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**Demographic Statistical Methods Division  
Survey Methodology**

# **2021 National Survey of College Graduates Bridge Panel Analysis Report**

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The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release.

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## Executive Summary

In parallel to the production sample for the 2021 National Survey of College Graduates (NSCG), the National Center for Science and Engineering Statistics within the National Science Foundation tested new questions and formatting changes for the NSCG using an experimental, non-production sample called the Bridge Panel. The Bridge Panel used a smaller sample compared to NSCG production to determine the effect of proposed question changes and new content on survey response and estimates.

The 2021 Bridge Panel evaluated three types of questions: formatting of a series of Yes/No and rating scale questions, Sexual Orientation and Gender Identity (SOGI) questions, and coronavirus pandemic-related questions. Our goal in testing the format of the Yes/No and rating scale questions was to determine whether the item-by-item format improved usability and data quality compared to grid questions. For SOGI questions, we studied new ways of asking about gender and sexual orientation to complement ongoing SOGI research efforts. Lastly, we sought to measure the impact of the coronavirus pandemic-related questions and response options, which were added to the production instrument, on response distributions and respondent interactions.

In comparing the grid and item-by-item formats, we found that the item-by-item format had higher breakoff rates, more changed answers, and slightly longer completion times than the grid format. However, we also saw that item-by-item format had lower item nonresponse and more “Yes” or positive responses. We would suggest prioritizing lower breakoffs over higher item nonresponse, since the NSCG would lose all the items following a breakoff and likely experience a decrease in the sample persons available for future cycles. Therefore, we suggest continuing to use the grid format for screens greater than or equal to 992-pixels wide, which excludes most smartphones, while also conducting new research to examine the differences in response distributions between the two formats.

The Bridge Panel tested three new SOGI questions (i.e., Birth Sex, Current Gender, and Sexual Orientation) in place of the single production question, “What is your sex?” (i.e., Sex). Other than the collective breakoff rate, the only statistical comparisons that were made were between Birth Sex and Sex. We noticed that Sex asked on the production instrument appeared to capture similar responses as the Birth Sex on the Bridge Panel. We also noticed that there were a notable number of breakoffs on Sexual Orientation but none on the other SOGI questions. We recommend the NSCG use Birth Sex and Current Gender in production and conduct more testing on Sexual Orientation in focus groups or cognitive testing to gain more insight on respondents’ reactions and responses to this question. We also note that previous research has recommended having the sex and gender questions on the same screen to provide context and possibly reduce ordering concerns. Therefore, we suggest putting Birth Sex and Current Gender together.

An analysis of new response options about the coronavirus pandemic studied whether adding specific references to the pandemic on the production instrument affected responses. We compared these responses to the Bridge Panel, which did not reference the pandemic. However, the only questions on the production instrument that had direct references to the pandemic and had corresponding questions on the Bridge Panel, were questions formatted as grids. Since we noticed a significant difference between grid and item-by-item formatted questions, we weren't able to make clear conclusions about the effect of the coronavirus references. There was one question on both the production and Bridge Panel that was not a grid that had a different response option, changed because of the increase in virtual conferences and meetings during the pandemic. This question was about professional conference attendance and there was a significantly higher response to "Yes, I attended in person or virtually (i.e., online or by remote access)," as it read on the production instrument, compared to "Yes", as it read on the Bridge Panel. The additional "Yes" responses to the expanded definition to include virtual conferences and meetings captured more attendance from respondents. The rest of the questions referring to the coronavirus pandemic did not have matching questions on the Bridge Panel (e.g., effect on salary and telework questions). Additionally, we reviewed responses to the pandemic-related questions added to the production instrument by mode. Differences were found across mode for almost all questions; however, it was difficult to attribute the differences solely to mode, as other factors, such as self-selection, likely contributed. The purpose of these analyses was to better understand the effect that pandemic references might have had on survey response. Because of confounding and other factors, there were not clear conclusions for most of the pandemic analyses.

This Bridge Panel analysis provided a first look at the effects of changing the format of Yes/No and rating scale questions, testing SOGI questions, and provided additional questions for further research to ensure we continue to provide high quality data and an excellent user experience to survey respondents. For Yes/No and rating scale questions, we suggest continuing to use the grid format and conducting additional analysis to determine respondents' true responses. For the newly proposed SOGI questions, we recommend adding Birth Sex and Current Gender into the production instrument on the same screen and conducting more testing on Sexual Orientation in focus groups or cognitive testing to gain more insight on respondents' reactions and responses to this question.

## 1. Introduction

The NSCG is a repeated cross-sectional biennial survey conducted since the 1970s. It is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF). On behalf of NCSES, under an interagency agreement, the U.S. Census Bureau serves as the data collection contractor for the NSCG. The survey provides data on the nation's college graduates, focusing on those in the Science and Engineering (S&E) workforce. The NSCG examines various characteristics of college-educated individuals, such as occupation, work activities, salary, and the relationship of degree field to occupation (U.S. Census Bureau, 2019).

In parallel to the production sample for the 2021 NSCG, NCSES tested new questions and question formatting for the NSCG using an experimental, non-production sample called the Bridge Panel. The Bridge Panel used a smaller sample to study proposed question changes and new content. The sample included 5,053 cases contacted for the first time during the regular NSCG data collection period. While similar to new cohort cases from the production sample, the Bridge Panel only received web invitations and were not eligible to respond by paper or computer-assisted telephone interview (CATI).

The 2021 National Survey of College Graduates (NSCG) Bridge Panel experiment tested the potential impacts of changing survey questions and using item-by-item formatting in the NSCG. The 2021 Bridge Panel evaluated three types of questions: formatting of a series of Yes/No and rating scale questions, Sexual Orientation and Gender Identity (SOGI) questions, and questions that referred to the coronavirus pandemic.<sup>1</sup> Otherwise, the Bridge Panel included all the same questions and sections as the 2021 new cohort production instrument.

Our goal in testing the format of the Yes/No and rating scale questions was to determine whether the item-by-item format improved usability and data quality compared to grid questions. For SOGI questions, we studied new ways of asking about gender and sexual orientation to complement ongoing SOGI research efforts.<sup>2</sup> Lastly, we sought to measure the impact of the coronavirus pandemic-related questions and response options, which were added to the production instrument, on response distributions and respondent interactions.

## 2. Methodology

The following section outlines the research questions and the methodology used to answer them.

Sampling for the 2021 NSCG new cohort production survey had a higher priority than the sampling for the Bridge Panel. In other words, production cases were selected first; then the Bridge Panel selected from the remaining cases on the frame. Due to the prioritized selection process, cases selected into the NSCG new cohort production sample with certainty (i.e., "take all" or "self-representative") are not represented in the Bridge Panel. Approximately 35 percent of the new cohort sample is comprised of certainty cases. To make the NSCG new cohort

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<sup>1</sup> The coronavirus pandemic refers to the 2019 coronavirus pandemic (COVID-19).

<sup>2</sup> For more information on NCSES's ongoing SOGI research efforts, see <https://nces.nsf.gov/about/faqs#card733>.



sample more comparable to the Bridge Panel, we removed certainty cases from this analysis when making comparisons.<sup>3</sup> Table 15 in Appendix A provides demographic characteristics for the full Bridge Panel sample alongside demographic characteristics for all eligible respondents to the Bridge Panel survey. Further, other than the last research question regarding completion mode, this analysis will be comparing new cohort web responses to Bridge Panel web responses since the Bridge Panel only provided the web mode option.

## **2.1 Research Questions**

We sought to answer the following research questions to determine the effects of question changes and additions.

### **2.1.1 Grid research questions**

1. Does changing the grid format to an item-by-item format affect response or respondents' interactions with the web survey instrument?
2. Does the effect from research question 2.1.1.1 vary by the number of response options in the grid or item-by-item list?

### **2.1.2 SOGI research questions**

1. Do respondents appear to have issues understanding or responding to the new sex, gender, and sexual orientation questions relative to the production sex question and questions of similar length and number of response options?

### **2.1.3 Coronavirus pandemic research questions**

1. Does including questions about the coronavirus pandemic's effect on salary and income influence the final reported amount?
2. Is there a change in the response distributions when the pandemic response options are added to grid or item-by-item questions?
3. Looking at just the questions on the production instrument, are questions that refer to the coronavirus pandemic reported differently across CATI, paper, and web modes?<sup>4</sup>

## **2.2 Data Analysis**

All estimates were weighted to measure differences. We used base weights for the paradata analysis and final weights for the survey estimates. Alternate new cohort weights, created by

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<sup>3</sup> Weights were adjusted to account for removing certainty cases.

<sup>4</sup> This research question examined NSCG questions which referred to the pandemic across response modes, and it does not compare 2021 new cohort production to the 2021 Bridge Panel. Instead, it looks at both old and new cohort respondents, not Bridge Panel respondents. This research question is included in this analysis and report because it pertains to the coronavirus pandemic questions that are also examined during this report.

removing certainty cases, are used to compare production to the Bridge Panel. Equations for these estimates are found in Appendix B. Response distributions used edited and imputed data and final weights that account for nonresponse and other survey-specific weighting adjustments. We estimated variances using the successive difference replication method (Hall, Gilary, & Farber, 2021).

Completion times, changed answers, item nonresponse, mean salary and earnings estimates, and breakoff rates were compared, when appropriate, using t-tests of differences or a chi-square test of independence (alpha level of 0.10), between the NSCG production and Bridge Panel. Statistical differences in response distributions were identified using chi-square tests. Appendix C provides hypothesis test criteria for statistical tests performed in each research question section. The NSCG and Bridge Panel have a complex sample design, creating a large design effect which increases variance estimates. We expect that these design effects will create less opportunities for statistical significance in comparative tests, so we will note meaningful differences when warranted. For a full list of screenshots displaying the differences between the production and Bridge Panel questionnaires, see Appendix D.

We verified our findings using double programming, a verification process in which multiple staff develop program code independently to produce results. This practice helps ensure the quality of deliverables.<sup>5</sup>

For paradata measures, we included nonrespondents (those that logged into the web instrument but did not finish or ultimately completed the survey using another mode) and excluded ineligible, and for survey estimates we excluded nonrespondents and ineligible.

### **3. Assumptions and Limitations**

- Our experience has shown that paradata files are often messy (records out of order, incongruous time frames, missing observations). Data issues were dealt with on a case-by-case basis. There were no major record issues identified that impeded analysis.
- There are not corresponding questions on the production instrument to compare to the sexual orientation and gender identity questions on the Bridge Panel. We attempted to find meaningful comparisons to these questions. See Section 4.2 in the results for more information.
- Several grid-formatted questions intended to be analyzed with the Bridge Panel were confounded by two experimental treatments; grid questions that also contained pandemic-related response options. If there is a significant difference in response behavior and estimates when switching between grid to item-by-item formats, we will not be able to parse out the additional effect of the pandemic-related response options for these specific questions. See Section 4.3 in the results for more information.

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<sup>5</sup> For disclosure purposes, the code used for programming and verifying results will be saved on the M drive under the DSMD Survey Methodology area folder.

## 4. 2021 NSCG Bridge Panel Analysis Results

This section provides details specific for each analytical topic (i.e., grid, SOGI, and coronavirus pandemic-related questions) and its results.

### 4.1 Grid versus item-by-item analysis

Question and item wording and response options were the same for the 12 grid and item-by-item formatted questions we analyzed on both the production and Bridge Panel surveys.<sup>6</sup> However, the format of the questions differed. The production instrument displayed items in a grid with yes and no or scale responses horizontally while the Bridge Panel displayed items as individual questions with the yes and no or scale responses displayed vertically (shown in Figure 1). There are 12 questions in this analysis that contain 88 items total.

For the production instrument, if a respondent's browser width was less than 992-pixel resolution, which includes most smartphones, the grid was no longer displayed and was instead shown in the item-by-item format. For this reason, we limited our analysis of the grid questions to production respondents who logged in using browsers with a width of 992-pixels or greater resolution. This ensured that we only compared estimates between the grid to item-by-item displays.

Figure 1: Example questions formatted as grid versus item-by-item display (screenshots)

| Production (grid)  | Bridge Panel (item-by-item) |                       |    |  |                       |                       |                     |                       |                       |   |                       |                       |  |
|--|-----------------------------|-----------------------|----|--|-----------------------|-----------------------|---------------------|-----------------------|-----------------------|---|-----------------------|-----------------------|--|
| <p>Did your duties on this job require the technical expertise of a bachelor's degree or higher in...<br/><i>Select Yes or No for each Item.</i></p> <table border="1"><thead><tr><th></th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>Engineering, computer science, math, or the natural sciences</td><td><input type="radio"/></td><td><input type="radio"/></td></tr><tr><td>The social sciences</td><td><input type="radio"/></td><td><input type="radio"/></td></tr><tr><td>Some other field (e.g., health, business, or education), <i>specify</i></td><td><input type="radio"/></td><td><input type="radio"/></td></tr></tbody></table> <p>&lt; Previous      Next &gt;</p> |                             | Yes                   | No | Engineering, computer science, math, or the natural sciences | <input type="radio"/> | <input type="radio"/> | The social sciences | <input type="radio"/> | <input type="radio"/> | Some other field (e.g., health, business, or education), <i>specify</i> | <input type="radio"/> | <input type="radio"/> | <p>Did your duties on this job require the technical expertise of a bachelor's degree or higher in...<br/><i>Select Yes or No for each Item.</i></p> <p>1. Engineering, computer science, math, or the natural sciences<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>2. The social sciences<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>3. Some other field (e.g., health, business, or education), <i>specify</i><br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>&lt; Previous      Next &gt;</p> |
|  | Yes                         | No                    |    |  |                       |                       |                     |                       |                       |   |                       |                       |  |
| Engineering, computer science, math, or the natural sciences   | <input type="radio"/>       | <input type="radio"/> |    |  |                       |                       |                     |                       |                       |   |                       |                       |  |
| The social sciences  | <input type="radio"/>       | <input type="radio"/> |    |  |                       |                       |                     |                       |                       |   |                       |                       |  |
| Some other field (e.g., health, business, or education), <i>specify</i>  | <input type="radio"/>       | <input type="radio"/> |    |  |                       |                       |                     |                       |                       |   |                       |                       |  |

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, MGINTR0

<sup>6</sup> Some grid and item-by-item formatted questions also included pandemic-related response options that were not included in the Bridge Panel. Those are removed from this part of the analysis. We discuss the coronavirus pandemic-related questions more in Section 4.3.

#### 4.1.1 Grid versus item-by-item analysis results

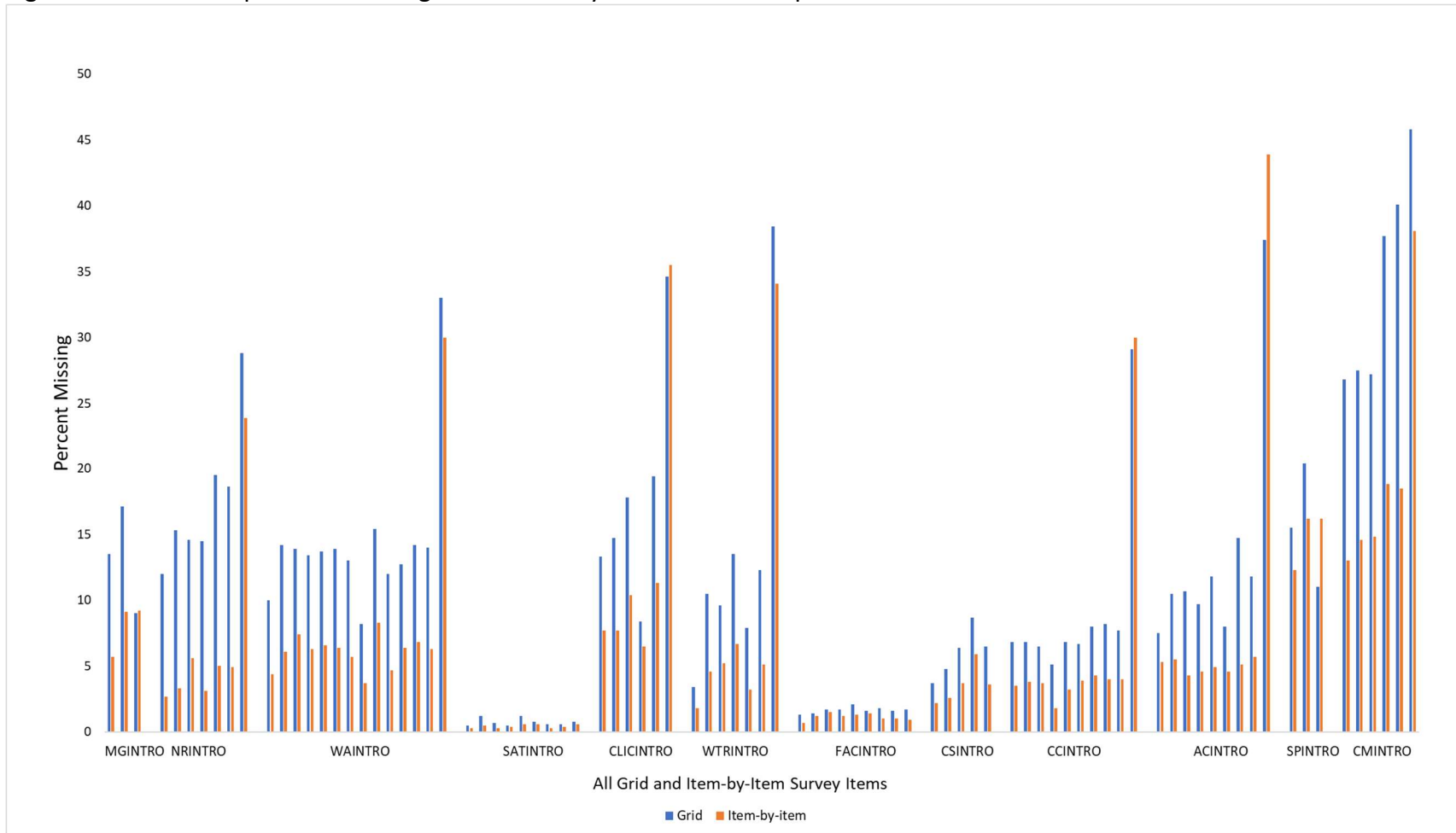
**Research Question 2.1.1.1: *Does changing the grid format to an item-by-item format affect response or respondents' interactions with the web survey instrument?***

##### **Item nonresponse rates**

To answer whether item format affected responses or respondents' interactions with the instrument, we calculated item nonresponse rates, response estimates, breakoff and changed answer rates, and completion times.

Figure 2 displays a summary of the item nonresponse rates for the 88 items in this analysis. The chart shows a side-by-side comparison of each item and its item missingness for both the grid and item-by-item format. For example, the first blue and green lines show that for the first item, the grid format had 13.5 percent item nonresponse and the item-by-item had 5.7 percent. The full table of item nonresponse estimates by item can be found in Table 19 in Appendix E.

Figure 2: Item nonresponse rates for grid and item-by-item formatted questions



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

The grid format usually had a higher item nonresponse rate compared to the corresponding item-by-item format; 72.7 percent of the 88 items tested showed significantly higher item nonresponse rates in the grid format. This was not surprising since previous research shows that some respondents do not attend to the “No” column when presented with the grid format. Specifically, Horwitz and her colleagues (2020) conducted a mouse tracking study and found that many respondents did not track their mouse over the “No” column at all. Two separate studies of college students found that one percent (Smyth, Christian, & Dillman, 2008) and 2.7 percent (Smyth, Dillman, Christian, & Stern, 2006) treated the grid as a check-all-that apply question and did not attend to the “No” column. Another study from Callegaro and colleagues (2015) found higher rates of respondents not using the “No” column (16.9 percent in one study and 3.2 percent in another). In the NSCG, many of these missing items are edited or imputed to a “No” selection. Of the two rating scale questions in this analysis, neither showed large item nonresponse for the grid or item-by-item formats.

Table 1 provides an example of item nonresponse rates for three of the 88 items in this analysis (i.e., one of the 12 questions): the question about job duties requiring technical expertise of a bachelor’s degree or higher. We see that 13.5 percent of respondents using the grid format left the first response option missing, while only 5.7 percent of those with the item-by-item format left the equivalent question missing. Similar patterns were observed for the other 11 questions, provided in Appendix E.

Table 1: Item nonresponse rates for NSCG question about job duties requiring technical expertise of a bachelor’s degree or higher

| Did your duties on the job require the technical expertise of a bachelor’s degree or higher in... | Item Nonresponse (Standard Error) |                             |                    |
|---|-----------------------------------|-----------------------------|--------------------|
|   | Grid (Production)                 | Item-by-item (Bridge panel) | Chi-square p-value |
| Engineering, computer science, math, or the natural sciences                                      | 13.5 (0.5)                        | 5.7 (0.8)                   | *<.0001            |
| The social sciences   | 17.1 (0.5)                        | 9.1 (0.9)                   | *<.0001            |
| Some other field (e.g., health, business, or education), specify:                                 | 9.0 (0.3)                         | 9.2 (1.0)                   | 0.7988             |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment, NSCG question MGINTR0

\*Denotes statistical significance with Rao-Scott Chi-square test at 0.10 alpha

Note: Rao-Scott Chi-square test compared item nonresponse distributions between grid and item-by-item

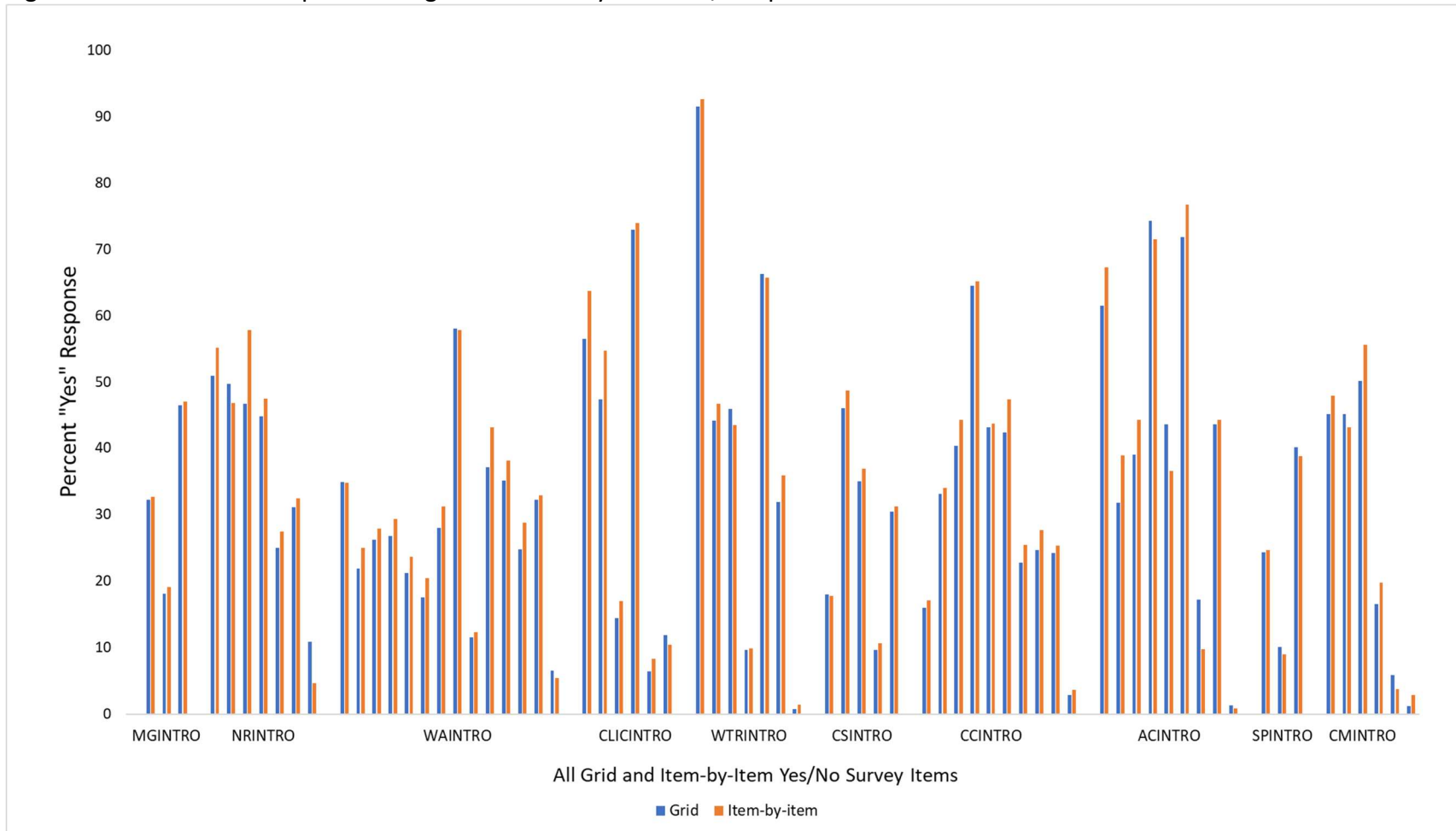
### Response distributions

It is generally important to avoid item nonresponse for better quality data. However, the item nonresponse rates were relatively low for rating scale questions in both formats, and research suggests that at least some of the item nonresponse in the grid format can be attributed to respondents not using the “No” column but still providing affirmative responses. Therefore, we also examined the final distributions of the edited and imputed data.

Figure 3 and Figure 4 provide a summary of the “Yes” and total positive rating scale responses for the grid and item-by-item formats, respectively. This summary shows that overall, the

estimates were similar, with the item-by-item format generally seeing more “Yes” responses for Yes/No questions and more positive responses for rating scale questions than grid. Approximately 19.3 percent of the 88 items had significantly different estimates between the grid and item-by-item. See Table 21 in Appendix F for a full list of the response distributions.

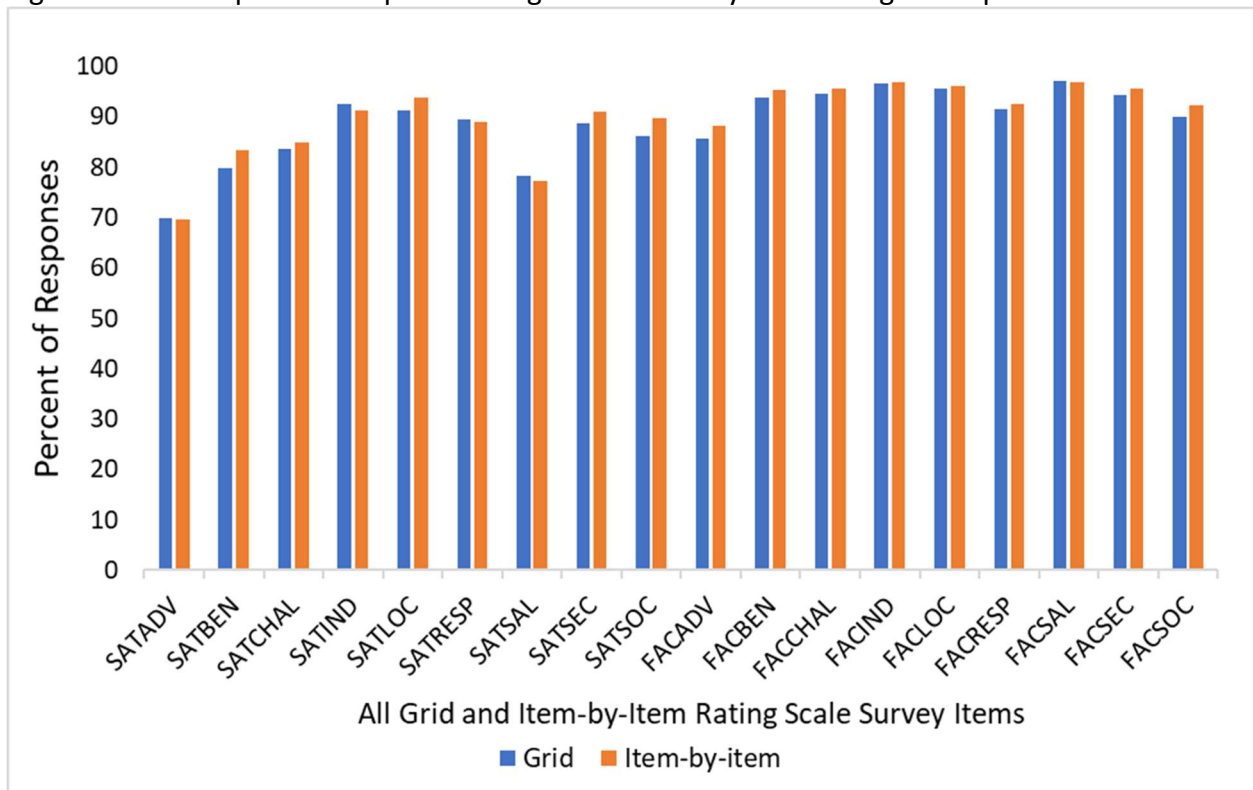
Figure 3: Percent “Yes” responses for grid and item-by-item Yes/No questions



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment



Figure 4: Percent positive responses for grid and item-by-item rating scale questions



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

As an example, Table 2 provides the percent of “Yes” responses for the NSCG question about job duties requiring technical expertise of a bachelor’s degree or higher. We can see that even though the production grid-format had more item nonresponse, there is no statistical difference in the percent of “Yes” responses. See Appendix F for response distributions for all the items in this analysis.

Table 2: Percent “Yes” for NSCG question about job duties requiring technical expertise of a bachelor’s degree or higher

| Did your duties on the job require the technical expertise of a bachelor’s degree or higher in... | Percent “Yes” Response (Standard Error) |                             |                    |
|---|---|-----------------------------|--------------------|
|   | Grid (Production)                       | Item-by-item (Bridge panel) | Chi-square p-value |
| Engineering, computer science, math, or the natural sciences                                      | 32.2 (0.7)                              | 32.6 (1.5)                  | 0.7774             |
| The social sciences   | 18.1 (0.5)                              | 19.1 (1.5)                  | 0.5459             |
| Some other field (e.g., health, business, or education), specify:                                 | 46.5 (0.7)                              | 47.0 (1.9)                  | 0.8108             |

Source: Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment, NSCG question MGINTRO

\*Denotes statistical significance with Rao-Scott Chi-square test at 0.10 alpha

Note: Rao-Scott Chi-square test compared response distributions between grid and item-by-item

Our findings that the item-by-item format usually had more affirmative answers are consistent with prior research comparing a check-all-that-apply format to a Yes/No grid format. However, there is disagreement among researchers as to whether more is better. Several researchers believe that forced-choice answers demand more thought than check-all-that (Sudman & Bradburn, 1982). Many scholars believe that forced-choice answers elicit deeper cognitive processing (Bradburn, Sudman, & Wansink, 2004). The theory of deeper cognitive processing argues that the Yes/No forces respondents to consider each item singularly and possibly reduces satisficing strategies (Krosnick J., 1999; Smyth, Dillman, Christian, & Stern, 2006; Thomas & Klein, 2006; Nicolaas, Campanelli, Hope, Jackle, & Lynn, 2011)

On the other hand, some researchers believe these findings could also be explained by acquiescence response bias, which is “the tendency for survey respondents to agree with statements regardless of their content” (Holbrook, 2008). While most research on acquiescence bias focused on Agree/Disagree questions, it was extended to Yes/No questions by Krosnick and Presser (2010). Callegaro and colleagues (2015) conducted a meta-analysis to compare the two formats and identify which theory, deeper cognitive processing or acquiescence bias was more accurate for the forced-choice and check-all-that-apply debate but were unable to draw a clear conclusion. This leaves ambiguity regarding how more affirmative responses should be interpreted and what it means for data quality.

We believe that the findings from studies focused on check-all versus a Yes/No format can be extended to this grid and item-by-item experiment. In this case, the grid requires less cognitive burden than the item-by-item, as all the grid questions are placed together, and the respondent can view them all at once. Item-by-item, on the other hand, presents each item as an individual question, which could lead to more focus on each item rather than scanning through a list in a grid.

While we feel the deeper cognitive processing theory is more compelling, the acquiescence theory cannot be ignored, especially given that we tended to see more positive responses for the rating scale questions in the item-by-item format. Therefore, we balance the findings from the response distributions with additional analyses presented below to reach a recommendation in the conclusion section.

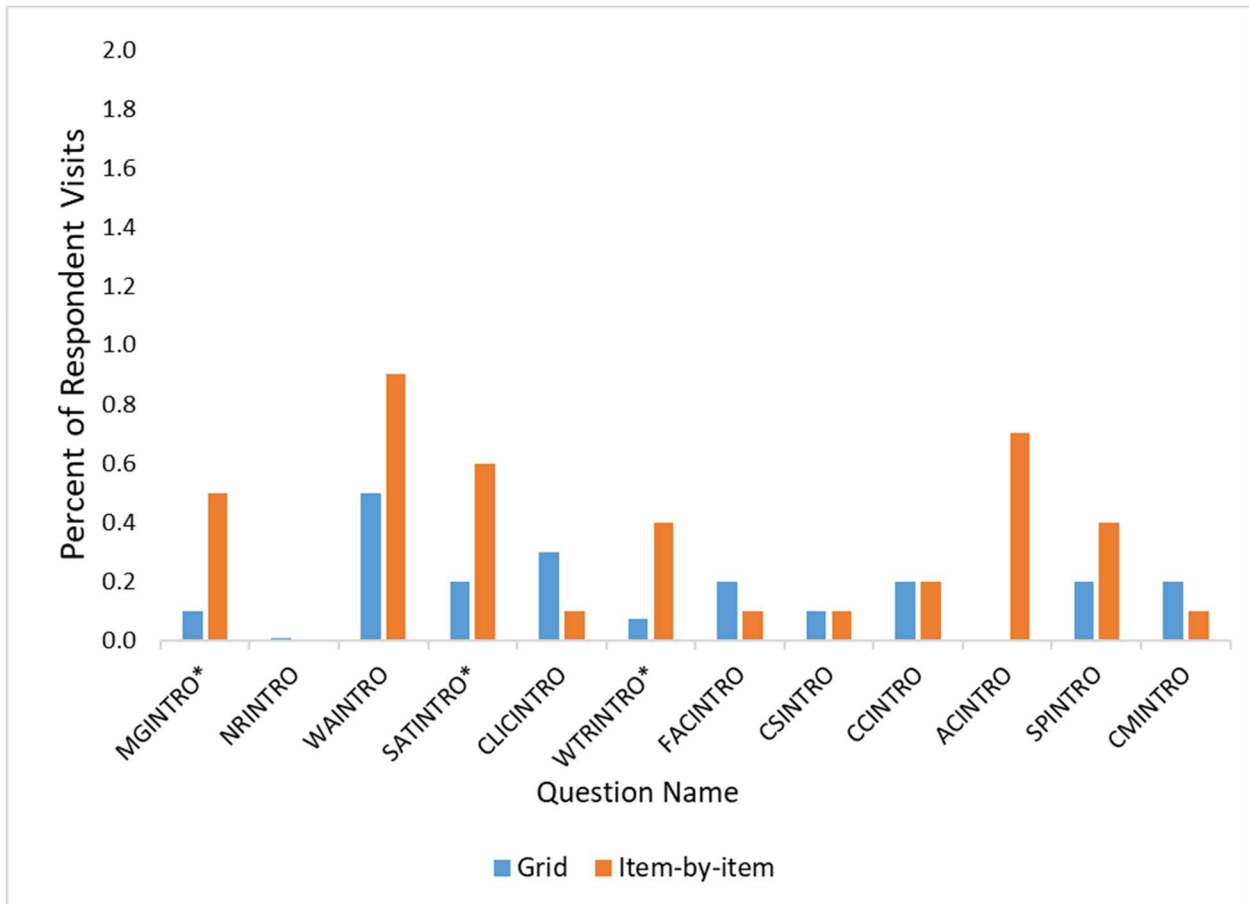
### **Breakoff rates**

A concern when changing question format is whether the change will prompt more breakoffs from the survey. More breakoffs would lead to less information collected in the questions following the newly formatted question and potentially fewer sample respondents eligible for future cycles. The summary in Figure 5 shows that the item-by-item format generally had a higher breakoff rate than the grid format. The screens in Figure 5 are presented in the order in which they appear in the web instrument. Significant differences occurred on MGINTRO (technical expertise required for principal job), SATINTRO (satisfaction with aspects of job), and

WTRINTRO (reasons for work-related training). See Table 31 in Appendix G for full results and question text.

