yifan Zhang, Erin Holsinger, Lea Prince, Sonja Swanson, Matthew Miller, Garen Wintemute, and David Studdert).

Crowdsourcing Accountability: ICT for Service Delivery, 2018, *World Development* 112: 74-87 (with Guy Grossman and Melina Platas).

Geography, Uncertainty, and Polarization, 2018, *Political Science Research and Methods* doi:10.1017/psrm.2018.12 (with Nolan McCarty, Boris Shor, Chris Tausanovitch, and Chris Warshaw).

Handgun Acquisitions in California after Two Mass Shootings, 2017, *Annals of Internal Medicine* 166(10):698-706. (with David Studdert, Yifan Zhang, Rob Hyndman, and Garen Wintemute).

Cutting Through the Thicket: Redistricting Simulations and the Detection of Partisan Gerrymanders, 2015, *Election Law Journal* 14(4): 1-15 (with Jowei Chen).

The Achilles Heel of Plurality Systems: Geography and Representation in Multi-Party Democracies, 2015, *American Journal of Political Science* 59(4): 789-805 (with Ernesto Calvo). Winner, Michael Wallerstein Award for best paper in political economy, American Political Science Association.

Why has U.S. Policy Uncertainty Risen Since 1960?, 2014, *American Economic Review: Papers and Proceedings* May 2014 (with Nicholas Bloom, Brandice Canes-Wrone, Scott Baker, and Steven Davis).

Unintentional Gerrymandering: Political Geography and Electoral Bias in Legislatures, 2013, *Quarterly Journal of Political Science* 8: 239-269 (with Jowei Chen).

How Should We Measure District-Level Public Opinion on Individual Issues?, 2012, *Journal of Politics* 74(1): 203-219 (with Chris Warshaw).

Representation and Redistribution in Federations, 2011, *Proceedings of the National Academy of Sciences* 108, 21: 8601-8604 (with Tiberiu Dragu).

Dual Accountability and the Nationalization of Party Competition: Evidence from Four Federatons, 2011, *Party Politics* 17, 5: 629-653 (with Erik Wibbels).

The Geographic Distribution of Political Preferences, 2010, *Annual Review of Political Science* 13: 297–340.

Fiscal Decentralization and the Business Cycle: An Empirical Study of Seven Federations, 2009, *Economics and Politics* 22(1): 37–67 (with Erik Wibbels).

Getting into the Game: Legislative Bargaining, Distributive Politics, and EU Enlargement, 2009, *Public Finance and Management* 9(4) (with Deniz Aksoy).

The Strength of Issues: Using Multiple Measures to Gauge Preference Stability, Ideological Constraint, and Issue Voting, 2008. *American Political Science Review* 102(2): 215-232 (with Stephen Ansolabehere and James Snyder).

Does Religion Distract the Poor? Income and Issue Voting Around the World, 2008, *Comparative Political Studies* 41(4): 437-476 (with Ana Lorena De La O).

Purple America, 2006, *Journal of Economic Perspectives* 20(2) (Spring): 97–118 (with Stephen Ansolabehere and James Snyder).

Economic Geography and Economic Voting: Evidence from the U.S. States, 2006, *British Journal of Political Science* 36(3): 527-47 (with Michael Ebeid).

Distributive Politics in a Federation: Electoral Strategies, Legislative Bargaining, and Government Coalitions, 2004, *Dados* 47(3) (with Marta Arretche, in Portuguese).

Comparative Federalism and Decentralization: On Meaning and Measurement, 2004, *Comparative Politics* 36(4): 481-500. (Portuguese version, 2005, in *Revista de Sociologia e Politica* 25).

Reviving Leviathan: Fiscal Federalism and the Growth of Government, 2003, *International Organization* 57 (Fall), 695-729.

Beyond the Fiction of Federalism: Macroeconomic Management in Multi-tiered Systems, 2003, *World Politics* 54(4) (July): 494-531 (with Erik Wibbels).

The Dilemma of Fiscal Federalism: Grants and Fiscal Performance around the World, 2002, *American Journal of Political Science* 46(3): 670-687.

Strength in Numbers: Representation and Redistribution in the European Union, 2002, *European Union Politics* 3(2): 151-175.

