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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

NATIONAL URBAN LEAGUE; LEAGUE OF WOMEN VOTERS; BLACK ALLIANCE FOR JUST IMMIGRATION; HARRIS COUNTY, TEXAS; KING COUNTY, WASHINGTON; CITY OF LOS ANGELES, CALIFORNIA; CITY OF SALINAS, CALIFORNIA; CITY OF SAN JOSE, CALIFORNIA; RODNEY ELLIS; and ADRIAN GARCIA,

Plaintiffs,

v.

WILBUR L. ROSS, JR., in his official capacity as Secretary of Commerce; U.S. DEPARTMENT OF COMMERCE; STEVEN DILLINGHAM, in his official capacity as Director of the U.S. Census Bureau; and U.S. CENSUS BUREAU,

Defendants.

CASE NO. 20-cv-5799-LHK

DECLARATION OF D. SUNSHINE HILLYGUS, PHD IN SUPPORT OF PLAINTIFFS' MOTION FOR STAY AND PRELIMINARY INJUNCTION

EXPERT DECLARATION OF D. SUNSHINE HILLYGUS, PHD

I. QUALIFICATIONS

1. I am a Professor of Political Science and Public Policy at Duke University. I earned a Ph.D. in political science from Stanford University in 2003. From 2003-2009, I was a faculty member at Harvard University in the Department of Government. In 2009, I joined the faculty at Duke University as an associate professor and was promoted to full professor in 2015.

2. I have more than 20 years of experience in survey design, implementation, and analysis. Of relevance to this declaration, I have published research on the topics of census participation, survey methodology, survey non-response, and data quality. This work has been funded by the National Science Foundation and published in respected academic journals including *Public Opinion Quarterly*, *Journal of Survey Statistics and Methodology*, *Statistical Science*, *Political Analysis*, and *Annals of Applied Statistics*. I am co-author of *The Hard Count: The Political and Social Challenges of Census Mobilization*.[1] My other experience of relevance includes serving as associate principal investigator of the American National Election Study, on the editorial boards of several academic journals, and as director of the Initiative on Survey Methodology at Duke University. I was also founding director of the Program on Survey Research at Harvard University. From 2012-2018, I served as a member of the Census Scientific Advisory Committee (CSAC). The committee provides advice on the design, operation and implementation of Census Bureau programs.

3. I have previously served as an expert witness in *League of Women Voters of North Carolina, et al. v. North Carolina, et al.*, No. 1:13-CV-00660-TDS-JEP (M.D.N.C.); *State of New York, et al. v. United States Department of Commerce, et al.*, No. 18-CV-2921-JMF (S.D.N.Y.); and *NAACP, et al. v. Bureau of the Census*, No. 18-CV-891-PWG (D. Md.); *State of Alabama, et al. v. United States Department of Commerce, et al.*, No. 2:18-cv-00772-RDP; and *Common Cause et al. v. Donald J. Trump, et al.*, No. 1:20-cv-02023-CRC. A copy of my curriculum vitae is attached.

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[1] D.S. Hillygus, N.H. Nie, K. Prewitt, and H. Pals, The Hard Count: The Political and Social Challenges of Census Mobilization (Russell Sage Foundation, 2006).

II. RETAINER INFORMATION AND SUMMARY OF OPINIONS

4. I have been retained to evaluate the likely impact of the administration's decision to compress data collection and data-processing operations of the 2020 decennial census. My compensation in this case is $350 per hour.

5. To formulate an expert opinion in this case, I reviewed a variety of materials from governmental, academic, and media sources. I have also relied on my own experiences and familiarity with survey practices and standards and Census Bureau programs and activities. Based on the knowledge I have amassed over my education, training, and experience, as well as a detailed review of government and academic research, data, and reports, I have reached the conclusion that shortening the Non-Response Follow Up (NRFU) operation will likely exacerbate the differential undercount of immigrants and racial and ethnic minorities, and significantly compromise the accuracy of the 2020 Census. More specifically, a reduction in the duration of the NRFU operation is almost certain to increase the number of hard-to-count households that will be inaccurately enumerated through administrative records, proxy respondents, and imputation as well as the number of hard-to-count households omitted entirely from the count.

A. Background and Overview

6. Before turning to my analysis, I provide some relevant background on the decennial census. The U.S. Constitution requires a count of every person living in the United States every 10 years for the purpose of reapportioning seats in the U.S. House of Representatives. While the most fundamental use of the decennial census is to determine the number of seats a state gets in Congress, the total population count has many other uses. States rely on the decennial count to redraw congressional districts and other political boundaries within a state. Census numbers are also used to allocate billions of dollars in federal program funds to states, counties, and cities—in 2017, $1.5 trillion in federal money was distributed based

on the 2010 decennial census data.[2] Census data are also the primary source of information about the nation's population. They inform business decision making and community planning about government services such as schools, libraries, and hospitals. Social scientists use these data to conduct scientific research about society, economics, and politics. Census numbers also provide the benchmark against which every other data collection about the population is evaluated and adjusted and sets the sample frame for surveys throughout the federal statistical system.

1. Overview of Census Process

7. Broadly speaking, the census process falls into three key steps: (1) the pre-enumeration phase, in which the Census Bureau engages in planning and research about enumeration procedures; (2) the actual enumeration of all living persons in the United States on April 1 in years ending in zero; and (3) a period afterwards in which the Census Bureau evaluates the accuracy and completeness of the data collected.

8. Pre-Enumeration Phase: Because of the size and scope of the undertaking required to enumerate the entire U.S. population, the Census Bureau engages in years of preparation and planning. Operational decisions and processes are researched and evaluated through field tests over the course of the decade. Throughout the planning and research stage, the Census Bureau works closely with stakeholders to gather input on potential design decisions. For example, the National Advisory Committee (NAC) and Census Scientific Advisory Committee (CSAC) offer feedback and advice on the design, operation and implementation of census operations.

9. Enumeration Phase: Since 1970, the U.S. Census Bureau has conducted an "actual enumeration" of all U.S. households and their demographic characteristics by enlisting the U.S. population in a multi-year, multi-part process that, generally speaking, proceeds in the following steps:

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[2] A. Reamer, Fifty-Five Large Federal Census-guided Spending Programs: Distribution by State, (GW Institute of Public Policy, 2019). https://gwipp.gwu.edu/sites/g/files/zaxdzs2181/f/downloads/Counting%20Dollars%20Brief%20%235%20May%202019.pdf.

a. *Master Address File.* The process starts with the creation of the *Master Address File (MAF),* a database containing every known housing unit in the country. The creation of the MAF is critical to the decennial count because the Census Bureau uses the MAF at all stages of the enumeration process as the basic list of addresses from which to engage with U.S. households—whether sending a census questionnaire or following up with an enumerator. In previous years, the MAF was created through address canvassing—sending field staff to verify every possible household in the country. In 2020, the bulk of households were added to the MAF without field verification, relying instead on in-office address verification through administrative records and aerial imaging.[3]

b. *Self-response.* Since 1960, self-response to the census has been the primary way households have been enumerated. The Census Bureau sends a mailing to (almost) every household in the MAF asking households to self-respond with information about their household. In 2020, the mailing directed most households to complete the census questionnaire online.[4] In an effort to boost self-response and to encourage participation among anyone omitted from the MAF, the Census Bureau engages in an advertising and outreach campaign.

c. *Non-Response Follow-up.* Households that do not self-respond will be visited at least once by an in-person enumerator as part of the *Non-Response Follow-up (NRFU)*

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[3] Census research evaluating the quality of this approach found that it correctly added only 83.6 percent of addresses. Given this limitation, the Census Bureau did in-field address verification for about 35% of households, but the overall quality is unclear—evaluations (2020 Census Evaluation: Reengineered Address Canvassing Study Plan and 2020 Census In-Field Address Canvassing Operational Assessment Study Plan) will not be completed until 2023. In field Quality Control found that 4.3% of verifications failed quality control. U.S. GAO 2020 *Census: Bureau Generally Followed Its Plan for In-Field Address Canvassing* (May 2020). https://www.gao.gov/assets/710/705310.pdf.

[4] Households in census tracts with limited internet access will receive a paper questionnaire along with a unique ID to complete online. A telephone number will also be provided which allows completion of the census over the phone. It is also possible to complete the Census by calling a Questionnaire Assistance Center or through Mobile Questionnaire Assistance.

operation.[5] Disproportionately, the households left to be enumerated through NRFU are considered hard-to-count, including racial and ethnic minorities, immigrants, and Non-English speakers.[6] In 2020, the Census Bureau is using administrative records from federal and state government agencies to enumerate the household if a single enumerator visit is unsuccessful. If the household cannot be enumerated with administrative records, an enumerator will return to the household for at least two more in-person attempts. On the third unsuccessful visit, the NRFU enumerator will become proxy-eligible, in which the enumerator asks a neighbor, landlord, or postal-worker to provide information about the household.

d. *Imputation and Data Product Release*. Finally, for households in the MAF not enumerated through NRFU, the Census Bureau will impute the number of household members and their characteristics. The Census Unedited File (CUF), used to produce apportionment numbers, uses count imputation of any remaining uncounted households to estimate the number of household members based on information from responding households. The Census Edited File (CEF), the basis for redistricting data files for the States, applies characteristic imputation—statistically imputes missing or conflicting information about the people in the household (*i.e.*, race, ethnicity, age, date of birth, sex, tenure, and relationship). The microdata are further altered to meet the confidentiality requirements of Title 13 of the United States Code. For the 2020 Census, the Census Bureau will rely on a new disclosure avoidance system relying on differential privacy to

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[5] The NRFU operation has the primary purposes of enumerating nonresponding households and determining housing unit status for nonresponding addresses, but it also serves to do field verification of any addresses that were not on the MAF and any cases added through Local Update of Census Addresses (LUCA) appeals or changes in the US Postal Delivery Sequence File. *See* 2020 Census Detailed Operational Plan for Nonresponse Follow-up Operation (NRFU), Version 2 (July 15, 2019). https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/NRFU-detailed-operational-plan_v20.pdf

[6] Maryann Chapin, *2020 Census: Counting Everyone Once, Only Once, and In the Right Place. A Design for Hard to Count Populations* (U.S. Dept. of Commerce, Census Bureau 2018), https://www2.census.gov/programs-surveys/decennial/2020/program-management/pmr-materials/10-19-2018/pmr-hard-to-count-2018-10-19.pdf.

protect individual responses upon release, which applies to all data products at a geographic level lower than the state (including the redistricting file).[7]

10. Post-Enumeration Evaluation of Data Quality: After the enumeration is complete, the Census Bureau conducts an independent coverage assessment to evaluate the accuracy of the census count, including estimates of the differential undercount of subgroups of the population. The coverage assessment identifies omissions (*i.e.*, people who *should* have been counted, but were not) and erroneous enumerations (people who *should not* have been counted, but were, including duplications)[8] using an independent Post-Enumeration Survey (PES) of a sample of census blocks.[9]

11. The Census Bureau evaluates not only the accuracy of the overall population count, but also the completeness and fairness of the count.[10] Coverage assessments have consistently found that some segments of the population, including immigrants and racial and ethnic minorities, are systematically undercounted in the decennial count, although the undercount for these groups has typically improved from one census to the next because the Census Bureau historically focused research, planning, and effort on improving the differential undercount.[11]

12. Critically, an overall population count can be accurate, at the same time that counts for subpopulations are inaccurate. This can happen, as it did in 2010, when some

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[7] The data are processed through the disclosure avoidance system that injects noise into the estimates, creating uncertainty in the numbers to protect confidentiality. *See* https://www.census.gov/newsroom/blogs/research-matters/2018/08/protecting_the_confi0.html.

