UNITED STATES DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. Census Bureau
Office of the Director
Washington, DC 20233-0001

MEMORANDUM FOR: Allison Plyer
Chair
Census Scientific Advisory Committee

From: Ron Jarmin
Performing the Non-Exclusive Functions
and Duties of the Director
U.S. Census Bureau

Subject: U.S. Census Bureau Responses to the Census Scientific Advisory Committee's Spring 2018 Recommendations

The U.S. Census Bureau thanks the Census Scientific Advisory Committee for its recommendations. We are responding to the Committee's recommendations submitted during its March 29-30, 2018 meeting.

Your expertise is necessary to ensure that the Census Bureau continues to provide relevant and timely statistics used by tribal, federal, state, and local governments, as well as businesses and organizations, in an increasingly technologically-oriented society.

Attachment

Recommendations and Comments to the Census Bureau from the Census Scientific Advisory Committee Spring 2018 Meeting

To: Ron Jarmin, Associate Director for Economic Programs, Performing the Non-Exclusive Functions and Duties of the Director

From: Barbara A. Anderson, Chair, CSAC

Date: March 30, 2018

Section 1: Citizenship Question on Main Census

The citizenship question planned to be on the main 2020 Census came up in Census Scientific Advisory Committee (CSAC) comments on many different sessions. The following summarizes these comments:

1. CSAC wishes to officially state our opposition to the last-minute inclusion of the citizenship question on the 2020 Census. We have concerns about the lack of adequate testing, about the implications for nonresponse (unit and item), implications for the cost, and implications for attitudes about the Census Bureau and concerns about confidentiality. There is a hierarchy of needs for the decennial census, with an accurate count of foremost importance, so any proposed changes should be evaluated in consideration of the potential impact on completeness and accuracy.

   Response: At the Secretary of Commerce's direction, the U.S. Department of Commerce and the U.S. Census Bureau conducted a thorough review of the Department of Justice's (DOJ) December 2017 request to reinstate a citizenship question on the 2020 Census. That review included legal, program, and policy considerations. On March 26, 2018, after taking a hard look at the request and ensuring that he considered all facts and data relevant to the question so that he could make an informed decision on how to respond, the Secretary determined that reinstatement of a citizenship question on the 2020 census is necessary to provide complete and accurate data in response to the DOJ's request. A copy of the Secretary's memorandum directing the Census Bureau to reinstate the citizenship question is available on the Department's website: https://www.commerce.gov/sites/commerce.gov/files/2018-03-26_2.pdf.

2. We think that the rationale offered by Sec. Ross in favor of adding the question relied on flawed logic. Fundamentally, the absence of evidence is not evidence of absence. In other words, just because there is not clear evidence that adding the question would harm the census accuracy, this is not evidence that it will not. Moreover, the empirical evidence that was discussed by Sec. Ross came from data collected in a different data collection context, in a different political climate, before anti-immigrant attitudes were as salient and consequential.

Response: As set forth in the Secretary's March 26, 2018 decision memorandum, a copy of which is available at https://www.commerce.gov/sites/commerce.gov/files/2018-03-26_2.pdf, the Census Bureau estimated that the reinstatement of the citizenship question could potentially increase non-response follow-up (NRFU) costs by up to 0.5 percent, which would equate to a potential cost increase of up to $27.5 million. However, as discussed in the Secretary's decision memorandum, this increased cost is well within the scope of the contingency funding included in the October 2017 Lifecycle Cost Estimate provided to Congress. While the Census Bureau predicted a self-response rate of 60.5 percent in 2017, the Lifecycle Cost Estimate included contingency funding to accommodate for several possible variables, including a reduction in self-response to 55 percent. So even though the current Lifecycle Cost Estimate was prepared before the reinstatement of the question, and therefore, could not have included its impact in the self-response assumption, the Lifecycle Cost Estimate adopted by Congress in the Fiscal Year (FY) 2018 Omnibus provides more than sufficient funding to address the potential drop-off in self-response that the Census Bureau predicted could result from reinstating the question.

3. The Census tradition has always been to collect evidence about the impact of a question before the question is added to the Census. We worry that it could have spill-over item nonresponse consequences for the race/ethnicity item. Similarly, borrowing the question from the ACS—which has question wording that reflected a different set of motivations and uses—results in a question wording that is puzzling in its specificity distinguishing U.S. territories. We would encourage the Census Bureau to immediately start testing the impact of the citizenship question.