Does Federalism Preserve Markets? 1997, *Virginia Law Review* 83(7): 1521-1572 (with Susan Rose-Ackerman). Spanish version, 1999, in *Quorum* 68.

Working Papers

Elections, Political Polarization, and Economic Uncertainty, NBER Working Paper 27961 (with Scott Baker, Aniket Baksy, Nicholas Bloom, and Steven Davis).

Federalism and Inter-regional Redistribution, Working Paper 2009/3, Institut d'Economia de Barcelona.

Representation and Regional Redistribution in Federations, Working Paper 2010/16, Institut d'Economia de Barcelona (with Tiberiu Dragu).

Changing the Default: The Impact of Motor-Voter Reform in Colorado (with Justin Grimmer), 2022.

Chapters in Books

Urbanization, in *Oxford Handbook of Historical Political Economy*, edited by Jeffery A. Jenkins and Jared Rubin, 2023, Oxford University Press.

Political Geography and Representation: A Case Study of Districting in Pennsylvania (with Thomas Weighill), in *Political Geometry*, edited by Moon Duchin and Olivia Walch, 2022, Springer.

Keeping Your Enemies Close: Electoral Rules and Partisan Polarization, in *The New Politics of Insecurity*, edited by Frances Rosenbluth and Margaret Weir, 2022, Cambridge University Press.

Decentralized Rule and Revenue, 2019, in Jonathan Rodden and Erik Wibbels, eds., *Decentralized Governance and Accountability*, Cambridge University Press.

Geography and Gridlock in the United States, 2014, in Nathaniel Persily, ed. *Solutions to Political Polarization in America*, Cambridge University Press.

Can Market Discipline Survive in the U.S. Federation?, 2013, in Daniel Nadler and Paul Peterson, eds, *The Global Debt Crisis: Haunting U.S. and European Federalism*, Brookings Press.

Market Discipline and U.S. Federalism, 2012, in Peter Conti-Brown and David A. Skeel, Jr., eds, *When States Go Broke: The Origins, Context, and Solutions for the American States in Fiscal Crisis*, Cambridge University Press.

Federalism and Inter-Regional Redistribution, 2010, in Nuria Bosch, Marta Espasa, and Albert Sole Olle, eds., *The Political Economy of Inter-Regional Fiscal Flows*, Edward Elgar.

Back to the Future: Endogenous Institutions and Comparative Politics, 2009, in Mark Lichbach and Alan Zuckerman, eds., *Comparative Politics: Rationality, Culture, and Structure* (Second Edition), Cambridge University Press.

The Political Economy of Federalism, 2006, in Barry Weingast and Donald Wittman, eds., *Oxford Handbook of Political Economy*, Oxford University Press.

Fiscal Discipline in Federations: Germany and the EMU, 2006, in Peter Wierts, Servaas Deroose, Elena Flores and Alessandro Turrini, eds., *Fiscal Policy Surveillance in Europe*, Palgrave MacMillan.

The Political Economy of Pro-cyclical Decentralised Finance (with Erik Wibbels), 2006, in Peter Wierts, Servaas Deroose, Elena Flores and Alessandro Turrini, eds., *Fiscal Policy Surveillance in Europe*, Palgrave MacMillan.

Globalization and Fiscal Decentralization, (with Geoffrey Garrett), 2003, in Miles Kahler and David Lake, eds., *Governance in a Global Economy: Political Authority in Transition*, Princeton University Press: 87-109. (Updated version, 2007, in David Cameron, Gustav Ranis, and Annalisa Zinn, eds., *Globalization and Self-Determination: Is the Nation-State under Siege?* Routledge.)

Introduction and Overview (Chapter 1), 2003, in Rodden et al., *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Soft Budget Constraints and German Federalism (Chapter 5), 2003, in Rodden, et al, *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Federalism and Bailouts in Brazil (Chapter 7), 2003, in Rodden, et al., *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Lessons and Conclusions (Chapter 13), 2003, in Rodden, et al., *Fiscal Decentralization and the Challenge of Hard Budget Constraints* (see above).

Online Interactive Visualization

Stanford Election Atlas, 2012 (collaboration with Stephen Ansolabehere at Harvard and Jim Herries at ESRI)

Other Publications

Supporting Advanced Manufacturing in Alabama, Report to the Alabama Innovation Commission, Hoover Institution, 2021.

