Exhibit 1

Response to Report of William Briggs

Stephen Ansolabehere

December 2, 2020

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Stephen Ansolabehere, Ph.D.

Statement of Inquiry

1. I have been asked to evaluate the report of Dr. William Briggs, dated November 23, 2020.

2. I am compensated at the rate of $550 an hour.

Summary Assessment

3. Based on my review, I find the estimates and analyses in Dr. Briggs report to be unreliable and the analysis is not up to scientific standards of survey research, data analysis, or election analysis. There are substantial errors in the design of the survey and errors and inconsistencies in the data used in the analysis that are of sufficient magnitude to invalidate any calculations or estimates based on these data. The survey design and implementation fail to meet basic scientific standards of survey research and statistical analysis of surveys. And, the interpretation of the data does not account for obvious and important features of absentee voting, including permanent absentee voters who do not need to request ballots to receive them and late, rejected, invalid, and spoiled absentee ballots. The errors in design, analysis, and interpretation of the data are so massive that there is no foundation for drawing any conclusions or inferences based on Dr. Briggs' report.

4. In his report, Dr. Briggs evaluates survey data that was provided to him by a third party and assumes that "the respondents [to the survey] are representative and the data are accurate." There is no indication in his report that any analysis was conducted by him or by those who provided the data to him to verify the correctness or integrity of the data he was

provided, the quality of the survey, or the representativeness of the sample on which he based his analysis. It is standard scientific practice in the field of survey research to give careful scrutiny to data before conducting any statistical analyses, including understanding the structure and wording of the survey questions, the sampling method and response rate, and the characteristics of the sample, such as demographic and behavioral indicators.

5. In his report, Dr. Briggs defines two types of errors. Those people who received absentee ballots even though the survey indicates that they did not request an absentee ballot are called Error #1. Those people who returned absentee ballots even though the election office did not record an absentee vote from them are called Error #2. These two errors combined he calls "troublesome ballots." Based on the information in Dr. Briggs' report, it is my conclusion, that neither assumption is justified. The estimates of Error #1 and Error #2 that he presents reflect defects in the design of the survey, fatal data errors evident in the survey toplines, calculation errors, and errors in the interpretation of the data. It is my professional judgment that none of the estimates and projections in his report are valid.

6. The design of the survey contaminates the data and any estimates, rendering them invalid. Specifically, in Question 1 of the survey the surveyor asks to speak to a specific person. Some of the respondents are flagged as "Reached Target," while others are flagged as "Uncertain" or "What is this about?" Both groups of people (Reached Target and Uncertain) are then asked Question 2, Did you request an absentee ballot? This is a serious survey design error, because some or perhaps all of the people flagged as "Uncertain" are not the Target of the interview. As a result, the design of the very first question of the survey allows some people

who were not the Target to be treated as if they were the Target in the remaining questions. This leads to the contamination of all results. This fact is evident in the Topline Tables that were attached to Dr. Briggs' report.

7. The survey suffers from ambiguously worded questions, which introduces measurement errors in any estimates. Question 2 asks respondents whether they requested an absentee ballot. They question does not clearly state what a request for an absentee ballot means. Perhaps the most troublesome example for this question is how those who are permanent absentee voters ought to respond to it. Permanent absentee voters are sent an absentee ballot automatically; they do not need to request a ballot for a particular election in order for the election office to mail one to them. Michigan allows for permanent absentee voting, as do three other states in his analysis -- Arizona, Pennsylvania, and Wisconsin. Georgia allows permanent absentee voting each election cycle for those 65 years of age or older. Both "yes" and "no" may be viewed as correct answers to this question. Respondents who are permanent absentee voter might respond yes because they did sign up for that status, or they might as correctly respond no because they did not have to request a ballot in order to have one sent to them. The questionnaire provides no way to clarify such cases. There is no follow up question to disambiguate permanent absentee voters from others. This is just one example of the substantial problems with the wording and structure of Question 2.

7. The wording of Question 3 is also very problematic. First, it does not ascertain whether the ballot was mailed back in a timely manner so as to be included in the record of ballots cast. Some or possibly all of the cases in question are late ballots, and thus not

necessarily included in the absentee vote record. Second, Question 3 asks whether someone voted. Survey questions asking whether someone voted are notoriously subject to social desirability biases that lead to inflation in the estimated number of voters.

8. There are errors and inconsistencies in survey data for every state, including for the state of Michigan. Appended to Dr. Briggs' report are a series of tables, called Topline Tables, for each state. The Topline Tables, or toplines for short, provide the basic statistics about the survey reported for each question, as well as the questions themselves and the response categories for each question. There are errors in the spreadsheet of toplines indicating data inconsistencies, including for the State of Michigan. For example, in the topline tables for Michigan, the number of respondents to Question 1 who are supposed to be asked Question 2 does not sum to the number of respondents to Question 2. The same accounting discrepancy arises in Arizona, Pennsylvania, and Wisconsin, but not in Georgia. In Michigan and Arizona, there are too many respondents to Question 2. In Pennsylvania and Wisconsin, there are too few respondents to Question 2. These errors infect and bias responses to Q2 and Q3. Generally, such errors indicate fundamental problems with the management of the survey and the databases generated by the survey. In standard survey practice, the presence of discrepancies in these topline tables indicates fatal flaws in the data, and lead researchers to attempt to clarify the problems and possibly discard the data altogether. Dr. Briggs' report makes no mention of these inconsistencies and errors and assumes that the underlying data are correct. These errors and inconsistencies reveal that the data are not correct.

9. The survey has extremely low response rates. The response rate for the Michigan survey is .008, just eight tenths of one percent. That means that 99.2 percent of people who the survey firm sought to interview in the State of Michigan could not be contacted, refused to participate, or were not in fact the correct person. Surveys with such a low response rate are not accepted in scientific publications, except on rare occasions and with proper analyses that ensure that the respondents in fact are representative. When researchers have low response rates, they must offer affirmative proof of representativeness or attempt to correct for biases. Neither is done here.

10. In performing his analysis, Dr. Briggs extrapolates from a poorly designed survey with an extraordinarily high non-response rate and evident data errors and inconsistencies. The high non-response rate, the data errors, and the survey design flaws are all evident in the topline tables that Dr. Briggs appended to his report. These data should not have been relied on for this analysis given that they are not correct, and the respondents to the survey are highly unlikely to represent the population in question. This is not up to scientific standards.

11. The interpretation of the data as evidence of "errors" and "troublesome ballots" fails to account for the rules and realities of absentee voting. First, Dr. Briggs calls Error #1 absentee ballots that were received by voters but were not "requested." This interpretation fails to consider permanent absentee voters, who receive ballots without requesting them. All five states in his report allow for permanent absentee voting for some or all registrants. Second, Dr. Briggs calls Error #2 ballots that were sent by voters but not recorded. This interpretation fails to account for late, undeliverable, rejected, and spoiled ballots. Most jurisdictions, for example, do not record

late ballots in the tally of returned absentee ballots. The results in his analysis, if they are real, are likely the consequence of the normal practice of absentee voting in compliance with state election procedures and laws.

II. Qualifications

12. I am the Frank G. Thompson Professor of Government in the Department of Government at Harvard University in Cambridge, MA. Formerly, I was an Assistant Professor at the University of California, Los Angeles, and I was Professor of Political Science at the Massachusetts Institute of Technology, where I held the Elting R. Morison Chair and served as Associate Head of the Department of Political Science. I am the Principal Investigator of the Cooperative Congressional Election Study (CCES), a survey research consortium of over 250 faculty and student researchers at more than 50 universities, directed the Caltech/MIT Voting Technology Project from its inception in 2000 through 2004, and served on the Board of Overseers of the American National Election Study from 1999 to 2013. I am an election analyst for and consultant to CBS News' Election Night Decision Desk. I am a member of the American Academy of Arts and Sciences (inducted in 2007). My curriculum vitae is attached to this report as Appendix A.