[8] The general term *coverage error* refers to any error that results from (1) the failure to include all eligible persons or housing units, or (2) the inclusion of some persons or housing units erroneously. Examples of coverage errors include omissions and duplications.

[9] The Census Bureau also conducts a Demographic Analysis (DA) that compares census results to independent estimates of the population using administrative records, including birth, death, and immigration records, estimates of undocumented immigration, and Medicare data.

[10] K. Prewitt, The US Decennial Census: Politics and political science. *Annual Review of Political Science*, 13, (2010), 237-254.

[11] Z.H. Seeskin and B.D. Spencer, *Working Paper: Balancing 2020 Census Cost and Accuracy: Consequences for Congressional Apportionment and Fund Allocations*, (Northwestern University, Institute for Policy Research, 2018).

segments of the population are undercounted at the same time other segments of the population are overcounted. Figure 1 reports the Census Bureau's estimates of the net undercount and the differential undercount of Black individuals and Hispanic individuals (compared to non-Hispanic White individuals) in the last three censuses from the independent post-enumeration survey that is conducted for the coverage assessment.[12] As can be seen, Non-Hispanic Whites continue to be overcounted in 2010, while Blacks and Hispanics continue to have net undercounts.

Figure 1: Recent Net and Differential Census Undercounts (Post-Enumeration Survey)

Race/Origin Domain	2010	2000	1990
U.S. Total	-0.01%	-0.49%	1.61%
Non-Hispanic White	-0.84%	-1.13%	0.68%
Black	2.06%	1.84%	4.57%
Hispanic	1.54%	0.71%	4.99%
Black Differential Undercount	2.90%	2.97%	3.89%
Hispanic Differential Undercount	2.38%	1.84%	4.31%

Note: Numbers reported in DSSD 2010 Census Coverage Measurement Memorandum Series #2010-G-01 (Table 7)

13. Given that the constitutional basis of the decennial count is to reapportion representatives across states, it is critical to have *distributional accuracy*—the proportional distribution of the population by geography or population groups. If the Census Bureau misses more people living in one state than another, the census count is not only inaccurate, it will also be unfair. Critically, the post-enumeration survey for the 2010 Census did not find a statistically significant undercount or overcount in the population or housing units for any state nor for any

[12] There is variation in the literature as to whether an undercount is represented as a negative or positive number. In this table, a negative number represents an *overcount*. It is also worth noting that the undercount of some subgroups of racial and ethnic minorities is even worse. For example, the net undercount rate for Black males age 30-49 in 2010 was 10%, with an omissions rate of 16.7%. And the net undercount is also worse for young minority children—6.3% for Black children age 0-4 and 7.5% for Hispanic children age 0-4. *See* William O'Hare, *Differential Undercounts in the US Census: Who is missed?* (Cham: Springer Open, 2019), 53.

counties or places of 100,000 or more.[13] As I discuss in the remainder of this declaration, the available evidence suggests that shortening the NRFU timeframe in the middle of census operations, against the advice of Census Bureau staff and experts, will contribute to demographic and geographic disparities in the 2020 count.

III. COVID-19 DELAYS IN CENSUS OPERATIONS

14. On March 11, 2020, the World Health Organization declared COVID-19 a pandemic, just one day before official Census Bureau invitations with detailed information on how to respond to the census were scheduled to arrive in mailboxes across the country.[14] That same day, the Census Bureau announced they had established an Internal Task Force to continuously monitor the situation and update as needed the Pandemic Addendum to the Census Bureau's Continuity of Operations (COOP) Plan.[15] In March, the Census Bureau suspended field activities and postponed key operations, including the critical NRFU operation. On April 13, 2020, Commerce Secretary Wilbur Ross and Census Director Steven Dillingham jointly announced that they would seek "statutory relief from Congress of 120 additional calendar days," thereby extending the window for field data collection and self-response to October 31, 2020 and delaying the delivery of apportionment counts to the President by April 30, 2021 and redistricting data files to the states no later than July 31, 2021.[16]

15. On August 3, however, the Census Bureau issued a statement that the Census Bureau would, in an effort to rush the completion of the Census by the end of the year, terminate NRFU and self-responses by mail, phone, or Internet on September 30, 2020—a month earlier

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[13] https://www.census.gov/newsroom/releases/archives/2010_census/cb12-95.html.

[14] The 2020 Census count kicked off as planned on January 21 in the remote Alaska Native village of Toksook Bay Census. Workers enumerate this village—which has spotty mail and unreliable internet connectivity—prior to the spring thaw, when residents leave to hunt, fish, and work warm weather jobs. March 12 marked the beginning of peak operations.

[15] https://2020census.gov/en/news-events/press-releases/statement-coronavirus.html.

[16] https://www.census.gov/newsroom/press-releases/2020/statement-covid-19-2020.html. NRFU operations were originally scheduled to run from May 15-July 31.

than previously announced.[17] This decision was made despite public statements from senior Census Bureau career staff that it would be impossible to conduct the census on this shortened timeline. On May 26, 2020, Tim Olson, Associate Director for Field Operations, said publicly: "We have passed the point where we could even meet the current legislative requirement of December 31. We can't do that anymore."[18] On July 8, 2020, Al Fontenot, Associate Director for Decennial Census Programs, stated of the December 31, 2020, statutory deadlines: "We are past the window of being able to get those counts by those dates at this point."[19]

16. The Census Bureau's response to the pandemic was to shift the timing of operations, preserving the same amount of time for completing the NRFU operations and producing the data products as scheduled in the 2020 Census Operational Plan.[20] This would have given the Census Bureau the same amount of time to accomplish a task that would already be much harder. The following are just a few of the ways in which the enumeration became more difficult since the Census Bureau announced the need to delay operations and deadlines by 120 days:

- Some of the population groups hardest hit by the pandemic—racial and ethnic minorities—are the same ones still to be counted during NRFU.[21] As the Centers for

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[17] https://www.census.gov/newsroom/press-releases/2020/delivering-complete-accurate-count.html.

[18] Hansi Lo Wang, 'We're Running Out Of Time': Census Turns To Congress To Push Deadlines. NPR (May 27, 2020). https://www.npr.org/sections/coronavirus-live-updates/2020/05/27/863290458/we-re-running-out-of-time-census-turns-to-congress-to-push-deadlines.

[19] Hansi Lo Wang, Republicans Signal They're Willing To Cut Census Counting Short. NPR (July 28, 2020). https://www.npr.org/2020/07/28/895744449/republicans-signal-theyre-willing-to-cut-short-census-counting).

[20] U.S. Census Bureau. *2020 Census Operational Plan: A New Design for the 21st Census*, v. 4. (December 2018). https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/2020-oper-plan4.pdf.

[21] Regarding risk from COVID, *see* E.G. Price-Haygood, J. Burton J, D. Fort, L. Seoane Hospitalization and Mortality among Black Patients and White Patients with Covid-19. *N Engl J Med* 2020; ME Killerby, R Link-Gelles, SC Haight, et al. Characteristics Associated with Hospitalization Among Patients with COVID-19 — Metropolitan Atlanta, Georgia, March–April 2020. *MMWR Morb Mortal Wkly Rep*. ePub: 17 June 2020. Regarding disparities in self-

Disease Control and Prevention (CDC) explains, "long-standing systemic and social inequities have put many people from racial and ethnicity minority groups at increased risk of getting sick and dying from COVID-19."[22]

- Millions have changed addresses as a result of the pandemic—a result of colleges abruptly shutting down, individuals relocating to less dense communities, or job losses. A July Pew Research survey found that 22% of U.S. adults either changed their residence due to the pandemic or knew someone who did.[23]
- Significant increases in housing evictions are expected to continue, with impacts concentrated among racial and ethnic minorities and immigrants. Federal protections expired on July 24, and state and local eviction protections vary.[24] For example, the state of Texas is expected to see an especially large surge in evictions which is likely to complicate enumerations during NRFU. The state has 9.6 million renters, and among the very weakest eviction protection policies in the country, garnering a score of 0/5 on a recent scorecard.[25]
- Restrictions by federal, state, and local health authorities have created major disruptions in outreach and partnership activities. In 2010, racial and ethnic minorities were more likely to have been mobilized by these outreach and partnership activities.[26]

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response, *see* Steven Romalewski, *Mapping "Self-Response" for a Fair and Accurate Census, Urban Institute* (August 7, 2020). https://www.gc.cuny.edu/CUNY_GC/media/CUNY-Graduate-Center/PDF/Centers/Center%20for%20Urban%20Research/Resources/Census2020-self-response-rates-thru-Aug-6-CUNY-Graduate-Center.pdf.

[22] https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html.

[23] Cohn, D'vera. (July 6, 2020). "About a fifth of U.S. adults moved due to COVID-19 or know someone who did," Pew Research Center. https://www.pewresearch.org/fact-tank/2020/07/06/about-a-fifth-of-u-s-adults-moved-due-to-covid-19-or-know-someone-who-did/.

[24] Emily Benfer. The COVID-19 Eviction Crisis: An Estimated 30-40 Million People in America Are at Risk (August 7, 2020). https://www.aspeninstitute.org/blog-posts/the-covid-19-eviction-crisis-an-estimated-30-40-million-people-in-america-are-at-risk/.

[25] https://evictionlab.org/covid-policy-scorecard/#scorecard-intro.