   Response: In 2020, the Census Bureau will include a citizenship question that has been asked on the American Community Survey (ACS). Its extensive use on the American Community Survey questionnaire – where it has been answered by 42 million households – far exceeds any testing sample size the Census Bureau could conduct and demonstrates that the question can be used successfully in a survey. We have a robust partnership and communications program that will encourage response to the 2020 Census by targeting the right message to the right audience in the right place.

   The Census Bureau's goal of testing a question and options for responses is to ensure that all populations can cognitively understand the concepts associated with the question and can accurately respond within the options provided. This goal of cognitive understanding and accurate response has been met through many years of use of this question in the ACS.

4. We anticipate an increased need for NRFU in light of reaction to the addition of the citizenship question. We would like to receive updated NRFU and cost estimates. A sensitivity analysis of the magnitude of the effect on costs would be appropriate, since a wide range would be plausible.

Response: The Secretary took the possibility of increased NRFU costs into account when he decided to reinstate the citizenship question. As set forth in his March 26, 2018 decision memorandum, a copy of which is available at https://www.commerce.gov/sites/commerce.gov/files/2018-03-26_2.pdf, the Census Bureau estimated that the reinstatement of the citizenship question could potentially increase non-response follow up costs by up to 0.5 percent, which would equate to a potential cost increase of up to $27.5 million. However, as discussed in the Secretary's decision memorandum, this increased cost is well within the scope of the contingency funding included in the October 2017 Lifecycle Cost Estimate provided to Congress. While the Census Bureau predicted a self-response rate of 60.5percent in 2017, the Lifecycle Cost Estimate included contingency funding to accommodate for several possible variables, including a reduction in self-response to 55 percent. So even though the current Lifecycle Cost Estimate was prepared before the reinstatement of the question and therefore could not have included its impact in the self-response assumption, the Lifecycle Cost Estimate adopted by Congress in the FY2018 Omnibus provides more than sufficient funding to address the potential drop-off in self-response that the Census Bureau predicted could result from reinstating the question.

5. One suggestion for evaluating the impact of the citizenship question is to compare responses to the 2018 Providence Census Test before and after Ross's announcement. Comparisons could be made in terms of unit and item nonresponse, junk responses, etc.

   Response: We appreciate the Committee's suggestion. We are closely tracking responses for many purposes. Although the 2018 End-to-End Census Test is underway and results are not final, and although it does not include a citizenship question, it is noteworthy that our response rates are higher than projected.

6. We would like to hear how the Census Bureau plans to assure the public of confidentiality protections. We also express concern that the knowledge of future availability of block-level estimates might lead to increased item or overall non-response, even if Title 13 effectively protects individual level data. Currently, based on the ACS, these data are available on the block group level, but the specificity, detail and risk would be much greater with block level data from a complete census.

   Response: No one should be afraid to stand up and be counted. Under Title 13 of the United States Code (Title 13), the answers a person provides on a census form may not be used for law enforcement or any other non-statistical purpose. Furthermore, the Census Bureau cannot make any publication of data that would reveal the identity of an individual or how an individual responded to a question. Anyone who handles Census Bureau data swears an oath to keep those data confidential for life. Violations of these Title 13 confidentiality provisions are punishable by fines and up to five years in prison. We are asking tribal, federal, state, and local leaders to reassure the public of these facts. Such public encouragement and reassurance would help achieve the goal that we share and are working very hard to achieve: a complete and accurate census. By encouraging

noncitizens, their friends, and their families to respond to the census, you can help the Census Bureau conduct a complete and accurate count. This would, in turn, provide the anonymous consideration of everyone. Better citizenship data will allow stronger enforcement of the Voting Rights Act to protect minorities, and accurate numbers will help governments and civic organizations provide better services to all. As with all other questions we ask, responses are completely confidential and cannot be shared with others. We assure the public of this information regularly and will continue to do so through our 2020 Census Integrated Communications Contract and a multichannel, sophisticated, data-based advertising campaign that delivers the right message to the right audience in the right place and at the right time

7. We believe adding the citizenship question has important implications for communications strategy. We would like to have relevant Census staff and Y&R present at the fall meeting to share their progress and plans in light of CBAMS results and the political context.

   Response: We will review Census Barriers Attitudes and Measures Survey results and related issues at an upcoming CSAC meeting as soon as the results are ready.