Overall, the breakoff rate was higher with the item-by-item format by approximately 5.8 percentage points (12.8 percent (se = 1.4) breakoff rate for production, 18.6 percent (se = 4.1) for Bridge Panel). While this difference was not statistically significant, the difference was large enough that we think it is notable.

Figure 5: Breakoffs by screen as a percent of respondent visits for grid and item-by-item formatted questions



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

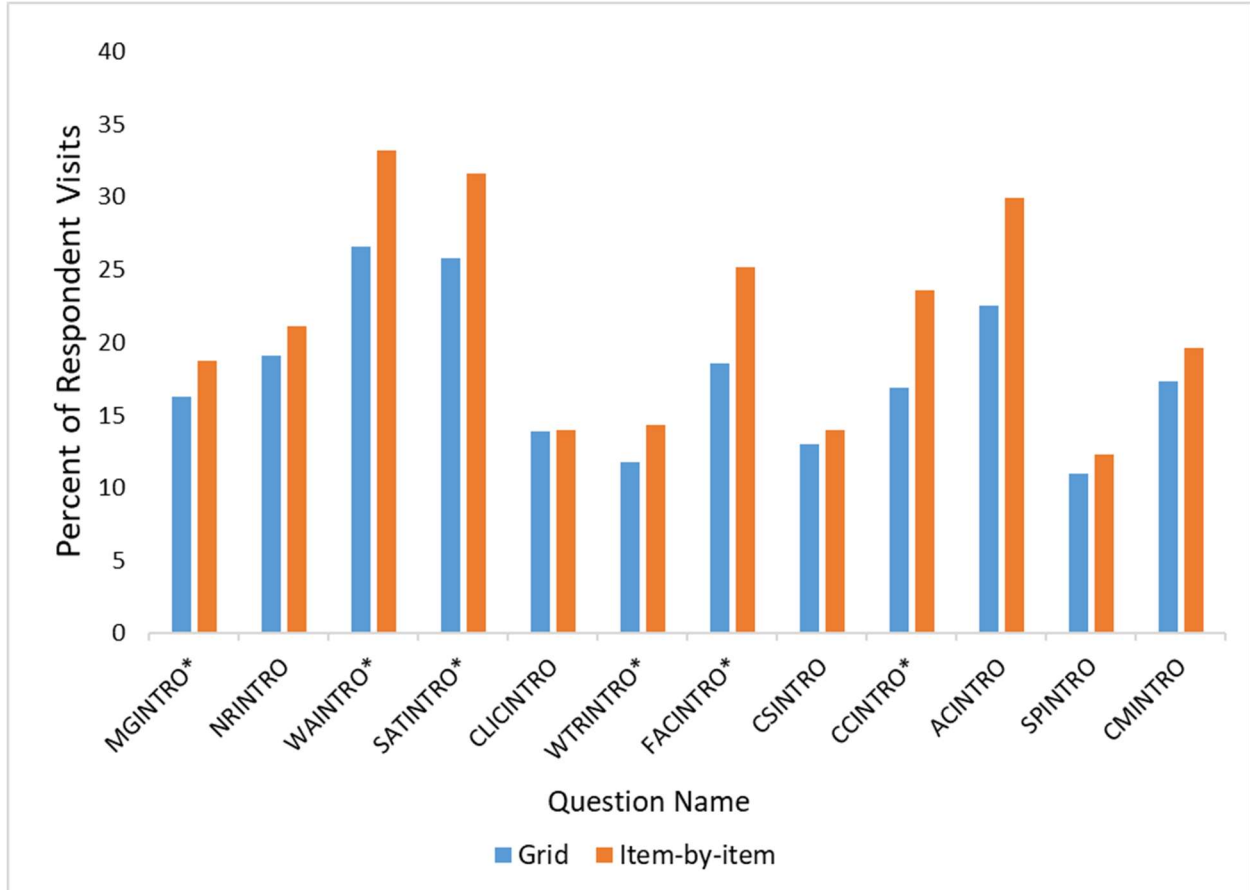
\*Denotes statistical significance at alpha 0.10

### Changed answers

Next, we examined the percent of changed answers on the 12 questions for the grid and item-by-item formats. Changed answer estimates can be an indication that the question or question formatting was burdensome or difficult for respondents. Figure 6 provides a summary of the changed answers as a percent of respondent visits to the screen for the grid and item-by-item questions. We can see that the item-by-item format tends to have more changed answers than

the grid format. However, given that respondents tend to leave grid questions blank as a proxy for a “No” response, we would expect fewer changed answers for the Yes/No grid questions, since respondents “changing” their blank response to “Yes” wouldn’t be captured in the estimate.

Figure 6: Changed answers as a percent of respondent visits for grid and item-by-item questions



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment  
 \*Denotes statistical significance with Rao-Scott Chi-square test at 0.10 alpha

Continuing to look at the NSCG question asking about duties on the job that required the technical expertise of a bachelor’s degree or higher, we see in Table 3 that of respondents who viewed this question, 16.3 percent had changed an answer on the grid format and 18.7 percent changed an answer on the item-by-item format. The difference between the percent of changed answers is 2.4 percentage points and is statistically significant. Additional results and question text can be found in Table 32 in Appendix G.

Table 3: Changed answers for NSCG question about job duties requiring technical expertise of a bachelor’s degree or higher

| <b>Changed Answers: Percent of Respondent Visits by Question<br/>(Standard Error)</b>                    |                              |  |                               |
|--|------------------------------|--|-------------------------------|
| <b>Did your duties on the job require the technical expertise of a bachelor’s degree or higher in...</b> | <b>Grid<br/>(Production)</b> | <b>Item-by-item<br/>(Bridge panel)</b> | <b>Chi-square<br/>p-value</b> |
|  | 16.3% (0.5)                  | 18.7% (1.4)                            | *0.0751                       |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment, NSCG question MGINTRO

\*Denotes statistical significance with Rao-Scott Chi-square test at 0.10 alpha

Note: Rao-Scott Chi-square test compared the rate of changed answers between grid and item-by-item

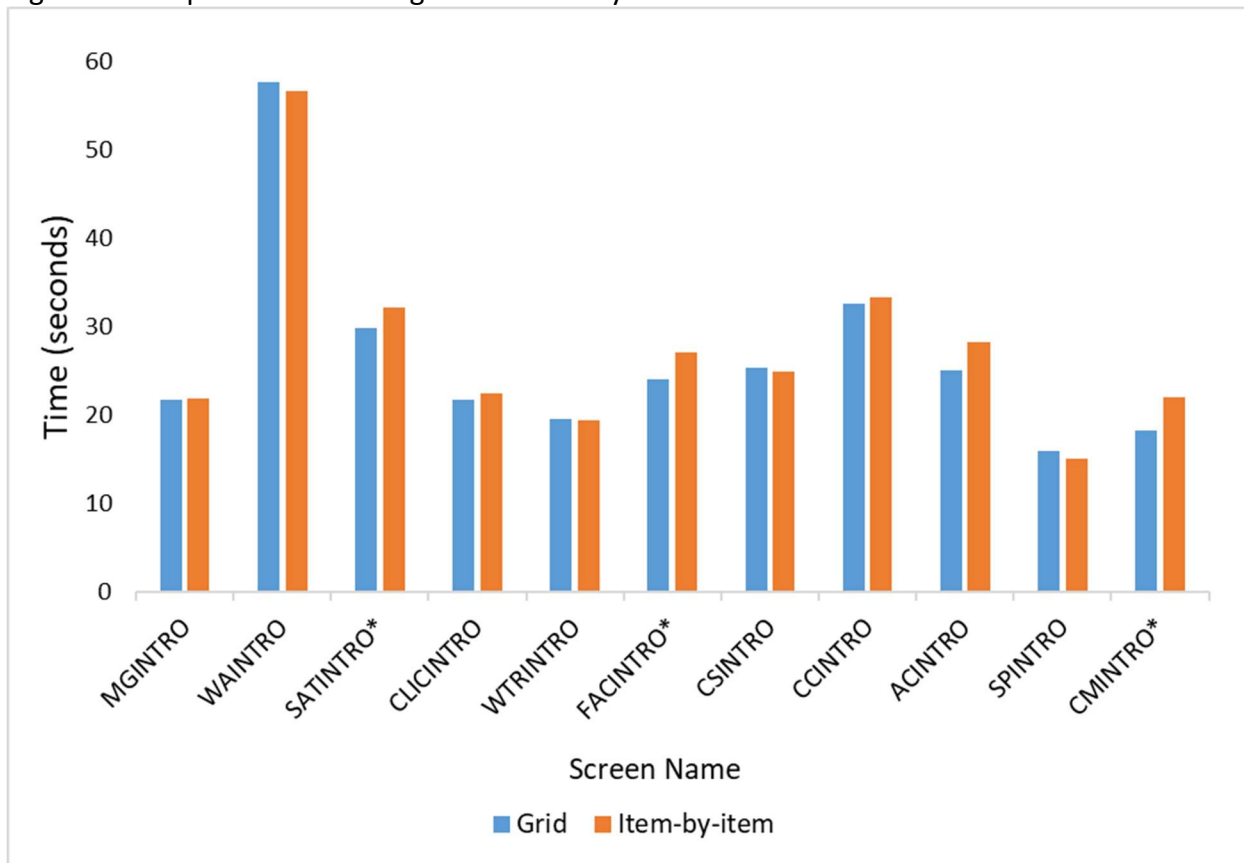
### Completion time

Lastly, we looked at the median time it took to complete the grid and the item-by-item questions. Figure 7 shows that the completion times were similar across the 12 questions. Only three of the 11 questions<sup>7</sup> had a significantly longer median completion time for the item-by-item format, ranging from a difference of 2.3 seconds to 3.7 seconds. Contrary to other studies (Revilla, Toninelli, & Ochoa, 2015), we see that the grid format had similar median completion times to the item-by-item format. See Table 34 in Appendix G for numeric results.

---

<sup>7</sup> We did not calculate completion times for NRINTRO (reasons for working outside the field of your highest degree) because most respondents who visited the screen that contained NRINTRO did not receive this follow-up question. Only respondents who selected “Not related” to the question, “To what extent was your work on your principal job related to your highest degree?” saw NRINTRO appear on the same screen after their selection.

Figure 7: Completion times for grid and item-by-item screens



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment  
 \*Denotes statistical significance at alpha 0.10

**Research Question 2.1.1.2: Does the effect from research question 2.1.1.1 vary by the number of response options in the grid or item-by-item list?**

Similar patterns were identified across all 12 questions in this analysis, regardless of the number of response options for that question.

**4.1.2 Grid analysis summary**

The analysis of the grid and item-by-item formats showed that the item-by-item format had higher breakoff rates, more changed answers, and slightly longer completion times than the grid format. However, it also showed that the item-by-item format had less item nonresponse and more “Yes” and positive responses than the grid format.

**4.2 SOGI research analysis**

New questions about sex, gender, and sexual orientation were tested on the 2021 Bridge Panel to more accurately reflect how respondents identify themselves. In the 2021 NSCG production questionnaire, there is only one question on SOGI topic - the sex question, which reads, “What

is your sex?" Alternatively, the Bridge Panel asks about the sex assigned at birth and the current gender identity (see Figure 8) as well as a question asking about sexual orientation (Figure 9).

Figure 8: Questions about sex and gender (screenshots)

| Production  | Bridge Panel  |
|---|---|
| <p><b>Sex</b></p> <p>What is your sex? <a href="#">Help</a></p> <p><input type="radio"/> Male<br/><input type="radio"/> Female</p> <p><input type="button" value=" &lt; Previous"/> <input type="button" value=" Next &gt;"/></p> | <p><b>Birth Sex</b></p> <p>What sex were you assigned at birth, on your original birth certificate?</p> <p><input type="radio"/> Male<br/><input type="radio"/> Female<br/><input type="radio"/> Don't know</p> <p><input type="button" value=" &lt; Previous"/> <input type="button" value=" Next &gt;"/></p><br><p><b>Current Gender</b></p> <p>What is your current gender identity?</p> <p><i>Select all that apply:</i></p> <p><input type="checkbox"/> Male<br/><input type="checkbox"/> Female<br/><input type="checkbox"/> Transgender<br/><input type="checkbox"/> Gender non-conforming<br/><input type="checkbox"/> Non-binary<br/><input type="checkbox"/> Genderfluid<br/><input type="checkbox"/> Genderqueer<br/><input type="checkbox"/> Other gender identity, <i>specify</i></p> <p><input type="text" value=""/></p> <p><input type="checkbox"/> Prefer not to answer</p> <p><input type="button" value=" &lt; Previous"/> <input type="button" value=" Next &gt;"/></p> |

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, GENDER, BIRTH\_GENDER, NOW\_GENDER

Figure 9: Question about sexual orientation (screenshot)

| Production               | Bridge Panel  |
|--------------------------|---|
| <p>Not on production</p> | <p><b>Sexual Orientation</b></p> <p>Regardless of your sexual experience, what is your sexual identity or orientation?</p> <p><i>Select all that apply:</i></p> <p><input type="checkbox"/> Lesbian or gay<br/><input type="checkbox"/> Straight, that is, not gay<br/><input type="checkbox"/> Bisexual<br/><input type="checkbox"/> Asexual<br/><input type="checkbox"/> Pansexual<br/><input type="checkbox"/> Fluid<br/><input type="checkbox"/> Queer<br/><input type="checkbox"/> Other sexual orientation, <i>specify</i></p> <p><input type="text" value=""/></p> <p><input type="checkbox"/> Prefer not to answer</p> <p><input type="button" value=" &lt; Previous"/> <input type="button" value=" Next &gt;"/></p> |

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, ORIENTATION

We calculated item nonresponse rates, response estimates, breakoff, changed answer and previous click rates, and completion times to examine the effect of these new questions.

Statistical comparisons across instruments were only made between the sex questions, Sex and Birth Sex, for most measures. Comparisons between Sex and Current Gender or Sexual Orientation were not appropriate in most cases as the topic, length, order, and type of question (select one vs. select all) were different. Additionally, if the intent is to have three questions in place of one, it's expected that item nonresponse, breakoffs, changed answers, previous clicks, and completion times will all be greater for three questions compared to one question.

#### 4.2.1 SOGI research results

In this section, we provide results for the SOGI analysis.

**Research Question 2.1.2.1: Do respondents appear to have issues understanding or responding to the new sex, gender, and sexual orientation questions relative to the production sex question and questions of similar length and number of response options?**

##### Item nonresponse rates

We started by calculating item nonresponse rates, displayed in Table 4. Item nonresponse rates for Sex (0.5 percent) and Birth Sex (0.4 percent) were not significantly different. Of the SOGI questions, the sexual orientation question had the highest item nonresponse rate at 2.1 percent. For comparison, we calculated item nonresponse rates for two other sensitive questions in the NSCG survey: Salary and Earn, displayed in Table 5. This offers more insight into the magnitude of the SOGI item nonresponse rates. The SOGI item nonresponse (between 0.5 and 2.1 percent) was lower than salary and earned income item nonresponse (between 5.1 and 7.2 percent).

Table 4: Item nonresponse rates: SOGI (standard errors)

| Production | Bridge Panel |                |                    |
|------------|--------------|----------------|--------------------|
|            | Birth Sex    | Current Gender | Sexual Orientation |
| 0.5% (0.1) | 0.4% (0.2)   | 0.6% (0.2)     | 2.1% (0.5)         |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

Note: Statistical comparison between Sex and Birth Sex was not significant at alpha 0.10 (p-value 0.5051)

Table 5: Item nonresponse rates: salary and earn (standard errors)

| Salary     |              | Earn       |              |
|------------|--------------|------------|--------------|
| Production | Bridge Panel | Production | Bridge Panel |
| 5.1% (0.3) | 5.5% (0.8)   | 7.0% (0.4) | 7.2% (0.8)   |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

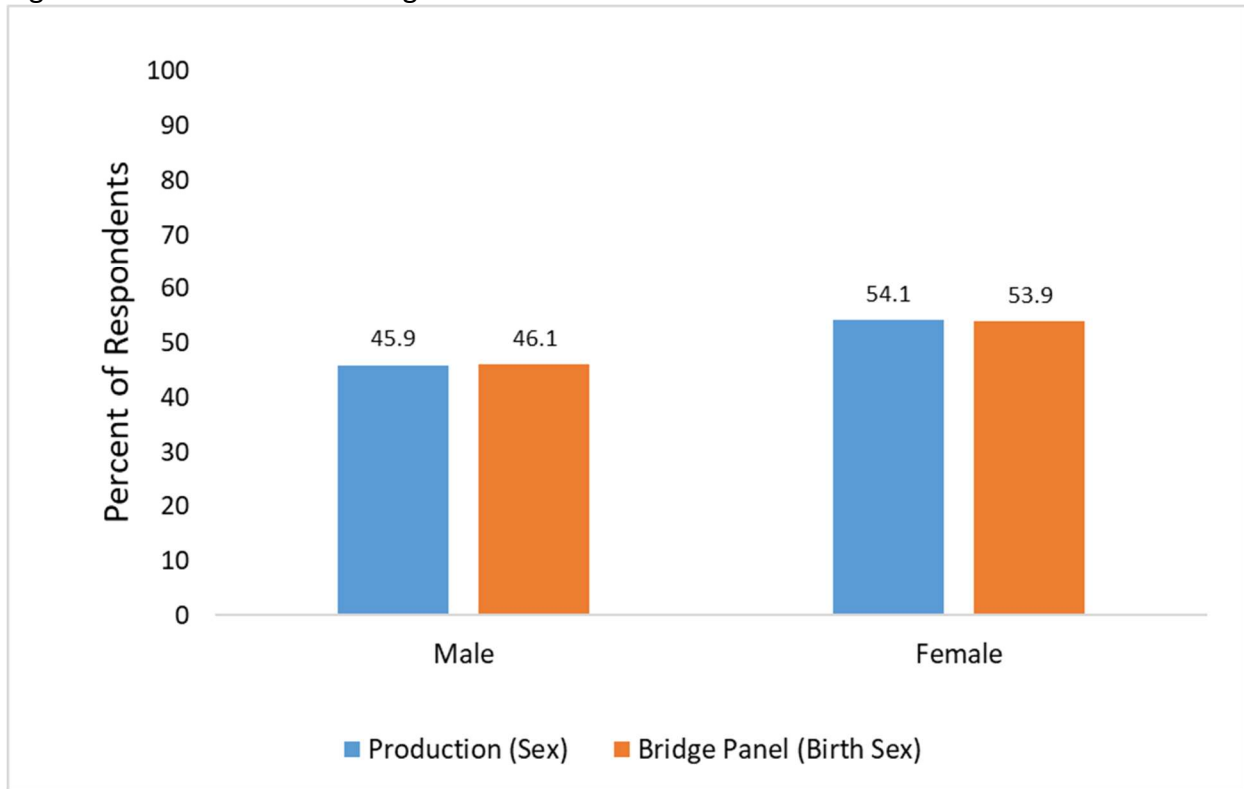
##### Response distributions

Next, we calculated the response distributions and found they were not significantly different between the production and bridge panel sex questions when removing the “Don’t know” responses from Birth Sex (which was less than 0.1 percent of respondents), displayed in Figure 10. The difference in the percentage of male and female respondents between the two



questions is 0.2 percentage points. This finding suggests that asking, “What is your sex?” in the production instrument is similar to asking “What sex were you assigned at birth, on your original birth certificate?” in the Bridge Panel instrument.

Figure 10: Production and Bridge Panel distribution of sex



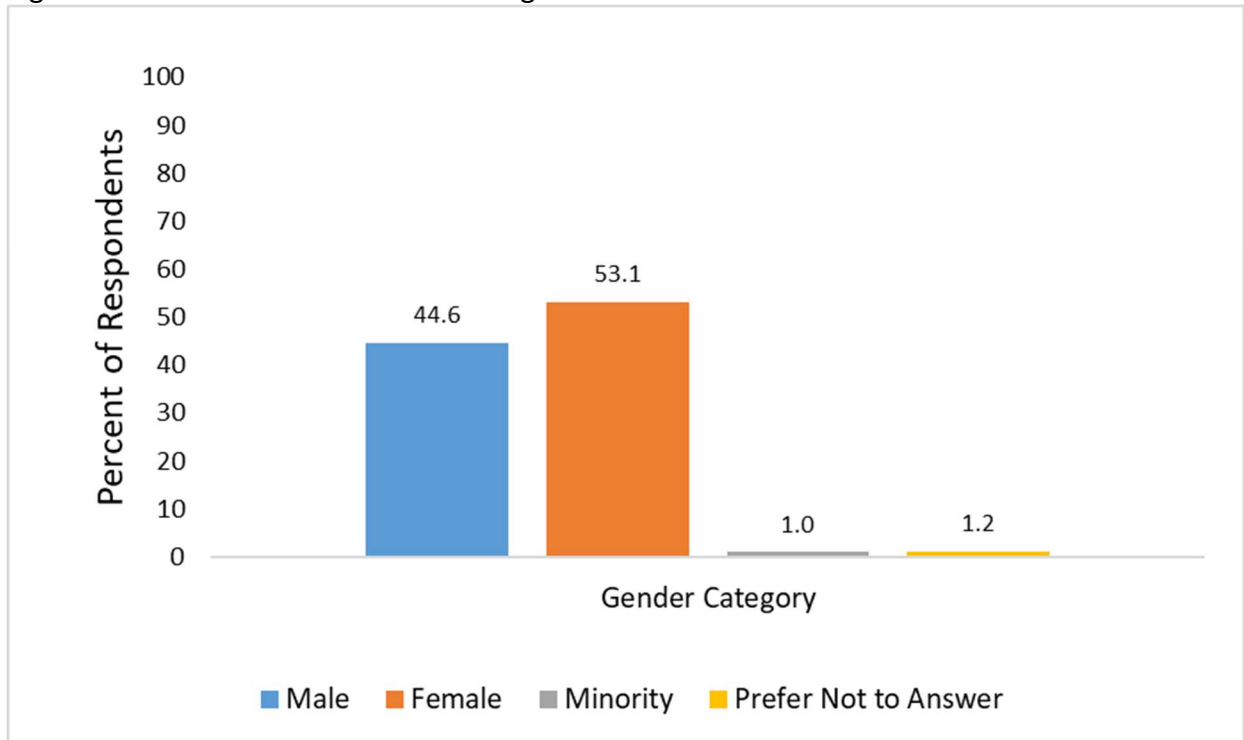
Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

Note: Removed “Don’t know” responses from Birth Sex (less than 0.1 percent of respondents answered “Don’t know”)

We summarized responses from the Birth Sex and Current Gender questions to create four categories: male, female, minority, and prefer not to answer. If responses to Birth Sex and Current Gender matched, they were added to their respective gender category, male or female. If the respondent did not provide any information and only selected “Prefer not to answer” for Current Gender, then we categorized the case as prefer not to answer. All other combinations of responses were categorized as a gender minority.<sup>8</sup> Gender minorities accounted for only 1.0 percent of Bridge Panel respondents. The full distribution of gender minorities responses is in Figure 11.

<sup>8</sup> There were less than 0.5 percent of respondents who selected “Other” with a write-in to Current Gender. The write-ins were mostly hostile, with responses that referred to religion, science, or feeling the question is inappropriate to ask. If we were able to conclude their gender from their Birth Sex and their write-in to Current Gender, we added them to male or female accordingly. If we were unable to deduce their gender from their Birth Sex and Current Gender write-in response, they were removed from analysis. All of the hostile write-in responses to Current Gender had sampling frame data depicting male sex.

Figure 11: Gender minorities in the Bridge Panel



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

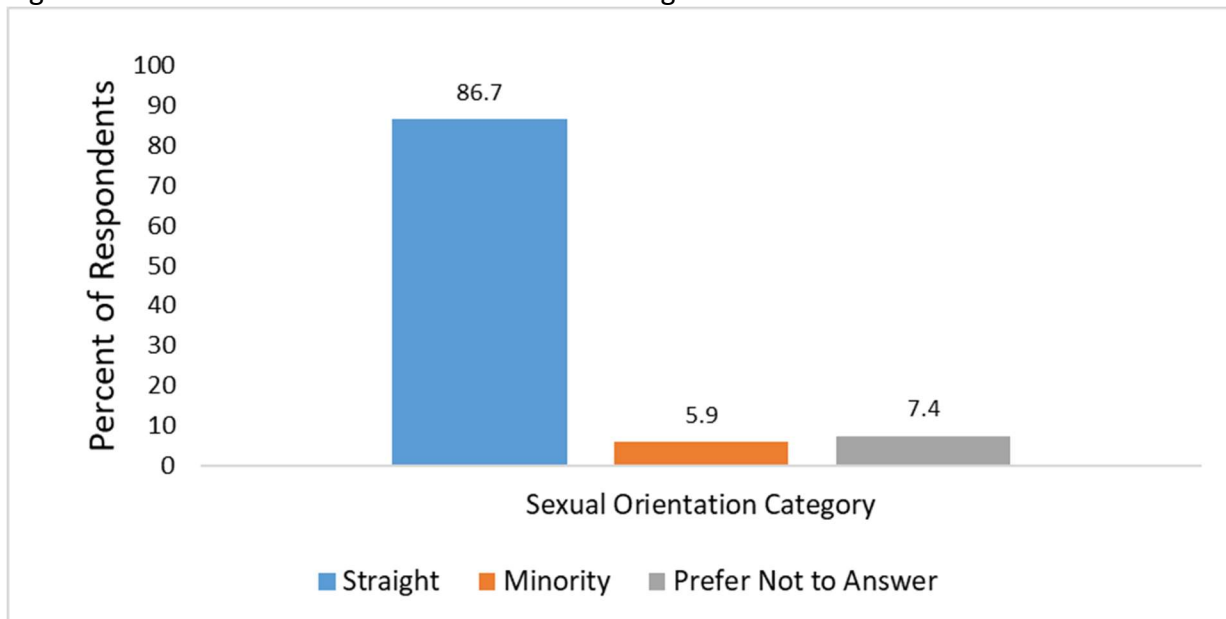
We noticed that the Bridge Panel had 53.9 percent female respondents for Birth Sex and 53.1 percent female who matched their Birth Sex response to Current Gender (difference of 0.8 percentage points). There were 46.1 percent male respondents for Birth Sex and 44.6 percent male when matched to Current Gender (difference of 1.5 percentage points). The majority of respondents (83.8 percent) who preferred not to answer the Current Gender question reported their Birth Sex as male.

Similar to gender minorities, we summarized responses from the Bridge Panel sexual orientation question to create three categories: straight, minority, and prefer not to answer.<sup>9</sup>

Figure 12 provides the distribution of sexual orientation responses. Approximately six percent of respondents were considered sexual orientation minorities and 7.4 percent selected “Prefer not to answer” to this question.

<sup>9</sup> There were less than 0.5 percent of respondents who selected “Other” to Sexual Orientation and who wrote in a response. The write-ins were mostly hostile with most responses questioning the relevance to the survey topic. If we were unable to deduce and categorize sexual orientation from the write-in response, then it was removed from analysis.

Figure 12: Sexual orientation minorities in the Bridge Panel



Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

We can compare these results to the National Academies of Science findings for sexual orientation identity item nonresponse (Measuring Sex, Gender Identity, and Sexual Orientation, 2022). Page 80 of the report shows results from five national surveys: 2016 National Crime Victimization Survey (NCVS), 2018 General Social Survey (GSS), 2020 Behavioral Risk Factor Surveillance System (BRFSS), 2020 National Health Interview Survey (NHIS), and 2021 Census Pulse Survey. None of the questions these surveys use to collect information about sexual orientation provided a “Prefer not to answer” response option. Rather, all provided an option similar to “I don’t know.” The item nonresponse and unknown rates ranged from 1.9 to 2.8 percent. Compared to these other national surveys, we believe that 7.4 percent reported for “Prefer not to answer” is high.

Cross-distributions of the SOGI items with eight demographic characteristics (found in Appendix H)<sup>10</sup> showed several significant differences in respondent makeup within Sex (production) and Birth Sex (Bridge Panel). In Table 6, we see that all demographic characteristics analyzed are significantly different between males and females for the Sex question on the production instrument. The Bridge Panel Birth Sex question also shows several significant differences between males and females. Sexual orientation and gender minorities showed significant differences for age group and marital status. Gender minorities also showed significant differences for their highest educational degree.

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<sup>10</sup> Cross-tabulations of gender minority by demographic characteristics were evaluated as part of this analysis. However, the cell sizes in the cross-tabulations create disclosure risk and are not included in this report.

Table 6: Significant differences in response distributions across demographic characteristics

| Characteristic                      | Production           | Bridge Panel               |                                |   |
|-------------------------------------|----------------------|----------------------------|--------------------------------|---|
|                                     | Sex<br>(Male/Female) | Birth Sex<br>(Male/Female) | Gender<br>Minority<br>(Yes/No) | Sexual<br>Orientation<br>Minority<br>(Yes/No) |
| Respondents (n)                     | 25,000               | 2,600 <sup>†</sup>         | 2,600 <sup>^</sup>             | 2,400 <sup>^</sup>                            |
| Age Group                           | *                    | *                          | *                              | *   |
| Citizenship                         | *                    |                            |                                |   |
| Highest Degree                      | *                    | *                          | *                              |   |
| Hispanic Origin                     | *                    | *                          |                                |   |
| Race                                | *                    | *                          |                                |   |
| Science & Engineering Degree        | *                    | *                          |                                |   |
| Science & Engineering<br>Occupation | *                    | *                          |                                |   |
| Marital Status                      | *                    |                            | *                              | *   |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Indicates significant difference with alpha 0.10

<sup>^</sup>Removed “Prefer not to answer” responses for this analysis.

<sup>†</sup>Removed “Don’t know” responses from Birth Sex for this analysis (less than 0.1 percent of respondents answered “Don’t know”).

Note: Demographic characteristics are captured using responses to the American Community Survey. Highest degree, race, and marital status categories were collapsed to prevent small cell sizes.

The highest percent of sexual orientation minorities and gender minorities were concentrated in the youngest age group (29 or younger), while the opposite was true for non-minorities. The highest percent of non-minorities was in the oldest age group, the 60-75 age range.

Another significant difference for sexual orientation and gender minorities was marital status.<sup>11</sup> Sexual orientation and gender minorities were less likely to be married. We saw a smaller percent in the married categories for minorities than we do for the non-minorities. One other significant difference for gender minorities was their highest educational degree. Gender minorities have more bachelor’s or professional degrees, and fewer master’s or doctorate degrees, than non-minorities.

### Breakoff rates

Next, we examine breakoff rates for the SOGI question series. We compared the production sex question to the Bridge Panel SOGI section to measure the expected impact on breakoffs from switching from one question about sex to three questions about birth sex, current gender, and sexual orientation, which are presented on individual screens. The only SOGI question with breakoffs on the Bridge Panel was Sexual Orientation. Two percent of all breakoffs from the Bridge Panel occurred on the Sexual Orientation screen, which was significantly higher than the

<sup>11</sup> Marital status measured whether the respondent was married or not married (i.e., widowed, divorced, separated, or never married) at the time of their completion of the American Community Survey.

production Sex question (0.1 percent; p-value <0.0001). For reference, the full 2021 new cohort paradata results showed that the 11<sup>th</sup> highest breakoff screen had 1.9 percent of all breakoffs.<sup>12</sup> There are screens in the instrument that fewer respondents visit; therefore, we also calculate breakoff rates as a percent of the number of respondents that visit a screen. Sexual Orientation had 0.2 percent of all respondents who saw the screen breakoff on that screen, while the screen with the Sex question had less than 0.1 percent of respondents breakoff (Table 8). While the difference in breakoff rates between the production and Bridge Panel instruments is notable, Sexual Orientation is fortunately near the end of the survey and limited data would be lost in the current cycle with a breakoff on this screen; however, breakoffs would not be eligible for future cycles unless they completed by some other mode.

Table 7: Percent of all breakoffs (standard errors)

| <b>Production</b> | <b>Bridge Panel</b> |                       |                           |
|-------------------|---------------------|-----------------------|---------------------------|
| <b>Sex</b>        | <b>Birth Sex</b>    | <b>Current Gender</b> | <b>Sexual Orientation</b> |
| 0.1% (0.1)        | 0.0% (N/A)          | 0.0% (N/A)            | 2.0% (1.6)                |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

Table 8: Breakoff rates as a percent of respondent visits (standard errors)

| <b>Production</b> | <b>Bridge Panel</b> |                       |                           |
|-------------------|---------------------|-----------------------|---------------------------|
| <b>Sex</b>        | <b>Birth Sex</b>    | <b>Current Gender</b> | <b>Sexual Orientation</b> |
| <0.1% (<0.1)      | 0.0% (N/A)          | 0.0% (N/A)            | 0.2% (0.2)                |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

### Changed answers

The percent of respondents who changed their answer was relatively low for the sex question on the production instrument and all three SOGI questions. The rates displayed in Table 9 for Sex and Birth Sex were not significantly different (p-value 0.9186). The lower changed answer rate for Sex and Birth Sex tells us that respondents were familiar with response options and/or they did not have difficulty finding a response option that fit their needs. The slightly higher changed answer rates for Current Gender and Sexual Orientation compared to Sex and Birth Sex indicate that respondents might have thought they found a response that fit them, but as they read the longer list of response options, found a response that better fit their identity.

<sup>12</sup> For comparison, the screens in the 2021 NSCG production new cohort instrument with the highest breakoff rates were as follows: EMINFO (principal employer information) – 10.3% (1.1), OCPRV (description of principal job) – 6.4% (1.1), VERIFYDOB (date of birth) – 4.2% (0.7), EARN (total earned income write-in) – 4.1% (0.8), WAITRO (work activities) – 4.0% (0.7), CERT\_LICENSE\_ONE (most recent certification or license) – 3.1% (0.6), CONTACT (contact information) – 2.9% (0.6), MRD (most recent degree information) – 2.8% (0.4), WRKG (working status) – 2.8% (0.8), VERIFYNAME (confirm name) – 2.6% (0.5), and VERIFYACS (County and state of residence on ACS) – 1.9% (0.6) (Heimel, Reeves, & Varela, Forthcoming).