[26] *2010 Census Evaluation of National Partnership Research Report,* 2010 Census Planning Memoranda Series, No. 196 (May 29, 2012). https://www.census.gov/2010census/pdf/2010_Census_Evaluation_Partnership_Research.pdf.

- The ongoing pandemic has affected the ability of households to respond by methods other than the Internet, disproportionately affecting racial and ethnic minorities and those with limited English proficiency who are less likely to have Internet access and less likely to feel comfortable answering online even when they have access.[27] For example, staff reductions at Questionnaire Assistance Centers have produced instances of long wait times and the unavailability of language assistance.[28] The pandemic has crippled the Mobile Questionnaire Assistance (MQA) operation, which was planned in libraries, churches, community centers, and festivals and other places "where people naturally congregate."[29] MQAs were a way for those without Internet access to complete the census online and they represented one of the few ways for those omitted from the MAF to be counted.[30]
- The pandemic is creating staffing insufficiencies, turnover, and dissatisfaction.[31] According to a report by the GAO, the majority of Area Census Office managers report

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[27] Paul Beatty et al., *American Community Survey Research And Evaluation Report Memorandum Series* #Acs15-Rer-10, Economics and Statistics Administration U.S. Census Bureau (September 4, 2015), https://www.census.gov/content/dam/Census/library/working-papers/2015/acs/2015_Nichols_01.pdf Racial and ethnic minorities also report greater concerns about Internet security. 2020 Census Barriers, Attitudes, and Motivators Study Survey Report A New Design for the 21st Century, version 2.0. (January 24, 2019). https://www2.census.gov/programs-surveys/decennial/2020/program-management/final-analysis-reports/2020-report-cbams-focus-group.pdf.

[28] https://bestofama.com/amas/ft36nf?utm_source=feedburner&utm_medium=twitter&utm_campaign=Feed%3A+bestofama+%28BestofAMA%29.

[29] U.S. Census Bureau, *2020 Census: Mobile Questionnaire Assistance Operation Project Plan* Version 3.0, (February 12, 2020). https://www2.census.gov/programs-surveys/decennial/2020/program-management/2020-census-mobile-questionnaire-assistance-operation.pdf.

[30] In 2010, 760,748 people were added to the census count through Questionnaire Assistance Center (QAC) locations, with 70,173 addresses added to MAF from the QACs after field verification. U.S. Census Bureau, 2010 Census Be Counted and Questionnaire Assistance Centers Assessment, 2010 Census Planning Memo No. 194, xiii (May 22, 2012). https://www.census.gov/content/dam/Census/library/publications/2012/dec/2010_cpex_194.pdf

[31] For example, more than one-third of applicants were old enough to be considered high risk for COVID. https://www.govexec.com/workforce/2020/07/900000-accept-census-job-offers-bureau-outlines-new-plans-keep-workers-and-public-safe/166747/.

dissatisfaction with the Census Bureau's communication and clarity about its pandemic plan and the adequacy of available PPE for office and fieldworkers.[32] An OIG memorandum from August 18, 2020 reports that the Census Bureau has only 73% of the field staff needed to complete the NRFU operation, with 37 Area Census Offices reporting less than 50% of the needed staffing.[33] With compressed NRFU operations, the Census Bureau is also increasing reliance on enumerators from outside the local community ("NRFU Travel Teams"), despite previous plans to rely on neighborhood enumerators who share the background and language of the local community—shown by research to be more effective at gaining the cooperation of reluctant respondents.[34]

- The enumeration task itself has been complicated by President Trump's July 21, 2020 Presidential Memorandum, *Memorandum on Excluding Illegal Aliens From the Apportionment Base Following the 2020 Census*, directing the census count to "exclude from the apportionment base aliens who are not in a lawful immigration status under the Immigration and Nationality Act." As of writing, the Census Bureau had yet to determine the methodology for producing counts of undocumented immigrants by state. The addition of a new enumeration task by the reporting deadline of December 31, 2020 —especially one that requires an unresolved and untested methodology of enumerating from incomplete and inaccurate administrative records—serves to siphon resources and distract staff from the constitutionally mandated count of all residents of the United States.

17. All of these new challenges mean that the Census Bureau has a substantially more

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[32] U.S. Government Accounting Office. Key Considerations for Agencies Returning Employees to Workplaces during Pandemics. GAO-20-650T (Jun 25, 2020). https://www.gao.gov/products/GAO-20-650T, 6-7.

[33] 2020 Census Alert: The Census Bureau Faces Challenges in Accelerating Hiring and Minimizing Attrition Rates for Abbreviated 2020 Census Field Operations Final Memorandum No. OIG-20-041-M. https://www.oig.doc.gov/OIGPublications/OIG-20-041-M.pdf

[34] https://www.census.gov/content/dam/Census/newsroom/press-kits/2020/2020-operational-plan-schedule-review.pdf. See Thomas Mangione et al., Question Characteristics And Interviewer Effects, Journal Of Official Statistics-Stockholm- 8, 293–293 (1992).

difficult task to accurately enumerate the population, yet their time to do it has been cut short. The majority of states, counties, cities, districts, tracts, and tribal lands have lower self-response rates at the beginning of 2020 NRFU operations compared to 2010, despite the delay providing 2.5 extra months to self-complete.[35] Whereas the 2010 NRFU workload was 48 million addresses, there are approximately 56 million as of August 6, 2020, so that the Census Bureau must attempt to enumerate 8 million more homes in 4 fewer weeks.[36] The 2020 Census is a highly complex operation with interconnected components representing a decade of work by thousands of dedicated employees; rushing the remaining census operations will jeopardize the accuracy, completeness, and credibility of the count.

IV. IMPACT OF SHORTENED ENUMERATION

A. Impact on Quality

18. When evaluating data quality, it is common to think only about the overall accuracy of the information collected. However, most conceptual frameworks for quality assessment—including those governing national statistical systems across the world—are more nuanced and detailed.[37] Since 2002, the U.S. Census Bureau has had formal standards for data quality governing its information products and the processes that generate them. These guidelines require that all information collected and disseminated by the U.S. Census Bureau be designed to ensure and maximize the utility, objectivity, and integrity of the information. *Utility* or "fitness of use" refers to the "usefulness of the information for its intended users;" *Objectivity* means the information is "accurate, reliable, and unbiased, and is presented in an accurate, clear, complete, and unbiased manner;" *Integrity* refers to the security of the information—protection

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[35] Steven Romalewski, *Mapping "Self-Response" for a Fair and Accurate Census, Urban Institute* (August 7, 2020). https://www.gc.cuny.edu/CUNY_GC/media/CUNY-Graduate-Center/PDF/Centers/Center%20for%20Urban%20Research/Resources/Census2020-self-response-rates-thru-Aug-6-CUNY-Graduate-Center.pdf.

[36] Steven Romalewski, *Mapping "Self-Response" for a Fair and Accurate Census*.

[37] Paul Biemer and Lars E. Lyberg, *Introduction to survey quality*. Vol. 335. (John Wiley & Sons, 2003).

from unauthorized access or revision.[38] This quality framework underlies the Census Bureau's mission to "count everyone once, only once, and in the right place."

B. How a Household is Enumerated Matters

19. As the Census Bureau acknowledges, the most accurate census data are those provided directly by a household resident, through self-completion online, mail, or telephone or to an in-person enumerator.[39] With 29 fewer days to conduct NRFU operations and to accept self-completions through mail, phone, or Internet, it is almost certain that more households in the MAF will have to be enumerated through administrative records, proxy respondents, and imputation. At issue, of course, is not only overall accuracy, but also the "objectivity" of the count—the extent to which the count is complete and fair. Consistent with history, it appears that immigrants and racial and ethnic minorities are disproportionately among the households that have not yet self-responded to the 2020 Census. Analyses of self-response by census tract find that the tracts with the lowest self-response rates have higher poverty, more foreign-born residents, more racial and ethnic minorities, and less English proficiency than the tracts with the highest self-response rates.[40] Presidential rhetoric and policies have undoubtedly contributed to the observed disparities in self-response rates by immigrants and racial and ethnic minorities.[41]

20. The State of Texas—a state with one of the highest estimated per capita rates of unauthorized immigrant populations in the country—enters the NRFU operation with a self-response rate 6.2 percentage points behind its final 2010 rate, with many of the border counties

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[38] U.S. Census Bureau, *U.S. Census Bureau Statistical Quality Standards* (July 2013). https://www.census.gov/content/dam/Census/about/about-the-bureau/policies_and_notices/quality/statistical-quality-standards/Quality_Standards.pdf.

[39] J. Brown et. al., *Working Paper: Understanding the Quality of Alternative Citizenship Data Sources for the 2020 Census*, Center for Economic Studies, U.S. Census Bureau, 18–38 (2018), https://www2.census.gov/ces/wp/2018/CES-WP-18-38.pdf.

[40] https://www.gc.cuny.edu/CUNY_GC/media/CUNY-Graduate-Center/PDF/Centers/Center%20for%20Urban%20Research/Resources/Census2020-self-response-rates-thru-July-23-CUNY-Graduate-Center.pdf.

[41] These effects are well-documented in the litigation surrounding the attempt to make a late addition of a citizenship question to the 2020 questionnaire. For summary, see decision in *Kravitz v. United States Dep't of Commerce*: 366 F. Supp. 3d 681, 716 (D. Md. 2019).

trailing their 2010 self-response rates by 20 percentage points or more.[42] The current disparities in self-response rates cannot be mitigated in a shortened NRFU operation, and, consequently, the likely increased reliance on alternative and less accurate forms of enumeration, such as administrative records, proxy respondents, and imputation, will further contribute to an undercount of immigrants and racial and ethnic minorities. The shortened time frame is also likely to contribute to an even larger overcount of the White population given the likelihood of both more erroneous enumerations (e.g., duplicates) and the compressed time frame for Quality Control and data processing. An August 4th statement by the past four U.S. Census Directors concluded: "The end result will be under-representation of those persons that NRFU was expected to reach and, at even greater rates for traditionally hard-to-count populations and over-representation of all other populations with potentially extreme differential undercounts."[43]

1. Administrative records

21. Administrative records refer to microdata held by agencies and offices of the government collected to carry out basic administration of a program, although it can also include data sources from states or commercial entities. Federal tax records and social security administration records are among the core administrative records used by the Census Bureau for "frame building, enumeration, imputation, and evaluation."[44] I focus here on their use in the NRFU operation, where they are used 1) to determine if a non-responding household is occupied, vacant, or nonexistent (thus removing it from the NRFU workload) and 2) to enumerate the household.[45] The operational plan outlines, as the first step, the use of administrative records to

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[42] https://www.pewresearch.org/hispanic/interactives/u-s-unauthorized-immigrants-by-state/; https://www.censushardtocountmaps2020.us/.