13. I have worked as a consultant to the Brennan Center in the case of *McConnell v. FEC*, 540 U.S. 93 (2003). I have testified before the U.S. Senate Committee on Rules, the U.S. Senate Committee on Commerce, the U.S. House Committee on Science, Space, and Technology, the U.S. House Committee on House Administration, and the Congressional Black Caucus on matters

of election administration in the United States. I filed an amicus brief with Professors Nathaniel Persily and Charles Stewart on behalf of neither party to the U.S. Supreme Court in the case of *Northwest Austin Municipal Utility District Number One v. Holder*, 557 U.S. 193 (2009) and an amicus brief with Professor Nathaniel Persily and others in the case of *Evenwel v. Abbott* 138 S.Ct. 1120 (2015). I have served as a testifying expert for the Gonzales intervenors in *State of Texas v. United States* before the U.S. District Court in the District of Columbia (No. 1:11-cv-01303); the Rodriguez plaintiffs in *Perez v. Perry*, before the U.S. District Court in the Western District of Texas (No. 5:11-cv-00360); for the San Antonio Water District intervenor in *LULAC v. Edwards Aquifer Authority* in the U.S. District Court for the Western District of Texas, San Antonio Division (No. 5:12cv620-OLG); for the Department of Justice in *State of Texas v. Holder*, before the U.S. District Court in the District of Columbia (No. 1:12-cv-00128); for the Guy plaintiffs in *Guy v. Miller* in U.S. District Court for Nevada (No. 11-OC-00042-1B**);** for the Florida Democratic Party in *In re Senate Joint Resolution of Legislative Apportionment* in the Florida Supreme Court (Nos. 2012-CA-412, 2012-CA-490); for the Romo plaintiffs in *Romo v. Detzner* in the Circuit Court of the Second Judicial Circuit in Florida (No. 2012 CA 412); for the Department of Justice in *Veasey v. Perry*, before the U.S. District Court for the Southern District of Texas, Corpus Christi Division (No. 2:13cv00193); for the Harris plaintiffs in *Harris v. McCrory* in the U. S. District Court for the Middle District of North Carolina (No. 1:2013cv00949); for the Bethune-Hill plaintiffs in *Bethune-Hill v. Virginia State Board of Elections* in the U.S. District Court for the Eastern District of Virginia (No. 3: 2014cv00852); for the Fish plaintiffs in *Fish v. Kobach* in the U.S. District Court for the District of Kansas (No. 2:16-cv-02105-JAR); and for intervenors in *Voto Latino, et al. v. Hobbs*, in the U.S. District Court for the District of Arizona (No. 2:19-cv-05685-DWL). I served as an expert witness and filed an

Affidavit in the North Carolina State Board of Elections hearings regarding absentee ballot fraud in the 2018 election for Congressional District 9 in North Carolina. I currently am an expert witness *Wood v. Raffensperger*, in Fulton County, Georgia, Superior Court, (No. 2020CV342959).

14. My areas of expertise include American government, with particular expertise in electoral politics, representation, and public opinion, as well as statistical methods in social sciences and survey research methods. I have authored numerous scholarly works on voting behavior and elections, the application of statistical methods in social sciences, legislative politics and representation, and distributive politics. This scholarship includes articles in such academic journals as the Journal of the Royal Statistical Society, American Political Science Review, American Economic Review, the American Journal of Political Science, Legislative Studies Quarterly, Quarterly Journal of Political Science, Electoral Studies, and Political Analysis. I have published articles on issues of election law in the Harvard Law Review, Texas Law Review, Columbia Law Review, New York University Annual Survey of Law, and Election Law Journal, for which I am a member of the editorial board. I have coauthored three scholarly books on electoral politics in the United States, The End of Inequality: Baker v. Carr and the Transformation of American Politics, Going Negative: How Political Advertising Shrinks and Polarizes the Electorate, and The Media Game: American Politics in the Media Age. I am coauthor with Benjamin Ginsberg, and Ken Shepsle of American Government: Power and Purpose.

III. Sources

15. I have relied on the report of Dr. William Briggs, especially the appended Topline Tables.

16. I have relied on the Election Assistance Commission, "Election Administration and Voting Survey (EAVS) for 2018: https://www.eac.gov/research-and-data/studies-and-reports. I present data from 2018 because it is the most recent federal election for which data on absentee and permanent absentee voting is available. The 2018 data are instructive about the magnitude of permanent absentee voters and of the magnitude of unreturned, late, rejected, and spoiled absentee ballots. The 2020 data are not yet reported.

17. I have relied on the report of Matthew Braynard in *King v. Whitmer*, No. 2:20-cv-13134-LVP-RSW (ED. Mich.2020).

IV. Findings

18. In my professional judgment there are fundamental flaws in the survey design, and survey data set out in Dr. Briggs' report. These flaws created biases in the estimates and analyses that are sufficiently large to completely explain the data that Dr. Briggs presents as nothing more than errors in the data collection process. Perhaps most troubling the survey is likely highly unrepresentative because it has a response rate less than 1 percent; the survey data are contaminated by respondents who should not have been included in the survey, and the basic data in the Topline summaries of the data do not add up, indicating fatal flaws in the implementation of the survey.

A. Critique of Interpretation

i. The survey data and its interpretation does not account for Permanent Absentee and Early Voters (PEV).

19. The analysis of Question 2 is used to estimate the number of people who received but did not request an absentee ballot. Dr. Briggs calls this Error #1.

20. The interpretation of these data as an Error in balloting does not account for the presence of a large number of Permanent Absentee and Early Voters (PEVs) in Arizona, Michigan, Pennsylvania, and Wisconsin, and "rollover" absentee voters in Georgia. PEVs are automatically sent their absentee ballots. They do not need to request that a ballot be sent for a particular election. Dr. Briggs' interpretation of the responses to Question 2 as indicative of an Error #1 fails to take into account the large number of people in Michigan and in the other four states in his study who are PEVs. There are other problems with Question 2 as discussed below.

21. There are a sizable number of PEVs in all of the states under study. Table 1 presents data from the number of absentee ballots sent in 2018 and the number of permanent absentee ballots sent in to voters in Arizona, Georgia (rollover ballots), Michigan, Pennsylvania, and Wisconsin. According to figures from the Election Assistance Commission for 2018, there were over half a million PEVs in the state of Michigan in 2018. The number of permanent absentee

ballots sent in Arizona, Michigan, and Wisconsin far exceeds the estimated Error #1 in the first table in Dr. Briggs' report. Those data cover 2018 and are presented to indicate the likely magnitude of PEVs in the states in 2020.

22. The number of PEVs in Michigan was even larger in 2020 Preliminary figures (as of September, 2020) from the Office of the Secretary of State of Michigan reveal that the number of PEVs in the November 2020 election was approximately 2 million, and that PEVs accounted for roughly two-thirds of absentee ballots sent this for the 2020 general election in the State of Michigan.[1] The other states saw similarly large numbers of PEVs in 2020. For example, the State of Georgia, which allows voters who are disabled or over 65 to sign up to have absentee ballots sent to them, reported at least 582,000 "rollover" ballots in Georgia in 2020.[2]

23. The number of registered voters who were sent a ballot without having to request one in the State of Michigan far exceeds the total number of absentee ballots that Dr. Briggs classifies as Error #1. The number of PEVs was 2 million in the November 2020 election. The maximum number of people who received an absentee ballot but said that they did not request one in Dr. Briggs' assessment is 36,529.

[1] Dave Boucher, "Michigan sets record for number of absentee ballot requests for Nov. election" Detroit Free Press September 10, 2002. https://www.freep.com/story/news/politics/elections/2020/09/10/michigan-absentee-voting-election-november-2020/5768768002/
Ray Hole, "Michigan receives record number of requests for absentee ballots," wwmt.com, September 10, 2020, https://wwmt.com/news/local/michigan-receives-record-number-of-request-for-absentee-ballots

[2] Stephen Fowler, "Nearly 800,000 Georgians Have Already Requested Absentee Ballots for November" GA Today gpb.org, September 2, 2020. https://www.gpb.org/news/2020/09/02/nearly-800000-georgians-have-already-requested-absentee-ballots-for-november

24. The survey makes no effort to distinguish PEVs from other sorts of absentee voters. Not accounting for PEVs is a serious error in survey design and interpretation of the survey numbers.

Table 1. Permanent Absentee Voters in Arizona, Georgia, Michigan, Pennsylvania, and Wisconsin in 2018

	Total Absentee Ballots Sent	Permanent Absentee Ballots Sent (i.e., ballots sent automatically without a specific ballot request)	Permanent Absentee Ballots as a Percent of Total
Arizona	2,672,384	2,545,198	95.2%
Georgia	281,490	*	*
Michigan	1,123,415	549,894	48.9%
Pennsylvania	216,575	6,340	2.9%
Wisconsin	168,788	54,113	32.1%

Source: EAC, EAVS 2018.

Note: * means no data reported.

ii. The interpretation of Question 3 fails to account for the proper handling of late, invalid, and spoiled absentee ballots by Local Election Offices.

25. The analysis of Question 3 is used to estimate the number of people who stated that they returned an absentee ballot but for whom no vote was recorded. Dr. Briggs calls this Error #2.

26. The interpretation does not account absentee ballots that are in fact not received or counted by election officers because the ballots are not returned by the postal system, are spoiled, are returned late, or are rejected. Such ballots are the obvious explanation for the data observed, but no effort in the survey or the analysis is made to ascertain the likelihood that these ballots. There are further problems with Question 3, as discussed below.

27. It is my experience researching elections over the past two decades that "uncounted" absentee ballots are a normal part of the election process. Table 2 presents counts of rejected, late, undelivered, and voided absentee ballots in Arizona, Georgia, Michigan, Pennsylvania, and Wisconsin for 2018, the most recent federal election for which systematic data on absentee voting are available. An undeliverable absentee ballot is one that was returned to the election office as not being deliverable to the address on the voter registration lists. The final column presents the number of sent absentee ballots for which the status of a ballot sent by the election office to a voter was not received and its status is not known. These are likely ballots that simply were not returned by voters or were lost or delayed in the US Postal System, as happens in every election in my experience.