8. Given the Census Bureau will need to produce block level estimates, the Census Bureau must determine how to incorporate Census data and administrative records to create estimates of citizenship by census block. CSAC would like to be involved in the decision making. We request information on the timeline, relevant decision makers, and other information that will keep us up to speed.

   Response: We are currently developing our approach to this work and will keep the CSAC apprised as we refine the methodology.

9. CSAC requests that at its next meeting John Abowd report on how the release of citizenship data at the block level will affect the risk of disclosure of personal information.

   Response: John Abowd will be addressing disclosure protection of block level data and public confidentiality at the next CSAC meeting.

10. Even before the full communications strategy for 2020 is set, we urge the Census Bureau to be proactive about communications countering false information published through social media.

    Response: The Census Bureau agrees. False information published on social media is one of the key issues for many federal agencies. The Census Bureau is currently developing requirements for the social media component of the Integrated Communications Contract. These requirements will include monitoring social media messaging and developing strategies to respond not only to potential and actual negative, but also to false information. These strategies will apply to communications in both traditional and

social media. The Census Bureau currently is working with Team Young & Rubicam (Y&R) and leveraging their experience in this area.

11. We encourage the Census Bureau to further investigate whether application of statistical methods to the ACS data on citizenship could satisfy the needs to enforce the Voting Rights Act that Sec. Ross discusses. We would like to have a presentation on this at the next CSAC meeting.

    Response: The Census Bureau is researching how to produce block-level citizen voting-age population data by race and ethnicity. A report will be delivered to CSAC upon completion.

Section 2: Update on the 2020 Census

We encourage the Census Bureau retrospectively to look back over the last decade to see which deadlines it has met and which have not been met. Doing so could identify the particular areas of weakness and areas where there is a need to invest time and energy.

Response: The Census Bureau accepts this recommendation. The 2020 Census plans to conduct lessons learned and produce assessment reports that will look back across the entire life cycle of the 2020 Census to see which deadlines were met and which were not met. These assessment reports will be developed through 2023.

Section 3: 2018 End-to-End Test

The Committee looks forward to an interim report on the results of the 2018 End-to-End test at its next meeting. Some topics that the Committee highlighted in its questions during the session include:

1. Whether item-non-response varies by method of completion (e.g. internet, phone).

   Response: The Census Bureau accepts this recommendation and would be happy to share any available results at the next meeting scheduled for September 2018. The 2018 Census Test does not conclude until July 31, 2018. As a result, we may not have enough time to process and analyze the operational and response data necessary to fully compile the results. In our post-2010 testing, we saw higher item nonresponse rates for paper responses and lower nonresponse rates for electronic modes. This result primarily is driven by the design of the electronic modes; prompting respondents when they skip a question typically succeeds in eliciting a response to the skipped question.

2. Whether the use of CAPTCHA continues to be an effective deterrent against bots and whether CAPTCHA is differentially burdensome to respondents by demographic group.

Response: The Census Bureau accepts this recommendation. reCAPTCHA has successfully been used in census tests since 2016 and is just one piece of a larger cadre of security measures that will be used to deter spam, bots, and other cyberattack attempts.

For the 2018 Census Test, a new version of reCAPTCHA is being used that works invisibly in the background to identify bots from humans. As a result, only some users will have to solve the reCAPTCHA to get into the instrument. As part of the "2018 End-to-End Census Test, Internet Self-Response Operational Assessment Study Plan", we will use paradata and data from Google to look at how respondents interacted with reCAPTCHA. This paradata will include the number of attempts to get into the instrument, the number of break-offs that occurred during Google reCAPTCHA validation, and if reCAPTCHA was more burdensome for certain demographic groups. It is important to note that demographic analysis can only be done on those cases where the reCAPTCHA was presented to the user and the user passed the reCAPTCHA validation to get into the survey.

3. Whether non-ID response options posed any new problems to obtaining an accurate count.

   Response: The Census Bureau accepts this recommendation. The Non-ID (NID) operation, in support of the 2018 End-to-End Census Test, is currently on going. Respondents continue to respond using the NID option. The clerical and Office Based Address Validation processes began in May. We currently do not have any results to share from the Test. We will be able to provide initial feedback during the fall CSAC meeting.

4. How the use of administrative records for NRFU worked out.

   Response: The Census Bureau accepts this recommendation and would be happy to share any available results at the meeting scheduled for September 2018. Given that the NRFU operation doesn't conclude until July 31, 2018, the available results may be limited by the time needed to process and analyze NRFU operational and response data.