Table 9: Percent of respondent visits with a changed answer (standard errors)

| <b>Production</b> | <b>Bridge Panel</b> |                       |                           |
|-------------------|---------------------|-----------------------|---------------------------|
| <b>Sex</b>        | <b>Birth Sex</b>    | <b>Current Gender</b> | <b>Sexual Orientation</b> |
| 1.0% (0.1)        | 1.0% (0.3)          | 2.5% (0.5)            | 3.4% (0.6)                |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

### Previous clicks

The percent of respondent visits with a previous click on these questions was also low for Sex and Birth Sex, displayed in Table 10. The rates for Sex and Birth Sex were not significantly different (p-value 0.6283). Similar to the changed answer rates, we notice that Current Gender and Sexual Orientation had higher previous click rates than Sex and Birth Sex. We attribute this to the newness of these questions. The previous clicks on these pages may be because respondents did not fully read the question before it and are confused why sex or sexual orientation are asked again. In cognitive interviews for a national survey of children’s health, our team discovered that there is still confusion in the general population between gender identity and sexual orientation (Bottini, Newman Satsisky, & Sloan, 2021). Misunderstanding gender identity and sexual orientation as the same might lead respondents to click previous to identify the differences between these questions.

Table 10: Percent of respondent visits with a previous click (standard errors)

| <b>Production</b> | <b>Bridge Panel</b> |                       |                           |
|-------------------|---------------------|-----------------------|---------------------------|
| <b>Sex</b>        | <b>Birth Sex</b>    | <b>Current Gender</b> | <b>Sexual Orientation</b> |
| 0.8% (0.1)        | 0.7% (0.3)          | 2.5% (0.5)            | 2.0% (0.4)                |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

### Completion time

The question stem for the production question Sex contains four words, and the question stem for the Bridge Panel question Birth Sex contains 12 words. Most people can read at an average rate of about four words per second, or 250 words per minute (Rayner, Slattery, & Belanger, 2010). Therefore, we would expect that it would take one second to read the Sex question, and Birth Sex would take three seconds, a two second difference. As expected, it took respondents significantly longer (1.7 seconds) to complete Birth Sex than Sex (p-value <0.0001), displayed in Table 11.

Table 11: Median completion times in seconds (standard errors)

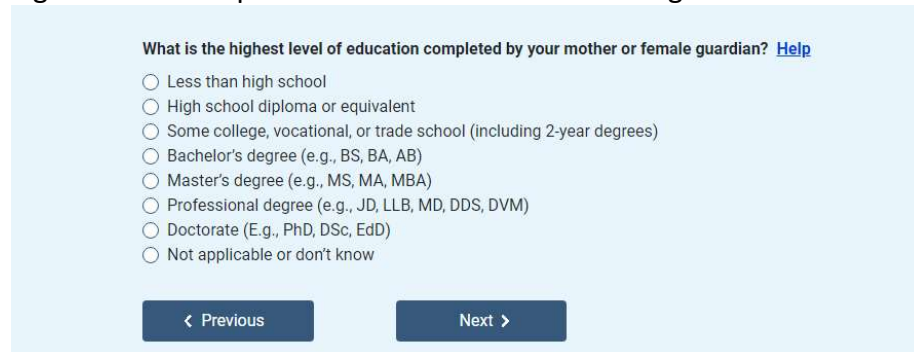
| <b>Production</b> | <b>Bridge Panel</b> |                       |                           |  |
|-------------------|---------------------|-----------------------|---------------------------|--|
| <b>Sex</b>        | <b>Birth Sex</b>    | <b>Current Gender</b> | <b>Sexual Orientation</b> | <b>Mother or Female Guardian Education</b> |
| 2.6 (<0.0)        | 4.3 (0.1)           | 4.7 (0.1)             | 10.1 (0.3)                | 9.5 (0.2)                                  |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

Note: Sex (production) and Birth Sex (Bride Panel) are significantly different at alpha=0.1

To provide context to the completion time for Sexual Orientation, we calculated the completion time for an NSCG question about the mother’s or female guardian’s education level (EDMOM). A screenshot of EDMOM is provided in Figure 13. We selected EDMOM to compare to the Sexual Orientation completion time because it is similar in length and has a similar number of response options (8) as Sexual Orientation (9). Sexual Orientation took 0.6 seconds longer to complete than EDMOM. Considering Sexual Orientation has one more response option and some of the response options may be new for the general population to read, a median completion time of 10.1 seconds seemed reasonable and did not indicate respondent difficulties when responding.

Figure 13: NSCG question about mother or female guardian education (screenshot)



Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, EDMOM

#### 4.2.2 SOGI research summary

Item nonresponse, response estimates, changed answer rates, and previous click rates were not statistically different between Sex on the production instrument and Birth Sex on the bridge panel. We can conclude that respondents understood the items to mean the same thing.

Breakoff rates on SOGI questions were significantly different between production and the Bridge Panel. The breakoff rate on the production instrument with one question, Sex, was 0.1 percent, while the breakoff rate for the Bridge Panel with three questions was 2.0 percent. Sexual Orientation was the only question with breakoffs in the SOGI series.

Changed answer rates, previous click rates, and median completion times were slightly higher for Current Gender and Sexual Orientation than Sex and Birth Sex, which was expected since they contain more response options, and response options with terms respondents may not be familiar with yet.

#### 4.3 Coronavirus pandemic question analysis

In the 2021 NSCG, questions and response options related to the coronavirus pandemic were added to the production questionnaire. These items were not included on the Bridge Panel to

provide a controlled comparison to the production survey. For example, the production questionnaire asked follow-up questions to the Salary question:

“For the principal job you held during the week of February 1, 2021, has your basic annual salary been affected at any time by the coronavirus pandemic?” and

“How has your basic annual salary been affected by the coronavirus pandemic?”

In contrast, the Bridge Panel did not ask these coronavirus pandemic follow-up questions and only asked Salary, displayed in Figure 14.

Figure 14: Salary question on both production and Bridge Panel questionnaires (screenshot)

As of the week of February 1, 2021, what was your **basic annual salary** on your principal job, before deductions?

*Do not include bonuses, overtime, or additional compensation for summertime teaching or research.*

*If you are not salaried, please estimate your earned income, excluding business expenses.*

Annual salary or earned income

\$  .00

< Previous      Next >

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, SALARY

Figure 15 provides an example of a coronavirus pandemic-related survey item on the production questionnaire but not on the Bridge Panel.

Figure 15: Example question related to the coronavirus pandemic (screenshot)

**How has your basic annual salary been affected by the coronavirus pandemic?**

- It was decreased temporarily but has returned to normal
- It is currently decreased
- It was increased temporarily but has returned to normal
- It is currently increased
- I did not receive an expected raise or cost of living increase
- Other, *specify*

< Previous      Next >

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, SALCOV2



### 4.3.1 Coronavirus pandemic questions results

This section provides results for the comparison of questions with references to the coronavirus pandemic between the production and Bridge Panel surveys. It also contains results for questions with coronavirus pandemic-related response options only in NSCG production for all three modes: CATI, web, and paper.

#### Research Question 2.1.3.1: Does including questions about the coronavirus pandemic’s effect on salary and income influence the final reported amount?

The 2021 NSCG production instrument included questions about whether salary or earned income were affected by the coronavirus pandemic. We start by comparing the salary and earned income questions between the two surveys to determine whether adding coronavirus pandemic follow-up questions in the production instrument affected reported income. Table 12 displays the mean and median of the salary and earned income questions for the production and Bridge Panel surveys. The Bridge Panel had nominally lower mean and median for salary, and nominally higher mean but lower median for earned income. Mean salary and earned income were not significantly different between the two surveys.

Table 12: Mean and median estimates for 2021 NSCG production and Bridge Panel surveys (standard errors)

| Survey Item          | Estimate      | Production      | Bridge Panel    | p-value |
|----------------------|---------------|-----------------|-----------------|---------|
| <b>Salary</b>        | <b>Mean</b>   | 92,860 (1,348)  | 89,390 (2,008)  | 0.1619  |
|                      | <b>Median</b> | 72,920 (1,305)  | 70,000 (2,007)  |         |
| <b>Earned Income</b> | <b>Mean</b>   | 98,750 (2,295)  | 101,000 (8,602) | 0.8011  |
|                      | <b>Median</b> | 69,990 (863.90) | 67,740 (1,861)  |         |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment  
 Note: T-test compared means between production and Bridge Panel

Because different occupations may have been impacted by the pandemic in different ways, we also examined the difference in reported salary and earned income by broad occupation type of the principal job held. Table 13 displays the mean earned income and the differences between surveys. There are ten categories with a significantly different mean income between the two surveys (in bold). Seven of the ten categories with significant differences have a higher mean income reported for the production instrument. We found similar results by broad category for mean salary. See Appendix I for mean salary and standard errors for earned income.

Even though the overall mean income and salary are not different between surveys, it is possible that the reported salary and earned incomes for certain job categories were affected by discussing the pandemic throughout the survey. Additionally, respondents may have seen the salary follow-up questions regarding the effect of the pandemic on their salary and

backtracked to change their salary to its pre-pandemic value. Without further analysis, not in scope for this project, it's difficult to determine the true reason for the differences.

Table 13: Mean earned income for 2021 NSCG production and Bridge Panel surveys

| <b>Broad Occupation Category</b>   | <b>Production</b> | <b>Bridge Panel</b> | <b>Difference in Mean Estimates</b> | <b>p-value</b> |
|--|-------------------|---------------------|-------------------------------------|----------------|
| Biological/Life Scientists   | 86,460            | 89,340              | (2,881)                             | 0.8793         |
| Clerical/Administrative Support Occupations  | 43,820            | 43,290              | 526.60                              | 0.9139         |
| Clergy/Other Religious Workers   | 55,210            | 47,400              | 7,806                               | 0.2699         |
| Computer Occupations   | 112,400           | 114,400             | (2,059)                             | 0.7728         |
| Counselors   | 50,940            | 50,870              | 72.95                               | 0.9952         |
| <b>Engineers/Architects</b>  | <b>129,800</b>    | <b>114,900</b>      | <b>14,920</b>                       | <b>*0.0898</b> |
| <b>Engineering Technologists/ Technicians/Surveyors</b>                                | <b>96,490</b>     | <b>76,260</b>       | <b>20,230</b>                       | <b>*0.0415</b> |
| <b>Farmers/Foresters/ Fishermen</b>  | <b>46,190</b>     | <b>87,500</b>       | <b>(41,300)</b>                     | <b>*0.0002</b> |
| <b>Health Occupations</b>  | <b>100,400</b>    | <b>127,000</b>      | <b>(26,590)</b>                     | <b>*0.0348</b> |
| Lawyers/Judges   | 249,000           | 187,500             | 61,510                              | 0.3966         |
| <b>Librarians/Archivists/ Curators</b>   | <b>51,440</b>     | <b>28,740</b>       | <b>22,700</b>                       | <b>*0.0098</b> |
| <b>Managers, Top-level Executives/ Administrators</b>                                  | <b>259,200</b>    | <b>183,300</b>      | <b>75,890</b>                       | <b>*0.0060</b> |
| Managers, Other  | 154,000           | 260,600             | (106,600)                           | 0.3433         |
| Management-Related Occupations   | 109,500           | 112,200             | (2,644)                             | 0.7973         |
| <b>Mathematical Scientists</b>   | <b>113,800</b>    | <b>80,430</b>       | <b>33,380</b>                       | <b>*0.0139</b> |
| Physical Scientists  | 85,280            | 138,700             | (53,390)                            | 0.1456         |
| <b>Sales/Marketing Occupations</b>   | <b>89,250</b>     | <b>66,920</b>       | <b>22,340</b>                       | <b>*0.0051</b> |
| Service Occupations, Except Health   | 51,480            | 43,870              | 7,613                               | 0.2204         |
| Social Scientists  | 82,290            | 86,800              | (4,510)                             | 0.6794         |
| Social Workers   | 53,230            | 50,500              | 2,723                               | 0.6713         |
| Teachers—Precollege  | 54,430            | 55,070              | (645.70)                            | 0.8580         |
| Teachers/Professors—Postsecondary  | 80,510            | 81,910              | (1,402)                             | 0.8924         |
| Teachers—Other   | 32,850            | 37,160              | (4,301)                             | 0.6481         |
| <b>Writers/Editors/Public Relations Specialists/Artists/ Entertainers/Broadcasters</b> | <b>53,960</b>     | <b>35,620</b>       | <b>18,340</b>                       | <b>*0.0039</b> |
| Other Professions  | 66,240            | 58,660              | 7,579                               | 0.5064         |
| <b>Other Occupations</b>   | <b>62,770</b>     | <b>109,500</b>      | <b>(46,700)</b>                     | <b>*0.0790</b> |
| Respondents Not Working During the Reference Week                                      | 40,380            | 36,270              | 4,109                               | 0.3741         |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment, EARN by N2OCPR-recoded to broad category

\*Denotes statistical significance at alpha 0.10.

Note: T-test compared means between production and Bridge Panel

**Research Question 2.1.3.2: Is there a change in the response distributions when the pandemic response options are added to grid or item-by-item questions?**

Most questions were the same on both the production and Bridge Panel, but some of the production questions had additional response options related to the coronavirus pandemic. Figure 16 provides an example of these types of questions.

Figure 16: Example of confounded question, with coronavirus pandemic-related response options and grid format (screenshots)

| Production (grid format)  | Bridge Panel (item-by-item format) |                       |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
|---|------------------------------------|-----------------------|----|---------|-----------------------|-----------------------|--|-----------------------|-----------------------|--|-----------------------|-----------------------|---------|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|
| <p>During the week of February 1, 2021, what were your reasons for not working?</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Retired</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>On layoff from a job due to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>On layoff from a job for reasons unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Student</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family responsibilities unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Chronic illness or permanent disability</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Suitable job not available</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Did not need or want to work</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Other reason, specify</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p> |                                    | Yes                   | No | Retired | <input type="radio"/> | <input type="radio"/> | On layoff from a job due to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | On layoff from a job for reasons unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Student | <input type="radio"/> | <input type="radio"/> | Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare) | <input type="radio"/> | <input type="radio"/> | Family responsibilities unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Chronic illness or permanent disability | <input type="radio"/> | <input type="radio"/> | Suitable job not available | <input type="radio"/> | <input type="radio"/> | Did not need or want to work | <input type="radio"/> | <input type="radio"/> | Other reason, specify | <input type="radio"/> | <input type="radio"/> | <p>During the week of February 1, 2021, what were your reasons for not working?</p> <ol style="list-style-type: none"> <li>Retired<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>On layoff from a job<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Student<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Family responsibilities<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Chronic illness or permanent disability<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Suitable job not available<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Did not need or want to work<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Other reason, specify<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> </ol> <p>&lt; Previous      Next &gt;</p> |
|   | Yes                                | No                    |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Retired   | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| On layoff from a job due to the coronavirus pandemic  | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| On layoff from a job for reasons unrelated to the coronavirus pandemic  | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Student   | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare)   | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Family responsibilities unrelated to the coronavirus pandemic   | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Chronic illness or permanent disability   | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Suitable job not available  | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Did not need or want to work  | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |
| Other reason, specify   | <input type="radio"/>              | <input type="radio"/> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                       |                       |                       |   |

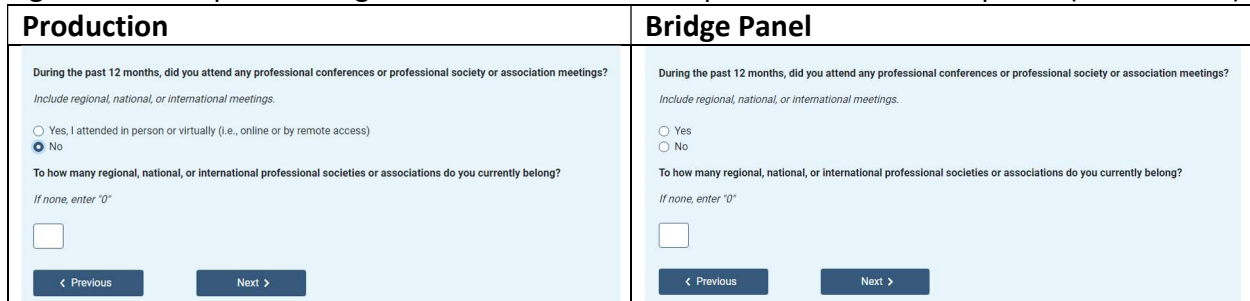
Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, NWINTRO

Prior to analysis, we noted that this part of the research could be confounded if significant differences were found between the grid and item-by-item formats since all questions with additional pandemic-related response options were also formatted as grids. As we determined in Section 4.1, there were statistical differences in response distributions between the grid and item-by-item response format. Therefore, it is difficult to interpret differences in the questions with differing format in addition to differing response options; however, we still provide a summary of the response distributions for informational purposes. We note that of the 88 grid and item-by-item questions *without* coronavirus pandemic response options, 17 (about 19 percent) had a significantly different response distribution between surveys. Of the 44 grid and item-by-item questions *with* coronavirus pandemic response options, 11 (about 25 percent) had a significantly different response distribution between surveys. See Appendix F for the response distributions.

There was one question that was not a grid format, which contained slightly different wording around conference and meeting attendance in each survey (Figure 17). The percent of “Yes” responses on the production instrument for this question was 23.9 percent, and on Bridge Panel it was 20.3 percent. The difference of 3.6 percentage points is statistically significant (p-

value 0.0124). This suggests that including more detailed information in the response option influenced response.

Figure 17: Example of non-grid item with coronavirus pandemic-related response (screenshots)



Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021, PROMTGI

**Research Question 2.1.3.3: Are questions that refer to the coronavirus pandemic reported differently across CATI, paper, and web modes?**

We found that questions that referred to the pandemic had different response distributions depending on mode of completion (web, paper, or CATI). However, since respondents could choose their preferred mode to respond, we expect demographic differences by mode to contribute to the differences. Other research has shown that socio-demographic characteristics of respondents differ when they choose between different response modes (Datta, Walsh, & Terrell, 2002). Therefore, the differences we report are likely not solely due to a mode effect but also self-selection into preferred modes.

Table 14 provides new cohort response distributions for one of the 14 questions we examined. We see that the “Yes” responses vary depending on mode. For example, of paper respondents, 75.5 percent said they were retired, of CATI, 60.3 percent, and of web, 54.0 percent. This response distribution is one example of the underlying demographic differences among the different mode choices. It is possible retired respondents prefer paper and CATI modes and thus other differences observed in the other response options may be partially attributable to differences in the underlying sub-populations. See Appendix F for all pandemic-related questions’ distributions by response mode.

Table 14: NSCG new cohort, reasons for not working question “Yes” responses by completion mode

| Item                                      | Response Options (Survey Item)   | Percent “Yes” (Standard Errors) |            |            | Chi-square p-value |
|---|--|---------------------------------|------------|------------|--------------------|
|   |  | CATI                            | Paper      | Web        |                    |
| During the week of February 1, 2021, what | Retired  | 60.3 (4.0)                      | 75.5 (2.8) | 54.0 (1.1) | *<.0001            |
|   | On layoff from a job due to the coronavirus pandemic                   | 15.8 (3.0)                      | 4.2 (1.3)  | 10.0 (0.7) | *0.0008            |
|   | On layoff from a job for reasons unrelated to the coronavirus pandemic | 10.4 (2.6)                      | 2.4 (1.0)  | 3.4 (0.4)  | *<.0001            |

| Item  | Response Options (Survey Item)   | Percent “Yes” (Standard Errors) |            |            |                    |
|---|--|---------------------------------|------------|------------|--------------------|
|   |  | CATI                            | Paper      | Web        | Chi-square p-value |
| <b>were your reasons for not working? (NWINTRO)</b> | Student  | 7.5 (2.0)                       | 3.1 (1.1)  | 5.5 (0.5)  | 0.1265             |
|   | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | 10.7 (2.3)                      | 2.2 (1.0)  | 6.6 (0.7)  | *0.0031            |
|   | Family responsibilities unrelated to the coronavirus pandemic                        | 13.3 (2.7)                      | 9.6 (1.9)  | 12.8 (0.9) | 0.3613             |
|   | Chronic illness or permanent disability  | 18.8 (3.0)                      | 9.7 (1.9)  | 6.3 (0.5)  | *<.0001            |
|   | Suitable job not available   | 17.9 (3.3)                      | 7.5 (1.7)  | 11.3 (0.8) | *0.0096            |
|   | Did not need or want to work   | 39.3 (3.5)                      | 21.7 (3.4) | 18.0 (0.9) | *<.0001            |
|   | Other reason, specify  | 4.8 (1.5)                       | 3.1 (1.4)  | 6.7 (0.6)  | 0.1241             |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10.

Note: Rao-Scott Chi-square test compared response distributions across modes

**4.3.2 Coronavirus pandemic question summary**

There were not significant differences in overall reported salary or income, but there may be a systematic pattern of over- or under-reporting salary of income by broad occupational category between the two surveys. Questions that had a grid format with coronavirus pandemic-related response options were difficult to analyze because the grid format alone showed statistically different estimates from the item-by-item format.

There are differences in estimates by respondent mode of completion. However, this is to be expected since their underlying populations are different.

**5. Conclusions and Recommendations**

The Bridge Panel provided the opportunity to measure the impact of new content and response formats. The results from this analysis will help inform future cycles of the NSCG as well as other Census Bureau surveys.

**Grid and item-by-item formats**

The item-by-item format had higher breakoffs, more changed answers, and slightly longer completion times than the grid format. While the item-by-item format had lower item nonresponse and more “Yes” and positive responses, most of the response distributions were not significantly different from the grid format. These findings are consistent with a meta-analysis conducted by Callegaro and colleagues (2015) comparing forced-choice to check-all that apply. They found that across several studies forced-choice, similar to item-by-item, increased endorsement rates substantially, and found a slightly higher breakoff rate. Because there are two opposing theories why item-by-item may be collecting more affirming responses, acquiescence bias and deeper cognitive processing, we cannot conclude with certainty that it is the superior format. Given the information we have, we see breakoffs as more of a concern

than item nonresponse and therefore recommend continuing to use the grid format for screens greater than or equal to 992-pixels wide (which includes most smartphones), but also conducting additional research to gain a better understanding of the response distribution differences.

### **Sexual Orientation and Gender Identity**

While the analysis of SOGI questions was challenging due to not having comparative questions on both surveys, we can confirm that the response distributions for Sex (production) and Birth Sex (Bridge Panel) did not exhibit significant differences. Additionally, breakoffs in the SOGI series were low overall, with respondents only breaking off on Sexual Orientation. Based on these findings, the NSCG could use Birth Sex and Current Gender moving forward in production without concern about data quality. However, given the breakoff rate and the percentage of respondents that selected “Prefer not to answer,” we recommend more testing on Sexual Orientation in focus groups and cognitive interviewing to gain insight into respondents’ understanding of and reactions to this question. To improve the user experience and avoid previous clicks for respondents, federal workings groups and other surveys have recommended having the sex and gender questions on the same screen (Federal Interagency Working Group on Improving Measurement of Sexual Orientation and Gender Identity in Federal Surveys (SOGI IWG), 2016; Office of Management and Budget; Reeves, Bottini, & Horwitz, 2022). We recommend an NSCG experiment putting Birth Sex and Current Gender together on the same screen to reduce the rate of previous clicks between screens. We also recommend removing the “Prefer not to answer” option from the question about Current Gender. A recent report released by the National Academies of Sciences stated that, “For data collections where respondents can easily skip over items if they do not wish to answer, it is not necessary to provide an explicit “prefer not to answer” response.” (National Academies of Sciences, Engineering, and Medicine, 2022). Other national surveys with questions about gender identity are testing questions that do not include this response option (National Center for Health Statistics (U.S.), 2022; Office of Management and Budget, 2022).

Lastly, as public opinion about the SOGI topic changes, respondent reactions and behaviors surrounding these questions may change. NCSES should continue to consult subject matter experts to keep abreast of the changing environment and consider continued testing and research to ensure the questions and response options change as appropriate.

### **Coronavirus pandemic questions and response options**

Questions on the production instrument that mention the coronavirus pandemic may have increased the amount of salary and income that was reported by respondents in particular occupations in comparison to Bridge Panel questions which did not reference the pandemic.

As expected, questions that referred to the coronavirus pandemic had response distributions that differed by mode. We understand the populations that choose different response modes are different and, therefore, expect to see differences in their responses.

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**Appendix A Bridge Panel sample and respondent demographic characteristics**

Table 15 provides a summary of the 2021 Bridge Panel sample and respondent demographic characteristics, using demographic information available on the sampling frame from the American Community Survey (ACS).

Table 15: Bridge Panel sample and respondent demographic characteristics

| Bridge Panel                |                                   | Sample<br>(Base weight) |         |               | Respondents<br>(Final weight) |         |               |
|-----------------------------|-----------------------------------|-------------------------|---------|---------------|-------------------------------|---------|---------------|
|                             |                                   | Frequency               | Percent | Std.<br>error | Frequency                     | Percent | Std.<br>error |
|                             | <b>Demographic Characteristic</b> |                         |         |               |                               |         |               |
| Race                        | White                             | 2,900                   | 77.7    | 0.3           | 1,600                         | 78.7    | 0.5           |
|                             | Black                             | 600                     | 8.6     | 0.1           | 200                           | 8.2     | 0.3           |
|                             | Asian                             | 1,300                   | 10.4    | 0.2           | 700                           | 10.3    | 0.2           |
|                             | American Indian/Alaskan Native    | 100                     | 1.0     | 0.1           | 50                            | 1.0     | 0.1           |
|                             | Some other race                   | 150                     | 2.4     | 0.2           | 60                            | 1.8     | 0.3           |
|                             | Total                             | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Hispanic Origin             | Hispanic                          | 700                     | 9.3     | 0.1           | 300                           | 8.9     | 0.3           |
|                             | Not Hispanic                      | 4,400                   | 90.7    | 0.1           | 2,300                         | 91.1    | 0.3           |
|                             | Total                             | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Age group                   | 0 to 29                           | 550                     | 11.5    | 0.7           | 250                           | 13.1    | 1.0           |
|                             | 30 to 39                          | 1,300                   | 22.3    | 0.7           | 650                           | 22.2    | 1.3           |
|                             | 40 to 49                          | 1,200                   | 21.0    | 0.7           | 600                           | 19.5    | 1.0           |
|                             | 50 to 59                          | 1,000                   | 19.2    | 0.8           | 550                           | 18.5    | 1.1           |
|                             | 60 to 75                          | 950                     | 26.0    | 0.8           | 550                           | 26.7    | 1.2           |
|                             | Total                             | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Citizenship status at birth | U.S. citizen at birth             | 3,400                   | 84.1    | 0.3           | 1,800                         | 85.5    | 0.6           |
|                             | Not a U.S. citizen at birth       | 1,700                   | 15.9    | 0.3           | 900                           | 14.5    | 0.6           |
|                             | Total                             | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Marital status              | Now married                       | 3,200                   | 61.9    | 1.1           | 1,800                         | 61.8    | 1.5           |
|                             | Widowed                           | 70                      | 2.0     | 0.3           | 30                            | 1.0     | 0.3           |

| Bridge Panel                          |  | Sample<br>(Base weight) |         |               | Respondents<br>(Final weight) |         |               |
|---------------------------------------|--|-------------------------|---------|---------------|-------------------------------|---------|---------------|
|                                       |  | Frequency               | Percent | Std.<br>error | Frequency                     | Percent | Std.<br>error |
| <b>Demographic Characteristic</b>     |  |                         |         |               |                               |         |               |
|                                       | Divorced   | 450                     | 9.2     | 0.6           | 200                           | 7.9     | 0.8           |
|                                       | Separated  | 60                      | 1.4     | 0.2           | 30                            | 0.9     | 0.3           |
|                                       | Never married  | 1,300                   | 25.5    | 0.9           | 600                           | 28.4    | 1.2           |
|                                       | Total  | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Highest degree                        | Bachelor or Professional degree                          | 3,000                   | 70.2    | 0.1           | 1,400                         | 66.6    | 1.0           |
|                                       | Masters  | 1,600                   | 25.9    | 0.1           | 950                           | 29.2    | 1.1           |
|                                       | Doctorate  | 450                     | 3.9     | 0.0           | 300                           | 4.2     | 0.3           |
|                                       | Total  | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Science and<br>engineering degree     | Science and engineering degree                           | 3,000                   | 46.5    | 1.2           | 1,700                         | 47.5    | 1.3           |
|                                       | No science and engineering degrees                       | 2,100                   | 53.5    | 1.2           | 950                           | 52.5    | 1.3           |
|                                       | Total  | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |
| Science and<br>engineering occupation | Science and engineering occupation                       | 2,700                   | 23.6    | 0.4           | 1,600                         | 24.0    | 0.7           |
|                                       | Non-science and engineering occupation or<br>not working | 2,400                   | 76.4    | 0.4           | 1,100                         | 76.0    | 0.7           |
|                                       | Total  | 5,000                   | 100.0   | -             | 2,600                         | 100.0   | -             |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

## Appendix B Paradata estimate equations

### Definitions

*R = Number of Respondents*  
*# = Number of*

### Completion Time

[1] Median Completion Time:

*Median(next action – screen entry)*

### Breakoffs

[2] Overall Breakoff Rate:

$$\frac{R \text{ with a breakoff}}{R \text{ who successfully logged in}} \times 100$$

[3] Percent of Breakoffs:

$$\frac{\# \text{ breakoffs on screen } x}{R \text{ had a breakoff}} \times 100$$

[4] Percent of Respondent Visits with a Breakoff:

$$\frac{\# \text{ breakoffs on screen } x}{R \text{ that visited screen } x} \times 100$$

### Previous Clicks

[5] Percent of Previous Clicks (of all survey items):

$$\frac{\# \text{ previous button clicks on screen } x}{\# \text{ previous button clicks}} \times 100$$

[6] Percent of Respondent Visits with a Previous Click:

$$\frac{R \text{ with previous button clicks on screen } x}{R \text{ that visited the screen}} \times 100$$

### Changed Answers

Note: Changed answers are identified at the item level and occur when a respondent:

- Deselects a checkbox that was originally selected (multi-part questions and standalone checkboxes)
- Reselects a standalone checkbox after deselecting it
- Selects an additional checkbox after a previous click (multi-part questions)
- Chooses a different radio button than originally chosen
- Enters a different write-in answer than originally entered
- Chooses a different drop-down option than originally chosen
- Returns to a screen using the previous button and answers a question for the first time

[7] Percent of Changed Answers:

$$\frac{\# \text{ changed answers on each question}}{\# \text{ changed answers throughout the survey}} \times 100$$

[8] Percent of Respondent Visits with a Changed Answer:

$$\frac{R \text{ changed answers question } x}{R \text{ visited question } x} \times 100$$

[9] Item Nonresponse:

$$\frac{\# \text{ of missing responses}}{\text{Expected number of responses for survey item}} \times 100$$

### **Paradata Variance Estimator**

[10]

$$\text{Var}(y) = \frac{4}{k} \sum_{r=1}^k (y_r - y_0)^2,$$

Where:

y = the survey estimate of interest

k = the number of replicates

r = the replicate number

$y_r$  = the survey estimate using the replicate weights from replicate r

$y_0$  = the survey estimate using the full sample weights

## Appendix C Statistical testing hypotheses

We used T and chi-square tests to compare estimates from the NSCG production new cohort to the Bridge Panel.

Below are the hypotheses tests for the analysis of SOGI questions, completion times, changed answers, item nonresponse, and breakoff rates, as well as analysis of response distributions. All tests used a significance level of 10 percent ( $\alpha=0.10$ ).

### **T-test hypothesis test for completion times, comparisons of salary and earned income**

H<sub>0</sub>: There is no difference between the estimates for the NSCG new cohort and the Bridge Panel. ( $E_{new\ coh} - E_{bridge} = 0$ )

H<sub>A</sub>: There is a difference between the estimates for the NSCG new cohort and the Bridge Panel. ( $E_{new\ cohort} - E_{bridge} \neq 0$ )

### **Rao-Scott Chi-square hypothesis test for distribution comparisons, breakoff rates, changed answers, item nonresponse, SOGI questions**

H<sub>0</sub>: There is no difference in the distribution for the [NSCG item] between the new cohort and Bridge Panel.

H<sub>A</sub>: There is a difference between the distribution for the [NSCG item] NSCG new cohort and Bridge Panel.

**Appendix D Difference between Production and Bridge Panel Questionnaires**

Table 16 through

Table 18 below provide screenshots of every item that was different between the NSCG production and Bridge Panel questionnaires (U.S. Census Bureau, NSCG, ADDP-SO, 2021). Screens in each table are listed in the order in which they appear in the web instrument.