[43] Statement by Former U.S. Census Bureau Directors (August 4, 2020) https://www.ctphilanthropy.org/resources/importance-extending-2020-census-statutory-deadlines-achieve-fair-and-accurate-enumeration.

[44] Karen D. Deaver, Decennial Census Programs Directorate. *Intended Administrative Data Use in the 2020 Census* (May 1, 2020). https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/administrative-data-use-2020-census.pdf.

[45] The Census Bureau calls the use of administrative records in 2020 "the most cost-effective strategy for contacting and counting people," whereas online self-response is called "accurate."

identify an initial set of vacant and nonexistent addresses that receive only one contact attempt unless a visit determines it to be occupied. For enumerating an occupied household, administrative records will be used after one unsuccessful visit and "where the Census Bureau has high-quality administrative records from trusted sources" to determine household size.[46]

22. It is well-documented that administrative records are less available and lower quality for immigrants and racial and ethnic minorities.[47] As reported in a GAO report, "records generally tend to over-represent white and economically advantaged populations in comparison to how other groups appear in the records."[48] A 2017 Urban Institute Research Report concluded that "vulnerable and hard-to-reach subpopulations may be systematically underrepresented by the new procedures. These subpopulations may not have the same body or quality of administrative records as other groups."[49] Another study concludes that "[g]iven the unevenness in which groups are represented in the Administrative Records . . . they could increase some of the undercount differentials in the 2020 Census. There is no doubt that using administrative records instead of repeated visits to non-responding households will save money, but it is not clear yet that it will not compromise quality."[50] The Census Bureau had planned to conduct a

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2020 Census Detailed Operational Plan, p. 4. Some special enumerations that rely on administrative records (e.g. group quarters) will be conducted at the same time as NRFU but are separate operations not discussed here.

[46] *2020 Census Operational Plan*, v. 4., p. 125.

[47] B. Bond, J. David, L Adela & A O'Hara A. *The nature of the bias when studying only linkable person records: Evidence from the American community survey*. CARRA Working Paper #2014-08. (2014). Available from https://census.gov/library/working-papers/2014/adrm/carra-wp-2014-08.html; *see also* Richard A. Griffin, *Issues Concerning Imputation of Hispanic Origin due to Administrative Record Enumeration for the 2020 Census*, Proceedings of the Survey Research Methods Section, American Statistical Association (2014), http://www.asasrms.org/Proceedings/y2014/files/311893_88330.pdf.

[48] U.S. Government Accountability Office, *2020 Census Bureau Is Taking Steps to Address Limitations of Administrative Records*, GAO-17-664, 6 (July 2017), https://www.gao.gov/assets/690/686099.pdf.

[49] Dave McClure, Robert Santos, Shiva Kooragayala (May 2017), "Administrative Records in the 2020 US Census: Civil Rights Considerations and Opportunities," Urban Institute Research Report, https://www.urban.org/sites/default/files/publication/90446/census_ar_report.pdf.

[50] William O'Hare, *Differential undercounts in the US Census: Who is missed?*

coverage assessment of the 2018 End-to-End Census Test, which relied on the use of administrative records in NRFU operations, but the assessment was canceled because of budget cuts.

23. The use of administrative records can worsen the differential undercount through two different mechanisms: First, the lack of administrative records for racial and ethnic minorities will increase the likelihood that occupied Non-White households get mistakenly classified as vacant.[51] Indeed, Census Bureau research using administrative records predicted a higher frequency of vacant households than shown in 2010 for areas with a high concentration of minority households.[52] This is more likely to happen both during the NRFU operation as well as during data editing and imputation, as I discuss below. A second mechanism by which administrative records can contribute to a differential undercount is through the more complete enumeration of White households, given greater availability records for this group. The greater availability of administrative records for Whites increases the likelihood of erroneous enumerations, such as counting a second home as occupied, including a college student at a parent's address, or enumerating someone who died before April 1.

24. It is also worth noting that the use of administrative records increases the risk and perception of risk about the confidentiality of the census.[53] Census Bureau research examining public opinion towards administrative records found that Black and Hispanic respondents were less likely than White respondents to say they would prefer to have their household enumerated using administrative records rather than with an interviewer coming to their homes.[54] These

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[51] U.S. Government Accountability Office, *2020 Census Bureau Is Taking Steps to Address Limitations of Administrative Records*, GAO-17-664, 6 (July 2017), https://www.gao.gov/assets/690/686099.pdf.

[52] *Id.* at 6.

[53] Nancy Bates, Monica J. Wroblewski, and Joanne Pascale "Public Attitudes Toward the Use of Administrative Records in the U.S. Census: Does Question Frame Matter?" *Survey Methodology #2012-04* (Center for Survey Measurement, U.S. Census Bureau, 2012), 6. https://www.census.gov/srd/papers/pdf/rsm2012-04.pdf.

[54] *Id. supra* n. 87 at table 2B.

concerns have been repeatedly raised by stakeholders and advisory committees,[55] but in response for calls for additional research and testing, CSAC was told that testing "could not be extended simply because time is too short."[56] Indeed, despite claims that that the advertising and outreach efforts would rely on aggregate rather than individual-level data,[57] the Census Bureau has started communicating via unsolicited email, text, and phone messages based on data purchased from third-party data providers, risking a potential privacy backlash among exactly the groups already worried about the privacy and confidentiality of the census.

25. Census research has also documented variation in the availability, content, and accuracy of administrative records across states and counties.[58] Variation in state laws and the interpretation of federal laws means that the Census Bureau could not get information about federal program participation from all states—e.g., not all states have shared administrative records regarding participation in Women, Infants, and Children (WIC).[59] The Census Bureau is also relying on information from the Centers for Medicare and Medicaid Services (CMS) Medicare Enrollment Database, but these data will cover a smaller proportion of the racial and

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[55] National Advisory Committee Working Group on Administrative Records, Internet, and Hard to Count Population Final Report, https://www2.census.gov/cac/nac/reports/2016-07-admin_internet-wg-report.pdf.

[56] U.S. Census Bureau response to Census Scientific Advisory Committee Recommendations tabled from the Fall 2018 Meeting on December 6-7, 2018, Economics and Statistics Administration U.S. Census Bureau (May 15, 2019), https://www2.census.gov/cac/sac/meetings/2019-02/2019-05-15-census-response.pdf?#.

[57] Karen D. Deaver, Decennial Census Programs Directorate. *Intended Administrative Data Use in the 2020 Census*, May 1, 2020, p. 7-8. https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/administrative-data-use-2020-census.pdf.

[58] R. Bhaskar et al. *Medicare Coverage and Reporting A Comparison of the Current Population Survey An Administrative Records.* CARRA Working Paper Series #2016-12. https://www.census.gov/content/dam/Census/library/working-papers/2016/adrm/carra-wp-2016-12.pdf; Benjamin Cerf Harris *Within and Across County Variation in SNAP Misreporting Evidence from Linked ACS and Administrative Records*, CARRA Working Paper Series #2014-05. https://www.census.gov/content/dam/Census/library/working-papers/2014/adrm/carra-wp-2014-05.pdf; R. Bhaskar, L.E. Fernandez, and S.R. Porter. Assimilation and coverage of the foreign-born population in administrative records. *Statistical Journal of the IAOS*, 34 (2), (2018), 191-201.

[59] https://www2.census.gov/foia/records/state-mou-agreements.pdf?#

ethnic minorities for those states (including Texas) that failed to adopt Medicaid expansion.[60] Social Security Administration records are a cornerstone of census operations, but they contain well-documented gaps and inaccuracies that vary across states.[61] The Census Bureau conducted an evaluation of overall rates of administrative records coverage among foreign-born respondents in the ACS and found substantial state-by-state variation, ranging from 65% coverage in Alabama to 88.6% coverage in Maine.[62]

26. In sum, variation in the completeness and accuracy of administrative records raises significant concerns that a shortened NRFU operation will exacerbate distributional inaccuracies in the decennial count. Increased reliance on administrative records represents a major design change from 2010 to 2020, one driven by cost-savings rather than quality considerations;[63] the Census Bureau argued that efficiently counting some households would allow them to focus effort on households not represented well by administrative records—the harder to count households. But cutting short the NRFU timeframe—the operation aimed at counting those households—undermines that claim. According to their own research, enumeration through administrative records is likely to undercount immigrants and racial and

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[60] Samantha Artiga et al. *The Impact of the Coverage Gap in States not Expanding Medicaid by Race and Ethnicity*, Kaiser Commission on Medicaid and the Uninsured (April 2015) https://www.issuelab.org/resources/21581/21581.pdf; Census research had already documented lower levels of Medicare coverage among older individuals in the state. *See* Bhaskar et al.

[61] J. Brown et. al., Working Paper: *Understanding the Quality of Alternative Citizenship Data Sources for the 2020 Census,* Center for Economic Studies, U.S. Census Bureau, 18–38 (2018), https://www2.census.gov/ces/wp/2018/CES-WP-18-38.pdf. Some of the state level sources of variation in accuracy include variation in the adoption of the enumeration-at-birth program. The 22 states that rely on e-verify to check employment eligibility might see improved records associated with corrections made after database errors are identified.

[62] Bhaskar et al. *Assimilation and coverage of the foreign-born population in administrative records*. https://www.census.gov/content/dam/Census/library/working-papers/2015/adrm/carra-wp-2015-02.pdf

[63] Nancy Bates et al., Public Attitudes Toward the Use of Administrative Records in the U.S. Census: Does Question Frame Matter?, Survey Methodology #2012-04, Center for Survey Measurement, U.S. Census Bureau, 1 (April 25, 2012), https://www.census.gov/srd/papers/pdf/rsm2012-04.pdf.

ethnic minorities.[64]

2. Proxy respondents

27. Based on current NRFU operational plans, households that are not enumerated by administrative records will be visited by an enumerator, becoming proxy eligible on the third visit. A proxy respondent can be a neighbor, landlord, utility worker, in-mover (a new resident of address), or other nonresident who is willing to provide information about the residents of the household as of April 1. Proxies are critical to determining if a household is occupied or vacant, but they provide less accurate data about the size and characteristics of a household.[65]

28. Proxies can be unwilling (in the case of a landlord not wanting to accurately report the number of residents if it exceeds occupancy laws) or unable (in the case of a postal worker unknowledgeable about all household members) to provide household size. Proxy respondents are also more likely to undercount those living in large, crowded, and complex households—disproportionately immigrants and racial and ethnic minorities.[66] Proxy respondents (and nonrelatives) are less likely to have knowledge about a person's living arrangements; for example, a landlord may be unaware that the number of occupants exceeds

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[64] Leticia Fernandez et al., The Use of Administrative Records and the American Community Survey to Study the Characteristics of Undercounted Young Children in the 2010 Census, CARRA Working Paper Series Working Paper Series #2018 – 05 (May 25, 2018), https://www.census.gov/content/dam/Census/library/working-papers/2018/adrm/carra-wp-2018-05.pdf ; Bhaskar et al. *Assimilation and coverage of the foreign-born population in administrative records;* U.S. Government Accountability Office, *2020 Census Bureau Is Taking Steps to Address Limitations of Administrative Records*.