How America's Urban-Rural Divide has Shaped the Pandemic, 2020, *Foreign Affairs*, April 20, 2020.

An Evolutionary Path for the European Monetary Fund? A Comparative Perspective, 2017, Briefing paper for the Economic and Financial Affairs Committee of the European Parliament.

Amicus Brief in *Rucho et al. v. Common Cause*, 2019, Supreme Court of the United States, with Wesley Pegden and and Samuel Wang.

Amicus Brief in *Gill et al. v. Whitford et al.*, 2017, Supreme Court of the United States, with Jowei Chen and Wesley Pegden.

Representation and Regional Redistribution in Federations: A Research Report, 2009, in *World Report on Fiscal Federalism*, Institut d'Economia de Barcelona.

On the Migration of Fiscal Sovereignty, 2004, *PS: Political Science and Politics* July, 2004: 427–431.

Decentralization and the Challenge of Hard Budget Constraints, *PREM Note* 41, Poverty Reduction and Economic Management Unit, World Bank, Washington, D.C. (July).

Decentralization and Hard Budget Constraints, *APSA-CP* (Newsletter of the Organized Section in Comparative Politics, American Political Science Association) 11:1 (with Jennie Litvack).

Book Review of *The Government of Money* by Peter Johnson, *Comparative Political Studies 32,7: 897-900.*

Fellowships, Honors, and Grants

John Simon Guggenheim Memorial Foundation Fellowship, 2021.

Martha Derthick Award of the American Political Science Association for "the best book published at least ten years ago that has made a lasting contribution to the study of federalism and intergovernmental relations," 2021.

National Science Foundation, funding for study "Segregation, Suburbanization, and Representation," 2023.

National Institutes of Health, funding for "Relationship between lawful handgun ownership and risk of homicide victimization in the home," 2021.

National Collaborative on Gun Violence Research, funding for "Cohort Study Of Firearm-Related Mortality Among Cohabitants Of Handgun Owners." 2020.

Fund for a Safer Future, Longitudinal Study of Handgun Ownership and Transfer (LongSHOT), GA004696, 2017-2018.

Stanford Institute for Innovation in Developing Economies, Innovation and Entrepreneurship research grant, 2015.

Michael Wallerstein Award for best paper in political economy, American Political Science Association, 2016.

Common Cause Gerrymandering Standard Writing Competition, 2015.

General support grant from the Hewlett Foundation for Spatial Social Science Lab, 2014.

Fellow, Institute for Research in the Social Sciences, Stanford University, 2012.

Sloan Foundation, grant for assembly of geo-referenced precinct-level electoral data set (with Stephen Ansolabehere and James Snyder), 2009-2011.

Hoagland Award Fund for Innovations in Undergraduate Teaching, Stanford University, 2009.

W. Glenn Campbell and Rita Ricardo-Campbell National Fellow, Hoover Institution, Stanford University, beginning Fall 2010.

Research Grant on Fiscal Federalism, Institut d'Economia de Barcelona, 2009.

Fellow, Institute for Research in the Social Sciences, Stanford University, 2008.

United Postal Service Foundation grant for study of the spatial distribution of income in cities, 2008.

Gregory Luebbert Award for Best Book in Comparative Politics, 2007.

Fellow, Center for Advanced Study in the Behavioral Sciences, 2006-2007.

National Science Foundation grant for assembly of cross-national provincial-level dataset on elections, public finance, and government composition, 2003-2004 (with Erik Wibbels).

MIT Dean's Fund and School of Humanities, Arts, and Social Sciences Research Funds.

Funding from DAAD (German Academic Exchange Service), MIT, and Harvard EU Center to organize the conference, "European Fiscal Federalism in Comparative Perspective," held at Harvard University, November 4, 2000.

Canadian Studies Fellowship (Canadian Federal Government), 1996-1997.

Prize Teaching Fellowship, Yale University, 1998-1999.

Fulbright Grant, University of Leipzig, Germany, 1993-1994.

Michigan Association of Governing Boards Award, one of two top graduating students at the University of Michigan, 1993.

W. J. Bryan Prize, top graduating senior in political science department at the University of Michigan, 1993.

Other Professional Activities

Selection committee, best paper award, American Journal of Political Science.