Section 4: Demonstration on Recruiting and Assessment

We commend the Census for focusing on applicant experience in the new recruiting and assessment platform. The online application will help reduce barriers for candidates and prevent a cumbersome process from hindering the goal of hiring the workforce needed for a successful Census.

1. We suggest the Census consider the value of having the voluntary fields of race, disability, etc. compared to potential costs of dissuading applicants concerned about discriminatory treatment. If they are kept, we suggest you place those questions at the end after the other components of the online form.

Response: While answering those questions is voluntary for the applicant, the Census Bureau is required t to provide the questions to all applicants with the option to respond. Because the questions should not be construed as part of the assessment of an applicant, we feel that the questions should remain as currently placed.

2. It would be helpful for users to have an overview of what they should expect before entering the application platform - asking about home address and transportation, asking about hours and days available, assessment tests, etc.

   Response: The Census Bureau agrees with this comment and has addressed this issue. Potential applicants interested in 2020 Census jobs first are directed to the *2020census.gov/jobs* website, which will be available starting September 4, 2018. We will provide visitors to the jobs site with information regarding the available jobs, including a Frequently Asked Questions (FAQs) section. The FAQs will provide assistance with the application used to apply for 2020 Census jobs. The FAQs also will include a section that describes the information needed to apply, such as home address (both physical and mailing), email address, Social Security number, veteran's preference documentation, general information about the work hour requirements for both field and office positions, etc. We also will include general information about the job assessments and sample assessment questions.

3. The presentation did not focus on the information pages available to potential candidates before they enter the application platform, but we encourage having clear and complete information about the opportunities and processes.

   Response: The Census Bureau agrees and has already addressed this issue. As you havestated, the presentation focused on the functionality of the online Recruitment and Assessment application. Individuals interested in 2020 Census jobs first are directed to 2020census.gov/jobs. This jobs site which will be available starting September 4, 2018. On this site, the FAQs section will aprovide answers to questions that applicants may have concerning job opportunities and the application process. The FAQs cover a wide range of topics, including: job qualifications, the application process, sample assessment questions, background checks, fingerprinting, job interviews and offers, and training. From the jobs site, a link will take the applicant directly to the online Recruitment and Assessment application.

4. We would recommend that the types of positions are clear with a standard job description, and as much information as possible about the rough magnitude of jobs open. We'd expect this latter information to be readily available from improved performance dashboards.

   Response: When an applicant applies for 2020 Census jobs, they complete one application to apply for all decennial positions (office and field) within the geographical area where they reside. General descriptions of these positions are included in the FAQs

on the jobs site, 2020census.gov/jobs. The FAQs clearly state that thousands of positions around the country will be filled, that the largest number of positions are in the field as census takers, and that office jobs are only available in areas where offices are located. Since the numbers and types of jobs available vary by timeframe and location, the jobs for which an applicant might be considered depend upon where they live and when they apply. Stating numbers might be misleading to applicants. If they are contacted for a phone interview concerning a position, additional information about the specific position will be provided to the applicant.

5. To be clear with applicants, hiring policies on disqualifying past criminal offenses should be public and explicit.

   Response: The Census Bureau agrees with this comment and has addressed this issue. The FAQs, which will be posted publicly on the 2020census.gov/jobs site, describes the background check process, fingerprinting, and specifically addresses the question, "Can I work for the government if I am an ex-offender?"

6. CSAC recommends that Census Bureau staff implement some means of verifying whether job applicants can actually speak and read the foreign languages they claim to speak.

   Response: The Census Bureau does not accept this recommendation. The staff that conducts telephone interviews for the positions would not necessarily have the ability to judge the specific language skills of the applicant. Each applicant self-certifies the accuracy of the information that they provide in their job application. The ramifications of an applicant making false statements on the job application, including claiming to have specific skills that they do not have, are clearly stated to all applicants.

Section 5: Questions Planned for the 2020 Census and the American Community Survey Process Overview

1. To ensure that non-English speakers are aware of Census Bureau resources available to complete the census, CSAC recommends that Bureau staff tabulate foreign languages spoken at home by county or MSA to identify areas with high concentration of language speakers and then consult lists of foreign language media outlets to find appropriate venues for advertising and outreach.