28. The magnitude of ballots that are returned to the office but are rejected, spoiled or late is quite large. The sum of these columns is comparable in magnitude to the magnitude of "Error #2" in Dr. Briggs' report. These figures are not definitive of the numbers in 2020, which have not yet been reported. Rather they are demonstrative of the fact that there are sound, documented administrative reasons that returned absentee ballots are not recorded as having voted, especially tardiness, spoilage, and rejection for lack of signatures, valid envelopes, and the like. These are ballots that are not allowed to be counted under law, and they are comparable in magnitude to the estimates of the Error #2 reported by Dr. Briggs for each state.

Table 2. Rejected, Undelivered, Voided, and Late Absentees in Arizona, Georgia, Michigan, Pennsylvania, and Wisconsin in 2018

	Rejected Absentee Ballots	Undeliverable Absentee Ballots	Spoiled/Voided Absentee Ballots	Late Absentee Ballots	Status Unknown
Arizona	8,567	102,896	27,804	2,515	642,210
Georgia	7,512	2,322	252	3,525	36,255
Michigan	6,013	791	19,679	2,207	41,120
Pennsylvania	8,714	*	*	8,162	20,622
Wisconsin	2,517	1,718	2,794	1,445	12,407

Source: EAC, EAVS 2018.

Note: * means no data reported.

B. Critique of Survey Design

29. Dr. Briggs offers no assessment of the design of the survey that generated the data that he presents. Rather, he assumes that the data are accurate. Also, there is no report of the survey design, beyond the information embedded in the topline tables. It would be standard for any scientifically sound report of survey data to describe fully the survey instrument used in a study and to make it publicly available.

30. It is my understanding that Matthew Braynard designed and conducted these surveys. The methodology that he used is described in an expert by Mr. Braynard in *King v. Whitmer*, No. 2:20-cv-13134-LVP-RSW (ED. Mich.2020). I evaluated that report as well as Dr. Briggs' report.

i. The surveys have unacceptably high non-response rates.

31. The response rate to the survey is measured as the number of people who answered the first substantive question (Q2) in the survey divided by the number of people who the surveyor sought to contact. The response rate for the Michigan survey is .008, meaning 99.2 percent of people did not respond to this survey. The response rate is similarly low in the other four states. It is .006 in Arizona, .004 in Georgia, .015 in Pennsylvania, and .004 in Wisconsin.

These are extremely low response rates, and such low response rates pose a critical threat to any inferences one might draw from the data.

32. Mr. Braynard, in his report, identifies that the survey attempts to interview all registered voters who were recorded as requesting but not returning an absentee ballot. Mr. Braynard's firm attempted to match phone numbers to records of registered voters in each of the states and then attempted to interview all of the people associated with each registration record of interest.

33. The appendix to Dr. Briggs' report presents Unreturned_Absentee Live ID Topline tables for each of the five states being studied, including Michigan. It is evident from the Topline tables that a there are significant shortfalls in the ability of the survey firm to match phone numbers to registration records. The Data Loads correspond to the number of matched phone numbers that were loaded into the survey system to be called. They are only a fraction of the population of all Unreturned Absentees.

34. The toplines also list Completes. These are phone numbers for which an interview commenced, an answering machine was reached, or a returned call was requested. For the State of Michigan, there were 70,030 Data Loads for Michigan, which is just half of the 139,190 unreturned absentee ballots in the State. Of the Data Loads, i.e., attempted calls, there were only 3,815 people who either responded to the survey, were left a message on an answering machine, or refused. These are called "Completes," even though most refused the call. Only 5 percent of the people that Mr. Braynard attempted to interview even got to the point of being classified as a

Complete. That is, 95 percent of the attempted survey contacts had already failed before the survey had begun.

35. There is no description in Dr. Briggs' report of the generation of "Data Loads" or the methodology for determining matches of phone numbers to registration records. No explanation is offered as to why the researchers could load only 70,030 phone numbers, rather than attempt calls to all 139,190 Michigan registrants who did not return their absentee ballots. Based on my experience conducting survey research, the likely problem is the difficult matching phone numbers to voter files and the large number voter file records that list no numbers. Mismatches, either false positives or false negatives, will generate errors in surveys. Incorrectly matched phone numbers will lead the survey to interview the wrong person (a false positive), and errors in matching may lead to researcher to exclude the person from the survey when in fact a valid number could have been found (a false negative).[3] Errors in phone matching make it entirely possible that the survey interviews the wrong person. Past research on phone surveys using registration-based samples, such as those reported by Dr. Briggs, find very high rates with which the wrong person answers a call, ranging from 30 to 60 percent.[4] And, as discussed below, there is evidence of such incorrect interviews in these studies.

36. Dr. Briggs offers no analysis of why the survey failed to identify a higher number of valid phone numbers for the people the researchers sought to interview. There is no analysis

[3] Alan S. Gerber and Donald P. Green, "Can Registration-Based Sampling Improve the Accuracy of Midterm Election Forecasts?" Public Opinion Quarterly 70 (2006): 197-223, esp. page 202.
[4] Pew Research Center, "Comparing Survey Sampling Strategies: Random-Digit Dialing vs. Voter Files," 2018. https://www.pewresearch.org/methods/2018/10/09/comparing-survey-sampling-strategies-random-digit-dial-vs-voter-files/, See page 25-26.

comparing the characteristics of those people for whom a valid phone number could be found and those people for whom a valid phone number could not be found.

37. Once the survey commences, there is first a screener question to determine whether the person interviewed should continue with the interview. That is Question 1. Question 2 asks "Did you request an Absentee Ballot in the State of <state name>?" People could answer Yes, No, some other answer, Refuse to answer, or Hang up. This is the first substantive question for the purpose of Dr. Briggs' analysis, as it is used to measure Error #1.

38. The response rate to the survey is the number of valid responses to Question 2. That is the total number of responses to the question, less the number of people who refused or hung up. The second column of Table 3 is the percent of people the researchers sought to interview (all Unreturned Absentee Ballots) who ultimately gave a valid response to Question 2.

39. The response rate for Michigan is just .008, or eight-tenths of one percent.

40. Once the entire survey process had been completed over 99 percent of people who the researcher sought to interview were not interviewed in Michigan. That was true in Arizona, Georgia, and Wisconsin. In Pennsylvania, 98.5 percent of those that the researchers set out to study were ultimately not included in the study for one reason or another.

41. In most disciplines of study that I am familiar with these surveys would not a scientifically acceptable or reliable samples simply because of their exceedingly low response

rates. For example, I am as associate editor of the Harvard Data Sciences Review, which broadly covers fields of statistics and data sciences, and specialty fields, such as, political science, public opinion, survey methodology, and economics, in which I have published. Papers with such high non-responses are rejected on their face as not plausibly valid studies.

42. Dr. Briggs' assumption that those who responded to the question are representative of the relevant population under study (i.e., the other 99 percent of people who could not or would not participate in the survey) is not warranted. When survey have high non-response rates, it is standard practice to analyze information about the sample and the target population, such as demographic characteristics or behavioral and attitudinal statistics, to confirm that the assumption of representativeness of a sample can be maintained. That is true even when the response rates are quite high. When the response rates are very low, such an analysis is a necessity in order to determine whether there is any scientific value to the survey. No such analysis is offered here.

Table 3. Response Rates to Surveys Reported by Dr. William Briggs

State	"Completes"/ Unreturned Absentee Ballots	Question 2 Valid Response/ Unreturned Absentee Ballots
Arizona	.011	.006
Georgia	.110	.004
Michigan	.027	.008
Pennsylvania	.109	.015
Wisconsin	.048	.004

Note: Ballots is the number of registered voters the survey sought to reach. See Table 1 of Briggs' report.

"Completes" is the number of "complete" contacts in the firsts part of each state's topline report.

Question 2 Response is the number of respondents who answered Question 2 and did not Refuse or Hangup.

ii. The survey has an unacceptably high interview breakoff rate.

43. The breakoff rate in surveys is the rate at which people who start the survey breakoff, for whatever reason. The interview may be stopped by the respondent or by the surveyor. In the toplines these are indicated as refusals and hang ups. The breakoff rate is measured as the number of people answering the last question in the survey divided by the number of Completes. The opposite of the breakoff rate is the survey completion rate.

44. The breakoff rates are extremely high in these surveys. The breakoff rates are 87.8 percent in Arizona, 98.8 percent in Georgia, 93.5 percent in Michigan, 95.4 percent in Pennsylvania, and 90.6 percent in Wisconsin. In Michigan, the breakoff rate of 95.4 percent means that once the survey began only 4.6 percent made it to the end.

45. The breakoff rate is a quality control indicator for survey researchers. Very high breakoff rates, such as observed here, are signs of quality control problems with the survey itself,

such as hostile or poorly trained interviewers or poorly worded questions. Any experienced survey researcher uses high breakoff rates to catch quality control failures. These surveys have extremely high rates of survey failures, which indicates that were quality control problems and there was no effort to correct them.

iii. The screening question improperly allows people to take the survey who should not.