Table 16: Screenshot comparison of grid to item-by-item format only (no pandemic-related questions or response options)

| Screen   | Production  | Bridge Panel          | Differences |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
|--|---|-----------------------|-------------|----|--|-----------------------|-----------------------|--|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|--|------------------|
| MGINTRO  | <p>Did your duties on this job require the technical expertise of a bachelor's degree or higher in...</p> <p>Select Yes or No for each item.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Engineering, computer science, math, or the natural sciences</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>The social sciences</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Some other field (e.g., health, business, or education), specify</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p>  |                       | Yes         | No | Engineering, computer science, math, or the natural sciences | <input type="radio"/> | <input type="radio"/> | The social sciences  | <input type="radio"/> | <input type="radio"/> | Some other field (e.g., health, business, or education), specify | <input type="radio"/> | <input type="radio"/> | <p>Did your duties on this job require the technical expertise of a bachelor's degree or higher in...</p> <p>Select Yes or No for each item.</p> <p>1. Engineering, computer science, math, or the natural sciences<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>2. The social sciences<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>3. Some other field (e.g., health, business, or education), specify<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>&lt; Previous      Next &gt;</p> | Grid format only      |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
|  | Yes   | No                    |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Engineering, computer science, math, or the natural sciences     | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| The social sciences  | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Some other field (e.g., health, business, or education), specify | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| NRINTRO  | <p>To what extent was your work on your principal job related to your highest degree?</p> <p>Please refer to the principal job you held during the week of February 1, 2021.</p> <p><input type="radio"/> Closely related<br/> <input type="radio"/> Somewhat related<br/> <input checked="" type="radio"/> Not related</p> <p>Did any of the following factors influence your decision to work in an area outside the field of your highest degree?</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Pay, promotion opportunities</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Working conditions (e.g., hours, equipment, working environment)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job location</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Change in career or professional interests</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family-related reasons (e.g., children, spouse's job moved)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job in highest degree field not available</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Some other factor, specify</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p> |                       | Yes         | No | Pay, promotion opportunities                                 | <input type="radio"/> | <input type="radio"/> | Working conditions (e.g., hours, equipment, working environment) | <input type="radio"/> | <input type="radio"/> | Job location   | <input type="radio"/> | <input type="radio"/> | Change in career or professional interests  | <input type="radio"/> | <input type="radio"/> | Family-related reasons (e.g., children, spouse's job moved) | <input type="radio"/> | <input type="radio"/> | Job in highest degree field not available | <input type="radio"/> | <input type="radio"/> | Some other factor, specify | <input type="radio"/> | <input type="radio"/> | <p>Did any of the following factors influence your decision to work in an area outside the field of your highest degree?</p> <p>1. Pay, promotion opportunities<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>2. Working conditions (e.g., hours, equipment, working environment)<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>3. Job location<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>4. Change in career or professional interests<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>5. Family-related reasons (e.g., children, spouse's job moved)<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>6. Job in highest degree field not available<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>7. Some other factor, specify<br/> <input type="radio"/> Yes<br/> <input type="radio"/> No</p> <p>&lt; Previous      Next &gt;</p> | Grid format only |
|  | Yes   | No                    |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Pay, promotion opportunities                                     | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Working conditions (e.g., hours, equipment, working environment) | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Job location   | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Change in career or professional interests                       | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Family-related reasons (e.g., children, spouse's job moved)      | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Job in highest degree field not available                        | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |
| Some other factor, specify                                       | <input type="radio"/>   | <input type="radio"/> |             |    |  |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |  |                  |

| Screen  | Production  | Bridge Panel          | Differences |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
|---|---|-----------------------|-------------|----|--------------------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|------------------------------------|-----------------------|-----------------------|----------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|---|-------------------------|
| <p>WAINTRO</p>  | <p>The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a <u>typical</u> work week on this job?</p> <p>Select Yes or No for each item.</p> <p>Please refer to your principal job held during the week of February 1, 2021.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Accounting, finance, contracts</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Basic research—study directed toward gaining scientific knowledge primarily for its own sake</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Applied research—study directed toward gaining scientific knowledge to meet a recognized need</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Development—using knowledge gained from research for the production of materials, devices</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Design of equipment, processes, structures, models</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Computer programming, systems or applications development</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Human resources—including recruiting, personnel development, training</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Managing or supervising people or projects</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Production, operations, maintenance (e.g., chip production, operating lab equipment)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Professional services (e.g., health care, counseling, financial services, legal services)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Sales, purchasing, marketing, customer service, public relations</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Quality or productivity management</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Teaching</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Other activity, specify</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next"/></p> |                       | Yes         | No | Accounting, finance, contracts | <input type="radio"/> | <input type="radio"/> | Basic research—study directed toward gaining scientific knowledge primarily for its own sake | <input type="radio"/> | <input type="radio"/> | Applied research—study directed toward gaining scientific knowledge to meet a recognized need | <input type="radio"/> | <input type="radio"/> | Development—using knowledge gained from research for the production of materials, devices | <input type="radio"/> | <input type="radio"/> | Design of equipment, processes, structures, models | <input type="radio"/> | <input type="radio"/> | Computer programming, systems or applications development | <input type="radio"/> | <input type="radio"/> | Human resources—including recruiting, personnel development, training | <input type="radio"/> | <input type="radio"/> | Managing or supervising people or projects | <input type="radio"/> | <input type="radio"/> | Production, operations, maintenance (e.g., chip production, operating lab equipment) | <input type="radio"/> | <input type="radio"/> | Professional services (e.g., health care, counseling, financial services, legal services) | <input type="radio"/> | <input type="radio"/> | Sales, purchasing, marketing, customer service, public relations | <input type="radio"/> | <input type="radio"/> | Quality or productivity management | <input type="radio"/> | <input type="radio"/> | Teaching | <input type="radio"/> | <input type="radio"/> | Other activity, specify | <input type="radio"/> | <input type="radio"/> | <p>The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a <u>typical</u> work week on this job?</p> <p>Select Yes or No for each item.</p> <p>Please refer to your principal job held during the week of February 1, 2021.</p> <ol style="list-style-type: none"> <li>Accounting, finance, contracts <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Basic research—study directed toward gaining scientific knowledge primarily for its own sake <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Applied research—study directed toward gaining scientific knowledge to meet a recognized need <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Development—using knowledge gained from research for the production of materials, devices <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Design of equipment, processes, structures, models <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Computer programming, systems or applications development <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Human resources—including recruiting, personnel development, training <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Managing or supervising people or projects <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Production, operations, maintenance (e.g., chip production, operating lab equipment) <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Professional services (e.g., health care, counseling, financial services, legal services) <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Sales, purchasing, marketing, customer service, public relations <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Quality or productivity management <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Teaching <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Other activity, specify <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> <p><input type="text"/></p> </li> </ol> | <p>Grid format only</p> |
|   | Yes   | No                    |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Accounting, finance, contracts  | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Basic research—study directed toward gaining scientific knowledge primarily for its own sake  | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Applied research—study directed toward gaining scientific knowledge to meet a recognized need | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Development—using knowledge gained from research for the production of materials, devices     | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Design of equipment, processes, structures, models  | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Computer programming, systems or applications development                                     | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Human resources—including recruiting, personnel development, training                         | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Managing or supervising people or projects  | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Production, operations, maintenance (e.g., chip production, operating lab equipment)          | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Professional services (e.g., health care, counseling, financial services, legal services)     | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Sales, purchasing, marketing, customer service, public relations                              | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Quality or productivity management  | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Teaching  | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |
| Other activity, specify   | <input type="radio"/>   | <input type="radio"/> |             |    |                                |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                    |                       |                       |          |                       |                       |                         |                       |                       |   |                         |



| Screen                        | Production  | Bridge Panel          | Differences           |                       |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
|-------------------------------|---|-----------------------|-----------------------|-----------------------|-----------------------|-------------------|--------|-----------------------|-----------------------|-----------------------|-----------------------|----------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|------------------|
| SATINTRO                      | <p>Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following</p> <table border="1"> <thead> <tr> <th></th> <th>Very Satisfied</th> <th>Somewhat Satisfied</th> <th>Somewhat Dissatisfied</th> <th>Very Dissatisfied</th> </tr> </thead> <tbody> <tr> <td>Salary</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Benefits</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job security</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job location</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Opportunities for advancement</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Intellectual challenge</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Level of responsibility</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Degree of independence</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Contribution to society</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p> <input type="button" value="Previous"/> <input type="button" value="Next"/> </p> |                       | Very Satisfied        | Somewhat Satisfied    | Somewhat Dissatisfied | Very Dissatisfied | Salary | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Benefits | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Job security | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Job location | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Opportunities for advancement | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Intellectual challenge | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Level of responsibility | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Degree of independence | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Contribution to society | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <p>Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following asp</p> <ol style="list-style-type: none"> <li><b>Salary</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Benefits</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Job security</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Job location</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Opportunities for advancement</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Intellectual challenge</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Level of responsibility</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Degree of independence</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> <li><b>Contribution to society</b> <ul style="list-style-type: none"> <li><input type="radio"/> Very Satisfied</li> <li><input type="radio"/> Somewhat Satisfied</li> <li><input type="radio"/> Somewhat Dissatisfied</li> <li><input type="radio"/> Very Dissatisfied</li> </ul> </li> </ol> | Grid format only |
|                               | Very Satisfied  | Somewhat Satisfied    | Somewhat Dissatisfied | Very Dissatisfied     |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Salary                        | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Benefits                      | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Job security                  | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Job location                  | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Opportunities for advancement | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Intellectual challenge        | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Level of responsibility       | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Degree of independence        | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |
| Contribution to society       | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |                   |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |  |                  |

| Screen    | Production  | Bridge Panel   | Differences      |
|-----------|---|--|------------------|
| CLICINTRO | <p>On February 1, 2021, why did you hold this certification or license?</p> <p>Select Yes or No for each item.</p> <p><b>Yes</b></p> <p>To improve skills or knowledge in my current occupational field <input type="radio"/></p> <p>To increase opportunities for promotion or advancement in my current occupational field <input type="radio"/></p> <p>To facilitate a change to a different occupational field <input type="radio"/></p> <p>Required or expected by employer <input type="radio"/></p> <p>To start my own business <input type="radio"/></p> <p>Other reason, <i>specify</i> <input type="radio"/></p> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p>  | <p>On February 1, 2021, why did you hold this certification or license?</p> <p>Select Yes or No for each item.</p> <p>1. To improve skills or knowledge in my current occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>2. To increase opportunities for promotion or advancement in my current occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>3. To facilitate a change to a different occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>4. Required or expected by employer<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>5. To start my own business<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>6. Other reason, <i>specify</i><br/><input type="radio"/> Yes<br/><input type="text"/><br/><input type="radio"/> No</p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p>  | Grid format only |
| WTRINTRO  | <p>For which of the following reasons did you take work-related training during the past 12 months?</p> <p>Select Yes or No for each item.</p> <p><b>Yes</b></p> <p>To improve skills or knowledge in my current occupational field <input type="radio"/></p> <p>To increase opportunities for promotion or advancement in my current occupational field <input type="radio"/></p> <p>For licensure or certification in my current occupational field <input type="radio"/></p> <p>To facilitate a change to a different occupational field <input type="radio"/></p> <p>Required or expected by employer <input type="radio"/></p> <p>For leisure or personal interest <input type="radio"/></p> <p>Other reason, <i>specify</i> <input type="radio"/></p> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p> | <p>For which of the following reasons did you take work-related training during the past 12 months?</p> <p>Select Yes or No for each item.</p> <p>1. To improve skills or knowledge in my current occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>2. To increase opportunities for promotion or advancement in my current occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>3. For licensure or certification in my current occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>4. To facilitate a change to a different occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>5. Required or expected by employer<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>6. For leisure or personal interest<br/><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>7. Other reason, <i>specify</i><br/><input type="radio"/> Yes<br/><input type="text"/><br/><input type="radio"/> No</p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p> | Grid format only |

| Screen                        | Production  | Bridge Panel          | Differences           |                       |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
|-------------------------------|---|-----------------------|-----------------------|-----------------------|----------------------|----------------------|--------|-----------------------|-----------------------|-----------------------|-----------------------|----------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|-----------------------|-----------------------|-----------------------|-----------------------|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|------------------|
| FACINTRO                      | <p>When thinking about a job, how important is each of the following factors to you?</p> <table border="1"> <thead> <tr> <th></th> <th>Very important</th> <th>Somewhat important</th> <th>Somewhat unimportant</th> <th>Not important at all</th> </tr> </thead> <tbody> <tr> <td>Salary</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Benefits</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job security</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job location</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Opportunities for advancement</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Intellectual challenge</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Level of responsibility</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Degree of independence</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Contribution to society</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; 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| Salary                        | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Benefits                      | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Job security                  | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Job location                  | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Opportunities for advancement | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Intellectual challenge        | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Level of responsibility       | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Degree of independence        | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |
| Contribution to society       | <input type="radio"/>   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                      |                      |        |                       |                       |                       |                       |          |                       |                       |                       |                       |              |                       |                       |                       |                       |              |                       |                       |                       |                       |                               |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |                        |                       |                       |                       |                       |                         |                       |                       |                       |                       |   |                  |

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|--|---|-----------------------|-------------|---|---|---|-----------------------|--|-----------------------|---|--|---|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|------------------|
| CSINTRO  | <p>During which of the following time periods did you take courses at a community college?</p> <p>Select Yes or No for each item.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> </tr> </thead> <tbody> <tr> <td>Before graduating from high school or earning a high school equivalency certificate</td> <td><input type="radio"/></td> </tr> <tr> <td>After high school and before ever enrolling in a 4-year college or university</td> <td><input type="radio"/></td> </tr> <tr> <td>While enrolled in a 4-year college or university and before receiving my first bachelor's degree</td> <td><input type="radio"/></td> </tr> <tr> <td>After leaving a 4-year college or university without receiving my first bachelor's degree</td> <td><input type="radio"/></td> </tr> <tr> <td>Any time after receiving my first bachelor's degree</td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p>   |                       | Yes         | Before graduating from high school or earning a high school equivalency certificate | <input type="radio"/>                                     | After high school and before ever enrolling in a 4-year college or university | <input type="radio"/> | While enrolled in a 4-year college or university and before receiving my first bachelor's degree | <input type="radio"/> | After leaving a 4-year college or university without receiving my first bachelor's degree | <input type="radio"/>  | Any time after receiving my first bachelor's degree | <input type="radio"/> | <p>During which of the following time periods did you take courses at a community college?</p> <p>Select Yes or No for each item.</p> <ol style="list-style-type: none"> <li>Before graduating from high school or earning a high school equivalency certificate<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>After high school and before ever enrolling in a 4-year college or university<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>While enrolled in a 4-year college or university and before receiving my first bachelor's degree<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>After leaving a 4-year college or university without receiving my first bachelor's degree<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Any time after receiving my first bachelor's degree<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> </ol> <p>&lt; Previous      Next &gt;</p> | Grid format only      |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
|  | Yes   |                       |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| Before graduating from high school or earning a high school equivalency certificate              | <input type="radio"/>   |                       |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| After high school and before ever enrolling in a 4-year college or university                    | <input type="radio"/>   |                       |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
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| After leaving a 4-year college or university without receiving my first bachelor's degree        | <input type="radio"/>   |                       |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| Any time after receiving my first bachelor's degree  | <input type="radio"/>   |                       |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| CCINTRO  | <p>Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses?</p> <p>Select Yes or No for each item.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>To earn college credits while still attending high school</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To complete an associate degree</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To prepare for college/increase chance of acceptance to a 4-year college or university</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To earn credits for a bachelor's degree</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>For financial reasons (e.g., cost of a 4-year school)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To gain further skills or knowledge in my academic or occupational field</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To facilitate a change in my academic or occupational field</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To increase opportunities for promotion, advancement, or higher salary</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>For leisure or personal interest</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Other reason, specify</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p> |                       | Yes         | No  | To earn college credits while still attending high school | <input type="radio"/>   | <input type="radio"/> | To complete an associate degree  | <input type="radio"/> | <input type="radio"/>   | To prepare for college/increase chance of acceptance to a 4-year college or university | <input type="radio"/>                               | <input type="radio"/> | To earn credits for a bachelor's degree   | <input type="radio"/> | <input type="radio"/> | For financial reasons (e.g., cost of a 4-year school) | <input type="radio"/> | <input type="radio"/> | To gain further skills or knowledge in my academic or occupational field | <input type="radio"/> | <input type="radio"/> | To facilitate a change in my academic or occupational field | <input type="radio"/> | <input type="radio"/> | To increase opportunities for promotion, advancement, or higher salary | <input type="radio"/> | <input type="radio"/> | For leisure or personal interest | <input type="radio"/> | <input type="radio"/> | Other reason, specify | <input type="radio"/> | <input type="radio"/> | <p>Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses?</p> <p>Select Yes or No for each item.</p> <ol style="list-style-type: none"> <li>To earn college credits while still attending high school<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To complete an associate degree<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To prepare for college/increase chance of acceptance to a 4-year college or university<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To earn credits for a bachelor's degree<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>For financial reasons (e.g., cost of a 4-year school)<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To gain further skills or knowledge in my academic or occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To facilitate a change in my academic or occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To increase opportunities for promotion, advancement, or higher salary<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>For leisure or personal interest<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Other reason, specify<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> </ol> <p>&lt; Previous      Next &gt;</p> | Grid format only |
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| To earn college credits while still attending high school  | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| To complete an associate degree  | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| To prepare for college/increase chance of acceptance to a 4-year college or university           | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| To earn credits for a bachelor's degree  | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| For financial reasons (e.g., cost of a 4-year school)  | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| To gain further skills or knowledge in my academic or occupational field                         | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
| To facilitate a change in my academic or occupational field                                      | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |
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| Other reason, specify  | <input type="radio"/>   | <input type="radio"/> |             |   |   |   |                       |  |                       |   |  |   |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |  |                       |                       |                                  |                       |                       |                       |                       |                       |  |                  |

| Screen  | Production   | Bridge Panel          | Differences |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
|---|--|-----------------------|-------------|----|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|--------------------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|----------------------------------|-----------------------|-----------------------|----------------------------------|-----------------------|-----------------------|-----------------------------------|-----------------------|-----------------------|--|------------------|
| ACINTRO   | <p>For which of the following reasons were you taking courses or enrolled?<br/><i>Select Yes or No for each item.</i></p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>To gain further education before beginning a career</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To prepare for graduate school or further education</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To change my academic or occupational field</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To gain <u>further</u> skills or knowledge in my academic or occupational field</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>For licensure or certification</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>To increase opportunities for promotion, advancement, or higher salary</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Required or expected by employer</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>For leisure or personal interest</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Some other reason, <i>specify</i></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next"/></p> |                       | Yes         | No | To gain further education before beginning a career         | <input type="radio"/> | <input type="radio"/> | To prepare for graduate school or further education | <input type="radio"/> | <input type="radio"/> | To change my academic or occupational field                             | <input type="radio"/> | <input type="radio"/> | To gain <u>further</u> skills or knowledge in my academic or occupational field  | <input type="radio"/> | <input type="radio"/> | For licensure or certification | <input type="radio"/> | <input type="radio"/> | To increase opportunities for promotion, advancement, or higher salary | <input type="radio"/> | <input type="radio"/> | Required or expected by employer | <input type="radio"/> | <input type="radio"/> | For leisure or personal interest | <input type="radio"/> | <input type="radio"/> | Some other reason, <i>specify</i> | <input type="radio"/> | <input type="radio"/> | <p>For which of the following reasons were you taking courses or enrolled?<br/><i>Select Yes or No for each item.</i></p> <ol style="list-style-type: none"> <li>To gain further education before beginning a career<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To prepare for graduate school or further education<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To change my academic or occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To gain <u>further</u> skills or knowledge in my academic or occupational field<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>For licensure or certification<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>To increase opportunities for promotion, advancement, or higher salary<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Required or expected by employer<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>For leisure or personal interest<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Some other reason, <i>specify</i><br/><input type="radio"/> Yes<br/><input type="text"/><br/><input type="radio"/> No</li> </ol> <p><input type="button" value="Previous"/> <input type="button" value="Next"/></p> | Grid format only |
|   | Yes  | No                    |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| To gain further education before beginning a career                             | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| To prepare for graduate school or further education                             | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| To change my academic or occupational field                                     | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| To gain <u>further</u> skills or knowledge in my academic or occupational field | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| For licensure or certification  | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| To increase opportunities for promotion, advancement, or higher salary          | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| Required or expected by employer  | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| For leisure or personal interest  | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| Some other reason, <i>specify</i>   | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| SPINTRO   | <p>Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in...?<br/><i>Select Yes or No for each item.</i></p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Engineering, computer science, math or the natural sciences</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>The social sciences</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Some other field (e.g., health, business, or education), <i>specify</i></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next"/></p>   |                       | Yes         | No | Engineering, computer science, math or the natural sciences | <input type="radio"/> | <input type="radio"/> | The social sciences                                 | <input type="radio"/> | <input type="radio"/> | Some other field (e.g., health, business, or education), <i>specify</i> | <input type="radio"/> | <input type="radio"/> | <p>Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in...?<br/><i>Select Yes or No for each item.</i></p> <ol style="list-style-type: none"> <li>Engineering, computer science, math or the natural sciences<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>The social sciences<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Some other field (e.g., health, business, or education), <i>specify</i><br/><input type="radio"/> Yes<br/><input type="text"/><br/><input type="radio"/> No</li> </ol> <p><input type="button" value="Previous"/> <input type="button" value="Next"/></p> | Grid format only      |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
|   | Yes  | No                    |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| Engineering, computer science, math or the natural sciences                     | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| The social sciences   | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |
| Some other field (e.g., health, business, or education), <i>specify</i>         | <input type="radio"/>  | <input type="radio"/> |             |    |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |                                |                       |                       |  |                       |                       |                                  |                       |                       |                                  |                       |                       |                                   |                       |                       |  |                  |

| Screen  | Production  | Bridge Panel          | Differences |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
|---|---|-----------------------|-------------|----|------------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|-------------------------------|-----------------------|-----------------------|---|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|-----------------------------------|-----------------------|-----------------------|--|------------------|
| CMINTRO   | <p>Which factors were important in your decision to first come to the United States for six months or longer?</p> <p>Select Yes or No for each item.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Family-related reasons</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Educational opportunities in the United States</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job or economic opportunities</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Scientific or professional infrastructure in my field</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>It was not my decision</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Some other reason, <i>specify</i></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p> |                       | Yes         | No | Family-related reasons | <input type="radio"/> | <input type="radio"/> | Educational opportunities in the United States | <input type="radio"/> | <input type="radio"/> | Job or economic opportunities | <input type="radio"/> | <input type="radio"/> | Scientific or professional infrastructure in my field | <input type="radio"/> | <input type="radio"/> | It was not my decision | <input type="radio"/> | <input type="radio"/> | Some other reason, <i>specify</i> | <input type="radio"/> | <input type="radio"/> | <p>Which factors were important in your decision to first come to the United States for six months or longer?</p> <p>Select Yes or No for each item.</p> <ol style="list-style-type: none"> <li>Family-related reasons <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Educational opportunities in the United States <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Job or economic opportunities <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Scientific or professional infrastructure in my field <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>It was not my decision <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Some other reason, <i>specify</i> <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> </ol> <p>&lt; Previous      Next &gt;</p> | Grid format only |
|   | Yes   | No                    |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
| Family-related reasons                                | <input type="radio"/>   | <input type="radio"/> |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
| Educational opportunities in the United States        | <input type="radio"/>   | <input type="radio"/> |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
| Job or economic opportunities                         | <input type="radio"/>   | <input type="radio"/> |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
| Scientific or professional infrastructure in my field | <input type="radio"/>   | <input type="radio"/> |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
| It was not my decision                                | <input type="radio"/>   | <input type="radio"/> |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |
| Some other reason, <i>specify</i>                     | <input type="radio"/>   | <input type="radio"/> |             |    |                        |                       |                       |  |                       |                       |                               |                       |                       |   |                       |                       |                        |                       |                       |                                   |                       |                       |  |                  |

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021

Table 17: Screenshot comparisons of SOGI questions

| Screen  | Production   | Bridge Panel  | Differences  |
|---|--|---|--|
| <p>GENDER (i.e., Sex)<br/>(Production)</p> <p>BIRTH_GENDER (i.e., Birth Sex)<br/>NOW_GENDER (i.e., Current Gender)<br/>(Bridge Panel)</p> | <p>What is your sex? <a href="#">Help</a></p> <p><input type="radio"/> Male<br/><input type="radio"/> Female</p> <p>&lt; Previous      Next &gt;</p> | <p>What sex were you assigned at birth, on your original birth certificate?</p> <p><input type="radio"/> Male<br/><input type="radio"/> Female<br/><input type="radio"/> Don't know</p> <p>&lt; Previous      Next &gt;</p> | Changed question about sex and added gender question |

| Screen                                    | Production        | Bridge Panel  | Differences           |
|---|-------------------|---|-----------------------|
|   |                   | <p>What is your current gender identity?</p> <p>Select all that apply.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Male</li> <li><input type="checkbox"/> Female</li> <li><input type="checkbox"/> Transgender</li> <li><input type="checkbox"/> Gender non-conforming</li> <li><input type="checkbox"/> Non-binary</li> <li><input type="checkbox"/> Genderfluid</li> <li><input type="checkbox"/> Genderqueer</li> <li><input type="checkbox"/> Other gender identity, <i>specify</i></li> </ul> <input style="width: 250px; height: 15px;" type="text"/> <p><input type="checkbox"/> Prefer not to answer</p> <p style="text-align: center;"> <input style="background-color: #2c4e64; color: white; padding: 5px 15px;" type="button" value=" &lt; Previous "/> <input style="background-color: #2c4e64; color: white; padding: 5px 15px;" type="button" value=" Next &gt; "/> </p>   |                       |
| ORIENTATION<br>(i.e., Sexual Orientation) | Not on production | <p>Regardless of your sexual experience, what is your sexual identity or orientation?</p> <p>Select all that apply.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Lesbian or gay</li> <li><input type="checkbox"/> Straight, that is, not gay</li> <li><input type="checkbox"/> Bisexual</li> <li><input type="checkbox"/> Asexual</li> <li><input type="checkbox"/> Pansexual</li> <li><input type="checkbox"/> Fluid</li> <li><input type="checkbox"/> Queer</li> <li><input type="checkbox"/> Other sexual orientation, <i>specify</i></li> </ul> <input style="width: 250px; height: 15px;" type="text"/> <p><input type="checkbox"/> Prefer not to answer</p> <p style="text-align: center;"> <input style="background-color: #2c4e64; color: white; padding: 5px 15px;" type="button" value=" &lt; Previous "/> <input style="background-color: #2c4e64; color: white; padding: 5px 15px;" type="button" value=" Next &gt; "/> </p> | Added to Bridge Panel |

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021



Table 18: Screenshot comparison of coronavirus pandemic-related questions

| Screen  | Production   | Bridge Panel                            | Differences                             |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
|---|--|---|---|----|---------|-----------------------|-----------------------|--|-----------------------|-----------------------|--|-----------------------|-----------------------|---------|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|--|--|
| NWINTRO   | <p>During the week of February 1, 2021, what were your reasons for not working?</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Retired</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>On layoff from a job due to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>On layoff from a job for reasons unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Student</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family responsibilities unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Chronic illness or permanent disability</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Suitable job not available</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Did not need or want to work</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Other reason, <i>specify</i></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p> |   | Yes                                     | No | Retired | <input type="radio"/> | <input type="radio"/> | On layoff from a job due to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | On layoff from a job for reasons unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Student | <input type="radio"/> | <input type="radio"/> | Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare) | <input type="radio"/> | <input type="radio"/> | Family responsibilities unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Chronic illness or permanent disability | <input type="radio"/> | <input type="radio"/> | Suitable job not available | <input type="radio"/> | <input type="radio"/> | Did not need or want to work | <input type="radio"/> | <input type="radio"/> | Other reason, <i>specify</i> | <input type="radio"/> | <input type="radio"/> | <p>During the week of February 1, 2021, what were your reasons for not working?</p> <ol style="list-style-type: none"> <li>Retired<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>On layoff from a job<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Student<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Family responsibilities<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Chronic illness or permanent disability<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Suitable job not available<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Did not need or want to work<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Other reason, <i>specify</i><br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> </ol> <p>&lt; Previous      Next &gt;</p> | <p>Pandemic-related items</p> <p>Grid format</p> |
|   | Yes  | No                                      |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Retired   | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| On layoff from a job due to the coronavirus pandemic                                | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| On layoff from a job for reasons unrelated to the coronavirus pandemic              | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Student   | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare) | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Family responsibilities unrelated to the coronavirus pandemic                       | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Chronic illness or permanent disability   | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Suitable job not available  | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Did not need or want to work  | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| Other reason, <i>specify</i>  | <input type="radio"/>  | <input type="radio"/>                   |   |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| SALCOV1   | <p>For the principal job you held during the week of February 1, 2021, has your basic annual salary been affected at any time by the coronavirus pandemic?</p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>&lt; Previous      Next &gt;</p>   | <p>Not included in the Bridge Panel</p> | <p>Not included in the Bridge Panel</p> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| SALEFF  | <p>Did the salary you provided reflect the effects of the coronavirus pandemic?</p> <p><input type="radio"/> Yes, the salary I provided reflects changes due to the coronavirus pandemic<br/><input type="radio"/> No, I provided my usual salary</p> <p>&lt; Previous      Next &gt;</p>  | <p>Not included in the Bridge Panel</p> | <p>Not included in the Bridge Panel</p> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |
| SALCOV2   | <p>How has your basic annual salary been affected by the coronavirus pandemic?</p> <p><input type="radio"/> It was decreased temporarily but has returned to normal<br/><input type="radio"/> It is currently decreased<br/><input type="radio"/> It was increased temporarily but has returned to normal<br/><input type="radio"/> It is currently increased<br/><input type="radio"/> I did not receive an expected raise or cost of living increase<br/><input type="radio"/> Other, <i>specify</i></p> <p>&lt; Previous      Next &gt;</p>   | <p>Not included in the Bridge Panel</p> | <p>Not included in the Bridge Panel</p> |    |         |                       |                       |  |                       |                       |  |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                            |                       |                       |                              |                       |                       |                              |                       |                       |  |  |



| Screen  | Production  | Bridge Panel                     | Differences                      |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
|---|---|----------------------------------|----------------------------------|----|------------------------------------|-----------------------|-----------------------|---------|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|------------------------|-----------------------|-----------------------|---|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|---|--|
| SALDEC  | <p>By how much did your salary decrease due to the pandemic?</p> <p><i>Your best estimate is fine</i></p> <p>It decreased by \$ <input type="text"/> .00</p> <p><input data-bbox="262 310 415 342" type="button" value=" &lt; Previous "/> <input data-bbox="485 310 638 342" type="button" value=" Next &gt; "/></p>   | Not included in the Bridge Panel | Not included in the Bridge Panel |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| SALINC  | <p>By how much did your salary increase due to the pandemic?</p> <p><i>Your best estimate is fine</i></p> <p>It increased by \$ <input type="text"/> .00</p> <p><input data-bbox="262 529 415 561" type="button" value=" &lt; Previous "/> <input data-bbox="485 529 638 561" type="button" value=" Next &gt; "/></p>   | Not included in the Bridge Panel | Not included in the Bridge Panel |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| PJINTRO   | <p>Did you want to work 35 or more hours per week on your principal job?</p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>Why did you usually work fewer than 35 hours?</p> <p><i>Select Yes or No for each item.</i></p> <table border="1" data-bbox="262 727 840 1185"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Previously retired or semi-retired</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Student</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family responsibilities unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Full-time job not available due to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Full-time job not available unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Hours or work reduced due to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Hours or work reduced unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Held more than one job</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Did not need or want to work more hours</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Other reason, <i>specify</i></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p><input type="text"/></p> |                                  | Yes                              | No | Previously retired or semi-retired | <input type="radio"/> | <input type="radio"/> | Student | <input type="radio"/> | <input type="radio"/> | Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare) | <input type="radio"/> | <input type="radio"/> | Family responsibilities unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Full-time job not available due to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Full-time job not available unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Hours or work reduced due to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Hours or work reduced unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Held more than one job | <input type="radio"/> | <input type="radio"/> | Did not need or want to work more hours | <input type="radio"/> | <input type="radio"/> | Other reason, <i>specify</i> | <input type="radio"/> | <input type="radio"/> | <p>Did you want to work 35 or more hours per week on your principal job?</p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p>Why did you usually work fewer than 35 hours?</p> <p><i>Select Yes or No for each item.</i></p> <p><b>1. Previously retired or semi-retired</b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><b>2. Student</b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><b>3. Family responsibilities</b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><b>4. Full-time job not available</b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><b>5. Held more than one job</b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><b>6. Did not need or want to work more hours</b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><b>7. Other reason, <i>specify</i></b></p> <p><input type="radio"/> Yes<br/><input type="radio"/> No</p> <p><input type="text"/></p> | <p>Pandemic-related items</p> <p>Grid format</p> |
|   | Yes   | No                               |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Previously retired or semi-retired  | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Student   | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Family responsibilities due to the coronavirus pandemic (e.g. childcare, eldercare) | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Family responsibilities unrelated to the coronavirus pandemic                       | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Full-time job not available due to the coronavirus pandemic                         | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Full-time job not available unrelated to the coronavirus pandemic                   | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Hours or work reduced due to the coronavirus pandemic                               | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Hours or work reduced unrelated to the coronavirus pandemic                         | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Held more than one job  | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Did not need or want to work more hours   | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |
| Other reason, <i>specify</i>  | <input type="radio"/>   | <input type="radio"/>            |                                  |    |                                    |                       |                       |         |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |                        |                       |                       |   |                       |                       |                              |                       |                       |   |  |

| Screen  | Production  | Bridge Panel                     | Differences                      |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
|---|---|----------------------------------|----------------------------------|----|--|-----------------------|-----------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|---|--|
| BFTINTRO  | <p>Thinking of your principal job during the week of February 1, 2021, which of the following benefits were available to you, even if you chose not to take them?</p> <p>Select Yes or No for each item.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Health insurance that was at least partially paid by your employer</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>A pension plan or a retirement plan to which your employer contributed</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>A profit-sharing plan</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>New or additional paid leave due to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Paid vacation, sick, or personal days unrelated to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>&lt; Previous      Next &gt;</p> |                                  | Yes                              | No | Health insurance that was at least partially paid by your employer | <input type="radio"/> | <input type="radio"/> | A pension plan or a retirement plan to which your employer contributed | <input type="radio"/> | <input type="radio"/> | A profit-sharing plan | <input type="radio"/> | <input type="radio"/> | New or additional paid leave due to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Paid vacation, sick, or personal days unrelated to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | <p>Thinking of your principal job during the week of February 1, 2021, which of the following benefits were available to you, even if you chose not to take them?</p> <p>Select Yes or No for each item.</p> <ol style="list-style-type: none"> <li>Health insurance that was at least partially paid by your employer<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>A pension plan or a retirement plan to which your employer contributed<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>A profit-sharing plan<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> <li>Paid vacation, sick, or personal days<br/><input type="radio"/> Yes<br/><input type="radio"/> No</li> </ol> <p>&lt; Previous      Next &gt;</p> | <p>Pandemic-related items</p> <p>Grid format</p> |
|   | Yes   | No                               |                                  |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| Health insurance that was at least partially paid by your employer          | <input type="radio"/>   | <input type="radio"/>            |                                  |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| A pension plan or a retirement plan to which your employer contributed      | <input type="radio"/>   | <input type="radio"/>            |                                  |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| A profit-sharing plan   | <input type="radio"/>   | <input type="radio"/>            |                                  |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| New or additional paid leave due to the coronavirus pandemic                | <input type="radio"/>   | <input type="radio"/>            |                                  |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| Paid vacation, sick, or personal days unrelated to the coronavirus pandemic | <input type="radio"/>   | <input type="radio"/>            |                                  |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| TELEW   | <p>Thinking of your principal job during the week of February 1, 2021, which of the following best describes whether you were allowed or required to telecommute/work remotely?</p> <p><input type="radio"/> I was allowed or required to telecommute/work remotely due to the coronavirus pandemic<br/> <input type="radio"/> I was allowed or required to telecommute/work remotely regardless of the coronavirus pandemic<br/> <input type="radio"/> I was not allowed or required to telecommute/work remotely<br/> <input type="radio"/> Telecommuting/working remotely did not make sense for my job</p> <p>&lt; Previous      Next &gt;</p>  | Not included in the Bridge Panel | Not included in the Bridge Panel |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| ERNCOV1   | <p>How was your total earned income for 2020 affected by the coronavirus pandemic?</p> <p><input type="radio"/> It increased<br/> <input type="radio"/> It decreased<br/> <input type="radio"/> It was not affected</p> <p>&lt; Previous      Next &gt;</p>   | Not included in the Bridge Panel | Not included in the Bridge Panel |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| ERNDEC  | <p>By how much did your income for 2020 decrease due to the pandemic?</p> <p>Your best estimate is fine</p> <p>It decreased by \$ <input type="text"/>.00</p> <p>&lt; Previous      Next &gt;</p>   | Not included in the Bridge Panel | Not included in the Bridge Panel |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |
| ERNINC  | <p>By how much did your income for 2020 increase due to the pandemic?</p> <p>Your best estimate is fine</p> <p>It increased by \$ <input type="text"/>.00</p> <p>&lt; Previous      Next &gt;</p>   | Not included in the Bridge Panel | Not included in the Bridge Panel |    |  |                       |                       |  |                       |                       |                       |                       |                       |  |                       |                       |   |                       |                       |   |  |

| Screen  | Production  | Bridge Panel  | Differences  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
|---|---|---|--|----|------------------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|--------------|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|---|-----------------------|-----------------------|--|-----------------------|-----------------------|---|-----------------------|-----------------------|---------|-----------------------|-----------------------|----------------------------|-----------------------|-----------------------|---|--|
| CHINTRO   | <p>Why did you change your employer or your job between the week of February 1, 2019 and the week of February 1, 2021?</p> <p>Select Yes or No for each item.</p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>Pay, promotion opportunities</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Working conditions (e.g., hours, equipment, working environment)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Job location</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Change in career or professional interests</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family-related reasons due to the coronavirus pandemic (e.g., childcare, eldercare)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Family-related reasons unrelated to the coronavirus pandemic (e.g., children, spouse's job moved)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>School-related reasons (e.g., returned to school, completed a degree)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Laid off or job terminated due to the coronavirus pandemic</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Laid off or job terminated for reasons other than the coronavirus pandemic (includes company closings, mergers, buyouts, grant or contract ended)</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Retired</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Some other reason, specify</td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p> |   | Yes  | No | Pay, promotion opportunities | <input type="radio"/> | <input type="radio"/> | Working conditions (e.g., hours, equipment, working environment) | <input type="radio"/> | <input type="radio"/> | Job location | <input type="radio"/> | <input type="radio"/> | Change in career or professional interests | <input type="radio"/> | <input type="radio"/> | Family-related reasons due to the coronavirus pandemic (e.g., childcare, eldercare) | <input type="radio"/> | <input type="radio"/> | Family-related reasons unrelated to the coronavirus pandemic (e.g., children, spouse's job moved) | <input type="radio"/> | <input type="radio"/> | School-related reasons (e.g., returned to school, completed a degree) | <input type="radio"/> | <input type="radio"/> | Laid off or job terminated due to the coronavirus pandemic | <input type="radio"/> | <input type="radio"/> | Laid off or job terminated for reasons other than the coronavirus pandemic (includes company closings, mergers, buyouts, grant or contract ended) | <input type="radio"/> | <input type="radio"/> | Retired | <input type="radio"/> | <input type="radio"/> | Some other reason, specify | <input type="radio"/> | <input type="radio"/> | <p>Why did you change your employer or your job between the week of February 1, 2019 and the week of February 1, 2021?</p> <p>Select Yes or No for each item.</p> <ol style="list-style-type: none"> <li>Pay, promotion opportunities <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Working conditions (e.g., hours, equipment, working environment) <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Job location <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Change in career or professional interests <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Family-related reasons (e.g., children, spouse's job moved) <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>School-related reasons (e.g., returned to school, completed a degree) <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Laid off or job terminated (includes company closings, mergers, buyouts, grant or contract ended) <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Retired <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> <li>Some other reason, specify <ul style="list-style-type: none"> <li><input type="radio"/> Yes</li> <li><input type="radio"/> No</li> </ul> </li> </ol> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p> | <p>Pandemic-related items</p> <p>Grid format</p> |
|   | Yes   | No  |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Pay, promotion opportunities  | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Working conditions (e.g., hours, equipment, working environment)  | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Job location  | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Change in career or professional interests  | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Family-related reasons due to the coronavirus pandemic (e.g., childcare, eldercare)   | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Family-related reasons unrelated to the coronavirus pandemic (e.g., children, spouse's job moved)   | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| School-related reasons (e.g., returned to school, completed a degree)   | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Laid off or job terminated due to the coronavirus pandemic  | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Laid off or job terminated for reasons other than the coronavirus pandemic (includes company closings, mergers, buyouts, grant or contract ended) | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Retired   | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| Some other reason, specify  | <input type="radio"/>   | <input type="radio"/>   |  |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |
| PROMTGI   | <p>During the past 12 months, did you attend any professional conferences or professional society or association meetings?</p> <p>Include regional, national, or international meetings.</p> <p><input type="radio"/> Yes, I attended in person or virtually (i.e., online or by remote access)</p> <p><input checked="" type="radio"/> No</p> <p>To how many regional, national, or international professional societies or associations do you currently belong?</p> <p>If none, enter "0"</p> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p>  | <p>During the past 12 months, did you attend any professional conferences or professional societies or association meetings?</p> <p>Include regional, national, or international meetings.</p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p>To how many regional, national, or international professional societies or associations do you currently belong?</p> <p>If none, enter "0"</p> <p><input type="text"/></p> <p><input type="button" value="Previous"/> <input type="button" value="Next &gt;"/></p> | <p>Response changed from "Yes, I attended in person or virtually" to "Yes"</p> |    |                              |                       |                       |  |                       |                       |              |                       |                       |  |                       |                       |   |                       |                       |   |                       |                       |   |                       |                       |  |                       |                       |   |                       |                       |         |                       |                       |                            |                       |                       |   |  |

Source: U.S. Census Bureau, National Survey of College Graduates, Associate Director for Demographic Programs – Survey Operations, 2021

## Appendix E Item nonresponse rates for grid and item-by-item formats, and SOGI

Table 19 and Table 20 contain item nonresponse rates for the grid and SOGI analyses. Items within Table 17 are listed in the order they appear in the NSCG production or Bridge Panel survey.