[65] This point has been acknowledged by Dr. Abowd. For example, in his January 19th memo to Secretary Ross, he notes that proxy respondents provide "less accurate information than self-responders" Abowd Memo (Jan. 19, 2018).

[66] Kevin S. Blake, Rebecca L. Kellerson, and Aleksandra Simic, *Measuring overcrowding in housing.* Washington, DC: Department of Housing and Urban Development, Office of Policy Development and Research (2007). Terry et. al., *supra* n. 14. Elizabeth Martin, *Strength of Attachment: Survey Coverage of People with Tenuous Ties to Residences*, Demography 44, no. 2: 427. (2007). Robert Fay, *An Analysis of Within-Household Undercoverage in the Current Population Survey*, Annual Research Conference (1989); Edward Kissam, Differential Undercount of Mexican Immigrant Families in the US Census, *Statistical Journal of the IAOS* 33, no. 3 797–816 (2017); M. de La Puente, *An Analysis of the Underenumeration of Hispanics: Evidence From Small Area Ethnographic Studies*, Annual Research Conference Proceedings. Bureau of the Census, 45–69 (1992).

that on the lease. Research shows that those with tenuous residential arrangements are more likely to be omitted from a household roster, especially by proxy respondents.[67] Census research examining the undercount of children concluded that "unknowledgeable or unwilling proxy respondents may be a key factor in the undercount of young children."[68]

29. Together, this research suggests that a shortened NRFU operation is likely to increase reliance on proxy respondents at the expense of self-completions (*i.e.*, given reduced time for online self-completions, including after a notice of visit from an enumerator). Moreover, the substantial uncertainty about exactly how the Census Bureau plans to fit 10 weeks of NRFU operations into 4 fewer weeks raises additional concerns about the implementation of the NRFU operation, including the determination of proxies as having "sufficient knowledge to enumerate the NRFU household," the extent of Quality Control re-interviews, and the addition of household contacts in the Closeout phrase.[69] According to the 2020 Census Final Operational Plan, "[w]hile most cases receive a maximum of six attempts, cases in hard-to-count areas may receive more than six attempts to achieve a consistent responses rate for all geographic areas" [70] Now, the Census Bureau states that, "In most cases, census workers will make up to six attempts at each housing unit address to count possible residents."[71] When concerns had been previously raised by stakeholders and experts about planned reductions in contact attempts between 2010 and 2020, the Census Bureau had provided reassurances that the Closeout Phase of NRFU would allow for closed cases to be reopened "if a NRFU case was closed without enough data to

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[67] Elizabeth Martin (1999), "Who knows who lives here? Within-household disagreements as a source of survey coverage error." *Public Opinion Quarterly*: 220-236.

[68] U.S. Census Bureau (2017), *Investigating the 2010 Undercount of Young Children – A Comparison of Demographic, Housing, and Household Characteristics of Children by Age*, 19. Additionally, it is thought that both the census and the post-enumeration survey miss the same type of people (termed correlation bias).

[69] NRFU Operational Plan, p. 27.

[70] 2020 Census Operational Plan, ver. 4, p. 212.

[71] Al Fontenot and Timothy Olson, Review of 2020 Operational Plan (August 17, 2020). https://www.census.gov/content/dam/Census/newsroom/press-kits/2020/2020-operational-plan-schedule-review.pdf

support apportionment."[72] A condensed NRFU operation jeopardizes this important stop gap.

3. The Role of NRFU for adding to the MAF

30. Another reason a compressed NRFU operation is likely to contribute to an undercount of racial and ethnic minorities and immigrants is that these groups are more likely to have been omitted from the MAF in the first place. In addition to enumerating nonresponding households, the NRFU operation serves to verify addresses from respondents who self-respond (e.g., through MQA) using an address not in the MAF. A shortened time from for adding and verifying new addresses will reduce the number of households added to the count from outside the initial MAF.

31. Data from the Census Bureau and external researchers finds that the MAF is more likely to miss those living in complex housing situations, disproportionately racial and ethnic minorities.[73] Recent research concludes that one reason for an undercount of racial and ethnic minorities is that they live in unusual or concealed housing units that are not in the MAF.[74] Large ethnographic studies in a number of different localities confirm "irregular housing," such as informal conversions from single family to multi-family arrangements are one reason for undercounts.[75] More recent research finds a record number of households living in multigenerational households.[76]

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[72] NRFU Operational Plan, p. 22. CSAC raised concerns about the number of contact attempts multiple times during my six years of service on the committee.

[73] For a review of the literature, see Edward Kissam, A Summary Review of Research Relevant to Housing Units Missing from the Census Bureau's Master Address File (MAF),WKF Giving Fund.

[74] Edward Kissam, *Differential Undercount of Mexican Immigrant Families in the US Census*, Statistical Journal of the IAOS, 33(3), 797-816 (2017).

[75] E.g., Rodney Terry et. al., Exploring Inconsistent Counts of Racial/Ethnic Minorities in a 2010 Census Ethnographic Evaluation, *Bulletin of Sociological Methodology* 135, no. 1, 32-49, 42 (2017); M. De la Puente, Why are People Missed or Erroneously Enumerated in the Census? A Summary of Findings from Ethnographic Research. *Proceedings of the 1993 Research Conference on Undercounted Ethnic Populations (1993).*

[76] D'Vera Cohn and Jeffrey S. Passel, *A Record 64 Million Americans Live in Multigenerational Households,* Pew Research Center (April 5, 2018), https://www.pewresearch.org/fact-tank/2018/04/05/a-record-64-million-americans-live-in-multigenerational-households/.

32. Evidence from community-based address canvassing as part of the Local Update of Census Address (LUCA) program found that hidden housing units that otherwise would have been omitted from MAF are overwhelmingly minority households: "the neighborhoods where in-field community-based address canvassing added newly-identified housing units are mostly ones with high proportions of households headed by non-citizens, racial/ethnic minority respondents, and heads of household with lower-than average educational attainment."[77] Unfortunately, LUCA participation is uneven across the country with some local areas vigorously seeking to improve the MAF (e.g., California has budgeted $7 million for LUCA efforts), but other jurisdictions doing little or nothing. For example, there are many border areas in Texas with hard-to-count tracts that have neither a county nor state level LUCA partnership.[78]

33. In sum, a shortened NRFU operation exacerbates the risks of missing addresses that might otherwise have been added to the census count through additions to the MAF during NRFU, increasing the likelihood of an undercount of immigrants and racial and ethnic minorities.

4. Imputation

34. If an address cannot be enumerated by an in-person enumerator, administrative records, or with a proxy, the Census Bureau relies on statistical imputation. Statistical imputation is a procedure that fills in individual missing or conflicting values with a substitute. To produce the apportionment numbers from the Census United File (CUF), which contains all household and persons in the decennial count, the Census Bureau must first make a final determination about the occupancy status and household size of all addresses in the MAF and any addresses considered for addition to the MAF during census operations.[79] If the status of a

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[77] Ed Kissam, Cindy Quezada, and Jo Ann Intili. "Community-based canvassing to improve the US Census Bureau's Master Address File: California's experience in LUCA 2018." *Statistical Journal of the IAOS* (2018), 609.

[78] https://gis-portal.data.census.gov/arcgis/apps/MapTools/index.html?appid=23c7b120c28844368eb5b71be041743e

[79] Examples of addresses added to the MAF include individuals who voluntarily self-respond with an address not included in the MAF, addition through an enumerator (e.g., enumerator

household—as occupied, vacant, or nonexistent—remains unknown after the NRFU operation, administrative records will be used to model a final status designation.[80] Given the incompleteness and inaccuracies of administrative records for immigrants and racial and ethnic minorities, a shortened NRFU operation is likely to increase the number of households unresolved through NRFU, thus increasing the likelihood they are erroneously classified as vacant.

35. Among occupied households, count imputation is the procedure that fills in household size. The specific imputation method relies on a hot-deck procedure that uses contemporaneous data from responding housing units to fill in deterministic values for the missing information.[81] As a separate and "downstream" process, characteristic imputation fills in the characteristics of the household, such as the age, race, and ethnicity of all residents.

36. In 2010, just 0.39% (less than one half of one percent) of the total population was added via count imputation, as opposed to direct enumeration; in 2000, just 0.43% of total population was added using count imputation.[82] A reduction in the duration of NRFU operations will almost certainly increase the number of households that must ultimately be imputed through count imputation, a point conceded in Census Bureau research earlier in the decade.[83]

37. The fundamental issue is that the missing data do not occur randomly.[84] The

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notices a single address is found to have multiple doorbells), or additions through LUCA appeals or USPS changes.

[80] When records say a housing unit existed, but it is unclear whether the unit is occupied or vacant, then the Bureau imputes both if occupied and household size.

[81] According to *Intended Administrative Data Use in the 2020 Census* (May 2020), the hot deck imputation is implemented within groups that are defined using administrative records.

[82] D'Vera Cohn, Imputation: Adding People to the Census. PEW Research Center (May 4, 2011). https://www.pewsocialtrends.org/2011/05/04/imputation-adding-people-to-the-census/

[83] Keller, Andrew. "Imputation Research for the 2020 Census," U.S Census Bureau. https://www.census.gov/content/dam/Census/library/working-papers/2015/dec/DSSD-WP2015-03.pdf.