46. A second substantial flaw in the survey is that the instructions allow people who are not affirmatively determined to be the correct person to take the survey.

47. Past research has documented that phone surveys using registered voter lists are often answered by someone other than the person who was listed on the registered voter file. The two most common problems are that the wrong number was matched to the voter list and that someone other than the person the research sought to speak with answered the phone. The latter occurs most often with landlines.[5]

48. Question 1 (Q1) of the survey asks "May I please speak to <lead on screen>?" "Lead on screen" is the name of from the voter registration list that is linked to the phone number that the survey has dialed. Responses to Q1 are listed as reached target, uncertain/other, refused, and hang up. For example, in the first table (Georgia), the responses are "Reached Target [Go to

[5] Pew Research Center, "Comparing Survey Sampling Strategies: Random-Digit Dialing vs. Voter Files," 2018. https://www.pewresearch.org/methods/2018/10/09/comparing-survey-sampling-strategies-random-digit-dial-vs-voter-files/, See page 25-26.

Q2]" and "[Go to Q2]," without further explanation. For other states the toplines describe this second response category as "Uncertain" or "What's this about?" Importantly, both cases classified as "Reached Target" and as "Uncertain" are instructed to "Go to Q2."

49. This is an error in the branching design of the survey. People who are not affirmatively identified as the correct person for the interview are allowed to answer the remaining questions in the survey. For example, Reponses to Questions 2 and 3 show evidence that spouses and other family members are asked Questions 2 and 3, even though they were not the person whose absentee voting records are in question.

50. A significant percent and number of respondents who are listed as not giving an affirmative answer to Question 1 are in fact kept in the survey and asked Question 2. Table 4 shows the percent and number of respondents who were inappropriately asked Questions 2 and 3 because they were not affirmatively identified as "the target." This error in the survey design affects 13 percent of cases in Arizona and Michigan, 16 percent of cases in Pennsylvania, and 25 percent of cases in Georgia. It is not possible to calculate the percent in Wisconsin because the topline report pools the "Reached Target" and "Uncertain" in a single response category.

51. This survey branching error contaminates all of the results, and it is of sufficient magnitude to alter the results significantly, and perhaps explain away all of the findings entirely. The number of respondents in Georgia who were improperly asked Question 2 is larger than the number of respondents who said that they did not request an absentee ballot. In Pennsylvania it

explains most of the people who did not request an absentee ballot. In Arizona and Michigan, it can explain half of those who did not request an absentee ballot.

52. These figures and aspects of the survey design show that the data for Q2 and Q3 were contaminated by improper branching from Q1. This information was available to, and even reported by, Dr. Briggs, but he did not take them into account in calculating or interpreting his Error #1 and Error #2.

Table 4. Respondents Who Were Not the Target of the Survey Were Allowed to Answer the Survey

State	Percent and Number of respondents to Q1 who were NOT the target registrant, but who were asked Q2
Arizona	12.6% [N=335]
Georgia	25.0% [N=255]
Michigan	12.9% [N=142]
Pennsylvania	15.7% [N=422]
Wisconsin	*

* The Topline Table for Wisconsin pools respondents who were coded as "Reached Target" and "Uncertain" and "What is this about?" It is not possible to identify how many Wisconsin respondents were inappropriately asked Question 2.

iv. Question 2 (did you request an absentee ballot) does not ascertain Permanent Absentee Voters or disambiguate Permanent Absentee Voters from Other Voters.

53. Question 2 is not sufficiently clear and specific to answer the question that the researcher wants to answer. The survey does not ascertain whether respondents are permanent absentee voters or have a designated person who may request a ballot on their behalf, even though Arizona, Georgia, Michigan, Pennsylvania, and Wisconsin allow for some or all voters to be permanent absentee voters. Permanent absentee voters do not need to request a ballot in order for one to be sent to them for a specific election.

55. The presence of permanent absentee voters in the registration system creates ambiguity in the interpretation of the question. Some permanent absentee voters may answer yes because the registered as for permanent absentee status, while others may say no because they do not need to request a ballot to receive one. The ambiguity of Question 2, and the failure to disambiguate permanent absentee voters from other absentee voters in the responses, introduces measurement error in the survey. Additional survey questions are required to distinguish different types of absentee voters.

56. The measurement error will create errors in the survey that are of the form of Error #1 described by Dr. Briggs. These are cases that would be wrongly identified as people who were erroneously sent a ballot, even though they did not request one. In fact, they did not need to request one. The survey data cannot be used to draw the conclusion that some survey respondents received an absentee ballot in error.

v. The survey cannot determine whether there was an error in handling of the ballot.

57. Dr. Briggs describes a second sort of error in absentee balloting that arises because people say that they returned a ballot, but no absentee ballot is received or recorded by the election office.

58. It is my experience working with election administrators and researching election administration as part of the Caltech/MIT Voting Technology Project that many absentee ballots are not recorded or counted because of some ballots are not received on time or are not properly prepared and submitted. Late absentees are not accepted, and they are usually not recorded in the tally of ballots received. Ballots that are spoiled, unsigned or in the incorrect envelopes or rejected for some other reason are not counted. The fact that there is no record of a vote or of a received absentee ballot is not necessarily evidence of an error in the handling of the ballot. Instead it may be evidence of correct treatment of ballots by the election officials in accordance with state laws.

59. Question 3 does not ascertain when the ballot was mailed back or how it was mailed. There is no follow up question asking when the ballot was sent, whether it was signed, whether it was witnessed (in states where that is a requirement), and in what envelope it was sent. In short, the question does not allow one to determine whether or not the ballot was returned in compliance with state laws, and thus whether there was or was not an error in handling the

ballot. It is incorrect for Dr. Briggs to conclude that ballots that were not received or recorded are in fact errors.

vi. Question 3 is subject to memory errors and social desirability bias.

60. Question 3 asks people whether they voted. Specifically, it asks people who said that they requested an absentee ballot whether they returned an absentee ballot, that is, whether they voted that ballot.

61. It has long been understood in political science that respondents to surveys over report voting in elections. The most commonly identified sorts of biases are memory errors and social desirability bias in questions asking people whether they voted.[6] In the context of this survey such biases would lead to overstatement of Yes responses to Question 3.

C. Critique of the Survey Databases and Data Analyses

62. There are obvious data errors and inconsistencies revealed in the Topline reports that are appended to Dr. Briggs' report. As I understand his report, these are the data and reports that he relied on them in making his estimates and projections. Dr. Briggs states that he assumes that "the data is accurate." I have examined the accounting in the Topline tables and discovered that the data do not add up. A routine analysis to check the consistency and integrity of data reported

[6] See for example, Allyson L. Holbrook and Jon A. Krosnick, "Social Desirability Bias in Voter Turnout Reports: Test Using the Item Count Technique," *Public Opinion Quarterly* 74 (2010): 37-67. See also Stephen Ansolabehere and Eitan Hersh, ,"Validation: What Big Data Reveal About Survey Misreporting and the Real Electorate," *Political Analysis* 20 (2012): 437-459

in the toplines is standard practice in the survey research field. I have performed such a check, and it reveals that the data lack integrity and are not correct. They should not be assumed to be accurate.

i. The figures on responses to Q1 simply do not add up for the State of Wisconsin.

63. The Topline table for Wisconsin reports that 2,261 people were coded as either "A-Reached Target" or "B-What Is This About?/Uncertain." An additional, 1,677 respondents were coded as "X=Refused." No other response categories are reported. The sum of 1,677 and 2,261 is 3,938. The bottom of the table reports the "Sum of All Responses" is 3,495. The rows clearly do not total to the reported bottom line.

64. All other survey questions and calculations for this table branch off of Question 1. Therefore, errors in this question infect responses to Questions 2 and 3 and make it unacceptable for anyone to rely on them to form conclusions. This error is a red flag for survey researchers indicating lack of data integrity. It should have signaled to the analyst, in this instance Dr. Briggs, that there is a problem with the programs that generated the data for this and other states.

ii. The survey data for Questions 1 and 2 cannot be reconciled.

65. I have examined the accounting across questions to make sure that the number of cases that are indicated as passing from Question 1 to Question 2 are the same as the number of

cases reported for Question 2. For Georgia, the data across questions are consistent, but for Arizona, Michigan, Pennsylvania, and Wisconsin there are substantial and idiosyncratic discrepancies. The accounting for Q1 and Q2 is shown in Table 5.

66. First, consider Georgia. Question 1 has two categories: Reached Target and Uncertain. There are 767 Reached Target and 255 Uncertain. Those sum to 1,022. Those two groups are then asked Question 2. Question 2 has several response categories. There are 591 Yes responses, 128 No responses, 175 "other" responses across various options (e.g., "member)[Go to Q3]"), 70 Refused, and 58 Hang ups. These sum to 1,022. For Georgia the total number of responses to Q2 equals the total number of respondents coded for Q2, and the data appear to be okay. But, looking at the other states, reveals inconsistencies that lead me to doubt the integrity and veracity of any of the data presented here, including Georgia.