Table 19: Item nonresponse rates for grid and item-by-item

| Question<br>(Census question ID)   | Item   | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|--|--|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|  |  |             | Percent              | Std. error | Percent                        | Std. Error |                       |
| <b>Did your duties on this job require the technical expertise of a bachelor's degree or higher in... (MGINTRO)</b>                    | Engineering, computer science, math, or the natural sciences     | Missing     | 13.5                 | 0.5        | 5.7                            | 0.8        | * < .0001             |
|  |  | Not missing | 86.5                 | 0.5        | 94.3                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | The social sciences  | Missing     | 17.1                 | 0.5        | 9.1                            | 0.9        | * < .0001             |
|  |  | Not missing | 82.9                 | 0.5        | 90.9                           | 0.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Some other field (e.g., health, business, or education), specify | Missing     | 9.0                  | 0.3        | 9.2                            | 1.0        | 0.7988                |
|  |  | Not missing | 91.0                 | 0.3        | 90.8                           | 1.0        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
| <b>Did any of the following factors influence your decision to work in an area outside the field of your highest degree? (NRINTRO)</b> | Pay, promotion opportunities                                     | Missing     | 12.0                 | 1.2        | 2.7                            | 1.9        | * 0.0154              |
|  |  | Not missing | 88.0                 | 1.2        | 97.3                           | 1.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Working conditions (e.g., hours, equipment, working environment) | Missing     | 15.3                 | 1.3        | 3.3                            | 1.8        | * 0.0015              |
|  |  | Not missing | 84.7                 | 1.3        | 96.7                           | 1.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Job location   | Missing     | 14.6                 | 1.2        | 5.6                            | 1.8        | * 0.0018              |
|  |  | Not missing | 85.4                 | 1.2        | 94.4                           | 1.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Change in career or professional interests                       | Missing     | 14.5                 | 1.3        | 3.1                            | 1.9        | * 0.0041              |
|  |  | Not missing | 85.5                 | 1.3        | 96.9                           | 1.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Family-related reasons (e.g., children, spouse's job moved)      | Missing     | 19.5                 | 1.6        | 5.0                            | 1.8        | * < .0001             |
|  |  | Not missing | 80.5                 | 1.6        | 95.0                           | 1.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 18.6                 | 1.5        | 4.9                            | 2.3        | * 0.0011              |

| Question<br>(Census question ID)   | Item   | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|--|--|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|  |  |             | Percent              | Std. error | Percent                        | Std. Error |                       |
|  | Job in highest degree field not available  | Not missing | 81.4                 | 1.5        | 95.1                           | 2.3        | 0.2820                |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Some other factor, specify   | Missing     | 28.8                 | 1.6        | 23.9                           | 3.8        |                       |
|  |  | Not missing | 71.2                 | 1.6        | 76.1                           | 3.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
| <b>The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a typical work week on this job? (WAINTRO)</b> | Accounting, finance, contracts   | Missing     | 10.0                 | 0.4        | 4.4                            | 0.7        | *<.0001               |
|  |  | Not missing | 90.0                 | 0.4        | 95.6                           | 0.7        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Basic research--study directed toward gaining scientific knowledge primarily for its own sake  | Missing     | 14.2                 | 0.5        | 6.1                            | 0.8        | *<.0001               |
|  |  | Not missing | 85.8                 | 0.5        | 93.9                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Applied research--study directed toward gaining scientific knowledge to meet a recognized need | Missing     | 13.9                 | 0.5        | 7.4                            | 1.0        | *<.0001               |
|  |  | Not missing | 86.1                 | 0.5        | 92.6                           | 1.0        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Development--using knowledge gained from research for the production of materials, devices     | Missing     | 13.4                 | 0.5        | 6.3                            | 0.9        | *<.0001               |
|  |  | Not missing | 86.6                 | 0.5        | 93.7                           | 0.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Design of equipment, processes, structures, models   | Missing     | 13.7                 | 0.5        | 6.6                            | 0.9        | *<.0001               |
|  |  | Not missing | 86.3                 | 0.5        | 93.4                           | 0.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Computer programming, systems or applications development                                      | Missing     | 13.9                 | 0.5        | 6.4                            | 1.0        | *<.0001               |
|  |  | Not missing | 86.1                 | 0.5        | 93.6                           | 1.0        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Human resources--including recruiting, personnel development, training                         | Missing     | 13.0                 | 0.5        | 5.6                            | 0.8        | *<.0001               |
|  |  | Not missing | 87.0                 | 0.5        | 94.4                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Managing or supervising people or projects   | Missing     | 8.2                  | 0.4        | 3.7                            | 0.6        | *<.0001               |
|  |  | Not missing | 91.8                 | 0.4        | 96.3                           | 0.6        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 15.4                 | 0.5        | 8.3                            | 1.1        | *<.0001               |
|  |  | Not missing | 84.6                 | 0.5        | 91.7                           | 1.1        |                       |

| Question<br>(Census question ID)   | Item   | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |        |
|--|--|-------------|----------------------|------------|--------------------------------|------------|-----------------------|--------|
|  |  |             | Percent              | Std. error | Percent                        | Std. Error |                       |        |
| <b>Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO)</b> | Production, operations, maintenance (e.g., chip production, operating lab equipment)   | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
|  | Professional services (e.g., health care, counseling, financial services, legal services)  | Missing     | 12.0                 | 0.5        | 4.7                            | 0.7        | * < .0001             |        |
|  |  | Not missing | 88.0                 | 0.5        | 95.3                           | 0.7        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
|  | Sales, purchasing, marketing, customer service, public relations   | Missing     | 12.7                 | 0.5        | 6.4                            | 0.9        | * < .0001             |        |
|  |  | Not missing | 87.3                 | 0.5        | 93.6                           | 0.9        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
|  | Quality or productivity management   | Missing     | 14.2                 | 0.5        | 6.8                            | 0.9        | * < .0001             |        |
|  |  | Not missing | 85.8                 | 0.5        | 93.2                           | 0.9        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
|  | Teaching   | Missing     | 14.0                 | 0.5        | 6.3                            | 0.9        | * < .0001             |        |
|  |  | Not missing | 86.0                 | 0.5        | 93.7                           | 0.9        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
|  | Other activity, specify  | Missing     | 33.0                 | 0.7        | 29.9                           | 1.7        | 0.1266                |        |
|  |  | Not missing | 67.0                 | 0.7        | 70.1                           | 1.7        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
|  | <b>Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO)</b> | Salary      | Missing              | 0.5        | 0.1                            | 0.3        | 0.1                   | 0.1448 |
|  |  |             | Not missing          | 99.5       | 0.1                            | 99.7       | 0.1                   |        |
| Total  |  |             | 100.0                | -          | 100.0                          | -          |                       |        |
| Benefits   |  | Missing     | 1.2                  | 0.2        | 0.5                            | 0.2        | * 0.0642              |        |
|  |  | Not missing | 98.8                 | 0.2        | 99.5                           | 0.2        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
| Job security   |  | Missing     | 0.7                  | 0.1        | 0.3                            | 0.1        | * 0.0308              |        |
|  |  | Not missing | 99.3                 | 0.1        | 99.7                           | 0.1        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
| Job location   |  | Missing     | 0.5                  | 0.1        | 0.4                            | 0.2        | 0.5340                |        |
|  |  | Not missing | 99.5                 | 0.1        | 99.6                           | 0.2        |                       |        |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |        |
| Opportunities for advancement  |  | Missing     | 1.2                  | 0.1        | 0.6                            | 0.2        | * 0.0585              |        |
|  |  | Not missing | 98.8                 | 0.1        | 99.4                           | 0.2        |                       |        |

| Question<br>(Census question ID)  | Item  | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|---|---|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|   |   |             | Percent              | Std. error | Percent                        | Std. Error |                       |
|   | Intellectual challenge  | Total       | 100.0                | -          | 100.0                          | -          | 0.3946                |
|   |   | Missing     | 0.8                  | 0.1        | 0.6                            | 0.2        |                       |
|   |   | Not missing | 99.2                 | 0.1        | 99.4                           | 0.2        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | Level of responsibility   | Missing     | 0.6                  | 0.1        | 0.3                            | 0.1        | *0.0606               |
|   |   | Not missing | 99.4                 | 0.1        | 99.7                           | 0.1        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | Degree of independence  | Missing     | 0.6                  | 0.1        | 0.4                            | 0.1        | 0.2593                |
|   |   | Not missing | 99.4                 | 0.1        | 99.6                           | 0.1        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | Contributions to society  | Missing     | 0.8                  | 0.1        | 0.6                            | 0.2        | 0.5844                |
|   |   | Not missing | 99.2                 | 0.1        | 99.4                           | 0.2        |                       |
| Total   |   | 100.0       | -                    | 100.0      | -                              |            |                       |
| <b>On February 1, 2021, why did you hold this certification or license? (CLICINTRO)</b> | To improve skills or knowledge in my current occupational field                         | Missing     | 13.3                 | 0.8        | 7.7                            | 1.6        | *0.0076               |
|   |   | Not missing | 86.7                 | 0.8        | 92.3                           | 1.6        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | To increase opportunities for promotion or advancement in my current occupational field | Missing     | 14.7                 | 0.8        | 7.7                            | 1.6        | *0.0018               |
|   |   | Not missing | 85.3                 | 0.8        | 92.3                           | 1.6        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | To facilitate a chance to a different occupational field                                | Missing     | 17.8                 | 0.9        | 10.4                           | 1.9        | *0.0023               |
|   |   | Not missing | 82.2                 | 0.9        | 89.6                           | 1.9        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | Required or expected by employer  | Missing     | 8.4                  | 0.6        | 6.5                            | 1.3        | 0.2262                |
|   |   | Not missing | 91.6                 | 0.6        | 93.5                           | 1.3        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | To start my own business  | Missing     | 19.4                 | 0.9        | 11.3                           | 1.8        | *0.0009               |
|   |   | Not missing | 80.6                 | 0.9        | 88.7                           | 1.8        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|   | Other reason, specify   | Missing     | 34.6                 | 1.2        | 35.5                           | 2.7        | 0.7646                |
|   |   | Not missing | 65.4                 | 1.2        | 64.5                           | 2.7        |                       |
|   |   | Total       | 100.0                | -          | 100.0                          | -          |                       |

| Question<br>(Census question ID)   | Item  | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |         |
|--|---|-------------|----------------------|------------|--------------------------------|------------|-----------------------|---------|
|  |   |             | Percent              | Std. error | Percent                        | Std. Error |                       |         |
| <b>For which of the following reasons did you take work-related training during the past 12 months? (WTRINTRO)</b> | To improve skills or knowledge in my current occupational field                                     | Missing     | 3.4                  | 0.4        | 1.8                            | 0.5        | *0.0397               |         |
|  |   | Not missing | 96.6                 | 0.4        | 98.2                           | 0.5        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | To increase opportunities for promotion or advancement in my current occupational field             | Missing     | 10.5                 | 0.6        | 4.6                            | 1.1        | *0.0003               |         |
|  |   | Not missing | 89.5                 | 0.6        | 95.4                           | 1.1        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | For licensure or certification in my current occupational field                                     | Missing     | 9.6                  | 0.6        | 5.2                            | 1.1        | *0.0030               |         |
|  |   | Not missing | 90.4                 | 0.6        | 94.8                           | 1.1        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | To facilitate a change to a different occupational field  | Missing     | 13.5                 | 0.6        | 6.7                            | 1.2        | *<.0001               |         |
|  |   | Not missing | 86.5                 | 0.6        | 93.3                           | 1.2        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | Required or expected by employer  | Missing     | 7.9                  | 0.5        | 3.2                            | 0.8        | *0.0002               |         |
|  |   | Not missing | 92.1                 | 0.5        | 96.8                           | 0.8        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | For leisure or personal interest  | Missing     | 12.3                 | 0.7        | 5.1                            | 1.0        | *<.0001               |         |
|  |   | Not missing | 87.7                 | 0.7        | 94.9                           | 1.0        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | Other reason, specify   | Missing     | 38.4                 | 1.1        | 34.1                           | 2.4        | *0.0959               |         |
|  |   | Not missing | 61.6                 | 1.1        | 65.9                           | 2.4        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
|  | <b>When thinking about a job, how important is each of the following factors to you? (FACINTRO)</b> | Salary      | Missing              | 1.3        | 0.2                            | 0.7        | 0.2                   | *0.0263 |
|  |   |             | Not missing          | 98.7       | 0.2                            | 99.3       | 0.2                   |         |
|  |   |             | Total                | 100.0      | -                              | 100.0      | -                     |         |
| Benefits   |   | Missing     | 1.4                  | 0.2        | 1.2                            | 0.3        | 0.7011                |         |
|  |   | Not missing | 98.6                 | 0.2        | 98.8                           | 0.3        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
| Job security   |   | Missing     | 1.7                  | 0.2        | 1.5                            | 0.4        | 0.7743                |         |
|  |   | Not missing | 98.3                 | 0.2        | 98.5                           | 0.4        |                       |         |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |         |
| Job location   |   | Missing     | 1.7                  | 0.2        | 1.2                            | 0.3        | 0.1986                |         |



| Question<br>(Census question ID)   | Item   | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|--|--|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|  |  |             | Percent              | Std. error | Percent                        | Std. Error |                       |
|  |  | Not missing | 98.3                 | 0.2        | 98.8                           | 0.3        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 2.1                  | 0.2        | 1.3                            | 0.3        |                       |
|  | Opportunities for advancement  | Not missing | 97.9                 | 0.2        | 98.7                           | 0.3        | *0.0496               |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 1.6                  | 0.2        | 1.4                            | 0.4        |                       |
|  | Intellectual challenge   | Not missing | 98.4                 | 0.2        | 98.6                           | 0.4        | 0.6935                |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 1.8                  | 0.2        | 1.0                            | 0.2        |                       |
|  | Level of responsibility  | Not missing | 98.2                 | 0.2        | 99.0                           | 0.2        | *0.0361               |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 1.6                  | 0.2        | 1.0                            | 0.2        |                       |
|  | Degree of independence   | Not missing | 98.4                 | 0.2        | 99.0                           | 0.2        | *0.0825               |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 1.7                  | 0.2        | 0.9                            | 0.3        |                       |
|  | Contribution to society  | Not missing | 98.3                 | 0.2        | 99.1                           | 0.3        | *0.0390               |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  |  | Missing     | 1.7                  | 0.2        | 0.9                            | 0.3        |                       |
| <b>During which of the following<br/>time periods did you take<br/>courses at a community<br/>college? (CSINTRO)</b> | Before graduating from high school or<br>earning a high school equivalency<br>certificate              | Missing     | 3.7                  | 0.4        | 2.2                            | 0.7        | 0.1203                |
|  |  | Not missing | 96.3                 | 0.4        | 97.8                           | 0.7        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | After high school and before ever<br>enrolling in a 4-year college or<br>university                    | Missing     | 4.8                  | 0.4        | 2.6                            | 0.7        | *0.0345               |
|  |  | Not missing | 95.2                 | 0.4        | 97.4                           | 0.7        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | While enrolled in a 4-year college or<br>university and before receiving my<br>first bachelor's degree | Missing     | 6.4                  | 0.5        | 3.7                            | 0.9        | *0.0184               |
|  |  | Not missing | 93.6                 | 0.5        | 96.3                           | 0.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | After leaving a 4-year college or<br>university without receiving my first<br>bachelor's degree        | Missing     | 8.7                  | 0.6        | 5.9                            | 1.0        | *0.0334               |
|  |  | Not missing | 91.3                 | 0.6        | 94.1                           | 1.0        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Any time after receiving my first<br>bachelor's degree   | Missing     | 6.5                  | 0.5        | 3.6                            | 1.0        | *0.0302               |
|  |  | Not missing | 93.5                 | 0.5        | 96.4                           | 1.0        |                       |

| Question<br>(Census question ID)   | Item   | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|--|--|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|  |  |             | Percent              | Std. error | Percent                        | Std. Error |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
| <b>Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses? (CCINTRO)</b> | To earn college credits while still attending high school                              | Missing     | 6.8                  | 0.5        | 3.5                            | 0.8        | *0.0058               |
|  |  | Not missing | 93.2                 | 0.5        | 96.5                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To complete an associate degree  | Missing     | 6.8                  | 0.5        | 3.8                            | 0.9        | *0.0155               |
|  |  | Not missing | 93.2                 | 0.5        | 96.2                           | 0.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To prepare for college/increase change of acceptance to a 4-year college or university | Missing     | 6.5                  | 0.5        | 3.7                            | 0.9        | *0.0286               |
|  |  | Not missing | 93.5                 | 0.5        | 96.3                           | 0.9        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To earn credits for a bachelor's degree  | Missing     | 5.1                  | 0.4        | 1.8                            | 0.4        | *<.0001               |
|  |  | Not missing | 94.9                 | 0.4        | 98.2                           | 0.4        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | For financial reasons (e.g., cost of a 4-year school)                                  | Missing     | 6.8                  | 0.5        | 3.2                            | 0.8        | *0.0023               |
|  |  | Not missing | 93.2                 | 0.5        | 96.8                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To gain further skills or knowledge in my academic or occupational field               | Missing     | 6.7                  | 0.5        | 3.9                            | 1.0        | *0.0315               |
|  |  | Not missing | 93.3                 | 0.5        | 96.1                           | 1.0        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To facilitate a chance in my academic or occupational field                            | Missing     | 8.0                  | 0.5        | 4.3                            | 0.8        | *0.0021               |
|  |  | Not missing | 92.0                 | 0.5        | 95.7                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To increase opportunities for promotion, advancement, or higher salary                 | Missing     | 8.2                  | 0.5        | 4.0                            | 0.8        | *0.0010               |
|  |  | Not missing | 91.8                 | 0.5        | 96.0                           | 0.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
| For leisure or personal interest   | Missing  | 7.7         | 0.5                  | 4.0        | 0.9                            | *0.0042    |                       |
|  | Not missing  | 92.3        | 0.5                  | 96.0       | 0.9                            |            |                       |
|  | Total  | 100.0       | -                    | 100.0      | -                              |            |                       |
| Other reason, specify  | Missing  | 29.1        | 0.9                  | 30.0       | 2.1                            | 0.6987     |                       |
|  | Not missing  | 70.9        | 0.9                  | 70.0       | 2.1                            |            |                       |
|  | Total  | 100.0       | -                    | 100.0      | -                              |            |                       |

| Question<br>(Census question ID)   | Item   | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|--|--|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|  |  |             | Percent              | Std. error | Percent                        | Std. Error |                       |
| <b>For which of the following reasons were you taking courses or enrolled? (ACINTRO)</b>                       | To gain further education before beginning a career                      | Missing     | 7.5                  | 1.5        | 5.3                            | 3.0        | 0.5602                |
|  |  | Not missing | 92.5                 | 1.5        | 94.7                           | 3.0        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To prepare for graduate school or further education                      | Missing     | 10.5                 | 1.7        | 5.5                            | 3.2        | 0.2763                |
|  |  | Not missing | 89.5                 | 1.7        | 94.5                           | 3.2        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To change my academic or occupational field                              | Missing     | 10.7                 | 1.9        | 4.3                            | 2.8        | 0.1646                |
|  |  | Not missing | 89.3                 | 1.9        | 95.7                           | 2.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To gain further skills or knowledge in my academic or occupational field | Missing     | 9.7                  | 1.9        | 4.6                            | 3.1        | 0.2865                |
|  |  | Not missing | 90.3                 | 1.9        | 95.4                           | 3.1        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | For licensure or certification   | Missing     | 11.8                 | 2.1        | 4.9                            | 2.8        | 0.1411                |
|  |  | Not missing | 88.2                 | 2.1        | 95.1                           | 2.8        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | To increase opportunities for promotion, advancement, or higher salary   | Missing     | 8.0                  | 1.8        | 4.6                            | 3.1        | 0.4282                |
|  |  | Not missing | 92.0                 | 1.8        | 95.4                           | 3.1        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Required or expected by employer   | Missing     | 14.7                 | 2.2        | 5.1                            | 3.1        | *0.0742               |
|  |  | Not missing | 85.3                 | 2.2        | 94.9                           | 3.1        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
| For leisure or personal interest   | Missing  | 11.8        | 1.8                  | 5.7        | 3.2                            | 0.1984     |                       |
|  | Not missing  | 88.2        | 1.8                  | 94.3       | 3.2                            |            |                       |
|  | Total  | 100.0       | -                    | 100.0      | -                              |            |                       |
| Some other reason, specify   | Missing  | 37.4        | 2.8                  | 43.9       | 6.0                            | 0.3095     |                       |
|  | Not missing  | 62.6        | 2.8                  | 56.1       | 6.0                            |            |                       |
|  | Total  | 100.0       | -                    | 100.0      | -                              |            |                       |
| <b>Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's</b> | Engineering, computer science, math or the natural sciences              | Missing     | 15.5                 | 0.6        | 12.3                           | 1.4        | *0.0480               |
|  |  | Not missing | 84.5                 | 0.6        | 87.7                           | 1.4        |                       |
|  |  | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | The social sciences  | Missing     | 20.4                 | 0.7        | 16.2                           | 1.5        | *0.0168               |

| Question<br>(Census question ID)   | Item  | Value       | Grid<br>(Production) |            | Item-by-item<br>(Bridge Panel) |            | Chi-square<br>p-value |
|--|---|-------------|----------------------|------------|--------------------------------|------------|-----------------------|
|  |   |             | Percent              | Std. error | Percent                        | Std. Error |                       |
| degree or higher in...<br>(SPINTRO)  |   | Not missing | 79.6                 | 0.7        | 83.8                           | 1.5        | *0.0025               |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Some other field (e.g., health,<br>business, or education), specify | Missing     | 11.0                 | 0.6        | 16.2                           | 1.9        |                       |
|  |   | Not missing | 89.0                 | 0.6        | 83.8                           | 1.9        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
| Which factors were<br>important in your decision to<br>first come to the United<br>States for six months or<br>longer? (CMINTRO) | Family-related reasons  | Missing     | 26.8                 | 1.9        | 13.0                           | 3.1        | *0.0015               |
|  |   | Not missing | 73.2                 | 1.9        | 87.0                           | 3.1        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Educational opportunities in the<br>United States                   | Missing     | 27.5                 | 2.1        | 14.6                           | 3.1        | *0.0016               |
|  |   | Not missing | 72.5                 | 2.1        | 85.4                           | 3.1        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Jobs or economic opportunities                                      | Missing     | 27.2                 | 2.0        | 14.8                           | 3.1        | *0.0039               |
|  |   | Not missing | 72.8                 | 2.0        | 85.2                           | 3.1        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Scientific or professional<br>infrastructure in my field            | Missing     | 37.7                 | 2.4        | 18.8                           | 3.4        | *<.0001               |
|  |   | Not missing | 62.3                 | 2.4        | 81.2                           | 3.4        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | It was not my decision  | Missing     | 40.1                 | 2.3        | 18.5                           | 3.4        | *<.0001               |
|  |   | Not missing | 59.9                 | 2.3        | 81.5                           | 3.4        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |
|  | Some other reason, specify  | Missing     | 45.8                 | 1.9        | 38.1                           | 4.2        | *0.0878               |
|  |   | Not missing | 54.2                 | 1.9        | 61.9                           | 4.2        |                       |
|  |   | Total       | 100.0                | -          | 100.0                          | -          |                       |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared item nonresponse distributions for grid (production) and item-by-item (Bridge Panel)

Table 20: Item nonresponse rates for SOGI

| Question           | Value       | Production |            | Bridge Panel |            |
|--------------------|-------------|------------|------------|--------------|------------|
|                    |             | Percent    | Std. error | Percent      | Std. error |
| Sex                | Missing     | 0.5        | 0.1        | -            | -          |
|                    | Not missing | 99.5       | 0.1        | -            | -          |
|                    | Total       | 100.0      | -          | -            | -          |
| Birth Sex          | Missing     | -          | -          | 0.4          | 0.2        |
|                    | Not missing | -          | -          | 99.6         | 0.2        |
|                    | Total       | -          | -          | 100.0        | -          |
| Current Gender     | Missing     | -          | -          | 0.6          | 0.2        |
|                    | Not missing | -          | -          | 99.4         | 0.2        |
|                    | Total       | -          | -          | 100.0        | -          |
| Sexual Orientation | Missing     | -          | -          | 2.1          | 0.5        |
|                    | Not missing | -          | -          | 97.9         | 0.5        |
|                    | Total       | -          | -          | 100.0        | -          |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

**Appendix F Response distributions for grid and item-by-item, SOGI, and coronavirus questions, and coronavirus questions by mode**

Table 21 to Table 30 provide response distributions and standard errors for the grid and item-by-item, SOGI, coronavirus, and coronavirus by mode analyses.

**Grid and item-by-item**

Table 21: Response distributions for grid and item-by-item

| Question (Census question ID)  | Item   | Value | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|--|--|-------|-------------------|------------|-----------------------------|------------|--------------------|
|  |  |       | Percent           | Std. error | Percent                     | Std. error |                    |
| <b>Did your duties on this job require the technical expertise of a bachelor's degree or higher in... (MGINTRO)</b>                    | Engineering, computer science, math, or the natural sciences     | Yes   | 32.2              | 0.7        | 32.6                        | 1.5        | 0.7774             |
|  |  | No    | 67.8              | 0.7        | 67.4                        | 1.5        |                    |
|  | The social sciences  | Yes   | 18.1              | 0.5        | 19.1                        | 1.5        | 0.5459             |
|  |  | No    | 81.9              | 0.5        | 80.9                        | 1.5        |                    |
|  | Some other field (e.g., health, business, or education), specify | Yes   | 46.5              | 0.7        | 47.0                        | 1.9        | 0.8108             |
|  |  | No    | 53.5              | 0.7        | 53.0                        | 1.9        |                    |
| <b>Did any of the following factors influence your decision to work in an area outside the field of your highest degree? (NRINTRO)</b> | Pay, promotion opportunities                                     | Yes   | 50.9              | 1.9        | 55.2                        | 4.6        | 0.3814             |
|  |  | No    | 49.1              | 1.9        | 44.8                        | 4.6        |                    |
|  | Working conditions (e.g., hours, equipment, working environment) | Yes   | 49.7              | 1.7        | 53.2                        | 4.1        | 0.4532             |
|  |  | No    | 50.3              | 1.7        | 46.8                        | 4.1        |                    |
|  | Job location   | Yes   | 46.7              | 1.7        | 57.8                        | 3.9        | *0.0198            |
|  |  | No    | 53.3              | 1.7        | 42.2                        | 3.9        |                    |
|  | Change in career or professional interests                       | Yes   | 44.8              | 1.9        | 47.5                        | 4.1        | 0.5336             |
|  |  | No    | 55.2              | 1.9        | 52.5                        | 4.1        |                    |
|  | Family-related reasons (e.g., children, spouse's job moved)      | Yes   | 24.9              | 1.3        | 27.4                        | 3.3        | 0.4943             |
|  |  | No    | 75.1              | 1.3        | 72.6                        | 3.3        |                    |
|  | Job in highest degree field not available                        | Yes   | 31.1              | 1.5        | 32.4                        | 3.9        | 0.7499             |
|  |  | No    | 68.9              | 1.5        | 67.6                        | 3.9        |                    |
| Some other factor, specify   | Yes  | 10.9  | 1.3               | 4.6        | 1.9                         | *0.0208    |                    |
|  | No   | 89.1  | 1.3               | 95.4       | 1.9                         |            |                    |
| <b>The next question is about your work</b>  | Accounting, finance, contracts                                   | Yes   | 34.8              | 0.7        | 34.7                        | 1.9        | 0.9401             |
|  |  | No    | 65.2              | 0.7        | 65.3                        | 1.9        |                    |

| Question (Census question ID)   | Item   | Value                   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|--|-------------------------|-------------------|------------|-----------------------------|------------|--------------------|
|   |  |                         | Percent           | Std. error | Percent                     | Std. error |                    |
| <b>activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a typical work week on this job? (WAINTRO)</b> | Basic research--study directed toward gaining scientific knowledge primarily for its own sake  | Yes                     | 21.8              | 0.6        | 24.9                        | 1.6        | *0.0642            |
|   |  | No                      | 78.2              | 0.6        | 75.1                        | 1.6        |                    |
|   | Applied research--study directed toward gaining scientific knowledge to meet a recognized need | Yes                     | 26.2              | 0.6        | 27.8                        | 1.6        | 0.3548             |
|   |  | No                      | 73.8              | 0.6        | 72.2                        | 1.6        |                    |
|   | Development--using knowledge gained from research for the production of materials, devices     | Yes                     | 26.7              | 0.6        | 29.3                        | 1.7        | 0.1563             |
|   |  | No                      | 73.3              | 0.6        | 70.7                        | 1.7        |                    |
|   | Design of equipment, processes, structures, models   | Yes                     | 21.2              | 0.6        | 23.6                        | 1.7        | 0.1606             |
|   |  | No                      | 78.8              | 0.6        | 76.4                        | 1.7        |                    |
|   | Computer programming, systems, or applications development                                     | Yes                     | 17.5              | 0.5        | 20.4                        | 1.4        | *0.0350            |
|   |  | No                      | 82.5              | 0.5        | 79.6                        | 1.4        |                    |
|   | Human resources--including recruiting, personnel development, training                         | Yes                     | 28.0              | 0.7        | 31.2                        | 1.9        | 0.1106             |
|   |  | No                      | 72.0              | 0.7        | 68.8                        | 1.9        |                    |
|   | Managing or supervising people or projects   | Yes                     | 58.0              | 0.8        | 57.8                        | 1.6        | 0.9014             |
|   |  | No                      | 42.0              | 0.8        | 42.2                        | 1.6        |                    |
|   | Production, operations, maintenance (e.g., chip production, operating lab equipment)           | Yes                     | 11.5              | 0.5        | 12.3                        | 1.1        | 0.4534             |
|   |  | No                      | 88.5              | 0.5        | 87.7                        | 1.1        |                    |
|   | Professional services (e.g., health care, counseling, financial services, legal services)      | Yes                     | 37.0              | 0.8        | 43.1                        | 1.6        | *0.0004            |
|   |  | No                      | 63.0              | 0.8        | 56.9                        | 1.6        |                    |
|   | Sales, purchasing, marketing, customer service, public relations                               | Yes                     | 35.0              | 0.8        | 38.1                        | 1.9        | 0.1280             |
|   |  | No                      | 65.0              | 0.8        | 61.9                        | 1.9        |                    |
| Quality or productivity management  | Yes  | 24.7                    | 0.6               | 28.7       | 1.9                         | *0.0448    |                    |
|   | No   | 75.3                    | 0.6               | 71.3       | 1.9                         |            |                    |
| Teaching  | Yes  | 32.2                    | 0.6               | 32.8       | 1.8                         | 0.7309     |                    |
|   | No   | 67.8                    | 0.6               | 67.2       | 1.8                         |            |                    |
| Other activity, specify   | Yes  | 6.5                     | 0.4               | 5.4        | 0.7                         | 0.2757     |                    |
|   | No   | 93.5                    | 0.4               | 94.6       | 0.7                         |            |                    |
| <b>Thinking about the principal job you held during the week of</b>   | Salary   | 1 Very Satisfied        | 29.9              | 0.7        | 27.8                        | 1.7        | 0.4646             |
|   |  | 2 Somewhat Satisfied    | 48.3              | 0.8        | 49.6                        | 1.8        |                    |
|   |  | 3 Somewhat Dissatisfied | 15.0              | 0.6        | 16.7                        | 1.3        |                    |