[84] More specifically, the count imputation approach assumes *ignorable missing data,* which means that the missingness is random conditional on the observed data. *Non-ignorable missing data* means there is a relationship between the missingness and the missing data, as is likely the case with household size among nonresponding households.

count imputation procedure assumes that the household size of missing households is the same, on average, as that of observed households. Yet Census research has shown that household size is related to census participation.[85] Data from the American Community Survey (ACS) also show that Hispanics and immigrants have larger household sizes on average.[86] Census researchers have acknowledged this problematic assumption underlying count imputations given.[87] While the census count is almost certainly more accurate with count imputation than without it, it also seems clear that count imputation is still likely to undercount hard-to-count populations. As such, a shortened NRFU operation that increases reliance on imputation will worsen the undercount of immigrants and racial and ethnic minorities.

38. In sum, compressing the remaining timeline for census operations jeopardizes the overall accuracy and the distributional accuracy of the resulting population numbers. The rushed plan will now accept self-responses through mail, phone, and the Internet only until September 30, 2020 rather than through October 31, 2020—giving less time for households to be counted by replying to a "Notice of Visit" as part of NRFU operations and less time for households outside of the MAF to be added. The rushed plan of a 6-week (rather than 10-week) NRFU operation will almost certainly increase the number of households enumerated through administrative records, proxy respondents, and imputation, even if the Census Bureau maintains the same basic contact attempt framework. The planned NRFU timeline had been structured as a

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[85] David Fein "Racial and Ethnic Differences in U.S. Census Omission Rates." *Demography* 27 (1990), 285-302; Arnold Jackson, "2010 Census Mail Response/Return Rates Assessment Report," *2010 Census Planning Memoranda Series*, No. 198 (2012).

[86] Census researchers have previously evaluated the quality of census coverage using external data. E.g., Andrew Keller and Tyler Fox (2014), "Using Data from the American Community Survey to Better Understand Coverage Measurement Results in the 2010 Census," Proceedings of the Survey Research Methods Section, American Statistical Association. http://ww2.amstat.org/sections/srms/proceedings/y2014/Files/312005_88544.pdf. Their comparison shows undercoverage of persons in areas with higher concentrations of Hispanic households and a higher proportion of persons who speak a language other than English at home.

[87] James Farber, Deborah Wagner, and Dean Resnick "Using Administrative Records for Imputation in the Decennial Census," Proceedings of the Survey Research Methods Section, American Statistical Association (2005). https://ww2.amstat.org/sections/srms/Proceedings/y2005/Files/JSM2005-000278.pdf

phased 10-week operation with many quality controls and backstops in which the progression through operational phases depended on the aggregate completion rate in a local geographic area and the arrival of updated administrative records from the IRS and USPS.[88] The planned extension until October 31, 2020 would have allowed census operations to progress, as planned, through the phases, maintaining the planned quality markers and standards (e.g., 60% of cases resolved to progress to Phase II and 85% of cases resolved to progress to the Closeout phase). The rushed plan simply cannot have the same number of days for every phase, thus necessitating either lowering the quality thresholds, lowering the thresholds for resolving a case, or resolving more cases prematurely because of shortened deadlines—in any case, the result will be an increased likelihood of a households being erroneously excluded as vacant/delete and an increased likelihood of household size being underestimated by a proxy respondent or imputation procedure. The planned extension until October 31, 2020 would have also allowed for the fully scheduled Closeout and Quality Control phases intended to identify enumerator mistakes and falsifications and to put additional effort into areas with too few unresolved cases. In 2010, the Closeout phase identified 729,143 housing units that required a follow-up visit by the field staff[89]; the Quality Control program conducted re-interviews with roughly 5% of households, with 13.8% of those interviewed found to have errors that were corrected; among the Quality Control vacancy/delete status check, 4.7% were found to be incorrectly labeled as vacant or delete.[90] In other words, extending the timeline until October 31, 2020 to allow for the full number and schedule of days for each planned phase of NRFU would result in a more accurate enumeration of the hard-to-count households that are the focus of the NRFU operation.

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[88] Phase I was scheduled to run from May 13 until June 17 (25 days) unless 60 percent of cases in an area were resolved (or 4 days of contacts attempted). Phase II was scheduled to run June 17-July 10 (23 days), unless 85% of cases in an area are resolved. The Closeout phase was set to run for 14 days (until July 24th). The final week of NRFU was scheduled for the completion of quality assurance reinterviews.

[89] See P. 22: https://www.census.gov/content/dam/Census/library/publications/2012/dec/2010_cpex_190.pdf

[90] https://www.census.gov/content/dam/Census/library/publications/2012/dec/2010_cpex_182.pdf.

V. VIOLATION OF STATISTICAL STANDARDS AND POLICIES

39. All available evidence points to the likelihood that a shortened NRFU operation will exacerbate the differential undercount of immigrants and racial and ethnic minorities. The currently disparities in self-response rates will not be corrected through NRFU operations and the compressed schedule will almost certainly increase the percentage of households in the MAF that are less accurately enumerated through administrative records, proxy respondents, and imputation, contributing to a differential undercount of immigrants and racial and ethnic minorities. In the language of the Census Bureau's Statistical Quality Standards, the resulting census count would fail the "objectivity" standard.

40. The shortened deadline will not be felt equally across the states given variation in demographic characteristics, social policies, and availability of administrative records. Given apportionment of the U.S. House of Representatives is based on statistical proportionality, the likely differential distribution in undercounts across states means that the census numbers will also fail in their fitness-for-use in the Census Bureau's first and most enduring purpose.

41. In addition to the Census Bureau Statistical Quality Standards, the Census Bureau is also subject to the Office of Management and Budget (OMB) policies and procedures. Under the OMB's Policy Directive No. 1, federal statistical agencies must "be independent from political and other undue external influence in developing, producing, and disseminating statistics."[91] The administration's decision to rush through the remaining census operations—especially the NRFU operations designed to enumerate hard-to-count households—a decision that comes on the heels of Trump's July 21, 2020 Memorandum, Executive Order 13880, the failed attempt to add a citizenship question, the addition of political appointments to the agency, political fundraising efforts linked to the exclusion of noncitizens from the census, all point to an effort by the Trump administration to politically influence the 2020 apportionment count. OMB Policy Directive No. 1 explains:

> Federal statistical agencies and recognized statistical units must function in an

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[91] Office of Management and Budget (OMB), Policy Directive No. 1. https://www.govinfo.gov/content/pkg/FR-2014-12-02/pdf/2014-28326.pdf.

environment that is clearly separate and autonomous from the other administrative, regulatory, law enforcement, or policy-making activities within their respective Departments. Specifically, Federal statistical agencies and recognized statistical units must be able to conduct statistical activities autonomously when determining what information to collect and process, the physical security and information systems security employed to protect confidential data, which methods to apply in their estimation procedures and data analysis, when and how to store and disseminate their statistical products, and which staff to select to join their agencies. In order to maintain credibility with data providers and users as well as the public, Federal statistical agencies and recognized statistical units must seek to avoid even the appearance that agency design, collection, processing, editing, compilation, storage, analysis, release, and dissemination processes may be manipulated.[92]

42. A complete, accurate, and unbiased census is essential for the economic and political health of the nation. To the extent that a shortened census timeline reduces the objectivity and utility of the decennial count, it also risks undermining the credibility of the entire federal statistical system. As former U.S. Census Director John Thompson expressed in his testimony before Congress: "Perceptions that the results of the 2020 Census have been manipulated for political purposes will greatly erode public and stakeholder confidence, not only in the 2020 Census but in our democracy."[93]

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[92] Office of Management and Budget (OMB), Policy Directive No. 1, p. 71615. https://www.govinfo.gov/content/pkg/FR-2014-12-02/pdf/2014-28326.pdf.

[93] Statement of John H Thompson, Former Director U.S. Census Bureau (August 2013 – June 2017), For the House Committee on Oversight and Reform, U.S. House of Representatives, July 29, 2020. https://oversight.house.gov/sites/democrats.oversight.house.gov/files/documents/Testimony%20Thompson.pdf

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on: August 24, 2020

D. Sunshine Hillygus, Ph.D.

D. SUNSHINE HILLYGUS

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ACADEMIC APPOINTMENT

Duke University
Professor of Political Science, July 2015-
Professor of Public Policy (by courtesy), Nov 2015-
Associate Professor of Political Science, July 2009-2015
Director, Duke Initiative on Survey Methodology, July 2010-

Harvard University
Frederick S. Danziger Associate Professor of Government, July 2007-June 2009
Director, Program on Survey Research, July 2005-June 2009
Assistant Professor of Government, July 2003-June 2007

EDUCATION

Stanford University
Ph.D., Political Science, 2003
M.A., Political Science, 2000
Dissertation: Understanding Receptivity to Political Campaigns: Three Essays on Voter Decision Making in Election 2000.
Committee: Morris Fiorina (chair), Norman Nie, Simon Jackman, David Brady

University of Arkansas
M.A., Political Science, May 1998
B.A., Political Science and B.A., Spanish, *Summa Cum Laude*, May 1996

BOOKS

Holbein, J. and D.S. Hillygus. *Making Young Voters: Converting Civic Attitudes into Civic Action*. Cambridge University Press, 2020.

Hillygus, D.S. and T. Shields. *The Persuadable Voter: Wedge Issues in Presidential Campaigns*. Princeton University Press, 2008. Paperback, 2009.
Winner of the 2009 Robert E. Lane Award.
Excerpt reprinted in *Controversies in Voting Behavior*, 5th edition(2011).

Hillygus, D.S., N. Nie, K. Prewitt, and H. Pals. *The Hard Count: The Political and Social Challenges of Census Mobilization*. Russell Sage Foundation, 2006.

JOURNAL PUBLICATIONS

Valentino, N., K. Zhirkov, and D.S. Hillygus, B. Guay. forthcoming "Personality Differences between Face-to-Face and Online Samples," *Public Opinion Quarterly*.

Hillygus, D. S., and Lopez, J. 2020. Easy as 1, 2, 3? Challenges of the 2020 Census and Implications for Political Science. *Journal of Political Institutions and Political Economy*, 1(2), 289-317.

Bail, C.A., Guay, B., Maloney, E., Combs, A., Hillygus, D.S., Merhout, F., Freelon, D. and Volfovsky, A., 2020. Assessing the Russian Internet Research Agency's impact on the political attitudes and behaviors of American Twitter users in late 2017. *Proceedings of the National Academy of Sciences*, 117(1).

Madson, G. and D.S. Hillygus. 2019. "Who Trusts the Polls? Motivated Reasoning in Evaluations of Polling Results," *Political Behavior*.

Carlson, C., V. Dounoucos, and D.S. Hillygus. 2019. "The Message and the Medium: The Communication Effects of Twitter Commentary," *Journal of Information Technology & Politics*.