67. Second, consider Arizona. The topline table for Q1 has 2,147 respondents who are either "Reached Target" or "Uncertain" and are instructed to Go to Q2. Applying the same accounting used for Georgia in Arizona, there are 2,489 respondents listed in Q2. That is there are more than 300 respondents who answered Q2 but were not indicated in the accounting for Q1 as directed to that question. There is no other way indicated in the survey data to get to Q2 without going through Q1.

68. Third, consider Michigan. The topline table for Q1 has 1,100 respondents who are either "Reached Target" or "Uncertain." However, there are 1,515 respondents to Q2. An

additional 415 people were asked Q2 than were indicated as allowed to under the branching rules of the survey.

69. Fourth, consider Pennsylvania. The topline table for Q1 has 2,684 respondents who are either "Reached Target" or "Uncertain." However, there are 2,537 respondents to Q2. That is, 147 fewer people were asked Q2 than were supposed to have been asked.

70. Fifth, consider Wisconsin. The topline table for Q1 has 3,938 respondents who are either "Reached Target" or "Uncertain." However, there are 2,723 respondents to Q2. That is, 1,215 fewer people were asked Q2 than were supposed to have been asked.

Table 5. Accounting Discrepancies in the number of cases reported in Toplines for Question 1 and Question 2 by State

State	Question 1 Number of Cases "Reached Target" or "Uncertain/Other"	Question 2 Number of Cases "Sum of All Responses"	Difference Number (%)
Arizona	2,147	2,489	-342*
Georgia	1,022	1,022	0
Michigan	1,100	1,515	-415
Pennsylvania	2,684	2,537	+147
Wisconsin	3,938	2,723	+1,215

Source: Toplines appended with Dr. William Briggs' report.

* Negative values mean there are fewer Reached Target or Uncertain responses to Question 1 than there are to Question 2. Positive values mean there are more Reached Target or Uncertain responses to Question 1 than there are to Question 2.

71. I attempted to resolve this by removing refusals and hang ups, to determine whether this would account for apparent discrepancies. It did not. The accounting in Michigan and Arizona were not resolved by removing the hang ups or refusals. And, doing so created accounting discrepancies elsewhere. Georgia developed a deficit of cases, and the deficits in Pennsylvania and Wisconsin worsened.

72. These errors in the spreadsheets will also contaminate the data in Q3, as the classification of respondents according to Q1 and Q2 determines whether the individual is asked Q3.

73. In my experience running, designing, and analyzing large scale surveys through the Cooperative Congressional Election Study and serving on the board of the American National Election Study, errors such as these usually have two sources. This is indicative of either there are (i) errors in the program that the program that assigns questions to people, or (ii) errors in the program that generates the spreadsheet. Either sort of error is catastrophic for this analysis, and the render the estimates, projections, and inferences in Dr. Briggs' report entirely unreliable.

74. The most rudimentary check of the toplines reveals errors and inconsistencies throughout the data that Dr. Briggs relied on. This leads me to conclude that the data are not correct. Dr. Briggs erred in his assumption that they are.

iii. There are inconsistencies in calculations.

75. I performed a sensitivity analysis of Dr. Briggs' calculations of the estimated ranges of Error #1 and Error #2. Specifically, I sought to explore how various discrepancies in the accounting might affect the estimates presented in Dr. Briggs' report. The figures he presents are extrapolations from a few hundred survey responses to tens of thousands of absentee requests. Thus, errors in a few dozen cases out of the few hundred survey responses that he identifies as errors would be highly consequential.

76. In performing the sensitivity analysis, I discovered that there were substantial inconsistencies in the way that Dr. Briggs calculated the rates of Error #1 and Error #2 using the survey data.

77. Consider, first, the calculation of Error #1. I converted the first table in Dr. Briggs' report from counts to percentages. I did this by dividing his lower and upper bound estimates for Error #1 by the total number of ballots. These are reported in the second column of Table 6. Second, I calculated the percent of people who responded NO or NO on behalf of their spouse to Question 2 and divided by the number of responses to Question 2. Third, I report two different Numbers of Cases used in making the calculations: the number of cases reported as "Sum of All

Responses" in the topline tables and that number less respondents who refused to answer. Finally, I calculated the percent of respondents who answered No to Q2 or whose spouse answered No to Q2 using the two different numbers of cases in column 4. I underline the number that was used by Dr. Briggs to estimate Error #1 for each state. These calculations are shown in the fifth column of Table 6.

Table 6. Calculation Inconsistencies in the Estimates for Error #1

State	Range Of Error #1 Expressed in Percentages	Question 2 Number of Cases "Sum of All Responses"	Number of Cases	Percent of Respondents Who answered No to Q2
Arizona	40.2 to 44.3%	885 No 21 Spouse - No	2,489 2,126 (less refusals)	36.4% <u>42.6%</u>
Georgia	12.3 to 16.5%	128 No 14 Spouse - No	964 894 (less refusals)	<u>14.7%</u> 15.9%
Michigan	21.3 to 26.2%	239 No 17 Spouse - No	1,515 1,106 (less refusals)	16.9% <u>23.1%</u>
Pennsylvania	19.6 to 22.6%	531 No 25 Spouse - No	2,537 2,430 (less refusals)	<u>21.9%</u> 22.9%
Wisconsin	16.9 to 19.9%	379 No 4 Spouse - No	2,723 2,162 (less refusals)	14.1% <u>17.7%</u>

Source: Toplines appended with Dr. William Briggs' report.

78. Dr. Briggs is inconsistent in his calculations. In Georgia and Pennsylvania, the denominator is the sum of all responses (that is, all cases who reach Q2). But, in Arizona, Michigan, and Wisconsin he excludes some respondents from the total number of cases. The effect of excluding those cases is to inflate the estimates by 6.2 percentage points for Arizona, by 6.2 percentage points for Michigan, and by 3.6 percentage points for Wisconsin. In Arizona and Wisconsin, the estimate using all cases in the denominator lies outside of the range of possible rates of Error #1 provided by Dr. Briggs. The estimates he offers are highly sensitive to which denominator he chooses to use in making his calculations. This shows a lack of rigor in performing the analysis that was presented.

79. Similar inconsistencies arise in the analysis of Question 3 for the estimation of the rate of Error #2. Table 7 parallels Table 6, but for Question 3. The second column shows the ranges of Error #2 expressed in Percentages. The third column shows the Number of respondents who answered Yes or Yes on behalf of their spouse. The fourth column is the number of respondents to Q2 and to Q3. The fifth column is the Percent of Survey Respondents who Answered Yes to Question 3.

80. Different denominators are used for the calculation of Error #2 in different states. In two instances (Georgia and Pennsylvania), Dr. Briggs uses the number of responses to Q2 as the denominator. In three instances (Arizona, Michigan, and Wisconsin), Dr. Briggs uses the number of responses to Q3, and does not adjust for refusals, as was done in Table 6. He offers no explanation of his calculations, or why he chose different denominators in different instances.

It is highly unusual to see different statistical formulas used for the computation of what is supposed to be the same quantity for different cases (in this instance the states) in the same report. The basic statistical methods deployed here lack rigor.

81. Dr. Briggs' estimates fail the sensitivity analysis suggested by his own calculations. The ranges presented in his report are not robust to variations in the formulas that he himself uses. In his report he reports a range of possible values for Error #1 and Error #2. Values outside of those ranges are highly unlikely to occur. The sensitivity analysis I have conducted reveals that simply using the different formulas he deploys yields values that fall outside the ranges that he presents. He uses the Number of Cases for Q2 in calculating Error #2 for Georgia and Pennsylvania and the Number of Cases for Q3 in calculating Error #2 for Arizona, Michigan, and Wisconsin. Consistently using the Number of Cases for Q2 produces estimated values of Error #2 that are below the lower bound estimates for Arizona (14.3 versus 15.2), for Michigan (16.0 versus 20.6), and for Wisconsin (11.9 versus 14.4). Hence, the estimated range of Error #2 presented in Dr. Briggs' report is not robust even to variations in the way he calculates that rate from the survey data.

Table 7. Calculation Inconsistencies in the Estimates for Error #2

State	Range Of Error #2 Expressed in Percentages	Question 2 Number of Cases "Sum of All Responses"	Number of Cases	Percent of Respondents Who answered Yes to Q3
Arizona	15.2 to 18.3%	344 Yes	Q2: 2,489	14.3%

		11 Spouse - Yes	Q3: 2,129	16.7%
Georgia	22.9 to 28.2%	240 Yes 17 Spouse - Yes	Q2: 964 Q3: 623	26.4% 41.3%
Michigan	20.6 to 24.9%	232 Yes 10 Spouse - Yes	Q2: 1,515 Q3: 1,090	16.0% 22.2%
Pennsylvania	16.3 to 19.1%	452 Yes 11 Spouse - Yes	Q2: 2,537 Q3: 1,137	18.2% 40.7%
Wisconsin	14.4 to 17.3%	316 Yes 9 Spouse - Yes	Q2: 2,723 Q3: 2,154	11.9% 15.1%
Source: Toplines appended with Dr. William Briggs' report.				