   Response: The Census Bureau accepts this recommendation. As part of the Integrated Partnership and Communications Program (IPC), the Communications Research and Analytics Team has developed several tabulations using ACS data to determine which areas have concentrations of foreign language speakers. The Census Bureau and Team Y&R are working together to develop non-English language creatives for these areas of the country and plan to reach non-English language media to make them aware of the request for proposal (RFP) process for securing media buys. The Census Bureau is working with Team Y&R to develop that process. We will share information with CSAC on how and

where all media vendors can access the RFP and other relevant information. We will also rely heavily on our multicultural subcontractors to socialize this information through their networks. In addition, the Census Bureau will conduct outreach with English and non-English media outlets at the headquarters and regional offices level.

2. CSAC recommends that Census Bureau staff explore the possible use of technology to identify respondents' preferred language of interview.

   Response: The Census Bureau does not accept this recommendation. The Census Bureau has considered the use of multilingual automated tools. We conclude that no currently-available solution meets our standards for accuracy and reliability. We will continue to provide language identification cards to enumerators to help identify languages spoken by respondents.

3. CSAC recommends that Census Bureau train enumerators to be able to confirm that family-provided translators actually understand the meaning of the questions they are translating and can communicate it to the respondent.

   Response: The Census Bureau does not accept this recommendation. Enumerators cannot judge translation capabilities of family members. We do our best to offer enumerators proficient in the necessary language to ensure that respondent understand the questions.

4. CSAC recommends that the content be the same for all 59 languages rather than being abbreviated for languages supported by internet self-report assistance or census questionnaire assistance.

   Response: The Census Bureau agrees with this recommendation to use the same content for all 59 non-English language guides. The Census Bureau will ensure that translation is meaningful, culturally relevant, and easily understood by non-English-speaking respondents.

5. In order to communicate the availability of language guide templates and video shells for languages beyond the 59 supported languages, CSAC recommends creating a check box for "other language" with a write-in space, and then programming the interface to send a message to the Decennial Translation Branch to assign a callback or visit by an interviewer fluent in that language or a translator.

   Response: The Census Bureau does not accept this recommendation. The Census Bureau would like to clarify that the language guide templates and the video shells will not be automated tools. These templates and shells will be downloadable files that will be shared through our partnership staff. Our partnership staff will share these files with community members, as appropriate, and work with them to help develop additional guides.

6. The listing of racial groups on the Census is in decreasing order by number of people in the category. Thus, we recommend that for sex, Female be listed before Male, since there are more females than males in the United States. This should be implemented as soon as possible on the Census and all Census surveys.

   Response: The current Male and Female response ordering has been in place since the beginning of the self-response era for the decennial census, and is the order we use for all the major demographic surveys conducted by the Census Bureau. This request will be noted as a potential future research opportunity pending available funding and resources after the 2020 Census.

Section 6: Cyber Security in the 2020 Census

We make the following suggestions:

1. The Census Bureau should conduct phishing experiments and study other attacks on contractors, not just Census Bureau systems.

   Response: The Census Bureau is currently conducting anti-phishing exercises for all employees, both federal and contractors, who have a Census Bureau email address. The Bureau is actively involved with the interagency and industry experts to continuously learn about, and adapt to, the ever present and changing cyber threat landscape.

2. Be careful what information is posted publicly (contractor names, system architecture).

   Response: The Census Bureau appreciates the CSAC's recognition of the importance of carefully selecting what information we post publicly. The Census Bureau is deliberate about the nature and scope of the information we share and will continue to be diligent in this regard.

3. There should be stress tests for Denial of Service attacks.

   Response: The Census Bureau conducts continuous monitoring of systems and system stress tests as part of the Decennial implementation.

4. The Census Bureau should be proactive in educating the public about phishing attacks.

   Response: The Census Bureau accepts this recommendation. The Census Bureau currently is working to address these issues at the IPC operation, using both internal Census Bureau resources and those provided through the Integrated Communications Contract. Starting in December, Census Bureau staff and Team Y&R team members will conduct regular meetings focused on best communications practices on cybersecurity

issues. We intend to develop a crisis management plan specifically designed to address this type of issue.

5. Be prepared for complex social media threats.

   Response: The Census Bureau, in coordination with Team Y&R, is preparing for an increasingly relevant and active social media landscape. We recognize the misinformation and threats that exist on social media and are preparing to address those with experts both internal and external to the federal government.