Selection committee, best paper award, American Political Economy

International Advisory Committee, Center for Metropolitan Studies, Sao Paulo, Brazil, 2006–2010.

Selection committee, Mancur Olson Prize awarded by the American Political Science Association Political Economy Section for the best dissertation in the field of political economy.

Selection committee, Gregory Luebbert Best Book Award.

Selection committee, William Anderson Prize, awarded by the American Political Science Association for the best dissertation in the field of federalism and intergovernmental relations.

Courses

Undergraduate

Politics, Economics, and Democracy

Introduction to Comparative Politics

Introduction to Political Science

Political Science Scope and Methods

Institutional Economics

Spatial Approaches to Social Science

Graduate

Political Economy

Political Economy of Institutions

Federalism and Fiscal Decentralization

Politics and Geography

Consulting

2017. Economic and Financial Affairs Committee of the European Parliament.

2016. Briefing paper for the World Bank on fiscal federalism in Brazil.

2013-2018: Principal Investigator, SMS for Better Governance (a collaborative project involving USAID, Social Impact, and UNICEF in Arua, Uganda).

2022. Expert witness in *Rivera v. Schwab* No. 2022-cv-89 (Kan. Dist. Ct. 2022)

2022. Drew Pennsylvania Congressional redistricting plan that was chosen by the Pennsylvania Supreme Court for implementation in *Carter v. Chapman* No. 7 MM 2022, 2022WL 549106 (Pennsylvania Supreme Court).

2022. Written expert testimony in *Benninghoff v. 2021 Legislative Reapportionment Commission* (Pennsylvania Supreme Court).

2022 Expert witness in *Bennett v. Ohio Redistricting Commission*, No. 2012-1198 (Ohio Supreme Court).

2022 Expert witness in *Adams v. DeWine* No. 2012-1428 (Ohio Supreme Court).

2022 Expert witness in *Neiman v. LaRose* No. 2022-0298 (Ohio Supreme Court)

2019: Written expert testimony in *McLemore, Holmes, Robinson, and Woullard v. Hosemann*, United States District Court, Mississippi.

2019: Expert witness in *Nancy Corola Jacobson v. Detzner*, United States District Court, Florida.

2018: Written expert testimony in *League of Women Voters of Florida v. Detzner* No. 4:18-cv-002510, United States District Court, Florida.

2018: Written expert testimony in *College Democrats of the University of Michigan, et al. v. Johnson, et al.*, United States District Court for the Eastern District of Michigan.

2017: Expert witness in *Bethune-Hill v. Virginia Board of Elections*, No. 3:14-CV-00852, United States District Court for the Eastern District of Virginia.

2017: Expert witness in *Arizona Democratic Party, et al. v. Reagan, et al.*, No. 2:16-CV-01065, United States District Court for Arizona.

2016: Expert witness in *Lee v. Virginia Board of Elections*, 3:15-cv-357, United States District Court for the Eastern District of Virginia, Richmond Division.

2016: Expert witness in *Missouri NAACP v. Ferguson-Florissant School District*, United States District Court for the Eastern District of Missouri, Eastern Division.

2014-2015: Written expert testimony in *League of Women Voters of Florida et al. v. Detzner, et al.*, 2012-CA-002842 in Florida Circuit Court, Leon County (Florida Senate redistricting case).

2013-2014: Expert witness in *Romo v Detzner*, 2012-CA-000412 in Florida Curcuit Court, Leon County (Florida Congressional redistricting case).

2011-2014: Consultation with investment groups and hedge funds on European debt crisis.

2011-2014: Lead Outcome Expert, Democracy and Governance, USAID and Social Impact.

2010: USAID, Review of USAID analysis of decentralization in Africa.

2006–2009: World Bank, Independent Evaluations Group. Undertook evaluations of World Bank decentralization and safety net programs.

2008–2011: International Monetary Fund Institute. Designed and taught course on fiscal federalism.

1998–2003: World Bank, Poverty Reduction and Economic Management Unit. Consultant for *World Development Report*, lecturer for training courses, participant in working group for assembly of decentralization data, director of multi-country study of fiscal discipline in decentralized countries, collaborator on review of subnational adjustment lending.

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