| Question (Census question ID)  | Item                          | Value                   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |         |
|--|-------------------------------|-------------------------|-------------------|------------|-----------------------------|------------|--------------------|---------|
|  |                               |                         | Percent           | Std. error | Percent                     | Std. error |                    |         |
| February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO) |                               | 4 Very Dissatisfied     | 6.7               | 0.4        | 6.0                         | 0.9        | 0.1160             |         |
|  | Benefits                      | 1 Very Satisfied        | 40.4              | 0.8        | 43.3                        | 1.8        |                    |         |
|  |                               | 2 Somewhat Satisfied    | 39.3              | 0.7        | 40.1                        | 1.7        |                    |         |
|  |                               | 3 Somewhat Dissatisfied | 12.5              | 0.5        | 10.2                        | 1.0        |                    |         |
|  |                               | 4 Very Dissatisfied     | 7.8               | 0.4        | 6.5                         | 0.9        |                    |         |
|  | Job security                  | 1 Very Satisfied        | 53.6              | 0.8        | 55.2                        | 1.7        |                    | *0.0172 |
|  |                               | 2 Somewhat Satisfied    | 35.1              | 0.9        | 35.9                        | 1.6        |                    |         |
|  |                               | 3 Somewhat Dissatisfied | 7.5               | 0.4        | 6.9                         | 0.9        |                    |         |
|  |                               | 4 Very Dissatisfied     | 3.9               | 0.3        | 2.0                         | 0.5        |                    |         |
|  | Job location                  | 1 Very Satisfied        | 64.1              | 0.6        | 66.4                        | 1.9        |                    | *0.0561 |
|  |                               | 2 Somewhat Satisfied    | 27.2              | 0.6        | 27.3                        | 1.7        |                    |         |
|  |                               | 3 Somewhat Dissatisfied | 6.7               | 0.4        | 5.4                         | 0.8        |                    |         |
|  |                               | 4 Very Dissatisfied     | 2.0               | 0.2        | 0.8                         | 0.3        |                    |         |
|  | Opportunities for advancement | 1 Very Satisfied        | 26.7              | 0.7        | 28.1                        | 1.7        |                    | 0.8188  |
|  |                               | 2 Somewhat Satisfied    | 43.1              | 0.8        | 41.5                        | 1.7        |                    |         |
|  |                               | 3 Somewhat Dissatisfied | 21.5              | 0.6        | 21.5                        | 1.5        |                    |         |
|  |                               | 4 Very Dissatisfied     | 8.7               | 0.4        | 8.9                         | 1.0        |                    |         |
|  | Intellectual challenge        | 1 Very Satisfied        | 44.4              | 0.7        | 45.9                        | 1.8        |                    | 0.6149  |
|  |                               | 2 Somewhat Satisfied    | 39.2              | 0.7        | 38.9                        | 1.8        |                    |         |
|  |                               | 3 Somewhat Dissatisfied | 11.9              | 0.5        | 11.7                        | 1.4        |                    |         |
| 4 Very Dissatisfied  |                               | 4.5                     | 0.3               | 3.5        | 0.6                         |            |                    |         |
| Level of responsibility  | 1 Very Satisfied              | 49.7                    | 0.7               | 51.3       | 1.9                         | 0.7250     |                    |         |
|  | 2 Somewhat Satisfied          | 39.8                    | 0.7               | 37.8       | 2.1                         |            |                    |         |
|  | 3 Somewhat Dissatisfied       | 8.1                     | 0.4               | 8.7        | 1.1                         |            |                    |         |
|  | 4 Very Dissatisfied           | 2.4                     | 0.2               | 2.2        | 0.5                         |            |                    |         |
| Degree of independence   | 1 Very Satisfied              | 62.5                    | 0.7               | 62.8       | 1.8                         | 0.6436     |                    |         |
|  | 2 Somewhat Satisfied          | 30.1                    | 0.6               | 28.5       | 1.7                         |            |                    |         |
|  | 3 Somewhat Dissatisfied       | 5.4                     | 0.3               | 6.6        | 1.0                         |            |                    |         |
|  | 4 Very Dissatisfied           | 2.1                     | 0.2               | 2.1        | 0.6                         |            |                    |         |
| Contributions to society   | 1 Very Satisfied              | 50.9                    | 0.6               | 56.2       | 1.9                         | *0.0312    |                    |         |



| Question (Census question ID)  | Item  | Value                   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|--|---|-------------------------|-------------------|------------|-----------------------------|------------|--------------------|
|  |   |                         | Percent           | Std. error | Percent                     | Std. error |                    |
|  |   | 2 Somewhat Satisfied    | 35.4              | 0.7        | 33.6                        | 1.7        |                    |
|  |   | 3 Somewhat Dissatisfied | 9.9               | 0.4        | 7.3                         | 1.2        |                    |
|  |   | 4 Very Dissatisfied     | 3.7               | 0.3        | 2.9                         | 0.6        |                    |
| <b>On February 1, 2021, why did you hold this certification or license? (CLICINTRO)</b>                            | To improve skills or knowledge in my current occupational field                         | Yes                     | 56.5              | 1.0        | 63.4                        | 2.5        | *0.0097            |
|  |   | No                      | 43.5              | 1.0        | 36.6                        | 2.5        |                    |
|  | To increase opportunities for promotion or advancement in my current occupational field | Yes                     | 47.4              | 1.1        | 54.7                        | 2.8        | *0.0141            |
|  |   | No                      | 52.6              | 1.1        | 45.3                        | 2.8        |                    |
|  | To facilitate a chance to a different occupational field                                | Yes                     | 14.4              | 0.8        | 16.8                        | 2.2        | 0.2381             |
|  |   | No                      | 85.6              | 0.8        | 83.2                        | 2.2        |                    |
|  | Required or expected by employer  | Yes                     | 72.9              | 0.9        | 73.8                        | 2.4        | 0.7311             |
|  |   | No                      | 27.1              | 0.9        | 26.2                        | 2.4        |                    |
|  | To start my own business  | Yes                     | 6.4               | 0.6        | 8.3                         | 1.3        | 0.1219             |
|  |   | No                      | 93.6              | 0.6        | 91.7                        | 1.3        |                    |
|  | Other reason, specify   | Yes                     | 11.9              | 0.7        | 10.3                        | 1.5        | 0.3723             |
|  |   | No                      | 88.1              | 0.7        | 89.7                        | 1.5        |                    |
| <b>For which of the following reasons did you take work-related training during the past 12 months? (WTRINTRO)</b> | To improve skills or knowledge in my current occupational field                         | Yes                     | 91.5              | 0.6        | 92.6                        | 1.2        | 0.3894             |
|  |   | No                      | 8.5               | 0.6        | 7.4                         | 1.2        |                    |
|  | To increase opportunities for promotion or advancement in my current occupational field | Yes                     | 44.0              | 0.9        | 45.7                        | 2.2        | 0.4371             |
|  |   | No                      | 56.0              | 0.9        | 54.3                        | 2.2        |                    |
|  | For licensure or certification in my current occupational field                         | Yes                     | 45.9              | 1.3        | 43.4                        | 2.7        | 0.3940             |
|  |   | No                      | 54.1              | 1.3        | 56.6                        | 2.7        |                    |
|  | To facilitate a change to a difference occupational field                               | Yes                     | 9.6               | 0.6        | 9.9                         | 1.3        | 0.8705             |
|  |   | No                      | 90.4              | 0.6        | 90.1                        | 1.3        |                    |
|  | Required or expected by employer  | Yes                     | 66.3              | 1.1        | 65.7                        | 2.5        | 0.8024             |
|  |   | No                      | 33.7              | 1.1        | 34.3                        | 2.5        |                    |
|  | For leisure or personal interest  | Yes                     | 31.8              | 0.9        | 35.8                        | 2.4        | 0.1218             |
|  |   | No                      | 68.2              | 0.9        | 64.2                        | 2.4        |                    |
| Other reason, specify  | Yes   | 0.7                     | 0.2               | 1.4        | 0.7                         | 0.1908     |                    |
|  | No  | 99.3                    | 0.2               | 98.6       | 0.7                         |            |                    |

| Question (Census question ID)   | Item                          | Value                  | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|-------------------------------|------------------------|-------------------|------------|-----------------------------|------------|--------------------|
|   |                               |                        | Percent           | Std. error | Percent                     | Std. error |                    |
| <b>When thinking about a job, how important is each of the following factors to you? (FACINTRO)</b> | Salary                        | 1 Very Important       | 69.8              | 0.6        | 64.8                        | 1.5        | *0.0163            |
|   |                               | 2 Somewhat Important   | 27.4              | 0.6        | 32.1                        | 1.4        |                    |
|   |                               | 3 Somewhat Unimportant | 1.7               | 0.2        | 2.0                         | 0.5        |                    |
|   |                               | 4 Not Important At All | 1.1               | 0.1        | 1.2                         | 0.3        |                    |
|   | Benefits                      | 1 Very Important       | 70.8              | 0.7        | 74.2                        | 1.3        | *0.0759            |
|   |                               | 2 Somewhat Important   | 22.9              | 0.6        | 21.2                        | 1.2        |                    |
|   |                               | 3 Somewhat Unimportant | 3.8               | 0.3        | 2.7                         | 0.5        |                    |
|   |                               | 4 Not Important At All | 2.4               | 0.2        | 1.9                         | 0.4        |                    |
|   | Job security                  | 1 Very Important       | 68.2              | 0.5        | 72.0                        | 1.5        | *0.0117            |
|   |                               | 2 Somewhat Important   | 26.1              | 0.5        | 23.6                        | 1.4        |                    |
|   |                               | 3 Somewhat Unimportant | 3.6               | 0.2        | 2.2                         | 0.4        |                    |
|   |                               | 4 Not Important At All | 2.0               | 0.2        | 2.3                         | 0.5        |                    |
|   | Job location                  | 1 Very Important       | 64.2              | 0.6        | 63.0                        | 1.5        | 0.5537             |
|   |                               | 2 Somewhat Important   | 31.4              | 0.6        | 33.1                        | 1.4        |                    |
|   |                               | 3 Somewhat Unimportant | 3.2               | 0.2        | 2.5                         | 0.5        |                    |
|   |                               | 4 Not Important At All | 1.2               | 0.2        | 1.4                         | 0.4        |                    |
|   | Opportunities for advancement | 1 Very Important       | 44.8              | 0.6        | 48.2                        | 1.5        | 0.1295             |
|   |                               | 2 Somewhat Important   | 41.0              | 0.6        | 40.1                        | 1.7        |                    |
|   |                               | 3 Somewhat Unimportant | 9.9               | 0.4        | 7.8                         | 0.8        |                    |
|   |                               | 4 Not Important At All | 4.3               | 0.3        | 3.8                         | 0.7        |                    |
|   | Intellectual challenge        | 1 Very Important       | 58.3              | 0.7        | 59.9                        | 1.7        | 0.2267             |
|   |                               | 2 Somewhat Important   | 36.4              | 0.7        | 35.7                        | 1.8        |                    |
|   |                               | 3 Somewhat Unimportant | 4.3               | 0.3        | 3.0                         | 0.6        |                    |
|   |                               | 4 Not Important At All | 1.0               | 0.1        | 1.5                         | 0.4        |                    |
|   | Level of responsibility       | 1 Very Important       | 43.8              | 0.6        | 43.8                        | 1.7        | *0.0785            |
|   |                               | 2 Somewhat Important   | 47.7              | 0.6        | 48.7                        | 1.7        |                    |
|   |                               | 3 Somewhat Unimportant | 7.0               | 0.3        | 5.2                         | 0.8        |                    |
|   |                               | 4 Not Important At All | 1.6               | 0.2        | 2.4                         | 0.5        |                    |
| Degree of independence  | 1 Very Important              | 63.0                   | 0.6               | 62.8       | 1.6                         | 0.2334     |                    |
|   | 2 Somewhat Important          | 33.6                   | 0.6               | 34.2       | 1.5                         |            |                    |

| Question (Census question ID)  | Item   | Value   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |        |
|--|--|---|-------------------|------------|-----------------------------|------------|--------------------|--------|
|  |  |   | Percent           | Std. error | Percent                     | Std. error |                    |        |
|  |  | 3 Somewhat Unimportant                                    | 2.6               | 0.2        | 1.8                         | 0.3        |                    |        |
|  |  | 4 Not Important At All                                    | 0.8               | 0.1        | 1.2                         | 0.3        |                    |        |
|  | Contribution to society  | 1 Very Important  | 52.8              | 0.6        | 57.0                        | 1.6        |                    |        |
|  |  | 2 Somewhat Important                                      | 37.3              | 0.6        | 35.3                        | 1.4        |                    |        |
|  |  | 3 Somewhat Unimportant                                    | 7.9               | 0.4        | 5.4                         | 0.7        |                    |        |
|  |  | 4 Not Important At All                                    | 2.1               | 0.2        | 2.4                         | 0.5        |                    |        |
| <b>During which of the following time periods did you take courses at a community college? (CSINTRO)</b> | Before graduating from high school or earning a high school equivalency certificate  | Yes   | 17.9              | 0.8        | 17.7                        | 1.9        | 0.9547             |        |
|  |  | No  | 82.1              | 0.8        | 82.3                        | 1.9        |                    |        |
|  | After high school and before ever enrolling in a 4-year college or university  | Yes   | 46.0              | 1.0        | 48.7                        | 2.3        | 0.3065             |        |
|  |  | No  | 54.0              | 1.0        | 51.3                        | 2.3        |                    |        |
|  | While enrolled in a 4-year college or university and before receiving my first bachelor's degree   | Yes   | 34.9              | 1.0        | 36.8                        | 2.2        | 0.4398             |        |
|  |  | No  | 65.1              | 1.0        | 63.2                        | 2.2        |                    |        |
|  | After leaving a 4-year college or university without receiving my first bachelor's degree  | Yes   | 9.6               | 0.7        | 10.6                        | 1.4        | 0.5242             |        |
|  |  | No  | 90.4              | 0.7        | 89.4                        | 1.4        |                    |        |
|  | Any time after receiving my first bachelor's degree  | Yes   | 30.4              | 0.9        | 31.2                        | 2.0        | 0.7551             |        |
|  |  | No  | 69.6              | 0.9        | 68.8                        | 2.0        |                    |        |
|  | <b>Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses? (CCINTRO)</b> | To earn college credits while still attending high school | Yes               | 15.9       | 0.7                         | 17.1       | 1.8                | 0.5299 |
|  |  |   | No                | 84.1       | 0.7                         | 82.9       | 1.8                |        |
| To complete an associate degree  |  | Yes   | 33.1              | 1.1        | 33.9                        | 2.1        | 0.7526             |        |
|  |  | No  | 66.9              | 1.1        | 66.1                        | 2.1        |                    |        |
| To prepare for college/increase change of acceptance to a 4-year college or university                   |  | Yes   | 40.3              | 1.2        | 44.2                        | 2.4        | 0.1605             |        |
|  |  | No  | 59.7              | 1.2        | 55.8                        | 2.4        |                    |        |
| To earn credits for a bachelor's degree  |  | Yes   | 64.5              | 0.9        | 65.1                        | 2.2        | 0.8047             |        |
|  |  | No  | 35.5              | 0.9        | 34.9                        | 2.2        |                    |        |
| For financial reasons (e.g., cost of a 4-year school)  |  | Yes   | 43.0              | 0.9        | 43.6                        | 2.4        | 0.8091             |        |
|  |  | No  | 57.0              | 0.9        | 56.4                        | 2.4        |                    |        |
| To gain further skills or knowledge in my academic or occupational field                                 |  | Yes   | 42.3              | 1.0        | 47.4                        | 2.4        | *0.0705            |        |
|  |  | No  | 57.7              | 1.0        | 52.6                        | 2.4        |                    |        |
| To facilitate a chance in my academic or occupational field  |  | Yes   | 22.7              | 0.9        | 25.4                        | 1.7        | 0.1879             |        |
|  |  | No  | 77.3              | 0.9        | 74.6                        | 1.7        |                    |        |

| Question (Census question ID)   | Item   | Value | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|--|-------|-------------------|------------|-----------------------------|------------|--------------------|
|   |  |       | Percent           | Std. error | Percent                     | Std. error |                    |
|   | To increase opportunities for promotion, advancement, or higher salary   | Yes   | 24.6              | 1.0        | 27.6                        | 2.2        | 0.2347             |
|   |  | No    | 75.4              | 1.0        | 72.4                        | 2.2        |                    |
|   | For leisure or personal interest   | Yes   | 24.2              | 0.8        | 25.3                        | 2.2        | 0.6621             |
|   |  | No    | 75.8              | 0.8        | 74.7                        | 2.2        |                    |
|   | Other reason, specify  | Yes   | 2.8               | 0.3        | 3.6                         | 1.1        | 0.4437             |
|   |  | No    | 97.2              | 0.3        | 96.4                        | 1.1        |                    |
| <b>For which of the following reasons were you taking courses or enrolled? (ACINTRO)</b>  | To gain further education before beginning a career                      | Yes   | 61.5              | 2.2        | 67.3                        | 6.0        | 0.3895             |
|   |  | No    | 38.5              | 2.2        | 32.7                        | 6.0        |                    |
|   | To prepare for graduate school or further education                      | Yes   | 31.7              | 2.8        | 38.8                        | 7.9        | 0.4076             |
|   |  | No    | 68.3              | 2.8        | 61.2                        | 7.9        |                    |
|   | To change my academic or occupational field                              | Yes   | 38.9              | 2.9        | 44.2                        | 6.9        | 0.4989             |
|   |  | No    | 61.1              | 2.9        | 55.8                        | 6.9        |                    |
|   | To gain further skills or knowledge in my academic or occupational field | Yes   | 74.3              | 2.3        | 71.5                        | 6.8        | 0.6920             |
|   |  | No    | 25.7              | 2.3        | 28.5                        | 6.8        |                    |
|   | For licensure or certification   | Yes   | 43.5              | 2.8        | 36.5                        | 7.3        | 0.3755             |
|   |  | No    | 56.5              | 2.8        | 63.5                        | 7.3        |                    |
|   | To increase opportunities for promotion, advancement, or higher salary   | Yes   | 71.8              | 2.6        | 76.7                        | 6.1        | 0.4740             |
|   |  | No    | 28.2              | 2.6        | 23.3                        | 6.1        |                    |
|   | Required or expected by employer   | Yes   | 17.2              | 2.3        | 9.7                         | 3.9        | 0.1435             |
|   |  | No    | 82.8              | 2.3        | 90.3                        | 3.9        |                    |
|   | For leisure or personal interest   | Yes   | 43.5              | 2.8        | 44.2                        | 6.5        | 0.9200             |
|   |  | No    | 56.5              | 2.8        | 55.8                        | 6.5        |                    |
|   | Some other reason, specify   | Yes   | 1.3               | 0.5        | D                           | D          | 0.6732             |
|   |  | No    | 98.7              | 0.5        | D                           | D          |                    |
| <b>Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in... (SPINTRO)</b> | Engineering, computer science, math or the natural sciences              | Yes   | 24.3              | 0.7        | 24.6                        | 2.1        | 0.9124             |
|   |  | No    | 75.7              | 0.7        | 75.4                        | 2.1        |                    |
|   | The social sciences  | Yes   | 10.1              | 0.6        | 9.0                         | 1.3        | 0.4945             |
|   |  | No    | 89.9              | 0.6        | 91.0                        | 1.3        |                    |
|   | Some other field (e.g., health, business, or education), specify         | Yes   | 40.0              | 0.9        | 38.7                        | 2.6        | 0.6466             |
|   |  | No    | 60.0              | 0.9        | 61.3                        | 2.6        |                    |

| Question (Census question ID)   | Item  | Value | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|---|-------|-------------------|------------|-----------------------------|------------|--------------------|
|   |   |       | Percent           | Std. error | Percent                     | Std. error |                    |
| <b>Which factors were important in your decision to first come to the United States for six months or longer? (CMINTRO)</b> | Family-related reasons                                | Yes   | 44.8              | 2.2        | 51.9                        | 4.2        | 0.1181             |
|   |   | No    | 55.2              | 2.2        | 48.1                        | 4.2        |                    |
|   | Educational opportunities in the United States        | Yes   | 45.3              | 2.0        | 46.2                        | 4.2        | 0.8476             |
|   |   | No    | 54.7              | 2.0        | 53.8                        | 4.2        |                    |
|   | Jobs or economic opportunities                        | Yes   | 49.8              | 2.4        | 55.5                        | 4.3        | 0.2225             |
|   |   | No    | 50.2              | 2.4        | 44.5                        | 4.3        |                    |
|   | Scientific or professional infrastructure in my field | Yes   | 17.6              | 1.2        | 20.4                        | 3.5        | 0.4273             |
|   |   | No    | 82.4              | 1.2        | 79.6                        | 3.5        |                    |
|   | It was not my decision                                | Yes   | 13.8              | 1.6        | 17.7                        | 3.3        | 0.2378             |
|   |   | No    | 86.2              | 1.6        | 82.3                        | 3.3        |                    |
|   | Some other reason, specify                            | Yes   | 6.9               | 1.2        | 5.2                         | 1.5        | 0.4085             |
|   |   | No    | 93.1              | 1.2        | 94.8                        | 1.5        |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: "D" represents a suppressed cell due to disclosure avoidance. Rao-Scott Chi-square test compared item nonresponse distributions for grid (production) and item-by-item (Bridge Panel)

**SOGI**

Table 22: Response distributions for SOGI

| Question                                 | Value                      | Percent | Std. error |
|--|----------------------------|---------|------------|
| <b>Sex (Production)</b>                  | Male                       | 45.9    | 0.2        |
|  | Female                     | 54.1    | 0.2        |
|  | Total                      | 100.0   | -          |
| <b>Birth Sex (Bridge Panel)</b>          | Male                       | 46.1    | 0.6        |
|  | Female                     | 53.9    | 0.6        |
|  | Don't Know                 | 0.1     | <0.1       |
|  | Total                      | 100.0   | -          |
| <b>Current Gender (Bridge Panel)</b>     | Unchecked                  | 55.3    | 0.7        |
|  | Male                       | 44.7    | 0.7        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 46.3    | 0.6        |
|  | Female                     | 53.7    | 0.6        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 99.7    | 0.3        |
|  | Transgender                | 0.3     | 0.3        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 99.8    | 0.1        |
|  | Gender non-conforming      | 0.2     | 0.1        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 99.7    | 0.2        |
|  | Non-binary                 | 0.3     | 0.2        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 99.8    | 0.1        |
|  | Genderfluid                | 0.2     | 0.1        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | D       | D          |
|  | Genderqueer                | D       | D          |
| Total                                    | D                          | -       |            |
| Unchecked                                | 99.7                       | 0.2     |            |
| Other gender identity, specify           | 0.3                        | 0.2     |            |
| Total                                    | 100.0                      | -       |            |
| Unchecked                                | 98.8                       | 0.3     |            |
| Prefer not to answer                     | 1.2                        | 0.3     |            |
| Total                                    | 100.0                      | -       |            |
| <b>Sexual Orientation (Bridge Panel)</b> | Unchecked                  | 96.5    | 0.7        |
|  | Lesbian or Gay             | 3.5     | 0.7        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 13.2    | 1.2        |
|  | Straight, that is, not gay | 86.8    | 1.2        |
|  | Total                      | 100.0   | -          |
|  | Unchecked                  | 98.6    | 0.4        |

| Question | Value                              | Percent | Std. error |
|----------|------------------------------------|---------|------------|
|          | Bisexual                           | 1.4     | 0.4        |
|          | Total                              | 100.0   | -          |
|          | Unchecked                          | 99.9    | <0.1       |
|          | Asexual                            | 0.1     | <0.1       |
|          | Total                              | 100.0   | -          |
|          | Unchecked                          | 99.3    | 0.3        |
|          | Pansexual                          | 0.7     | 0.3        |
|          | Total                              | 100.0   | -          |
|          | Unchecked                          | 99.4    | 0.3        |
|          | Fluid                              | 0.6     | 0.3        |
|          | Total                              | 100.0   | -          |
|          | Unchecked                          | 99.1    | 0.4        |
|          | Queer                              | 0.9     | 0.4        |
|          | Total                              | 100.0   | -          |
|          | Unchecked                          | 99.6    | 0.2        |
|          | Other sexual orientation - specify | 0.4     | 0.2        |
|          | Total                              | 100.0   | -          |
|          | Unchecked                          | 92.6    | 0.8        |
|          | Prefer not to answer               | 7.4     | 0.8        |
|          | Total                              | 100.0   | -          |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

Note: "D" represents a suppressed cell due to disclosure avoidance.

## Coronavirus-related questions

Table 23: Response distributions for coronavirus questions

| Question (Census question ID)   | Item   | Value | Production |            | Bridge Panel |            | Chi-square p-value |
|---|--|-------|------------|------------|--------------|------------|--------------------|
|   |  |       | Percent    | Std. error | Percent      | Std. error |                    |
| <b>During the week of February 1, 2021, what were your reasons for not working? (NWINTRO)</b> | Retired  | Yes   | 54.9       | 1.1        | 61.6         | 3.2        | *0.0586            |
|   |  | No    | 45.1       | 1.1        | 38.4         | 3.2        |                    |
|   | On layoff from a job due to the coronavirus pandemic                                 | Yes   | 9.9        | 0.7        | -            | -          | N/A                |
|   |  | No    | 90.1       | 0.7        | -            | -          |                    |
|   | On layoff from a job for reasons unrelated to the coronavirus pandemic               | Yes   | 3.4        | 0.4        | 6.5          | 1.4        | *0.0071            |
|   |  | No    | 96.6       | 0.4        | 93.5         | 1.4        |                    |
|   | ^On layoff from a job for any reason   | Yes   | 12.8       | 0.8        | 6.5          | 1.4        | *0.0007            |
|   |  | No    | 87.2       | 0.8        | 93.5         | 1.4        |                    |
|   | Student  | Yes   | 5.0        | 0.6        | 5.3          | 1.4        | 0.8454             |
|   |  | No    | 95.0       | 0.6        | 94.7         | 1.4        |                    |
|   | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | Yes   | 6.6        | 0.7        | -            | -          | N/A                |
|   |  | No    | 93.4       | 0.7        | -            | -          |                    |
|   | Family responsibilities unrelated to the coronavirus pandemic                        | Yes   | 12.9       | 0.9        | 14.5         | 2.4        | 0.4785             |
|   |  | No    | 87.1       | 0.9        | 85.5         | 2.4        |                    |
|   | ^Family responsibilities   | Yes   | 17.1       | 1.1        | 14.5         | 2.4        | 0.3050             |
|   |  | No    | 82.9       | 1.1        | 85.5         | 2.4        |                    |
|   | Chronic illness or permanent disability  | Yes   | 6.4        | 0.5        | 6.7          | 1.4        | 0.8232             |
|   |  | No    | 93.6       | 0.5        | 93.3         | 1.4        |                    |
| Suitable job not available  | Yes  | 11.2  | 0.9        | 10.9       | 1.9          | 0.8908     |                    |
|   | No   | 88.8  | 0.9        | 89.1       | 1.9          |            |                    |
| Did not need or want to work  | Yes  | 18.2  | 0.9        | 24.3       | 3.1          | *0.0520    |                    |
|   | No   | 81.8  | 0.9        | 75.7       | 3.1          |            |                    |
| Other reason, specify   | Yes  | 6.3   | 0.6        | 10.8       | 2.2          | *0.0216    |                    |
|   | No   | 93.7  | 0.6        | 89.2       | 2.2          |            |                    |
| <b>Why did you usually work fewer than 35 hours? (PJINTRO)</b>                                | Previously retired or semi-retired   | Yes   | 20.3       | 1.3        | 14.4         | 3.2        | 0.1249             |
|   |  | No    | 79.7       | 1.3        | 85.6         | 3.2        |                    |
|   | Student  | Yes   | 8.9        | 1.0        | 6.1          | 1.9        | 0.2124             |
|   |  | No    | 91.1       | 1.0        | 93.9         | 1.9        |                    |
|   | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | Yes   | 18.8       | 1.5        | -            | -          | N/A                |
|   |  | No    | 81.2       | 1.5        | -            | -          |                    |
|   | Family responsibilities unrelated to the coronavirus pandemic                        | Yes   | 27.2       | 1.3        | 45.2         | 5.4        | *0.0002            |
|   |  | No    | 72.8       | 1.3        | 54.8         | 5.4        |                    |
| ^Family responsibilities  | Yes  | 34.6  | 1.5        | 45.2       | 5.4          | *0.0428    |                    |



| Question (Census question ID)   | Item   | Value | Production |            | Bridge Panel |            | Chi-square p-value |
|---|--|-------|------------|------------|--------------|------------|--------------------|
|   |  |       | Percent    | Std. error | Percent      | Std. error |                    |
|   |  | No    | 65.4       | 1.5        | 54.8         | 5.4        |                    |
|   |  | Yes   | 12.9       | 1.3        | -            | -          |                    |
|   | Full-time job not available due to the coronavirus pandemic                | No    | 87.1       | 1.3        | -            | -          | N/A                |
|   | Full-time job not available unrelated to the coronavirus pandemic          | Yes   | 12.7       | 1.2        | 23.3         | 3.9        | *0.0027            |
|   |  | No    | 87.3       | 1.2        | 76.7         | 3.9        |                    |
|   | ^Full-time job not available   | Yes   | 22.8       | 1.6        | 23.3         | 3.9        | 0.9033             |
|   |  | No    | 77.2       | 1.6        | 76.7         | 3.9        |                    |
|   | Hours or work reduced due to the coronavirus pandemic                      | Yes   | 24.6       | 1.7        | -            | -          | N/A                |
|   |  | No    | 75.4       | 1.7        | -            | -          |                    |
|   | Hours or work reduced unrelated to the coronavirus pandemic                | Yes   | 9.1        | 1.0        | -            | -          | N/A                |
|   |  | No    | 90.9       | 1.0        | -            | -          |                    |
|   | Held more than one job   | Yes   | 13.5       | 1.2        | 17.6         | 4.2        | 0.3124             |
|   |  | No    | 86.5       | 1.2        | 82.4         | 4.2        |                    |
|   | Did not need or want to work more hours                                    | Yes   | 45.8       | 1.7        | 46.5         | 4.5        | 0.8847             |
| No  |  | 54.2  | 1.7        | 53.5       | 4.5          |            |                    |
| Other reason, specify   | Yes  | 11.7  | 1.1        | 15.0       | 3.0          | 0.2429     |                    |
|   | No   | 88.3  | 1.1        | 85.0       | 3.0          |            |                    |
| Thinking of your principal job during the week of February 1, 2021, which of the following benefits were available to you, even if you chose not to take them? (BFTINTRO) | Health insurance that was at least partially paid by your employer         | Yes   | 80.2       | 0.5        | 83.2         | 1.3        | *0.0489            |
|   |  | No    | 19.8       | 0.5        | 16.8         | 1.3        |                    |
|   | A pension plan or a retirement plant to which your employer contributed    | Yes   | 72.9       | 0.6        | 75.3         | 1.4        | 0.1140             |
|   |  | No    | 27.1       | 0.6        | 24.7         | 1.4        |                    |
|   | A profit-sharing plan  | Yes   | 22.1       | 0.5        | 25.8         | 1.7        | *0.0345            |
|   |  | No    | 77.9       | 0.5        | 74.2         | 1.7        |                    |
|   | New or additional paid leave due to the coronavirus pandemic               | Yes   | 34.6       | 0.6        | -            | -          | N/A                |
|   |  | No    | 65.4       | 0.6        | -            | -          |                    |
|   | Paid vacation, sick or personal days unrelated to the coronavirus pandemic | Yes   | 77.7       | 0.5        | 84.2         | 1.1        | *<.0001            |
|   |  | No    | 22.3       | 0.5        | 15.8         | 1.1        |                    |
| ^Any paid leave   | Yes  | 79.0  | 0.5        | 84.2       | 1.1          | *<.0001    |                    |
|   | No   | 21.0  | 0.5        | 15.8       | 1.1          |            |                    |
| Why did you change your employer or your job between the week of February 1, 2019 and the week of February 1, 2021? (CHINTRO)   | Pay, promotion opportunities   | Yes   | 58.0       | 1.4        | 63.3         | 4.6        | 0.2911             |
|   |  | No    | 42.0       | 1.4        | 36.7         | 4.6        |                    |
|   | Working conditions (e.g., hours, equipment, working environment)           | Yes   | 45.5       | 1.8        | 51.4         | 4.1        | 0.2043             |
|   |  | No    | 54.5       | 1.8        | 48.6         | 4.1        |                    |
|   | Job location   | Yes   | 30.9       | 1.5        | 29.3         | 4.0        | 0.6984             |
|   |  | No    | 69.1       | 1.5        | 70.7         | 4.0        |                    |
| Change in career or professional interests  | Yes  | 31.5  | 1.5        | 31.2       | 3.7          | 0.9542     |                    |
|   | No   | 68.5  | 1.5        | 68.8       | 3.7          |            |                    |

| Question (Census question ID)  | Item  | Value             | Production |            | Bridge Panel |            | Chi-square p-value |
|--|---|-------------------|------------|------------|--------------|------------|--------------------|
|  |   |                   | Percent    | Std. error | Percent      | Std. error |                    |
|  | Family-related reasons due to the coronavirus pandemic (e.g., childcare, eldercare)   | Yes               | 4.3        | 0.6        | -            | -          | N/A                |
|  |   | No                | 95.7       | 0.6        | -            | -          |                    |
|  | Family-related reasons unrelated to the coronavirus pandemic (e.g., children, spouse's job moved)   | Yes               | 9.0        | 0.8        | 10.5         | 2.4        | 0.5460             |
|  |   | No                | 91.0       | 0.8        | 89.5         | 2.4        |                    |
|  | ^Family related   | Yes               | 11.5       | 0.9        | 10.5         | 2.4        | 0.6864             |
|  |   | No                | 88.5       | 0.9        | 89.5         | 2.4        |                    |
|  | School-related reasons (e.g., returned to school, completed a degree)   | Yes               | 9.7        | 0.9        | 10.0         | 2.0        | 0.8851             |
|  |   | No                | 90.3       | 0.9        | 90.0         | 2.0        |                    |
|  | Laid off or job terminated due to the coronavirus pandemic  | Yes               | 10.1       | 1.0        | -            | -          | N/A                |
|  |   | No                | 89.9       | 1.0        | -            | -          |                    |
|  | Laid off or job terminated for reasons other than the coronavirus pandemic (includes company closings, mergers, buyouts, grant or contract ended) | Yes               | 12.0       | 1.0        | 24.5         | 3.6        | *<.0001            |
|  |   | No                | 88.0       | 1.0        | 75.5         | 3.6        |                    |
|  | ^Laid off   | Yes               | 20.3       | 1.3        | 24.5         | 3.6        | 0.2570             |
|  |   | No                | 79.7       | 1.3        | 75.5         | 3.6        |                    |
|  | Retired   | Yes               | 2.5        | 0.4        | 5.1          | 1.8        | *0.0360            |
|  |   | No                | 97.5       | 0.4        | 94.9         | 1.8        |                    |
| Some other reason, specify   | Yes   | 7.9               | 0.8        | 2.8        | 1.0          | *0.0023    |                    |
|  | No  | 92.1              | 0.8        | 97.2       | 1.0          |            |                    |
| <b>During the past 12 months, did you attend any professional conferences or professional society or association meetings? (PROMTGI)</b> | Production: Yes, I attended in person or virtually, i.e., online or by remote access  | Bridge Panel: Yes | 23.9       | 0.5        | 20.3         | 1.3        | *0.0124            |
|  | Production: No  | Bridge Panel: No  | 76.1       | 0.5        | 79.7         | 1.3        |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