6. Prepare for foreign actors entering fraudulent information.

   Response: The Census Bureau has incorporated into its operations both fraud detection and cyber security tools and processes that will identify, detect, protect, respond, and recover from threats related to the entering of potentially fraudulent information, whether from foreign or domestic sources. The Census Bureau is also working with federal intelligence partners to keep abreast of potential threats and is prepared, if necessary, to address those threats.

7. Ensure there are clear roles to manage external threats. While the Census Bureau is ultimately responsible for all threats, it does not have the capability to manage all external threats.

   Response: The Census Bureau is working with the Department , the U.S. Department of Homeland Security, and federal intelligences agencies responsible for cyber threats to receive briefings and technical information. The Census Bureau Computer Incident Response Team (BOC CIRT) and the Census Bureau Security Operations Center (SOC) are working to ensure that roles and responsibilities are clearly defined to effectively coordinate with partner agencies on external cybersecurity threats.

8. Work on detecting "cyber-trolling"- purposefully entering incorrect information.

   Response: On the front end of the data collection process, the Census Bureau has incorporated cybersecurity tools and processes to detect and prevent "cyber-trolling" bots and automated attacks. We also have incorporated fraud detection systems to review collected data to identify suspicious data patterns that could indicate the entering of incorrect information.

9. We would like to know what happens if there are two entries for the same person, but one was based on a stolen identity (for non-id cases)? Records would likely be identical for Person 1 except for the phone number/email or lack of contact information.

   Response: The Census Bureau has a long history of identifying and de-duplicating multiple paper responses from a single household. We have evolved those processes to work for

responses submitted online and by phone. We do not divulge our specific procedures for addressing these situations like resolving non-ID duplications, to ensure that our methods remain secure and effective; however, please be assured that we address such scenarios.

Section 7: Administrative Records Research Usage in the American Community Survey

1. Census should be cautious about incorporating Administrative Records that are derived from proprietary or black-box methods, as it will not be possible to validate methods or results, or to be confident about changes to underlying systems or methods over time.

   Response: The Census Bureau accepts and concurs with the CSAC recommendation to be cautious about incorporating administrative records that are derived from proprietary or black-box methods. The Census Bureau will develop fitness-for-use criteria to govern the use of administrative records for the ACS, which will establish criteria regarding data source and methodology.

Section 8: Administrative Records Usage in the 2020 Census

There are the following recommendations based on the work of the Administrative Records Data Working Group and endorsed by CSAC:

1. Census should continue to explore strategies for incorporating out-of-sample forecast error (also called cross validation) into the multinomial regression models for the 2020 Census to improve and refine categorizations of Occupied, Vacant and Non-Existent housing and to refine the assignment of probabilities for correct addresses.

   Response: The Census Bureau conditionally accepts this recommendation. In a previous analysis, the Census Bureau conducted some out-of-sample forecast error methods. If we conduct additional regression modeling research, we will incorporate this suggestion where appropriate. With respect to the logistic models, we have used different training data samples while fitting the model against 2010 data. We also have used ACS data to fit the models. Finally, we have studied using different modeling techniques other than logistic regressions, such as classification trees and random forests. This research has demonstrated low variability in identifying occupied, vacant, and nonexistent addresses across the multiple techniques.

2. Census should test additional thresholds for owner-renter and Hispanic origin sub-national models. Two additions could be considered: adding new thresholds beyond the less than and greater than 20% breakpoint currently being tested, and consider testing more than two categories. For example, the urban/rural distinction is currently binary – could more than two categories be considered, as for example suburban and/or exurban.

   Response: The Census Bureau conditionally accepts this recommendation. The thresholds were part of research undertaken to determine the existence of any benefits

to using separate models for some areas, as compared to one national model. The Census Bureau agrees with the working group assessment that there was very little difference and benefit to using separate models. Using separate models also introduces more operational complexity. Based on these factors, the Census Bureau has no plans to do additional research on separate models. If further research is contemplated in the future, we will keep this recommendation in mind.

3. Census should continue testing to further reduce bias in assigning characteristics of age, sex, race / origin and tenure in documented low income and marginal demographic communities, where inaccurate assignments may be more pronounced. Special attention should be paid to simulations applying "Within Household" and "Nearest Neighbor" hot deck assignments, given the recent decisions against using a combined question for collecting race/ethnicity or a separate "Middle Eastern or North African" (MENA) category.