D. Sensitivity

82. A further exercise in sensitivity analysis is to measure the effect on the analysis of Q2 of the inclusion of people who should not have been included. To see the potential effect of the inclusion of these people in the analysis, assume that all of the people who answered Uncertain Q1 in fact answered No to Question 2. That is an assumption for the sake of sensitivity analysis.

83. What is the potential effect of this branching error alone (excluding all other issues) on the survey estimates? Table 8 entertains that possibility. The Adjusted Percent who

Responded No to Q2 subtracts the Number of Uncertain Cases from the Numerator and Denominator. The rate of Error #1 cases is substantially reduced in every one of the states by the exclusion of these cases. In every case, the adjusted rate is far below the estimate provided in Dr. Briggs' report. In Georgia, that rate falls entirely to 0. That is, the branching error can completely account for his Error #1 results in Georgia.

Table 8. Calculation Inconsistencies in the Estimates for Error #1

State	Range Of Error #1 Expressed in Percentages	Question 2 Number of Cases "Sum of All Responses"	Number of "Uncertain" Responses to Q1	Adjusted Percent of Respondents Who answered No to Q2 (without "Uncertain" cases)
Arizona	40.2 to 44.3%	885 No 21 Spouse - No	335	26.7%
Georgia	12.3 to 16.5%	128 No 14 Spouse - No	255	0%
Michigan	21.3 to 26.2%	239 No 17 Spouse - No	142	13.9%
Pennsylvania	19.6 to 22.6%	531 No 25 Spouse - No	422	5.3%
Wisconsin	16.9 to 19.9%	379 No 4 Spouse - No	unknown	No calculation Possible

Source: Toplines appended with Dr. William Briggs' report.

E. Conclusion

84. The estimates and projections presented by Dr. Briggs are based on survey data collected in Arizona, Georgia, Michigan, Pennsylvania, and Wisconsin. My overall assessment of these data is that they are unreliable and riddled with accounting and survey design errors. These errors are of sufficient magnitude and severity as to make the estimates completely uninformative.

85. The data are not accurate. The Topline summaries of the survey data appended to Dr. Briggs' report reveal fatal accounting errors in the data. No sound estimates or inferences can be drawn based on these data.

86. The design of the survey is improperly structured so that people who were not identified as the Target of the study (i.e., the registered voter whose ballot is in question) were asked whether they had requested a ballot and whether they returned one.

87. The magnitude of the accounting errors evident in the Toplines and the number of people improperly asked Questions 2 and 3 exceeds the number of people coded as Error #1 and Error #2.

88. The questions are ambiguous and do not allow researchers to determine whether people were permanent absentee voters or whether they submitted legally acceptable ballots in a timely manner.

89. The survey respondents are highly unlikely to be representative. The surveys have unacceptably low response rates and breakoff rates. In Michigan specifically, 99 percent of people who the researchers sought to interview did not ultimately end up in the sample, participate in the study or complete Question 2. Scientific research standards do not allow researchers to assume that a sample survey a 99 percent non-response rate is representative of the population of interest. The breakoff rate exceeds 90 percent, indicating serious quality control problems in conducting the survey, which will also produce biases in the data. No effort is made to show that the sample is representative or to correct for possible biases.

90. The interpretation of the surveys is deeply flawed. The interpretation of Error #1 does not account for the large number of Permanent Absentee Voters in these states – approximately 2 million in Michigan. These registrants are sent a ballot without requesting one. The interpretation of Error #2 does not account for the fact that thousands of absentee ballots are not legally acceptable because they are late, spoiled, or invalid.

91. Each of these problems would create significant biases in the estimates and projections offered in Dr. Briggs' report. The multitude of weaknesses with the survey design, the data itself, and the interpretation lead me to conclude that no valid estimates and conclusions

can be made based on these data. Dr. Briggs assumed at the outset that the respondents are representative to the surveys and the data are accurate. Neither assumption is correct. Indeed, the information contained in and appended to Dr. Briggs' report showed that to be evident. Even the most basic review of the information about the survey reveal the deep flaws in the design and errors and inconsistencies in the accounting of the survey design. These data and the analyses based on them do not meet the standards for scientifically acceptable research.

Signed at Cambridge, Massachusetts on the date below.

Date: December 2, 2020

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Stephen Ansolabehere.

Exhibit A

STEPHEN DANIEL ANSOLABEHERE

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EDUCATION

Harvard University	Ph.D., Political Science	1989
University of Minnesota	B.A., Political Science	1984
	B.S., Economics	

PROFESSIONAL EXPERIENCE

ACADEMIC POSITIONS

2016-present	Frank G. Thompson Professor of Government, Harvard University
2008-present	Professor, Department of Government, Harvard University
2015-present	Director, Center for American Politics, Harvard University
1998-2009	Elting Morison Professor, Department of Political Science, MIT (Associate Head, 2001-2005)
1995-1998	Associate Professor, Department of Political Science, MIT
1993-1994	National Fellow, The Hoover Institution
1989-1993	Assistant Professor, Department of Political Science, University of California, Los Angeles

FELLOWSHIPS AND HONORS

American Academy of Arts and Sciences	2007
Carnegie Scholar	2000-02
National Fellow, The Hoover Institution	1993-94
Harry S. Truman Fellowship	1982-86

PUBLICATIONS

Books

2019 *American Government*, 15th edition. With Ted Lowi, Benjamin Ginsberg and Kenneth Shepsle. W.W. Norton.

2014 *Cheap and Clean: How Americans Think About Energy in the Age of Global Warming*. With David Konisky. MIT Press. Recipient of the Donald K. Price book award.

2008 *The End of Inequality: One Person, One Vote and the Transformation of American Politics*. With James M. Snyder, Jr., W. W. Norton.

1996 *Going Negative: How Political Advertising Divides and Shrinks the American Electorate*. With Shanto Iyengar. The Free Press. Recipient of the Goldsmith book award.

1993 *Media Game: American Politics in the Television Age*. With Roy Behr and Shanto Iyengar. Macmillan.

Journal Articles

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2020 "Proximity, NIMBYism, and Public Support for Energy Infrastructure" *Public Opinion Quarterly* (with David Konisky and Sanya Carley) https://doi.org/10.1093/poq/nfaa025

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2011 "Profiling Originalism" *Columbia Law Review* (with Jamal Greene and Nathaniel Persily).

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2005 "Legislative Bargaining under Weighted Voting" *American Economic Review* (with James M. Snyder, Jr., and Michael Ting)

2005 "Voting Weights and Formateur Advantages in Coalition Formation: Evidence from Parliamentary Coalitions, 1946 to 2002" (with James M. Snyder, Jr., Aaron B. Strauss, and Michael M. Ting) *American Journal of Political Science*.

2005 "Reapportionment and Party Realignment in the American States" *Pennsylvania Law Review* (with James M. Snyder, Jr.)

2004 "Residual Votes Attributable to Voting Technologies" (with Charles Stewart) *Journal of Politics*

2004 "Using Term Limits to Estimate Incumbency Advantages When Office Holders Retire Strategically" (with James M. Snyder, Jr.). *Legislative Studies Quarterly* vol. 29, November 2004, pages 487-516.

2004 "Did Firms Profit From Soft Money?" (with James M. Snyder, Jr., and Michiko Ueda) *Election Law Journal* vol. 3, April 2004.

2003 "Bargaining in Bicameral Legislatures" (with James M. Snyder, Jr. and Mike Ting) *American Political Science Review*, August, 2003.

2003 "Why Is There So Little Money in U.S. Politics?" (with James M. Snyder, Jr.) *Journal of Economic Perspectives*, Winter, 2003.

2002 "Equal Votes, Equal Money: Court-Ordered Redistricting and the Public Spending in the American States" (with Alan Gerber and James M. Snyder, Jr.) *American Political Science Review*, December, 2002.
Paper awarded the Heinz Eulau award for the best paper in the American Political Science Review.

2002 "Are PAC Contributions and Lobbying Linked?" (with James M. Snyder, Jr. and Micky Tripathi) *Business and Politics* 4, no. 2.

2002 "The Incumbency Advantage in U.S. Elections: An Analysis of State and Federal Offices, 1942-2000" (with James Snyder) *Election Law Journal,* 1, no. 3.

2001 "Voting Machines, Race, and Equal Protection." *Election Law Journal*, vol. 1, no. 1

2001 "Models, assumptions, and model checking in ecological regressions" (with Andrew Gelman, David Park, Phillip Price, and Larraine Minnite) *Journal of the Royal Statistical Society,* series A, 164: 101-118.

2001 "The Effects of Party and Preferences on Congressional Roll Call Voting." (with James Snyder and Charles Stewart) *Legislative Studies Quarterly* (forthcoming).
Paper awarded the *Jewell-Lowenberg Award* for the best paper published on legislative politics in 2001. Paper awarded the *Jack Walker Award* for the best paper published on party politics in 2001.