^Denotes a recoded item, which combines the response option that references the coronavirus pandemic and the matching response option that does not

Note: Rao-Scott Chi-square test compared distributions for production and Bridge Panel

Table 24: Response distributions for coronavirus salary and telework questions

| Survey item   |  | Mean   | Std. error |
|---|--|--------|------------|
| By how much did your income for 2020 decrease due to the pandemic? (ERNDEC) |  | 22,670 | 1,076      |
| By how much did your income for 2020 increase due to the pandemic? (ERNINC) |  | 24,050 | 3,951      |
| By how much did your salary decrease due to the pandemic? (SALDEC)          |  | 18,210 | 1,052      |
| By how much did your salary increase due to the pandemic? (SALINC)          |  | 16,940 | 4,578      |

| Survey item   | Response option   | Percent | Std. error |
|---|---|---------|------------|
| How was your total earned income for 2020 affected by the coronavirus pandemic? (ERNCOV1)   | It increased  | 7.7     | 0.4        |
|   | It decreased  | 26.7    | 0.6        |
|   | It was not affected   | 65.5    | 0.7        |
|   | Total   | 100.0   |            |
| For the principal job you held during the week of February 1, 2021, has your basic annual salary been affected at any time by the coronavirus pandemic? (SALCOV1) | No  | 74.6    | 0.7        |
|   | Yes   | 25.4    | 0.7        |
|   | Total   | 100.0   |            |
| Did the salary you provided reflect the effects of the coronavirus pandemic? (SALEFF)   | No  | 51.3    | 1.3        |
|   | Yes   | 48.7    | 1.3        |
|   | Total   | 100.0   |            |
| How has your basic annual salary been affected by the coronavirus pandemic? (SALCOV2)   | It was decreased temporarily but has returned to normal                                       | 44.6    | 1.3        |
|   | It is currently decreased   | 29.1    | 1.2        |
|   | It was increased temporarily but has returned to normal                                       | 3.6     | 0.5        |
|   | It is currently increased   | 4.6     | 0.7        |
|   | I did not receive an expected raise or cost of living increase                                | 14.5    | 0.9        |
|   | Other, specify  | 3.6     | 0.5        |
|   | Total   | 100.0   |            |
| Thinking of your principal job during the week of February 1, 2021, which of the following best describes whether you were allowed or                             | I was allowed or required to telecommute/work remotely due to the coronavirus pandemic        | 53.4    | 0.6        |
|   | I was allowed or required to telecommute/work remotely regardless of the coronavirus pandemic | 14.6    | 0.4        |

|  |  |       |     |
|--|--|-------|-----|
| required to telecommute/work remotely? (TELEW) | I was not allowed or required to telecommute/work remotely   | 9.6   | 0.4 |
|  | Telecommuting/working remotely did not make sense for my job | 22.4  | 0.6 |
|  | Total  | 100.0 |     |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

### Coronavirus-related questions by mode (new and old cohort)

Table 25: New cohort mean and median salary and income increase or decrease by mode of response

| Survey Item  |              | CATI    | Paper    | Web      | p-value              |
|--|--------------|---------|----------|----------|----------------------|
| As of the week of February 1, 2021, what was your basic annual salary on your principal job, before deductions? (SALARY) | Mean         | 77,320  | 85,450   | 92,360   | 0.1492 (CATI/Paper)  |
|  | (Std. error) | (3,376) | (4,830)  | (1,275)  | *0.0002 (CATI/Web)   |
|  | Median       | 64,560  | 64,990   | 72,920   | 0.1661 (Paper/Web)   |
|  | (Std. error) | (3,203) | (2,716)  | (1,251)  | N/A                  |
| Counting all jobs held in 2020, what was your total earned income for 2020, before deductions? (EARN)                    | Mean         | 74,740  | 88,530   | 97,910   | *0.0349 (CATI/Paper) |
|  | (Std. error) | (4,002) | (5,129)  | (2,080)  | *<.0001 (CATI/Web)   |
|  | Median       | 57,990  | 64,980   | 69,990   | *0.0981 (Paper/Web)  |
|  | (Std. error) | (2,408) | (3,072)  | (681.70) | N/A                  |
| By how much did your income for 2020 decrease due to the pandemic? (ERNDEC)  | Mean         | 22,320  | 49,000   | 22,420   | 0.3068 (CATI/Paper)  |
|  | (Std. error) | (2,837) | (25,830) | (1,035)  | 0.9722 (CATI/Web)    |
|  | Median       | 9,859   | 9,902    | 9,973    | 0.3084 (Paper/Web)   |
|  | (Std. error) | (1,530) | (2,957)  | (802.80) | N/A                  |
| By how much did your income for 2020 increase due to the pandemic? (ERNINC)  | Mean         | 12,950  | 14,090   | 23,130   | 0.7671 (CATI/Paper)  |
|  | (Std. error) | (2,491) | (3,074)  | (3,492)  | *0.0223 (CATI/Web)   |
|  | Median       | 9,875   | 5,889    | 7,634    | *0.0526 (Paper/Web)  |
|  | (Std. error) | (1,909) | (2,157)  | (871.60) | N/A                  |
| By how much did your salary decrease due to the pandemic? (SALDEC)   | Mean         | 23,690  | 29,400   | 18,020   | 0.6203 (CATI/Paper)  |
|  | (Std. error) | (3,664) | 11,150   | (1,020)  | 0.1467 (CATI/Web)    |
|  |              |         |          |          | 0.3136 (Paper/Web)   |

| Survey Item  |              | CATI    | Paper    | Web      | p-value              |
|--|--------------|---------|----------|----------|----------------------|
|  | Median       | 9,964   | 9,838    | 9,472    | N/A                  |
|  | (Std. error) | (4,788) | (1,142)  | (909.00) |                      |
| By how much did your salary increase due to the pandemic? (SALINC) |              |         |          |          | *0.0226 (CATI/Paper) |
|  | Mean         | 18,470  | 6,588    | 16,890   | 0.8041 (CATI/Web)    |
|  | (Std. error) | (4,747) | (2,058)  | (4,524)  | *0.0407 (Paper/Web)  |
|  | Median       | 9,758   | 2,828    | 4,848    | N/A                  |
| (Std. error)   | (5,154)      | (1,055) | (687.20) |          |                      |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: T-test compared means across respective response modes

Table 26: Old cohort mean and median salary and income increase or decrease by mode of response

| Survey Item  |              | CATI     | Paper    | Web      | p-values             |
|--|--------------|----------|----------|----------|----------------------|
| As of the week of February 1, 2021, what was your basic annual salary on your principal job, before deductions? (SALARY) |              |          |          |          | *0.0693 (CATI/Paper) |
|  | Mean         | 88,180   | 79,760   | 92,260   | 0.3359 (CATI/Web)    |
|  | (Std. error) | (4,114)  | (1,955)  | (860.10) | *<.0001 (Paper/Web)  |
|  | Median       | 69,250   | 63,380   | 75,000   | N/A                  |
| (Std. error)   | (2,741)      | (2,074)  | (1,120)  |          |                      |
| Counting all jobs held in 2020, what was your total earned income for 2020, before deductions? (EARN)                    |              |          |          |          | 0.3660 (CATI/Paper)  |
|  | Mean         | 103,100  | 89,610   | 98,310   | 0.7499 (CATI/Web)    |
|  | (Std. error) | (14,900) | (3,665)  | (1,187)  | *0.0261 (Paper/Web)  |
|  | Median       | 69,510   | 59,980   | 69,990   | N/A                  |
| (Std. error)   | (2,387)      | (2,629)  | (596.40) |          |                      |
| By how much did your income for 2020 decrease due to the pandemic? (ERNDEC)  |              |          |          |          | *0.0574 (CATI/Paper) |
|  | Mean         | 27,890   | 55,620   | 25,630   | 0.5639 (CATI/Web)    |
|  | (Std. error) | (3,737)  | (14,200) | (1,192)  | *0.0368 (Paper/Web)  |
|  | Median       | 13,800   | 11,830   | 9,988    | N/A                  |
| (Std. error)   | (2,104)      | (1,758)  | (489.70) |          |                      |
| By how much did your income for 2020 increase due to the pandemic? (ERNINC)  |              |          |          |          | 0.6966 (CATI/Paper)  |
|  | Mean         | 23,280   | 19,350   | 24,180   | 0.9106 (CATI/Web)    |
|  | (Std. error) | (7,828)  | (6,580)  | (2,841)  | 0.5040 (Paper/Web)   |
|  | Median       | 3,929    | 4,187    | 5,867    | N/A                  |
| (Std. error)   | (3,169)      | (858.60) | (690.30) |          |                      |

| Survey Item  |              | CATI     | Paper    | Web      | p-values             |
|--|--------------|----------|----------|----------|----------------------|
| By how much did your salary decrease due to the pandemic? (SALDEC) | Mean         | 21,410   | 147,900  | 18,950   | *0.0001 (CATI/Paper) |
|  | (Std. error) | (2,575)  | (32,750) | (669.80) | 0.3603 (CATI/Web)    |
|  | Median       | 9,940    | 9,961    | 9,911    | *0.0001 (Paper/Web)  |
|  | (Std. error) | (2,318)  | (1,218)  | (466.60) | N/A                  |
| By how much did your salary increase due to the pandemic? (SALINC) | Mean         | 3,970    | 6,130    | 15,540   | 0.1225 (CATI/Paper)  |
|  | (Std. error) | (656.50) | (1,222)  | (2,110)  | *<.0001 (CATI/Web)   |
|  | Median       | 1,916    | 3,788    | 3,990    | *0.0001 (Paper/Web)  |
|  | (Std. error) | (1,084)  | (2,168)  | (833.20) | N/A                  |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: T-test compared means across respective response modes

Table 27: New cohort response distributions of coronavirus questions by mode of response

| Question (Census question ID)  | Item   | Value | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|--|-------|---------|------------|---------|------------|---------|------------|--------------------|
|  |  |       | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
| During the week of February 1, 2021, what were your reasons for not working? (NWINTRO) | Retired  | Yes   | 60.3    | 4.0        | 75.5    | 2.8        | 54.0    | 1.1        | *<.0001            |
|  |  | No    | 39.7    | 4.0        | 24.5    | 2.8        | 46.0    | 1.1        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | On layoff from a job due to the coronavirus pandemic                   | Yes   | 15.8    | 3.0        | 4.2     | 1.3        | 10.0    | 0.7        | *0.0008            |
|  |  | No    | 84.2    | 3.0        | 95.8    | 1.3        | 90.0    | 0.7        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | On layoff from a job for reasons unrelated to the coronavirus pandemic | Yes   | 10.4    | 2.6        | 2.4     | 1.0        | 3.4     | 0.4        | *<.0001            |
|  |  | No    | 89.6    | 2.6        | 97.6    | 1.0        | 96.6    | 0.4        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Student  | Yes   | 7.5     | 2.0        | 3.1     | 1.1        | 5.5     | 0.5        | 0.1265             |
|  |  | No    | 92.5    | 2.0        | 96.9    | 1.1        | 94.5    | 0.5        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Family responsibilities unrelated to the coronavirus pandemic          | Yes   | 13.3    | 2.7        | 9.6     | 1.9        | 12.8    | 0.9        | 0.3613             |
|  |  | No    | 86.7    | 2.7        | 90.4    | 1.9        | 87.2    | 0.9        |                    |

| Question (Census question ID)                                  | Item   | Value | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|--|-------|---------|------------|---------|------------|---------|------------|--------------------|
|  |  |       | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | Yes   | 10.7    | 2.3        | 2.2     | 1.0        | 6.6     | 0.7        | *0.0031            |
|  |  | No    | 89.3    | 2.3        | 97.8    | 1.0        | 93.4    | 0.7        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Chronic illness or permanent disability  | Yes   | 18.8    | 3.0        | 9.7     | 1.9        | 6.3     | 0.5        | * < .0001          |
|  |  | No    | 81.2    | 3.0        | 90.3    | 1.9        | 93.7    | 0.5        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Suitable job not available   | Yes   | 17.9    | 3.3        | 7.5     | 1.7        | 11.3    | 0.8        | *0.0096            |
|  |  | No    | 82.1    | 3.3        | 92.5    | 1.7        | 88.7    | 0.8        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Did not need or want to work   | Yes   | 39.3    | 3.5        | 21.7    | 3.4        | 18.0    | 0.9        | * < .0001          |
|  |  | No    | 60.7    | 3.5        | 78.3    | 3.4        | 82.0    | 0.9        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Other reason, specify  | Yes   | 4.8     | 1.5        | 3.1     | 1.4        | 6.7     | 0.6        | 0.1241             |
|  |  | No    | 95.2    | 1.5        | 96.9    | 1.4        | 93.3    | 0.6        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| <b>Why did you usually work fewer than 35 hours? (PJINTRO)</b> | Previously retired or semi-retired   | Yes   | 15.9    | 7.0        | 30.2    | 4.8        | 19.6    | 1.2        | *0.0602            |
|  |  | No    | 84.1    | 7.0        | 69.8    | 4.8        | 80.4    | 1.2        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Student  | Yes   | 18.2    | 5.8        | 4.5     | 2.0        | 10.6    | 1.0        | *0.0297            |
|  |  | No    | 81.8    | 5.8        | 95.5    | 2.0        | 89.4    | 1.0        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | Yes   | 14.6    | 5.3        | 13.5    | 3.5        | 18.8    | 1.4        | 0.3468             |
|  |  | No    | 85.4    | 5.3        | 86.5    | 3.5        | 81.2    | 1.4        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Family responsibilities unrelated to the coronavirus pandemic                        | Yes   | 29.8    | 9.0        | 19.3    | 4.2        | 26.8    | 1.3        | 0.3206             |
|  |  | No    | 70.2    | 9.0        | 80.7    | 4.2        | 73.2    | 1.3        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Full-time job not available due to the coronavirus pandemic                          | Yes   | 13.7    | 5.3        | 4.7     | 1.9        | 12.8    | 1.2        | *0.0424            |
|  |  | No    | 86.3    | 5.3        | 95.3    | 1.9        | 87.2    | 1.2        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |

| Question (Census question ID)  | Item   | Value | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|--|-------|---------|------------|---------|------------|---------|------------|--------------------|
|  |  |       | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|  | Full-time job not available unrelated to the coronavirus pandemic      | Yes   | 30.1    | 10.2       | 13.2    | 3.2        | 13.1    | 1.1        | *0.0290            |
|  |  | No    | 69.9    | 10.2       | 86.8    | 3.2        | 86.9    | 1.1        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Hours or work reduced due to the coronavirus pandemic                  | Yes   | 23.8    | 6.8        | 12.9    | 3.4        | 24.3    | 1.6        | *0.0417            |
|  |  | No    | 76.2    | 6.8        | 87.1    | 3.4        | 75.7    | 1.6        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Hours or work reduced unrelated to the coronavirus pandemic            | Yes   | 13.4    | 5.6        | 55.2    | 5.3        | 9.2     | 1.0        | *<.0001            |
|  |  | No    | 86.6    | 5.6        | 44.8    | 5.3        | 90.8    | 1.0        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Held more than one job   | Yes   | 31.8    | 7.6        | 15.9    | 4.6        | 13.2    | 1.1        | *0.0126            |
|  |  | No    | 68.2    | 7.6        | 84.1    | 4.6        | 86.8    | 1.1        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Did not need or want to work more hours                                | Yes   | 47.4    | 6.5        | 6.5     | 2.3        | 44.8    | 1.7        | *<.0001            |
|  |  | No    | 52.6    | 6.5        | 93.5    | 2.3        | 55.2    | 1.7        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Other reason, specify  | Yes   | 22.4    | 6.6        | 24.2    | 5.2        | 11.6    | 1.1        | *0.0013            |
|  |  | No    | 77.6    | 6.6        | 75.8    | 5.2        | 88.4    | 1.1        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| <b>Thinking of your principal job during the week of February 1, 2021, which of the following benefits were available to you, even if you chose not to take them? (BFTINTRO)</b> | Health insurance that was at least partially paid by your employer     | Yes   | 79.7    | 1.9        | 79.7    | 1.7        | 80.5    | 0.5        | 0.8399             |
|  |  | No    | 20.3    | 1.9        | 20.3    | 1.7        | 19.5    | 0.5        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | A pension plan or a retirement plan to which your employer contributed | Yes   | 67.8    | 2.5        | 71.8    | 2.1        | 72.9    | 0.6        | *0.1150            |
|  |  | No    | 32.2    | 2.5        | 28.2    | 2.1        | 27.1    | 0.6        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | A profit-sharing plan  | Yes   | 22.2    | 2.2        | 20.2    | 2          | 22.1    | 0.5        | 0.6588             |
|  |  | No    | 77.8    | 2.2        | 79.8    | 2          | 77.9    | 0.5        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | New or additional paid leave due to the coronavirus pandemic           | Yes   | 31.3    | 2.8        | 33.9    | 2.3        | 34.6    | 0.5        | 0.5014             |
|  |  | No    | 68.7    | 2.8        | 66.1    | 2.3        | 65.4    | 0.5        |                    |
|  |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Yes  | 73.1  | 2       | 74.3       | 2.1     | 77.8       | 0.5     | *0.0339    |                    |



| Question (Census question ID)   | Item  | Value | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|---|---|-------|---------|------------|---------|------------|---------|------------|--------------------|
|   |   |       | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|   | Paid vacation, sick or personal days unrelated to the coronavirus pandemic                        | No    | 26.9    | 2          | 25.7    | 2.1        | 22.2    | 0.5        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| <b>Why did you change your employer or your job between the week of February 1, 2019 and the week of February 1, 2021? (CHINTRO)</b>              | Pay, promotion opportunities  | Yes   | 60.1    | 5.5        | 54.1    | 5.6        | 58.7    | 1.2        | 0.6713             |
|   |   | No    | 39.9    | 5.5        | 45.9    | 5.6        | 41.3    | 1.2        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Working conditions (e.g., hours, equipment, working environment)                                  | Yes   | 40.3    | 5.3        | 47.6    | 4.8        | 45.5    | 1.6        | 0.5738             |
|   |   | No    | 59.7    | 5.3        | 52.4    | 4.8        | 54.5    | 1.6        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Job location  | Yes   | 28.1    | 4.9        | 38.8    | 5.9        | 31.0    | 1.4        | 0.2554             |
|   |   | No    | 71.9    | 4.9        | 61.2    | 5.9        | 69.0    | 1.4        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Change in career or professional interests  | Yes   | 44.4    | 4.8        | 32.4    | 5.3        | 32.3    | 1.3        | 0.1034             |
|   |   | No    | 55.6    | 4.8        | 67.6    | 5.3        | 67.7    | 1.3        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Family-related reasons due to the coronavirus pandemic (e.g., childcare, eldercare)               | Yes   | 9.9     | 3.9        | 2.0     | 1.0        | 4.3     | 0.6        | *0.0135            |
|   |   | No    | 90.1    | 3.9        | 98.0    | 1.0        | 95.7    | 0.6        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Family-related reasons unrelated to the coronavirus pandemic (e.g., children, spouse's job moved) | Yes   | 20.9    | 4.7        | 10.1    | 3.0        | 9.0     | 0.7        | *0.0027            |
|   |   | No    | 79.1    | 4.7        | 89.9    | 3.0        | 91.0    | 0.7        |                    |
|   |   | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | School-related reasons (e.g., returned to school, completed a degree)                             | Yes   | 19.7    | 4.7        | 15.6    | 4.8        | 10.1    | 0.8        | *0.0276            |
|   |   | No    | 80.3    | 4.7        | 84.4    | 4.8        | 89.9    | 0.8        |                    |
| Total   |   | 100.0 |         | 100.0      |         | 100.0      |         |            |                    |
| Laid off or job terminated due to the coronavirus pandemic  | Yes   | 9.9   | 2.7     | 3.4        | 1.7     | 9.9        | 0.9     | *0.0526    |                    |
|   | No  | 90.1  | 2.7     | 96.6       | 1.7     | 90.1       | 0.9     |            |                    |
|   | Total   | 100.0 |         | 100.0      |         | 100.0      |         |            |                    |
| Laid off or job terminated for reasons other than the coronavirus pandemic (includes company closings, mergers, buyouts, grant or contract ended) | Yes   | 12.1  | 2.6     | 12.4       | 3.7     | 11.8       | 0.9     | 0.9785     |                    |
|   | No  | 87.9  | 2.6     | 87.6       | 3.7     | 88.2       | 0.9     |            |                    |
|   | Total   | 100.0 |         | 100.0      |         | 100.0      |         |            |                    |

| Question (Census question ID)  | Item   | Value             | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|--|-------------------|---------|------------|---------|------------|---------|------------|--------------------|
|  |  |                   | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|  | Retired  | Yes               | 8.6     | 3.5        | 3.3     | 1.6        | 2.4     | 0.4        | *0.0079            |
|  |  | No                | 91.4    | 3.5        | 96.7    | 1.6        | 97.6    | 0.4        |                    |
|  |  | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Some other reason, specify   | Yes               | 3.7     | 1.3        | 6.1     | 2.6        | 7.5     | 0.7        | 0.2902             |
|  |  | No                | 96.3    | 1.3        | 93.9    | 2.6        | 92.5    | 0.7        |                    |
|  |  | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| <b>During the past 12 months, did you attend any professional conferences or professional society or association meetings? (PROMTGI)</b> | Production: Yes, I attended in person or virtually, i.e., online or by remote access | Bridge Panel: Yes | 20.8    | 2.0        | 19.3    | 1.2        | 24.2    | 0.4        | *0.0024            |
|  | Production: No   | Bridge Panel: No  | 79.2    | 2.0        | 80.7    | 1.2        | 75.8    | 0.4        |                    |
|  |  |                   |         |            |         |            |         |            |                    |
|  | Total  |                   | 100.0   |            | 100.0   |            | 100.0   |            |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared distributions across mode of response

Table 28: Old cohort response distributions of coronavirus questions by mode of response

| Question (Census question ID)   | Item   | Value | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|---|--|-------|---------|------------|---------|------------|---------|------------|--------------------|
|   |  |       | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
| <b>During the week of February 1, 2021, what were your reasons for not working? (NWINTRO)</b> | Retired  | Yes   | 59.8    | 3.8        | 76.3    | 2.1        | 58.5    | 1.0        | *<.0001            |
|   |  | No    | 40.2    | 3.8        | 23.7    | 2.1        | 41.5    | 1.0        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | On layoff from a job due to the coronavirus pandemic                   | Yes   | 11.8    | 2.3        | 6.1     | 1.4        | 9.1     | 0.6        | *0.0973            |
|   |  | No    | 88.2    | 2.3        | 93.9    | 1.4        | 90.9    | 0.6        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | On layoff from a job for reasons unrelated to the coronavirus pandemic | Yes   | 6.3     | 1.7        | 2.9     | 0.7        | 4.3     | 0.4        | 0.1070             |
|   |  | No    | 93.7    | 1.7        | 97.1    | 0.7        | 95.7    | 0.4        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Student  | Yes   | 2.9     | 0.8        | 1.6     | 0.5        | 3.0     | 0.4        | *0.0984            |
|   |  | No    | 97.1    | 0.8        | 98.4    | 0.5        | 97.0    | 0.4        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| Family responsibilities unrelated to the coronavirus pandemic                                 | Yes  | 25.9  | 3.6     | 9.6        | 1.5     | 13.0       | 0.7     | *<.0001    |                    |
|   | No   | 74.1  | 3.6     | 90.4       | 1.5     | 87.0       | 0.7     |            |                    |

| Question (Census question ID)                                     | Item   | Value | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|---|--|-------|---------|------------|---------|------------|---------|------------|--------------------|
|   |  |       | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | Yes   | 9.7     | 2.4        | 3.5     | 0.8        | 7.4     | 0.6        | *0.0038            |
|   |  | No    | 90.3    | 2.4        | 96.5    | 0.8        | 92.6    | 0.6        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Chronic illness or permanent disability  | Yes   | 19.8    | 3.3        | 7.2     | 1.2        | 6.3     | 0.5        | *<.0001            |
|   |  | No    | 80.2    | 3.3        | 92.8    | 1.2        | 93.7    | 0.5        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Suitable job not available   | Yes   | 19.4    | 3.1        | 5.1     | 1.5        | 9.8     | 0.7        | *<.0001            |
|   |  | No    | 80.6    | 3.1        | 94.9    | 1.5        | 90.2    | 0.7        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Did not need or want to work   | Yes   | 47.5    | 4.0        | 21.2    | 1.9        | 19.6    | 0.8        | *<.0001            |
|   |  | No    | 52.5    | 4.0        | 78.8    | 1.9        | 80.4    | 0.8        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Other reason, specify  | Yes   | 1.7     | 0.9        | 3.0     | 0.8        | 6.1     | 0.5        | *0.0016            |
|   |  | No    | 98.3    | 0.9        | 97.0    | 0.8        | 93.9    | 0.5        |                    |
| Total   |  | 100.0 |         | 100.0      |         | 100.0      |         |            |                    |
| <b>Why did you usually work fewer than 35 hours? (PJINTRO)</b>    | Previously retired or semi-retired   | Yes   | 21.4    | 4.6        | 30.9    | 3.0        | 27.0    | 1.2        | 0.2168             |
|   |  | No    | 78.6    | 4.6        | 69.1    | 3.0        | 73.0    | 1.2        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Student  | Yes   | 15.5    | 5.7        | 2.7     | 0.8        | 6.6     | 0.6        | *0.0013            |
|   |  | No    | 84.5    | 5.7        | 97.3    | 0.8        | 93.4    | 0.6        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Family responsibilities due to the coronavirus pandemic (e.g., childcare, eldercare) | Yes   | 14.5    | 4.8        | 13.7    | 2.2        | 17.5    | 1.1        | 0.3857             |
|   |  | No    | 85.5    | 4.8        | 86.3    | 2.2        | 82.5    | 1.1        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Family responsibilities unrelated to the coronavirus pandemic                        | Yes   | 31.2    | 7.0        | 24.2    | 3.0        | 28.2    | 1.2        | 0.4972             |
|   |  | No    | 68.8    | 7.0        | 75.8    | 3.0        | 71.8    | 1.2        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|   | Full-time job not available due to the coronavirus pandemic                          | Yes   | 24.1    | 5.9        | 5.7     | 1.7        | 9.8     | 0.9        | *0.0003            |
|   |  | No    | 75.9    | 5.9        | 94.3    | 1.7        | 90.2    | 0.9        |                    |
|   |  | Total | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| Full-time job not available unrelated to the coronavirus pandemic | Yes  | 14.3  | 5.3     | 7.9        | 1.5     | 13.6       | 1.0     | *0.0713    |                    |
|   | No   | 85.7  | 5.3     | 92.1       | 1.5     | 86.4       | 1.0     |            |                    |
|   | Total  | 100.0 |         | 100.0      |         | 100.0      |         |            |                    |
| Hours or work reduced due to the coronavirus pandemic             | Yes  | 34.1  | 6.7     | 10.4       | 1.9     | 21.3       | 1.3     | *<.0001    |                    |
|   | No   | 65.9  | 6.7     | 89.6       | 1.9     | 78.7       | 1.3     |            |                    |
|   | Total  | 100.0 |         | 100.0      |         | 100.0      |         |            |                    |
|   |  | Yes   | 25.3    | 6.6        | 52.2    | 3.8        | 9.0     | 0.8        | *<.0001            |

| Question (Census question ID)  | Item   | Value                        | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |           |
|--|--|------------------------------|---------|------------|---------|------------|---------|------------|--------------------|-----------|
|  |  |                              | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |           |
|  | Hours or work reduced unrelated to the coronavirus pandemic  | No                           | 74.7    | 6.6        | 47.8    | 3.8        | 91.0    | 0.8        | 0.1685             |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 11.6    | 4.6        | 16.1    | 2.5        | 11.3    | 0.9        |                    |           |
|  | Held more than one job   | No                           | 88.4    | 4.6        | 83.9    | 2.5        | 88.7    | 0.9        |                    |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 43.3    | 6.9        | 5.1     | 1.3        | 52.5    | 1.4        |                    |           |
|  | Did not need or want to work more hours  | No                           | 56.7    | 6.9        | 94.9    | 1.3        | 47.5    | 1.4        |                    | * < .0001 |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 10.7    | 4.3        | 18.5    | 2.6        | 12.1    | 1.1        |                    |           |
|  | Other reason, specify  | No                           | 89.3    | 4.3        | 81.5    | 2.6        | 87.9    | 1.1        |                    | * 0.0383  |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 78.7    | 2.3        | 75.9    | 1.4        | 81.3    | 0.4        |                    |           |
| <b>Thinking of your principal job during the week of February 1, 2021, which of the following benefits were available to you, even if you chose not to take them? (BFTINTRO)</b> | Health insurance that was at least partially paid by your employer   | No                           | 21.3    | 2.3        | 24.1    | 1.4        | 18.7    | 0.4        | * 0.0008           |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 69.7    | 2.4        | 69.2    | 1.5        | 73.6    | 0.5        |                    |           |
|  | A pension plan or a retirement plant to which your employer contributed  | No                           | 30.3    | 2.4        | 30.8    | 1.5        | 26.4    | 0.5        | * 0.0067           |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 23.7    | 2.1        | 18.1    | 1.3        | 21.1    | 0.4        |                    |           |
|  | A profit-sharing plan  | No                           | 76.3    | 2.1        | 81.9    | 1.3        | 78.9    | 0.4        | * 0.0407           |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 31.0    | 2.7        | 32.1    | 1.6        | 35.3    | 0.5        |                    |           |
|  | New or additional paid leave due to the coronavirus pandemic   | No                           | 69.0    | 2.7        | 67.9    | 1.6        | 64.7    | 0.5        | * 0.0659           |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 77.1    | 2.1        | 71.9    | 1.5        | 78.0    | 0.4        |                    |           |
|  | Paid vacation, sick or personal days unrelated to the coronavirus pandemic   | No                           | 22.9    | 2.1        | 28.1    | 1.5        | 22.0    | 0.4        | * 0.0003           |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100     |            |                    |           |
|  |  | Yes                          | 53.9    | 7.2        | 50.0    | 4.3        | 60.8    | 1.0        |                    |           |
|  | <b>Why did you change your employer or your job between the week of February 1, 2019 and the week of February 1, 2021? (CHINTRO)</b> | Pay, promotion opportunities | No      | 46.1       | 7.2     | 50.0       | 4.3     | 39.2       | 1.0                | * 0.0502  |
|  |  |                              | Total   | 100.0      |         | 100.0      |         | 100.0      |                    |           |
|  |  |                              | Yes     | 41.0       | 7.5     | 35.6       | 4.1     | 43.9       | 1.2                |           |
| Working conditions (e.g., hours, equipment, working environment)   |  | No                           | 59.0    | 7.5        | 64.4    | 4.1        | 56.1    | 1.2        | 0.2430             |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 41.3    | 7.1        | 23.3    | 3.1        | 29.7    | 1.0        |                    |           |
| Job location   |  | No                           | 58.7    | 7.1        | 76.7    | 3.1        | 70.3    | 1.0        | * 0.0306           |           |
|  |  | Total                        | 100.0   |            | 100.0   |            | 100.0   |            |                    |           |
|  |  | Yes                          | 34.7    | 5.7        | 26.5    | 3.3        | 34.0    | 1.0        |                    |           |
| Change in career or professional interests   |  | No                           | 65.3    | 5.7        | 73.5    | 3.3        | 66.0    | 1.0        | 0.1594             |           |

| Question (Census question ID)  | Item  | Value             | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|---|-------------------|---------|------------|---------|------------|---------|------------|--------------------|
|  |   |                   | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Family-related reasons due to the coronavirus pandemic (e.g., childcare, eldercare)   | Yes               | 18.5    | 6.9        | 4.3     | 1.3        | 4.7     | 0.4        | * < .0001          |
|  |   | No                | 81.5    | 6.9        | 95.7    | 1.3        | 95.3    | 0.4        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Family-related reasons unrelated to the coronavirus pandemic (e.g., children, spouse's job moved)   | Yes               | 20.4    | 6          | 10.1    | 2.5        | 9.2     | 0.6        | * 0.0153           |
|  |   | No                | 79.6    | 6          | 89.9    | 2.5        | 90.8    | 0.6        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | School-related reasons (e.g., returned to school, completed a degree)   | Yes               | 13.5    | 3.7        | 2.8     | 0.8        | 6.7     | 0.6        | * 0.0011           |
|  |   | No                | 86.5    | 3.7        | 97.2    | 0.8        | 93.3    | 0.6        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Laid off or job terminated due to the coronavirus pandemic  | Yes               | 11.4    | 4.3        | 11.5    | 2.6        | 9.2     | 0.6        | 0.6006             |
|  |   | No                | 88.6    | 4.3        | 88.5    | 2.6        | 90.8    | 0.6        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Laid off or job terminated for reasons other than the coronavirus pandemic (includes company closings, mergers, buyouts, grant or contract ended) | Yes               | 14.3    | 3.4        | 8.8     | 2          | 12.1    | 0.8        | 0.3085             |
|  |   | No                | 85.7    | 3.4        | 91.2    | 2          | 87.9    | 0.8        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Retired   | Yes               | 5.4     | 2.2        | 7.6     | 2.3        | 2.8     | 0.3        | * 0.0024           |
|  |   | No                | 94.6    | 2.2        | 92.4    | 2.3        | 97.2    | 0.3        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
|  | Some other reason, specify  | Yes               | 6.8     | 2.8        | 13.1    | 2.6        | 6.6     | 0.6        | * 0.0076           |
|  |   | No                | 93.2    | 2.8        | 86.9    | 2.6        | 93.4    | 0.6        |                    |
|  |   | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| <b>During the past 12 months, did you attend any professional conferences or professional society or association meetings? (PROMTGI)</b> | Production: Yes, I attended in person or virtually, i.e., online or by remote access  | Bridge Panel: Yes | 18.1    | 1.5        | 18.7    | 0.9        | 24.1    | 0.4        | * < .0001          |
|  |   | Bridge Panel: No  | 81.9    | 1.5        | 81.3    | 0.9        | 75.9    | 0.4        |                    |
|  | Production: No  | Total             | 100.0   |            | 100.0   |            | 100.0   |            |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared distributions across mode of response