   Response: The Census Bureau accepts this recommendation. The Census Bureau will analyze the results of the edit and imputation procedures for the 2018 End-to-End Census Test. This analysis will allow us to decide whether we need to enhance any procedures for the 2020 Census implementation. With respect to coverage of traditionally low income and marginal demographic communities, the Census Bureau is researching the incorporation of additional administrative record sources as part of its characteristic imputation procedures. These potential record sources include Medicaid or state program participation data. For the 2020 Census, the Census Bureau wants to implement procedures that reduce bias in assigning characteristics when the respondent does not provide that information.

4. Census should implement formal protocols for risks, dependencies and priorities for AR use in handling NRFU units for the upcoming decennial census data collection and for future efforts. Testing and analysis take time but are less costly than repeated NRFU follow-ups. Additionally, incomplete testing might provide incomplete information. CSAC recommends testing additional parameters / thresholds, additional categories, and/or additional test areas.

   To this end, we suggest that the Census Bureau assign/hire more statisticians to carry out the technical tasks necessary for investigating administrative records use in the 2020 Census, since there is current insufficient staff to accomplish the tasks and this would overall save money.

   Response: The Census Bureau conditionally accepts this recommendation. The Census Bureau agrees about implementing formal protocols for risks, dependencies, and priorities for the administrative record usage in the NRFU operation. During the research and testing phase, the Census Bureau had more staff assigned to carry out the technical research to investigate the administrative record usage. We are now in our operational phase and already working on implementing procedures with the production systems for

the 2018 End-to-End Census Test. While the Census Bureau has staffing assigned that we believe is appropriate for this point in the operational life cycle, we will reassess to determine if additional resources need to be assigned.

5. To assure the goal of reducing Decennial costs by $1.4B while maintaining quality, we recommend the Census Bureau prioritize the effort of those involved in working on Administrative Records activities. With the understanding that both staffing and time are limited, the Bureau should evaluate the remaining activities to determine benefit, effort, risk, and dependencies. Ideally, the activities with the highest benefit and lowest effort, risk, and dependencies should be worked on first. This is important in light of the possibility that in 2020 those that choose to not respond may increase.

   Response: The Census Bureau accepts this recommendation. The Census Bureau agrees with the recommendation that the Census Bureau prioritize the effort of those involved in working on administrative record activities. We evaluated the remaining activities and are allocating resources that take into account benefit, effort, risks, and dependencies.

6. CSAC would appreciate a presentation on any updated estimate of NRFU in 2020, including the possibility of increased non response in combination with the savings from Administrative Records.

   Response: The Census Bureau accepts this recommendation and would be happy to share any updated estimates associated with the NRFU operation in 2020.

Section 9: New Annual Business Survey

1. CSAC expressed appreciation and support for the presentation and initiative to conduct an Annual Business Survey. There were no comments on the presenter's questions.

   Response: We appreciate CSAC's support for this work.

2. CSAC wants to see more effort to identify and gather information about non-employer businesses. We would like to know if more information can be obtained through the ACS's question on employment, possibly combined with administrative records.

   Response: Our plan is to leverage existing individual-level administrative and census records to assign demographic characteristics to the universe of nonemployers and produce an annual non-employer business statistics by the demographics of the business owner. Demographic characteristics include veteran status, sex, race, Hispanic origin, age, and citizenship at birth. One of the main advantages of this nonemployer work is a reduction of respondent burden on approximately 24 million nonemployer businesses while creating a replacement annual data product for nonemployers.

In addition, we will work with ACS staff to determine whether there is additional information we can collect or use in our work on the Annual Business Survey (ABS) and nonemployers.

3. CSAC would be interested in a follow-up presentation on the progress of the ABS and on initiatives to gather more information about non-employer businesses or individuals who are generating income but do not necessarily regard themselves as being in business. We would also like to hear how/whether Census is coordinating with BLS, BEA, SBA, IRS and other agencies that may have an interest in both employer and non-employer businesses.

   Response: We would be happy to provide a follow up presentation to discuss the progress of the ABS, as well as initiatives to gather more information about nonemployer businesses or individuals. In close collaboration with stakeholders, we have developed a strategy that will deliver nonemployer statistics based on administrative data of higher quality, in a timely fashion and more frequently than previously possible. We continue to explore the expansion of this program in close consultation with stakeholders. Stakeholders have identified the presence of contract work, part time salaried work, the trade status of the business, and innovation activities as a few of the additional nonemployer characteristics of interest. We are committed to producing the best statistics possible as part of the nonemployer statistics program and to being responsive to stakeholders needs.