2001 "Candidate Positions in Congressional Elections," (with James Snyder and Charles Stewart). *American Journal of Political Science* 45 (November).

2000 "Old Voters, New Voters, and the Personal Vote," (with James Snyder and Charles Stewart) *American Journal of Political Science* 44 (February).

2000 "Soft Money, Hard Money, Strong Parties," (with James Snyder) *Columbia Law Review* 100 (April):598 - 619.

2000 "Campaign War Chests and Congressional Elections," (with James Snyder) *Business and Politics*. 2 (April): 9-34.

1999 "Replicating Experiments Using Surveys and Aggregate Data: The Case of Negative Advertising." (with Shanto Iyengar and Adam Simon) *American Political Science Review* 93 (December).

1999 "Valence Politics and Equilibrium in Spatial Models," (with James Snyder), *Public Choice.*

1999 "Money and Institutional Power," (with James Snyder), *Texas Law Review* 77 (June, 1999): 1673-1704.

1997 "Incumbency Advantage and the Persistence of Legislative Majorities," (with Alan Gerber), *Legislative Studies Quarterly* 22 (May 1997).

1996 "The Effects of Ballot Access Rules on U.S. House Elections," (with Alan Gerber), *Legislative Studies Quarterly* 21 (May 1996).

1994 "Riding the Wave and Issue Ownership: The Importance of Issues in Political Advertising and News," (with Shanto Iyengar) *Public Opinion Quarterly* 58: 335-357.

1994 "Horseshoes and Horseraces: Experimental Evidence of the Effects of Polls on Campaigns," (with Shanto Iyengar) *Political Communications* 11/4 (October-December): 413-429.

1994 "Does Attack Advertising Demobilize the Electorate?" (with Shanto Iyengar), *American Political Science Review* 89 (December).

1994 "The Mismeasure of Campaign Spending: Evidence from the 1990 U.S. House Elections," (with Alan Gerber) *Journal of Politics* 56 (September).

1993 "Poll Faulting," (with Thomas R. Belin) *Chance* 6 (Winter): 22-28.

1991 "The Vanishing Marginals and Electoral Responsiveness," (with David Brady and Morris Fiorina) *British Journal of Political Science* 22 (November): 21-38.

1991 "Mass Media and Elections: An Overview," (with Roy Behr and Shanto Iyengar) *American Politics Quarterly* 19/1 (January): 109-139.

1990 "The Limits of Unraveling in Interest Groups," *Rationality and Society* 2: 394-400.

1990 "Measuring the Consequences of Delegate Selection Rules in Presidential Nominations," (with Gary King) *Journal of Politics* 52: 609-621.

1989 "The Nature of Utility Functions in Mass Publics," (with Henry Brady) *American Political Science Review* 83: 143-164.

Special Reports and Policy Studies

2010 *The Future of Nuclear Power*, Revised.

2006 *The Future of Coal*. MIT Press. Continued reliance on coal as a primary power source will lead to very high concentrations of carbon dioxide in the atmosphere, resulting in global warming. This cross-disciplinary study – drawing on faculty from Physics, Economics, Chemistry, Nuclear Engineering, and Political Science – develop a road map for technology research and development policy in order to address the challenges of carbon emissions from expanding use of coal for electricity and heating throughout the world.

2003 *The Future of Nuclear Power*. MIT Press. This cross-disciplinary study – drawing on faculty from Physics, Economics, Chemistry, Nuclear Engineering, and Political Science – examines the what contribution nuclear power can make to meet growing electricity demand, especially in a world with increasing carbon dioxide emissions from fossil fuel power plants.

2002 "Election Day Registration." A report prepared for DEMOS. This report analyzes the possible effects of Proposition 52 in California based on the experiences of 6 states with election day registration.

2001 *Voting: What Is, What Could Be.* A report of the Caltech/MIT Voting Technology Project. This report examines the voting system, especially technologies for casting and counting votes, registration systems, and polling place operations, in the United States. It was widely used by state and national governments in formulating election reforms following the 2000 election.

2001 "An Assessment of the Reliability of Voting Technologies." A report of the Caltech/MIT Voting Technology Project. This report provided the first nationwide assessment of voting equipment performance in the United States. It was prepared for the Governor's Select Task Force on Election Reform in Florida.

Chapters in Edited Volumes

2016 "Taking the Study of Public Opinion Online" (with Brian Schaffner) *Oxford Handbook of Public Opinion,* R. Michael Alvarez, ed. Oxford University Press: New York, NY.

2014 "Voter Registration: The Process and Quality of Lists*"* *The Measure of American Elections*, Barry Burden, ed..

2012 "Using Recounts to Measure the Accuracy of Vote Tabulations: Evidence from New Hampshire Elections, 1946-2002" in Confirming Elections, R. Michael Alvarez, Lonna Atkeson, and Thad Hall, eds. New York: Palgrave, Macmillan.

2010 "Dyadic Representation" in Oxford Handbook on Congress, Eric Schickler, ed., Oxford University Press.

2008 "Voting Technology and Election Law" in *America Votes!,* Benjamin Griffith, editor, Washington, DC: American Bar Association.

2007 "What Did the Direct Primary Do to Party Loyalty in Congress" (with Shigeo Hirano and James M. Snyder Jr.) in *Process, Party and Policy Making: Further New Perspectives on the History of Congress,* David Brady and Matthew D. McCubbins (eds.), Stanford University Press, 2007.

2007 "Election Administration and Voting Rights" in *Renewal of the Voting Rights Act*, David Epstein and Sharyn O'Hallaran, eds. Russell Sage Foundation.

2006 "The Decline of Competition in Primary Elections," (with John Mark Hansen, Shigeo Hirano, and James M. Snyder, Jr.) *The Marketplace of Democracy*, Michael P. McDonald and John Samples, eds. Washington, DC: Brookings.

2005 "Voters, Candidates and Parties" in *Handbook of Political Economy*, Barry Weingast and Donald Wittman, eds. New York: Oxford University Press.

2003 "Baker v. Carr in Context, 1946 – 1964" (with Samuel Isaacharoff) in *Constitutional Cases in Contex*t, Michael Dorf, editor. New York: Foundation Press.

2002 "Corruption and the Growth of Campaign Spending"(with Alan Gerber and James Snyder). *A User's Guide to Campaign Finance*, Jerry Lubenow, editor. Rowman and Littlefield.

2001 "The Paradox of Minimal Effects," in Henry Brady and Richard Johnston, eds., *Do Campaigns Matter*? University of Michigan Press.

2001 "Campaigns as Experiments," in Henry Brady and Richard Johnson, eds., Do *Campaigns Matter*? University of Michigan Press.

2000 "Money and Office," (with James Snyder) in David Brady and John Cogan, eds., *Congressional Elections: Continuity and Change*. Stanford University Press.

1996 "The Science of Political Advertising," (with Shanto Iyengar) in *Political Persuasion and Attitude Change*, Richard Brody, Diana Mutz, and Paul Sniderman, eds. Ann Arbor, MI: University of Michigan Press.

1995 "Evolving Perspectives on the Effects of Campaign Communication," in Philo Warburn, ed., *Research in Political Sociology*, vol. 7, JAI.

1995 "The Effectiveness of Campaign Advertising: It's All in the Context," (with Shanto Iyengar) in *Campaigns and Elections American Style*, Candice Nelson and James A. Thurber, eds. Westview Press.

1993 "Information and Electoral Attitudes: A Case of Judgment Under Uncertainty," (with Shanto Iyengar), in *Explorations in Political Psychology*, Shanto Iyengar and William McGuire, eds. Durham: Duke University Press.

Working Papers

2009 "Sociotropic Voting and the Media" (with Marc Meredith and Erik Snowberg), American National Election Study Pilot Study Reports, John Aldrich editor.

2007 "Public Attitudes Toward America's Energy Options: Report of the 2007 MIT Energy Survey" CEEPR Working Paper 07-002 and CANES working paper.

2006 "Constituents' Policy Perceptions and Approval of Members' of Congress" CCES Working Paper 06-01 (with Phil Jones).

2004 "Using Recounts to Measure the Accuracy of Vote Tabulations: Evidence from New Hampshire Elections, 1946 to 2002" (with Andrew Reeves).

2002 "Evidence of Virtual Representation: Reapportionment in California," (with

Ruimin He and James M. Snyder).

1999 "Why did a majority of Californians vote to lower their own power?" (with James Snyder and Jonathan Woon). Paper presented at the annual meeting of the American Political Science Association, Atlanta, GA, September, 1999. Paper received the award for the best paper on Representation at the 1999 Annual Meeting of the APSA.

1999 "Has Television Increased the Cost of Campaigns?" (with Alan Gerber and James Snyder).

1996 "Money, Elections, and Candidate Quality," (with James Snyder).

1996 "Party Platform Choice - Single- Member District and Party-List Systems,"(with James Snyder).

1995 "Messages Forgotten" (with Shanto Iyengar).

1994 "Consumer Contributors and the Returns to Fundraising: A Microeconomic Analysis," (with Alan Gerber), presented at the Annual Meeting of the American Political Science Association, September.