Holbein, J., D.S. Hillygus, C. Gibson-Davis, M. Lenard, and D. Hill. 2018. "The Development of Students' Engagement in School, Community, and Democracy," *British Journal of Political Science*.

Hillygus, D.S. 2018. "Navigating Scholarly Exchange in Today's Media Environment," *Journal of Politics* 80(3), 1064-1068(editor-reviewed).

Xing, Z. D.S. Hillygus and L. Carin. 2017. "Evaluating U.S. Electoral Representation with a Joint Statistical Model of Congressional Roll-Calls, Legislative Text, and Voter Registration Data," *Proceedings of the 23nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 1205-1214.

Knutson, K, J. Phelan, M. Paskow, A. Roach, K. Whiton, G. Langer; D.S. Hillygus, M. Mokrzycki, W.A. Broughton, S. Chokroverty, K.L. Lichstein, M. Hirshkowitz. 2017. "The National Sleep Foundation's Sleep Health Index," *Sleep Health* 3 (4): 234-40.

DeYoreo, M., Reiter, J. and D.S. Hillygus. 2017."Nonparametric Bayesian Models With Focused Clustering for Mixed Ordinal and Nominal Data," *Bayesian Analysis*.

Hillygus, D.S., McKee, S., and M. Young. 2017. "Reversal of Fortune: The Political Behavior of White Migrants to the South," *Presidential Studies Quarterly*.

Henderson, M. and D.S. Hillygus. 2016. "Contextual Factors in Time of Decision in the 2008 Presidential Election," *Public Opinion Quarterly*.

Holbein, J. and D.S. Hillygus. 2016. "Making Young Voters: The Impact of Preregistration on Youth Turnout," *American Journal of Political Science*.

Ballard, A., D.S. Hillygus, and T. Konitzer. 2016. "Campaigning Online: Web Display Ads in the 2012 Presidential Campaign," *PS: Political Science & Politics*.

Si, Y., J. Reiter, and D.S. Hillygus. 2016. "Bayesian Latent Pattern Mixture Models For Handling Attrition In Panel Studies With Refreshment Samples," *Annals of Applied Statistics*.

Schifeling, T. C. Cheng, J. Reiter and D.S. Hillygus. 2015. "Accounting for Nonignorable Unit Nonresponse and Attrition in Panel Studies with Refreshment Samples," *Journal of Survey Statistics and Methodology*.

Gerber, A., K. Arceneaux, C. Boudreau, C. Dowling, and D.S. Hillygus. 2015."Reporting Balance Tables, Response Rates and Manipulation Checks in Experimental Research: A Reply from the Committee that Prepared the Reporting Guidelines," *Journal of Experimental Political Science*.

Johnston, C., D.S. Hillygus, and B. Bartels. 2014. "Ideology, The Affordable Care Act Ruling, and Supreme Court Legitimacy," *Public Opinion Quarterly*, 78 (4): 963-973.

Gerber, A., K. Arceneaux, C. Boudreau, C. Dowling, D.S. Hillygus, T. Palfrey, D. Biggers, D. Hendry. 2014. "Reporting Guidelines for Experimental Research: A Report from the Experimental Research Section Standards Committee," *Journal of Experimental Political Science*, 1(1): 81-98.

Si, Y., J. Reiter and D.S. Hillygus. 2014. "Semi-parametric Selection Models for Potentially Non-ignorable Attrition in Panel Studies with Refreshment Samples," *Political Analysis*, 23(1): 92-112.

Frankel, L. and D.S. Hillygus. 2014. "Panel Attrition and the Survey Experience," *Political Analysis*, 22(3): 336-353.

Hillygus, D.S. and S. Treul. 2014. "Assessing Strategic Voting in the 2008 Presidential Primaries," *Public Choice*, 161(3): 517-536.

Aldrich, J., B. Bishop, R. Hatch, D.S. Hillygus, and D. Rohde. 2013. "Blame, Responsibility, and the Tea Party in the 2010 Midterm Elections," *Political Behavior*, 36(3), 471-491.

Deng, Y., D.S. Hillygus, J. Reiter, and Y. Si. 2013. "Handling Attrition in Longitudinal Studies: The Case for Refreshment Samples," *Statistical Science*, 28(2): 238-256.

Hillygus, D.S. 2011. "The Evolution of Election Polling in the United States," *Public Opinion Quarterly*, 75(5): 962-981.

Henderson, M. and D.S. Hillygus. 2011. "The Dynamics of Health Care Opinion, 2008-2010: Partisanship, Self-Interest, and Racial Resentment," *Journal of Health Politics, Policy, and Law*, 36(6): 945-960.

Henderson, M., D.S. Hillygus, and T. Tompson. 2010. "'Sour Grapes' or Rational Voting? Voter Decision Making Among Thwarted Primary Voters in 2008," *Public Opinion Quarterly*, 74(3): 499-529.

Ellis, R., D.S. Hillygus and N. Nie. 2010. "Retrospective and Prospective Candidate Evaluations and the Dynamics of Vote Choice in 2008," *Electoral Studies* 29(4): 582-593.

Hillygus, D.S. and M. Henderson. 2010. "Policy Issues and the Dynamics of Vote Choice in the 2008 Presidential Election," *Journal of Elections, Public Opinion, and Parties*, 20(2): 241-269.

Treier, S. and D.S. Hillygus. 2009. "The Nature of Political Ideology in the Contemporary Electorate," *Public Opinion Quarterly*, 73(4):679-703.

Burden, B. and D.S. Hillygus. 2009. "Opinion Formation, Polarization, and Presidential Reelection." *Presidential Studies Quarterly*, 39: 619-35.

Hillygus, D.S. and T. Shields. 2008. "Southern Discomfort? Regional Differences in Voter Decision Making in the 2000 Presidential Election," *Presidential Studies Quarterly*, 38(3): 506-520.

Hillygus, D.S. 2007. "The Dynamics of Voter Decision Making Among Minor Party Supporters: The 2000 U.S. Presidential Election," *British Journal of Political Science*, 37(2): 225-244.

Hillygus, D.S. 2005. "Campaign Effects and the Dynamics of Turnout Intention in Election 2000," *Journal of Politics*, 66(1): 50-68.

Hillygus, D.S. 2005. "The Missing Link: Exploring the Relationship between Higher Education and Political Behavior," *Political Behavior*, 27(1): 25-47.

Hillygus, D.S. and T. Shields. 2005. "Moral Issues and Voter Decision Making in the 2004 Presidential Election," *PS: Political Science and Politics*, 38(2): 201-10. Reprinted in *Quantitative Methods in Practice*, D. Rochefort (ed) CQ Press, 2006.

Hillygus, D.S. and S. Jackman. 2003. "Voter Decision Making in Election 2000: Campaign Effects, Partisan Activation, and the Clinton Legacy," *American Journal of Political Science*, 47(4): 583-596.

Nie, N. and D.S. Hillygus. 2002. "Where Does Internet Time Come From?: A Reconnaissance," *IT & Society*, 1(2): 1-20.

Nie, N. and D.S. Hillygus. 2002. "The Impact of Internet Use on Sociability: Time-Diary Findings," *IT & Society*, 1(1): 1-29.

OTHER PUBLICATIONS

Zhou, J., D.S. Hillygus, and J. Aldrich. 2019. "Understanding the Trump Win: Populism, Partisanship, and Polarization in the 2016 Election," *Publications of the Bavarian American Academy*, Heidelberg University Press.

Guay, B. and D.S. Hillygus. 2018. "Online Public Opinion Polling," *Oxford Bibliographies*

Hillygus, D.S. and S. Snell. 2018. "Longitudinal Surveys: Issues and Opportunities," *Oxford Handbook on Polling and Polling Methods*. L. Atkeson and M. Alvarez, eds. New York: Oxford University Press.

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Hillygus, D.S. 2016. "The Practice of Survey Research: Changes and Challenges," *New Directions in Public Opinion*, second edition. Adam Berinsky, ed. Routledge Press.

Hillygus, D.S., N. Jackson, and M. Young. 2014. "Professional Respondents in Online Survey Panels," *Online Panel Research: A Data Quality Perspective*. M.Callegaro, R. Baker, P. Lavrakas, J. Krosnick, J. Bethlehem, and A. Göritz, eds.

Frankel, L. and D.S. Hillygus. 2014. "Niche Communication in Political Campaigns," *Oxford Handbook on Political Communication*. Kathleen Hall Jamieson and Kate Kenski, eds. New York: Oxford University Press.

Hillygus, D.S. and B. Burden. 2013. "Mass Polarization in the Bush Presidency," *The Presidency of George W. Bush: Perspectives on the Forty-Third President of the United States*, D. Kelly and T. Shields, eds. Texas A&M Press.

Hillygus, D.S. 2011. "The Practice of Survey Research: Changes and Challenges" *New Directions in Public Opinion*. Adam Berinsky, ed. Routledge Press.

Bishop, B. and D.S. Hillygus. 2011. "Campaigning, Debating, Advertising," *Oxford Handbook on Public Opinion and Media*. Larry Jacobs and Robert. Shapiro, eds. New York: Oxford University Press.

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Bishop, B., A. Cooper, and D.S. Hillygus. 2009. "Innovative Survey Methodologies for the Study of Attitudes Toward Terrorism and Counterterrorism Strategies," Institute for Homeland Security Solutions, Duke University.

Hillygus, D.S. 2009. "Guest Editor Introduction: Understanding the 2008 Presidential Election," *Public Opinion Quarterly* 73: 841-844.

Hillygus, D.S. 2009. "The Need for Survey Reporting Standards in Political Science," *The Future of Political Science: 100 Perspectives*, G. King, N. Nie, and K. Schlozman (eds).

Hillygus, D.S. 2008. "Internet and Politics 2008: Microtargeting," *The Publius Project*, The Berkman Center.

Hillygus, D.S. and T. Shields. 2008. "Moderation or Polarization in Candidates' Campaign Agendas?" *The Polling Report*, 24(15).

Hillygus, D.S. 2007. "Moral Values: Media, Voters, and Candidate Strategy," in *A Matter of Faith? Religion in the 2004 Presidential Election*, Brookings Institution Press.

Hillygus, D.S. 2004. Review of Models of Voting in Presidential Elections: The 2000 Election, H. Weisberg and C. Wilcox (eds), in *Presidential Studies Quarterly*, 34(3).