1992 "Biases in Ecological Regression," (with R. Douglas Rivers) August, (revised February 1994). Presented at the Midwest Political Science Association Meetings, April 1994, Chicago, IL.

1992 "Using Aggregate Data to Correct Nonresponse and Misreporting in Surveys" (with R. Douglas Rivers). Presented at the annual meeting of the Political Methodology Group, Cambridge, Massachusetts, July.

1991 "The Electoral Effects of Issues and Attacks in Campaign Advertising" (with Shanto Iyengar). Presented at the Annual Meeting of the American Political Science Association, Washington, DC.

1991 "Television Advertising as Campaign Strategy: Some Experimental Evidence" (with Shanto Iyengar). Presented at the Annual Meeting of the American Association for Public Opinion Research, Phoenix.

1991 "Why Candidates Attack: Effects of Televised Advertising in the 1990 California Gubernatorial Campaign," (with Shanto Iyengar). Presented at the Annual Meeting of the Western Political Science Association, Seattle, March.

1990 "Winning is Easy, But It Sure Ain't Cheap." Working Paper #90-4, Center for the American Politics and Public Policy, UCLA. Presented at the Political Science Departments at Rochester University and the University of Chicago.

Research Grants

1989-1990 Markle Foundation. "A Study of the Effects of Advertising in the 1990 California Gubernatorial Campaign." Amount: $50,000

1991-1993 Markle Foundation. "An Experimental Study of the Effects of Campaign Advertising." Amount: $150,000

1991-1993 NSF. "An Experimental Study of the Effects of Advertising in the 1992 California Senate Electoral." Amount: $100,000

1994-1995 MIT Provost Fund. "Money in Elections: A Study of the Effects of Money on Electoral Competition." Amount: $40,000

1996-1997 National Science Foundation. "Campaign Finance and Political Representation." Amount: $50,000

1997 National Science Foundation. "Party Platforms: A Theoretical Investigation of Party Competition Through Platform Choice." Amount: $40,000

1997-1998 National Science Foundation. "The Legislative Connection in Congressional Campaign Finance. Amount: $150,000

1999-2000 MIT Provost Fund. "Districting and Representation." Amount: $20,000.

1999-2002 Sloan Foundation. "Congressional Staff Seminar." Amount: $156,000.

2000-2001 Carnegie Corporation. "The Caltech/MIT Voting Technology Project." Amount: $253,000.

2001-2002 Carnegie Corporation. "Dissemination of Voting Technology Information." Amount: $200,000.

2003-2005 National Science Foundation. "State Elections Data Project." Amount: $256,000.

2003-2004 Carnegie Corporation. "Internet Voting." Amount: $279,000.

2003-2005 Knight Foundation. "Accessibility and Security of Voting Systems." Amount: $450,000.

2006-2008 National Science Foundation, "Primary Election Data Project," $186,000

2008-2009	Pew/JEHT. "Measuring Voting Problems in Primary Elections, A National Survey." Amount: $300,000
2008-2009	Pew/JEHT. "Comprehensive Assessment of the Quality of Voter Registration Lists in the United States: A pilot study proposal" (with Alan Gerber). Amount: $100,000.
2010-2011	National Science Foundation, "Cooperative Congressional Election Study," $360,000
2010-2012	Sloan Foundation, "Precinct-Level U. S. Election Data," $240,000.
2012-2014	National Science Foundation, "Cooperative Congressional Election Study, 2010-2012 Panel Study" $425,000
2012-2014	National Science Foundation, "2012 Cooperative Congressional Election Study," $475,000
2014-2016	National Science Foundation, "Cooperative Congressional Election Study, 2010-2014 Panel Study" $510,000
2014-2016	National Science Foundation, "2014 Cooperative Congressional Election Study," $400,000
2016-2018	National Science Foundation, "2016 Cooperative Congressional Election Study," $485,000
2018-2020	National Science Foundation, "2018 Cooperative Congressional Election Study," $844,784.
2019-2022	National Science Foundation, RIDIR: "Collaborative Research: Analytic Tool for Poststratification and small-area estimation for survey data." $942,607

Professional Boards

Editor, Cambridge University Press Book Series, Political Economy of Institutions and Decisions, 2006-2016

Member, Board of the Reuters International School of Journalism, Oxford University, 2007 to present.

Member, Academic Advisory Board, Electoral Integrity Project, 2012 to present.

Contributing Editor, *Boston Review*, The State of the Nation.

Member, Board of Overseers, American National Election Studies, 1999 - 2013.

Associate Editor, Public Opinion Quarterly, 2012 to 2013.

Editorial Board of Harvard Data Science Review, 2018 to present.
Editorial Board of American Journal of Political Science, 2005 to 2009.
Editorial Board of Legislative Studies Quarterly, 2005 to 2010.
Editorial Board of Public Opinion Quarterly, 2006 to present.
Editorial Board of the Election Law Journal, 2002 to present.
Editorial Board of the Harvard International Journal of Press/Politics, 1996 to 2008.
Editorial Board of Business and Politics, 2002 to 2008.
Scientific Advisory Board, Polimetrix, 2004 to 2006.

Special Projects and Task Forces

Principal Investigator, Cooperative Congressional Election Study, 2005 – present.

CBS News Election Decision Desk, 2006-present

Co-Director, Caltech/MIT Voting Technology Project, 2000-2004.

Co-Organizer, MIT Seminar for Senior Congressional and Executive Staff, 1996-2007.

MIT Energy Innovation Study, 2009-2010.
MIT Energy Initiative, Steering Council, 2007-2008
MIT Coal Study, 2004-2006.
MIT Energy Research Council, 2005-2006.
MIT Nuclear Study, 2002-2004.
Harvard University Center on the Environment, Council, 2009-present

Expert Witness, Consultation, and Testimony

2001	Testimony on Election Administration, U. S. Senate Committee on Commerce.
2001	Testimony on Voting Equipment, U.S. House Committee on Science, Space, and Technology
2001	Testimony on Voting Equipment, U.S. House Committee on House Administration
2001	Testimony on Voting Equipment, Congressional Black Caucus
2002-2003	*McConnell v. FEC*, 540 U.S. 93 (2003), consultant to the Brennan Center.
2009	Amicus curiae brief with Professors Nathaniel Persily and Charles Stewart on behalf of neither party to the U.S. Supreme Court in the case of *Northwest*

	Austin Municipal Utility District Number One v. Holder, 557 U.S. 193 (2009).
2009	Testimony on Voter Registration, U. S. Senate Committee on Rules.
2011-2015	*Perez v. Perry*, U. S. District Court in the Western District of Texas (No. 5:11-cv-00360). Exert witness on behalf of Rodriguez intervenors.
2011-2013	*State of Texas v. United States*, the U.S. District Court in the District of Columbia (No. 1:11-cv-01303), expert witness on behalf of the Gonzales intervenors.
2012-2013	*State of Texas v. Holder*, U.S. District Court in the District of Columbia (No. 1:12-cv-00128), expert witness on behalf of the United States.
2011-2012	*Guy v. Miller* in U.S. District Court for Nevada (No. 11-OC-00042-1B), expert witness on behalf of the Guy plaintiffs.
2012	*In re Senate Joint Resolution of Legislative Apportionment*, Florida Supreme Court (Nos. 2012-CA-412, 2012-CA-490), consultant for the Florida Democratic Party.
2012-2014	*Romo v. Detzner*, Circuit Court of the Second Judicial Circuit in Florida (No. 2012 CA 412), expert witness on behalf of Romo plaintiffs.
2013-2014	*LULAC v. Edwards Aquifer Authority*, U.S. District Court for the Western District of Texas, San Antonio Division (No. 5:12cv620-OLG,), consultant and expert witness on behalf of the City of San Antonio and San Antonio Water District
2013-2014	*Veasey v. Perry*, U. S. District Court for the Southern District of Texas, Corpus Christi Division (No. 2:13-cv-00193), consultant and expert witness on behalf of the United States Department of Justice.
2013-2015	*Harris v. McCrory*, U. S. District Court for the Middle District of North Carolina (No. 1:2013cv00949), consultant and expert witness on behalf of the Harris plaintiffs. (later named *Cooper v. Harris*)
2014	Amicus curiae brief, on behalf of neither party, Supreme Court of the United States, *Alabama Democratic Conference v. State of Alabama*.
2014- 2016	*Bethune-Hill v. Virginia State Board of Elections*, U. S. District Court for the Eastern District of Virginia (No. 3:2014cv00852), consultant and expert on behalf of the Bethune-Hill plaintiffs.
2015	Amicus curiae brief in support of Appellees, Supreme Court of the United States, *Evenwell v. Abbott*
2016-2017	*Perez v. Abbott*, U. S. District Court in the Western District of Texas (No. 5:11-cv-00360). Exert witness on behalf of Rodriguez intervenors.
2017-2018	Fish v. Kobach, U. S. District Court in the District of Kansas (No. 2:16-cv-02105-JAR). Expert witness of behalf of the Fish plaintiffs.