Brady, D. and D.S. Hillygus. 2004. "Assessing the Clinton Presidency: The Political Constraints of Legislative Policy" in *The Clinton Riddle: Perspectives on the 42nd President*, Shields, Whayne, and Kelley (eds). U of Arkansas Press.

Nie, N., D.S. Hillygus, and L. Erbring. 2003."Internet Use, Interpersonal Relations and Sociability: A Time Diary Study" in *The Internet in Everyday Life*, Wellman and Haythornthwaite (eds). Oxford: Blackwell Publishers.

Nie, N. and D.S. Hillygus. 2001. "Education and Democratic Citizenship," in *Making Good Citizens: Education and Civil Society*, Ravitch and Viteritti (eds). Yale University Press.

CURRENT PROJECTS

Olanrewaju A., G. Madson, D.S. Hillygus and J. Reiter. "Leveraging Auxiliary Information on Marginal Distributions in Nonignorable Models for Item and Unit Nonresponse in Surveys," under review.

Lopez, J. and D.S. Hillygus. "Why So Serious?: Survey Trolls and Political Misinformation" available at SSRN.

Endres, K. D.S. Hillygus, and S. Snell, "Big Data, Big Problems: Overcoming Barriers to Consent for Data Linking."

HONORS/AWARDS

Duke University Howard D. Johnson Distinguished Teaching Award, 2019.

National Science Foundation, Political Science Program ($3.9m) "ANES Web: American National Election Study," (PI S. Iyengar), 2018-2021.

Provost "Together Duke" Initiative ($454,000), "Duke Polarization Lab" (Co-PI with K. Heller, J. Moody, G. Sapiro, A. Volfovsky and PI C. Bail), 2018-2019

National Science Foundation, Political Science Program, Grant SES-1657821 ($335,690), "Making Young Voters: Policy Reforms to Increase Youth Turnout" (PI with Co-PI J. Holbein) 2017-2019

National Science Foundation, MMS Program, Grant SES-1733835 ($300,000), "Leveraging Auxiliary Information on Marginal Distributions in Multiple Imputation for Survey Nonresponse" (Co-PI with PI J. Reiter) 2017-2019

Bass Connections, Education and Human Development grant ($23,000), 2017-2019

Facebook Academic Program gift ($25,000), 2016

National Science Foundation, Political Science Program, Grant SES-1416816 ($249,999), "Education, Engagement, and Well-being among Adolescents" (PI with Co-PI C. Gibson-Davis) 2014-2016

National Science Foundation, MMS Program, Grant SES-1131897 supplement ($199,000), "Conducting Research Using the Survey of Income and Program Participation (SIPP) Panel Study," 2013-2015

Information Initiative at Duke, Research Incubator Award ($75,000) "Using Big Data to Understand the American Electorate," (with L. Carin), 2013-2015

National Science Foundation, MMS Program, Grant SES-1131897 ($2,997,591), "Triangle Census Research Network" (Senior Co-Investigator with L. Cox, D. Dunson, J. Hotz, F. Li, and PI J. Reiter and Co-PI A. Karr), 2011-2016

National Science Foundation, MMS Program, Grant SES-1061241 ($160,000), "Multiple Imputation Methods for Handling Missing Data in Longitudinal Studies with Refreshment Samples." (with PI J. Reiter), 2011-2012

National Science Foundation, Political Science Program, SES-1110341"Balancing Innovation and Continuity in Longitudinal Surveys"($38,235), 2011

IHSS Award, Innovative Survey Methodologies($25,081), 2009

Robert E. Lane Award for best book published in political psychology in 2008

CAPS Junior Faculty Seed Grant ($5000), 2008

Shorenstein Center for Press and Politics Fellow, Fall 2005

Program on the Global Demography of Aging Grant ($17,130), 2005-06

Institute for Quantitative Social Science Research Grant ($10,000), 2005-06

Institutional Development Initiative ($10,000), 2005-06

Blair Center for Southern Politics, 2004 Election Survey Funding ($85,000)

CAPS Junior Faculty Seed Grant ($5000), 2004-2005

Milton Fund Grant, Harvard University ($3500), 2004-2005

Harvard University Cooke-Clark Grant ($6000)

Westview Paper Prize, 2003 Midwest Political Science Meeting

Heinz Eulau Political Behavior Fellowship, 2002-2003

Best Graduate Student Poster Award, 2002 Political Methodology Meeting

National Conference of State Legislators Women's Graduate Fellowship, 1998

PROFESSIONAL SERVICE

Associate PI, American National Election Study, 2018-2021
Associate Editor, *Political Analysis*, 2018-
Chair, POQ Advisory Committee, 2011-
Methods, Measurement, and Statistics Advisory Panel, National Science Foundation, 2018-2020
Board Member, American National Election Studies, 2010-2013, 2014-2017
Scientific Advisory Committee, U.S. Census Bureau, 2012-2018
Political Science Advisory Panel, National Science Foundation, 2010-2012
Member, Executive Council, Midwest Political Science Association, 2014-17
Member, Executive Council, Southern Political Science Association, 2014-17

Editorial Board, *American Political Science Review*, 2016-
Editorial Board, *Journal of Politics*, 2010-
Editorial Board, *Public Opinion Quarterly*, 2008-
Editorial Board, *Political Communication*, 2015-
Editorial Board, *Journal of Experimental Political Science*, 2013-
Editorial Board, *Political Behavior*, 2011-
Editorial Board, *Journal of Elections, Public Opinion and Parties*, 2008-
Editorial Board, *Political Science Network*, 2007-
Editorial Board, *The Forum*, 2011-
Editorial Board, *Political Analysis*, 2015-2017
Editorial Board, *American Journal of Political Science*, 2009-2012
Guest Editor, *Public Opinion Quarterly* 2009 Special Issue
AAPOR Journals Committee (2019)
APSA EPOVB Best Article in Political Behavior Award Committee (2019)
APSA Experimental Research Section: Reporting Standards Committee (2011)
APSA Political Meth Section: Nominations Committee (2010-2012), Diversity Committee (2005-08, 2011-12), Miller Prize (2017), Emerging Scholar (2018-2020)
SPSA, VO Key Award Committee, 2013
APSA Gladys M. Kammerer Award Committee, 2012
APSA Philip Converse Book Award Committee, 2009, 2010 and 2012
SPSA Program Committee, 2009 and 2012
JOP Best Paper Award Committee, 2011
AAPOR Book Award Committee, 2011, 2016

CONFERENCES ORGANIZED

International Total Survey Error Workshop (6/18)
Conducting Research Using the Survey of Income and Program Participation (SIPP) Panel Study, Durham, NC (2/14)
Balancing Innovation and Continuity in Longitudinal Surveys, Durham, NC (2/11)
Assessing Survey Quality, Cambridge, MA (4/09)
Surveying Multiethnic America, Cambridge, MA (4/07)
Advances in Questionnaire Design, Cambridge, MA (2/06)

Expert Witness Work

League of Women Voters v. State of North Carolina, Case No. 1:13-CV-660
NAACP et al. v. Bureau of the Census et al., Case No. 8:18-CV-00891
New York Immigration Coalition v. Dept. of Commerce, Case No. 18-CV-5025

INVITED PRESENTATIONS(last 5 years)

Plenary, Pacific Association of Public Opinion Research Meeting (12/19)
Massachusetts Institute of Technology (10/19)
Michigan State University (9/19)
Plenary, American Association of Public Opinion Research Meeting (5/19)
University of North Carolina (2/19)
Emory University (11/18)
Duke Alumni Association of Philadelphia (4/18)
Duke Alumni Association of Los Angeles (6/17)
Duke Alumni Association of Austin (6/17)

Duke Alumni Association of Denver (5/17)
Fordham University (4/17)
Qualtrics Innovation Summit, Salt Lake City (3/17)
Stanford Alumni Association, Durham (2/17)
Duke Alumni Association of San Diego (11/16)
Wake Forest University (11/16)
Reed College (10/16)
UNC-Wilmington (10/16)
Duke Alumni Association of North Texas (9/16)
Duke Alumni Association of Charlotte (5/16)
Dept of Political Science, MIT (4/16)
Center for the Study of Democratic Politics, Princeton (3/16)
Appalachian State University (3/16)
Computers, Privacy, and Data Protection Conference, Brussels (1/16)
Political Persuasion Conference, Laguna Beach, CA (1/16)
Duke Alumni Association of Tampa (1/16)
Keynote, Australian Society for Quantitative Political Science, Melbourne (12/15)
Dept of Communication, U. of Michigan (11/15)
Dept of Political Science, UNC-Greensboro (11/15)
Microsoft Panel on Campaign Technology, D.C. (11/15)
Political Science Dept, U. Texas (12/14)
ElectionsLive!, Duke University (11/14)
American Politics Research Group, UNC (11/14)
American Politics Workshop, UCLA (01/14)
The American Panel Survey Workshop, Wash U (11/13)
Intro to Survey Methods, Shanghai Jiao Tong University (06/13)
Senior Scholar Career Presentation, Visions in Methodology, FSU (04/13)
American Politics Workshop, Yale University (03/13)
Google Political Innovation Summit, New York (01/13)

DEPARTMENTAL AND UNIVERSITY SERVICE

Founding Director, Duke Initiative on Survey Methodology, 2010-
Associate Director, Institutional Review Board, Duke University, 2010-
Social Science Research Institute Steering Committee, 2011-
Duke Advisory Committee on Investment Responsibility, 2017-
EHD-Bass Connections Team Leader, 2017-2020
Standing Committee for Misconduct in Research, 2019-2022
Social Science Research Institute (SSRI) Director Search chair, 2018
Faculty Fellow, Duke Alumni Association, 2015-2018
POLIS steering committee, 2015-2017
Social Science Research Institute Planning Committee, 2012
Behavior and Identity Field Chair, 2011-2012, 2014, 2016-2018
Behavior and Identity Workshop Organizer, 2010-2012, 2016
American Politics Field Organizer, 2010-2012
REP Search Committee, Duke Political Science, 2013, 2017
China Search Committee, Duke Political Science, 2011
Graduate Admissions Committee, Duke Political Science, 2009, 2014

Undergraduate Curriculum Committee, Duke Political Science, 2009
Faculty Organizer, Duke Political Science Graduate Orientation, 2009
Harvard University Faculty Advisory Group for Metrics and Analysis, 2006-2009
Faculty Advisory Board for the Social Sciences, Harvard FAS, 2008-2009
Executive Committee, Center for American Political Studies, 2003-2009
Organizer, Political Psychology and Behavior Workshop, 2003-2008
Standing Committee on Women, Harvard FAS 2004-2005