Table 29: New cohort response distributions for coronavirus affected salary and telework questions with standard errors by mode of response

| Survey item  | Response option   | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|---|---------|------------|---------|------------|---------|------------|--------------------|
|  |   | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
| How was your total earned income for 2020 affected by the coronavirus pandemic? (ERNCOV1)  | It increased  | 5.5     | 0.9        | 6.2     | 0.9        | 7.7     | 0.3        | * < .0001          |
|  | It decreased  | 32.8    | 2.6        | 20.4    | 1.7        | 26.4    | 0.6        |                    |
|  | It was not affected   | 61.6    | 2.8        | 73.4    | 1.9        | 65.9    | 0.7        |                    |
|  | Total   | 100.0   |            | 100.0   |            |         |            |                    |
| For the principal job you held during the week of February 1, 2021, has your basic annual salary been affected at any time by the coronavirus pandemic? (SALCOV1)                    | No  | 71.9    | 2.6        | 79.8    | 1.6        | 75.0    | 0.7        | * 0.0210           |
|  | Yes   | 28.1    | 2.6        | 20.2    | 1.6        | 25.0    | 0.7        |                    |
|  | Total   | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| Did the salary you provided reflect the effects of the coronavirus pandemic? (SALEFF)  | No  | 33.1    | 4.8        | 51.9    | 4.9        | 51.4    | 1.2        | * 0.0016           |
|  | Yes   | 66.9    | 4.8        | 48.1    | 4.9        | 48.6    | 1.2        |                    |
|  | Total   | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| How has your basic annual salary been affected by the coronavirus pandemic? (SALCOV2)  | It was decreased temporarily but has returned to normal                                       | 49.3    | 5.7        | 58.1    | 5.4        | 44.3    | 1.2        | * 0.0008           |
|  | It is currently decreased   | 25.4    | 3.4        | 20.0    | 4.4        | 28.8    | 1.1        |                    |
|  | It was increased temporarily but has returned to normal                                       | 3.9     | 1.9        | 8.7     | 3.0        | 3.7     | 0.5        |                    |
|  | It is currently increased   | 9.1     | 2.8        | 5.8     | 2.4        | 4.5     | 0.6        |                    |
|  | I did not receive an expected raise or cost of living increase                                | 10.2    | 2.5        | 6.9     | 2.6        | 15.0    | 0.8        |                    |
|  | Other, specify  | 2.1     | 1.2        | 0.5     | 0.3        | 3.6     | 0.5        |                    |
|  | Total   | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| Thinking of your principal job during the week of February 1, 2021, which of the following best describes whether you were allowed or required to telecommute/work remotely? (TELEW) | I was allowed or required to telecommute/work remotely due to the coronavirus pandemic        | 46.8    | 2.6        | 45.4    | 2.1        | 54.1    | 0.6        | * < .0001          |
|  | I was allowed or required to telecommute/work remotely regardless of the coronavirus pandemic | 15.7    | 1.9        | 11.1    | 1.4        | 14.4    | 0.4        |                    |
|  | I was not allowed or required to telecommute/work remotely                                    | 12.1    | 1.7        | 13.2    | 1.7        | 9.5     | 0.3        |                    |
|  | Telecommuting/working remotely did not make sense for my job                                  | 25.4    | 2.4        | 30.3    | 1.8        | 22.0    | 0.6        |                    |

| Survey item | Response option | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|-------------|-----------------|---------|------------|---------|------------|---------|------------|--------------------|
|             |                 | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
|             | Total           | 100.0   |            | 100.0   |            | 100.0   |            |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared distributions across mode of response

Table 30: Old cohort response distributions for coronavirus affected salary and telework questions by mode of response

| Survey item   | Response option  | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|---|--|---------|------------|---------|------------|---------|------------|--------------------|
|   |  | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
| How was your total earned income for 2020 affected by the coronavirus pandemic? (ERNCOV1)   | It increased   | 7.2     | 1.3        | 7.5     | 0.9        | 7.6     | 0.3        | 0.4894             |
|   | It decreased   | 30.2    | 2.4        | 25.7    | 1.4        | 26.3    | 0.5        |                    |
|   | It was not affected  | 62.6    | 2.4        | 66.8    | 1.6        | 66.2    | 0.5        |                    |
|   | Total  | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| For the principal job you held during the week of February 1, 2021, has your basic annual salary been affected at any time by the coronavirus pandemic? (SALCOV1) | No   | 73.5    | 2.3        | 77.3    | 1.3        | 75.8    | 0.5        | 0.3142             |
|   | Yes  | 26.5    | 2.3        | 22.7    | 1.3        | 24.2    | 0.5        |                    |
|   | Total  | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| Did the salary you provided reflect the effects of the coronavirus pandemic? (SALEFF)   | No   | 24.8    | 4.3        | 41.6    | 3.1        | 49.2    | 1.0        | *<.0001            |
|   | Yes  | 75.2    | 4.3        | 58.4    | 3.1        | 50.8    | 1.0        |                    |
|   | Total  | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| How has your basic annual salary been affected by the coronavirus pandemic? (SALCOV2)   | It was decreased temporarily but has returned to normal                                | 44.2    | 5.5        | 53.9    | 3.2        | 45.8    | 1.0        | *0.0002            |
|   | It is currently decreased  | 34.1    | 4.9        | 26.1    | 2.8        | 25.5    | 0.9        |                    |
|   | It was increased temporarily but has returned to normal                                | 7.5     | 3.5        | 5.7     | 1.8        | 3.7     | 0.4        |                    |
|   | It is currently increased  | 6.8     | 2.0        | 4.6     | 1.3        | 5.1     | 0.5        |                    |
|   | I did not receive an expected raise or cost of living increase                         | 6.0     | 1.5        | 7.1     | 1.2        | 15.5    | 0.7        |                    |
|   | Other, specify   | 1.4     | 0.7        | 2.5     | 1.0        | 4.5     | 0.6        |                    |
|   | Total  | 100.0   |            | 100.0   |            | 100.0   |            |                    |
| Thinking of your principal job during the week of February 1, 2021, which of the following best   | I was allowed or required to telecommute/work remotely due to the coronavirus pandemic | 53.3    | 2.6        | 44.1    | 1.6        | 54.7    | 0.5        | *<.0001            |

| Survey item  | Response option   | CATI    |            | Paper   |            | Web     |            | Chi-square p-value |
|--|---|---------|------------|---------|------------|---------|------------|--------------------|
|  |   | Percent | Std. error | Percent | Std. error | Percent | Std. error |                    |
| describes whether you were allowed or required to telecommute/work remotely? (TELEW) | I was allowed or required to telecommute/work remotely regardless of the coronavirus pandemic | 14.5    | 1.6        | 12.1    | 1.1        | 14.4    | 0.4        |                    |
|  | I was not allowed or required to telecommute/work remotely                                    | 9.7     | 1.4        | 11.6    | 1.3        | 10.1    | 0.3        |                    |
|  | Telecommuting/working remotely did not make sense for my job                                  | 22.6    | 2.2        | 32.2    | 1.6        | 20.8    | 0.4        |                    |
|  | Total   | 100.0   |            | 100.0   |            | 100.0   |            |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared distributions across mode of response



## Appendix G Paradata estimates for grid and item-by-item questions

Table 31 to Table 34 provide paradata estimates from the grid and item-by-item analysis.

Table 31: Breakoff rates as a percent of respondent visits for the grid and item-by-item questions

| Screen (Census question ID)   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|-------------------|------------|-----------------------------|------------|--------------------|
|   | Estimate          | Std. error | Estimate                    | Std. error |                    |
| Did your duties on this job require the technical expertise of a bachelor's degree or higher in... (MGINTRO)  | 0.1               | <0.1       | 0.5                         | 0.3        | *0.0019            |
| Did any of the following factors influence your decision to work in an area outside the field of your highest degree? (NRINTRO)   | <0.1              | <0.1       | 0.0                         | N/A        | N/A                |
| The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a typical work week on this job? (WAINTRO) | 0.5               | 0.1        | 0.9                         | 0.4        | 0.2507             |
| Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO)                                   | 0.2               | 0.1        | 0.6                         | 0.3        | *0.0364            |
| On February 1, 2021, why did you hold this certification or license? (CLICINTRO)  | 0.3               | 0.1        | 0.1                         | 0.1        | 0.3826             |
| For which of the following reasons did you take work-related training during the past 12 months? (WTRINTRO)   | 0.1               | <0.1       | 0.4                         | 0.4        | *0.0847            |
| When thinking about a job, how important is each of the following factors to you? (FACINTRO)  | 0.2               | 0.1        | 0.1                         | <0.1       | 0.1450             |
| During which of the following time periods did you take courses at a community college? (CSINTRO)   | 0.1               | 0.1        | 0.1                         | 0.1        | 0.9628             |
| Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses? (CCINTRO)   | 0.2               | 0.1        | 0.2                         | 0.2        | 0.7494             |
| For which of the following reasons were you taking courses or enrolled? (ACINTRO)   | 0.0               | N/A        | 0.7                         | 0.7        | N/A                |
| Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in... (SPINTRO)  | 0.2               | 0.1        | 0.4                         | 0.3        | 0.3345             |
| Which factors were important in your decision to first come to the United States for six months or longer? (CMINTRO)  | 0.2               | 0.1        | 0.1                         | 0.1        | 0.5623             |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared breakoff rates for the screen by survey

Table 32: Changed answers by question as a percent of respondent screen visits for the grid and item-by-item questions

| Screen (Census question ID)   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|-------------------|------------|-----------------------------|------------|--------------------|
|   | Estimate          | Std. error | Estimate                    | Std. error |                    |
| Did your duties on this job require the technical expertise of a bachelor's degree or higher in... (MGINTRO)  | 16.3              | 0.5        | 18.7                        | 1.4        | *0.0751            |
| Did any of the following factors influence your decision to work in an area outside the field of your highest degree? (NRINTRO)   | 19.1              | 1.5        | 21.1                        | 3.0        | 0.5086             |
| The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a typical work week on this job? (WAINTRO) | 26.6              | 0.6        | 33.2                        | 1.6        | *<0.0001           |
| Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO)                                   | 25.8              | 0.5        | 31.6                        | 1.7        | *0.0009            |
| On February 1, 2021, why did you hold this certification or license? (CLICINTRO)  | 13.9              | 0.8        | 14.0                        | 1.6        | 0.9592             |
| For which of the following reasons did you take work-related training during the past 12 months? (WTRINTRO)   | 11.8              | 0.6        | 14.3                        | 1.6        | *0.0999            |
| When thinking about a job, how important is each of the following factors to you? (FACINTRO)  | 18.6              | 0.4        | 25.2                        | 1.4        | *<0.0001           |
| During which of the following time periods did you take courses at a community college? (CSINTRO)   | 13.0              | 0.6        | 14.0                        | 1.5        | 0.5249             |
| Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses? (CCINTRO)   | 16.9              | 0.7        | 23.6                        | 1.9        | *0.0003            |
| For which of the following reasons were you taking courses or enrolled? (ACINTRO)   | 22.5              | 2.4        | 29.9                        | 6.2        | 0.2486             |
| Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in... (SPINTRO)  | 11.0              | 0.5        | 12.3                        | 1.7        | 0.4458             |
| Which factors were important in your decision to first come to the United States for six months or longer? (CMINTRO)  | 17.3              | 1.7        | 19.6                        | 3.1        | 0.5051             |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared changed answer rates for the question by survey

Table 33: Changed answers by item as a percent of respondent screen visits for the grid and item-by-item questions

| Question (Census question ID)   | Item   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|--|-------------------|------------|-----------------------------|------------|--------------------|
|   |  | Estimate          | Std. error | Estimate                    | Std. error |                    |
| Did your duties on this job require the technical expertise of a bachelor's degree or higher in... (MGINTRO)  | Engineering, computer science, math, or the natural sciences                                   | 4.8               | 0.3        | 6.9                         | 0.7        | *0.0026            |
|   | The social sciences  | 4.3               | 0.3        | 5.2                         | 0.7        | 0.2207             |
|   | Some other field (e.g., health, business, or education), specify                               | 9.6               | 0.4        | 8.0                         | 0.9        | *0.0975            |
| Did any of the following factors influence your decision to work in an area outside the field of your highest degree? (NRINTRO)   | Pay, promotion opportunities   | 4.2               | 0.7        | 4.3                         | 1.7        | 0.9251             |
|   | Working conditions (e.g., hours, equipment, working environment)                               | 4.2               | 0.7        | 3.0                         | 1.1        | 0.4290             |
|   | Job location   | 4.2               | 0.8        | 4.2                         | 1.5        | 0.9578             |
|   | Change in career or professional interests   | 2.9               | 0.6        | 1.8                         | 0.9        | 0.3337             |
|   | Family-related reasons (e.g., children, spouse's job moved)                                    | 2.4               | 0.5        | 2.3                         | 1.0        | 0.9077             |
|   | Job in highest degree field not available  | 3.8               | 0.6        | 5.4                         | 2.0        | 0.3838             |
|   | Some other factor, specify   | 6.6               | 0.8        | 6.4                         | 1.7        | 0.9271             |
| The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a typical work week on this job? (WAINTRO) | Accounting, finance, contracts   | 2.3               | 0.2        | 2.6                         | 0.6        | 0.6632             |
|   | Basic research--study directed toward gaining scientific knowledge primarily for its own sake  | 4.7               | 0.3        | 7.1                         | 0.9        | *0.0031            |
|   | Applied research--study directed toward gaining scientific knowledge to meet a recognized need | 2.8               | 0.2        | 3.6                         | 0.7        | 0.2126             |
|   | Development--using knowledge gained from research for the production of materials, devices     | 3.8               | 0.3        | 3.6                         | 0.6        | 0.8431             |
|   | Design of equipment, processes, structures, models   | 2.5               | 0.2        | 2.7                         | 0.5        | 0.6831             |
|   | Computer programming, systems or applications development                                      | 2.0               | 0.2        | 2.6                         | 0.6        | 0.2502             |
|   | Human resources--including recruiting, personnel development, training                         | 3.6               | 0.3        | 3.6                         | 0.7        | 0.9925             |
|   | Managing or supervising people or projects   | 4.2               | 0.3        | 4.5                         | 0.6        | 0.6875             |
|   | Production, operations, maintenance (e.g., chip production, operating lab equipment)           | 1.9               | 0.2        | 2.6                         | 0.5        | 0.1336             |
|   | Professional services (e.g., health care, counseling, financial services, legal services)      | 2.9               | 0.2        | 4.8                         | 0.7        | *0.0025            |
|   | Sales, purchasing, marketing, customer service, public relations                               | 2.4               | 0.2        | 4.6                         | 0.8        | *0.0010            |
|   | Quality or productivity management   | 1.9               | 0.2        | 3.4                         | 0.5        | *0.0011            |
|   | Teaching   | 2.9               | 0.3        | 3.3                         | 0.6        | 0.5480             |

| Question (Census question ID)   | Item  | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|---|-------------------|------------|-----------------------------|------------|--------------------|
|   |   | Estimate          | Std. error | Estimate                    | Std. error |                    |
|   | Other activity, specify   | 3.4               | 0.3        | 1.9                         | 0.4        | *0.0201            |
| Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO) | Salary  | 6.0               | 0.4        | 6.7                         | 0.9        | 0.4800             |
|   | Benefits  | 4.0               | 0.2        | 4.1                         | 0.7        | 0.8571             |
|   | Job security  | 4.3               | 0.3        | 4.5                         | 0.6        | 0.6869             |
|   | Job location  | 4.8               | 0.3        | 4.6                         | 0.7        | 0.8093             |
|   | Opportunities for advancement   | 5.5               | 0.3        | 5.8                         | 0.8        | 0.6994             |
|   | Intellectual challenge  | 4.4               | 0.3        | 5.6                         | 0.9        | 0.1539             |
|   | Level of responsibility   | 3.8               | 0.2        | 5.8                         | 0.9        | *0.0081            |
|   | Degree of independence  | 4.1               | 0.3        | 5.8                         | 0.8        | *0.0205            |
|   | Contributions to society  | 4.7               | 0.3        | 4.5                         | 0.7        | 0.8542             |
| On February 1, 2021, why did you hold this certification or license? (CLICINTRO)  | To improve skills or knowledge in my current occupational field                         | 3.8               | 0.5        | 4.8                         | 1.2        | 0.3857             |
|   | To increase opportunities for promotion or advancement in my current occupational field | 3.0               | 0.4        | 3.6                         | 0.9        | 0.5032             |
|   | To facilitate a chance to a different occupational field                                | 3.0               | 0.3        | 4.6                         | 1.1        | *0.0851            |
|   | Required or expected by employer  | 3.3               | 0.5        | 2.3                         | 0.8        | 0.3347             |
|   | To start my own business  | 1.7               | 0.3        | 0.8                         | 0.2        | *0.0204            |
|   | Other reason, specify   | 2.7               | 0.3        | 2.7                         | 0.9        | 0.9515             |
| For which of the following reasons did you take work-related training during the past 12 months? (WTRINTRO)   | To improve skills or knowledge in my current occupational field                         | 1.0               | 0.2        | 1.5                         | 0.4        | 0.2069             |
|   | To increase opportunities for promotion or advancement in my current occupational field | 2.0               | 0.3        | 2.3                         | 0.7        | 0.6193             |
|   | For licensure or certification in my current occupational field                         | 2.3               | 0.3        | 2.5                         | 0.6        | 0.7469             |
|   | To facilitate a change to a difference occupational field                               | 1.8               | 0.3        | 2.1                         | 0.7        | 0.7126             |
|   | Required or expected by employer  | 2.9               | 0.3        | 2.5                         | 0.6        | 0.6183             |
|   | For leisure or personal interest  | 3.1               | 0.4        | 4.1                         | 1.0        | 0.3095             |
|   | Other reason, specify   | 1.2               | 0.2        | 1.1                         | 0.4        | 0.6936             |
|   |   |                   |            |                             |            |                    |
| When thinking about a job, how important is each of the   | Salary  | 3.3               | 0.2        | 3.6                         | 0.6        | 0.6082             |
|   | Benefits  | 2.7               | 0.2        | 2.5                         | 0.5        | 0.7980             |
|   | Job security  | 2.5               | 0.2        | 3.3                         | 0.5        | 0.1201             |

| Question (Census question ID)   | Item   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|---|--|-------------------|------------|-----------------------------|------------|--------------------|
|   |  | Estimate          | Std. error | Estimate                    | Std. error |                    |
| following factors to you? (FACINTRO)  | Job location   | 3.5               | 0.2        | 3.3                         | 0.6        | 0.6664             |
|   | Opportunities for advancement  | 3.4               | 0.2        | 5.0                         | 0.7        | *0.0076            |
|   | Intellectual challenge   | 2.6               | 0.2        | 3.8                         | 0.7        | *0.0540            |
|   | Level of responsibility  | 2.8               | 0.2        | 4.8                         | 0.7        | *0.0010            |
|   | Degree of independence   | 2.8               | 0.2        | 3.5                         | 0.6        | 0.2137             |
|   | Contribution to society  | 3.9               | 0.3        | 5.9                         | 0.8        | *0.0070            |
| During which of the following time periods did you take courses at a community college? (CSINTRO)   | Before graduating from high school or earning a high school equivalency certificate              | 1.2               | 0.2        | 2.1                         | 0.7        | 0.1183             |
|   | After high school and before ever enrolling in a 4-year college or university                    | 4.1               | 0.3        | 4.5                         | 1.0        | 0.6774             |
|   | While enrolled in a 4-year college or university and before receiving my first bachelor's degree | 3.7               | 0.4        | 3.0                         | 0.8        | 0.4092             |
|   | After leaving a 4-year college or university without receiving my first bachelor's degree        | 5.1               | 0.4        | 4.5                         | 0.9        | 0.5835             |
|   | Any time after receiving my first bachelor's degree  | 2.2               | 0.2        | 1.5                         | 0.5        | 0.2778             |
| Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses? (CCINTRO) | To earn college credits while still attending high school  | 1.0               | 0.2        | 2.1                         | 0.7        | *0.0543            |
|   | To complete an associate degree  | 1.5               | 0.2        | 2.9                         | 0.6        | *0.0088            |
|   | To prepare for college/increase change of acceptance to a 4-year college or university           | 2.6               | 0.3        | 4.2                         | 1.1        | *0.0822            |
|   | To earn credits for a bachelor's degree  | 2.1               | 0.3        | 2.8                         | 0.8        | 0.3029             |
|   | For financial reasons (e.g., cost of a 4-year school)  | 2.4               | 0.3        | 4.0                         | 0.9        | *0.0433            |
|   | To gain further skills or knowledge in my academic or occupational field                         | 4.2               | 0.3        | 5.6                         | 1.0        | 0.1109             |
|   | To facilitate a chance in my academic or occupational field                                      | 2.3               | 0.3        | 1.9                         | 0.5        | 0.4591             |
|   | To increase opportunities for promotion, advancement, or higher salary                           | 2.0               | 0.3        | 2.8                         | 0.8        | 0.2266             |
|   | For leisure or personal interest   | 1.7               | 0.2        | 2.9                         | 0.9        | 0.1123             |
|   | Other reason, specify  | 1.4               | 0.2        | 0.9                         | 0.3        | 0.2065             |
| For which of the following reasons were you taking courses or enrolled? (ACINTRO)   | To gain further education before beginning a career  | 3.6               | 0.8        | 3.8                         | 1.8        | 0.9068             |
|   | To prepare for graduate school or further education  | 5.8               | 1.4        | 8.1                         | 3.5        | 0.5159             |
|   | To change my academic or occupational field  | 4.8               | 1.2        | 4.2                         | 2.1        | 0.7990             |
|   | To gain further skills or knowledge in my academic or occupational field                         | 1.9               | 0.7        | 12.2                        | 5.5        | *<0.0001           |
|   | For licensure or certification   | 4.0               | 1.2        | 0.7                         | 0.4        | *0.0033            |

| Question (Census question ID)  | Item   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | Chi-square p-value |
|--|--|-------------------|------------|-----------------------------|------------|--------------------|
|  |  | Estimate          | Std. error | Estimate                    | Std. error |                    |
|  | To increase opportunities for promotion, advancement, or higher salary | 2.0               | 0.7        | 1.8                         | 0.9        | 0.8837             |
|  | Required or expected by employer                                       | 4.6               | 1.2        | 4.0                         | 2.1        | 0.7571             |
|  | For leisure or personal interest                                       | 4.2               | 1.0        | 4.5                         | 2.1        | 0.9208             |
|  | Some other reason, specify   | 2.6               | 0.8        | 0.0                         | N/A        | N/A                |
| Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in... (SPINTRO) | Engineering, computer science, math or the natural sciences            | 3.3               | 0.3        | 4.9                         | 1.0        | *0.0757            |
|  | The social sciences  | 3.0               | 0.3        | 2.4                         | 0.6        | 0.4370             |
|  | Some other field (e.g., health, business, or education), specify       | 6.4               | 0.5        | 5.6                         | 1.2        | 0.5758             |
| Which factors were important in your decision to first come to the United States for six months or longer? (CMINTRO)                     | Family-related reasons   | 5.4               | 1.1        | 7.0                         | 2.3        | 0.5203             |
|  | Educational opportunities in the United States                         | 4.3               | 0.8        | 6.3                         | 2.0        | 0.3328             |
|  | Jobs or economic opportunities   | 4.9               | 1.1        | 7.1                         | 2.6        | 0.3865             |
|  | Scientific or professional infrastructure in my field                  | 3.2               | 0.8        | 3.8                         | 1.8        | 0.7567             |
|  | It was not my decision   | 3.5               | 0.7        | 4.1                         | 1.0        | 0.6093             |
|  | Some other reason, specify   | 4.9               | 1.3        | 2.2                         | 1.0        | 0.1320             |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared changed answer rates for each item by survey

Table 34: Median completion time in seconds for the grid and item-by-item questions

| Screen (Census question ID)   | Grid (Production) |            | Item-by-item (Bridge Panel) |            | p-value  |
|---|-------------------|------------|-----------------------------|------------|----------|
|   | Estimate          | Std. error | Estimate                    | Std. error |          |
| Did your duties on this job require the technical expertise of a bachelor's degree or higher in... (MGINTRO)  | 21.7              | 0.3        | 21.8                        | 0.6        | 0.8679   |
| The next question is about your work activities on your principal job. Which of the following work activities occupied at least 10 percent of your time during a typical work week on this job? (WAINTRO) | 57.7              | 0.5        | 56.7                        | 1.3        | 0.4535   |
| Thinking about the principal job you held during the week of February 1, 2021, how satisfied or dissatisfied were you with the following aspects of the job? (SATINTRO)                                   | 29.8              | 0.3        | 32.1                        | 0.6        | *0.0004  |
| On February 1, 2021, why did you hold this certification or license? (CLICINTRO)  | 21.7              | 0.3        | 22.5                        | 0.7        | 0.2812   |
| For which of the following reasons did you take work-related training during the past 12 months? (WTRINTRO)   | 19.5              | 0.2        | 19.4                        | 0.7        | 0.9701   |
| When thinking about a job, how important is each of the following factors to you? (FACINTRO)  | 24.1              | 0.2        | 27.1                        | 0.4        | *<0.0001 |
| During which of the following time periods did you take courses at a community college? (CSINTRO)   | 25.3              | 0.3        | 24.9                        | 0.8        | 0.5766   |
| Thinking back to the time(s) you attended community college, for which of the following reasons did you take community college courses? (CCINTRO)   | 32.6              | 0.4        | 33.3                        | 0.6        | 0.3431   |
| For which of the following reasons were you taking courses or enrolled? (ACINTRO)   | 25.1              | 0.7        | 28.2                        | 1.9        | 0.2938   |
| Did your spouse's or partner's duties on his or her job require the technical expertise of a bachelor's degree or higher in... (SPINTRO)  | 15.9              | 0.2        | 15.1                        | 0.9        | 0.4695   |
| Which factors were important in your decision to first come to the United States for six months or longer? (CMINTRO)  | 18.3              | 0.5        | 22.0                        | 0.8        | *0.0001  |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: T-test compared medians between production and Bridge Panel

## Appendix H SOGI Responses by Select Demographic Characteristics

Cross-tabulations of Sex, Birth Sex, and Sexual Orientation minorities by demographic characteristics are provided in Table 35 to Table 37. The number of gender minority respondents was less than 25, which made division into demographic characteristics too small to report for our disclosure standards.

Table 35: Sex (production) by ACS demographic characteristics

| Demographic Characteristic         |                                  | Male    |            | Female  |            | Chi-square<br>p-value |
|------------------------------------|----------------------------------|---------|------------|---------|------------|-----------------------|
|                                    |                                  | Percent | Std. error | Percent | Std. error |                       |
| Age group                          | 0 to 29                          | 11.0    | 0.5        | 13.7    | 0.5        | *<.0001               |
|                                    | 30 to 39                         | 23.8    | 0.6        | 25.3    | 0.5        |                       |
|                                    | 40 to 49                         | 20.2    | 0.6        | 22.2    | 0.6        |                       |
|                                    | 50 to 59                         | 18.9    | 0.6        | 17.4    | 0.5        |                       |
|                                    | 60 to 75                         | 26.1    | 0.8        | 21.4    | 0.5        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
| Citizenship status at birth        | U.S. citizen at birth            | 84.3    | 0.5        | 85.7    | 0.5        | *0.0355               |
|                                    | Not a U.S. citizen at birth      | 15.7    | 0.5        | 14.3    | 0.5        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
| Highest degree level collapsed     | Bachelors or professional degree | 68.8    | 0.5        | 66.5    | 0.6        | *0.0007               |
|                                    | Masters or doctorate degrees     | 31.2    | 0.5        | 33.5    | 0.6        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
| Hispanic Origin                    | Hispanic                         | 7.8     | 0.3        | 9.4     | 0.3        | *<.0001               |
|                                    | Non-Hispanic                     | 92.2    | 0.3        | 90.6    | 0.3        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
| Marital status collapsed           | Married                          | 65.9    | 0.8        | 59.0    | 0.6        | *<.0001               |
|                                    | Not married                      | 34.1    | 0.8        | 41.0    | 0.6        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
| Race collapsed                     | White                            | 80.4    | 0.4        | 77.2    | 0.4        | *<.0001               |
|                                    | Not White                        | 19.6    | 0.4        | 22.8    | 0.4        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
| Science and engineering occupation | Science and engineering          | 16.1    | 0.3        | 4.5     | 0.1        | *<.0001               |
|                                    | Non-science and engineering      | 72.2    | 0.4        | 79.5    | 0.4        |                       |
|                                    | Science and engineering related  | 11.7    | 0.3        | 16.0    | 0.4        |                       |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                       |
|                                    | Science and engineering degree   | 53.2    | 0.6        | 44.1    | 0.4        | *<.0001               |



| Demographic Characteristic     |                                    | Male    |            | Female  |            | Chi-square p-value |
|--------------------------------|------------------------------------|---------|------------|---------|------------|--------------------|
|                                |                                    | Percent | Std. error | Percent | Std. error |                    |
| Science and engineering degree | Non-science and engineering degree | 46.8    | 0.6        | 55.9    | 0.4        |                    |
|                                | Total                              | 100.0   | -          | 100.0   | -          |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared male and female distributions

Table 36: Birth sex (Bridge Panel) by ACS demographic characteristics

| Demographic Characteristic         |                                  | Male    |            | Female  |            | Chi-square p-value |
|------------------------------------|----------------------------------|---------|------------|---------|------------|--------------------|
|                                    |                                  | Percent | Std. error | Percent | Std. error |                    |
| Age group                          | 0 to 29                          | 13.2    | 1.6        | 13.1    | 1.4        | *0.0402            |
|                                    | 30 to 39                         | 21.5    | 1.7        | 22.8    | 1.8        |                    |
|                                    | 40 to 49                         | 16.3    | 1.5        | 22.3    | 1.5        |                    |
|                                    | 50 to 59                         | 18.6    | 1.5        | 18.4    | 1.7        |                    |
|                                    | 60 to 75                         | 30.4    | 2.0        | 23.5    | 1.7        |                    |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                    |
| Citizenship status at birth        | U.S. citizen at birth            | 84.4    | 0.8        | 86.5    | 0.9        | 0.1014             |
|                                    | Not a U.S. citizen at birth      | 15.6    | 0.8        | 13.5    | 0.9        |                    |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                    |
| Highest degree level collapsed     | Bachelors or professional degree | 70.4    | 1.3        | 63.4    | 1.7        | *0.0014            |
|                                    | Masters or doctorate degrees     | 29.6    | 1.3        | 36.6    | 1.7        |                    |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                    |
| Hispanic Origin                    | Hispanic                         | 7.5     | 0.4        | 10.0    | 0.3        | *<.0001            |
|                                    | Non-Hispanic                     | 92.5    | 0.4        | 90.0    | 0.3        |                    |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                    |
| Marital status collapsed           | Married                          | 62.9    | 2.3        | 60.9    | 2.6        | 0.6138             |
|                                    | Not married                      | 37.1    | 2.3        | 39.1    | 2.6        |                    |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                    |
| Race collapsed                     | White                            | 79.8    | 0.7        | 77.8    | 0.7        | *0.0305            |
|                                    | Not White                        | 20.2    | 0.7        | 22.2    | 0.7        |                    |
|                                    | Total                            | 100.0   | -          | 100.0   | -          |                    |
| Science and engineering occupation | Science and engineering          | 14.9    | 0.6        | 4.5     | 0.2        | *<.0001            |
|                                    | Non-science and engineering      | 74.3    | 1.0        | 80.2    | 0.9        |                    |
|                                    | Science and engineering related  | 10.7    | 0.7        | 15.3    | 0.9        |                    |

| Demographic Characteristic     | Male                               |            | Female  |            | Chi-square p-value |
|--------------------------------|------------------------------------|------------|---------|------------|--------------------|
|                                | Percent                            | Std. error | Percent | Std. error |                    |
| Total                          | 100.0                              | -          | 100.0   | -          |                    |
| Science and engineering degree | Science and engineering degree     | 52.8       | 2.0     | 42.9       | 1.8                |
|                                | Non-science and engineering degree | 47.2       | 2.0     | 57.1       | 1.8                |
|                                | Total                              | 100.0      | -       | 100.0      | -                  |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared male and female distributions

Table 37: Sexual orientation minority (Bridge Panel) by ACS demographic characteristics

| Demographic Characteristic     | Sexual Orientation Minority      |            | Not Minority |            | Chi-square p-value |
|--------------------------------|----------------------------------|------------|--------------|------------|--------------------|
|                                | Percent                          | Std. error | Percent      | Std. error |                    |
| Age group                      | 0 to 29                          | 31.0       | 6.0          | 12.2       | 1.1                |
|                                | 30 to 39                         | 20.5       | 6.8          | 21.9       | 1.5                |
|                                | 40 to 49                         | 14.7       | 5.0          | 20.2       | 1.0                |
|                                | 50 to 59                         | 27.4       | 6.2          | 18.2       | 1.1                |
|                                | 60 to 75                         | 6.4        | 1.8          | 27.5       | 1.4                |
|                                | Total                            | 100.0      | -            | 100.0      | -                  |
| Citizenship status at birth    | U.S. citizen at birth            | 89.0       | 3.6          | 85.4       | 0.7                |
|                                | Not a U.S. citizen at birth      | 11.0       | 3.6          | 14.6       | 0.7                |
|                                | Total                            | 100.0      | -            | 100.0      | -                  |
| Highest degree level collapsed | Bachelors or professional degree | 75.3       | 5.7          | 65.8       | 1.2                |
|                                | Masters or doctorate degrees     | 24.7       | 5.7          | 34.2       | 1.2                |
|                                | Total                            | 100.0      | -            | 100.0      | -                  |
| Hispanic Origin                | Hispanic                         | 11.4       | 3.7          | 9.0        | 0.4                |
|                                | Non-Hispanic                     | 88.6       | 3.7          | 91.0       | 0.4                |
|                                | Total                            | 100.0      | -            | 100.0      | -                  |
| Marital status collapsed       | Married                          | 26.8       | 5.7          | 64.6       | 1.6                |
|                                | Not married                      | 73.2       | 5.7          | 35.4       | 1.6                |
|                                | Total                            | 100.0      | -            | 100.0      | -                  |
| Race collapsed                 | White                            | 80.8       | 4.2          | 78.7       | 0.6                |
|                                | Not White                        | 19.2       | 4.2          | 21.3       | 0.6                |
|                                | Total                            | 100.0      | -            | 100.0      | -                  |

| Demographic Characteristic         |                                    | Sexual Orientation Minority |            | Not Minority |            | Chi-square p-value |
|------------------------------------|------------------------------------|-----------------------------|------------|--------------|------------|--------------------|
|                                    |                                    | Percent                     | Std. error | Percent      | Std. error |                    |
| Science and engineering occupation | Science and engineering            | 8.3                         | 1.6        | 9.4          | 0.3        | 0.2513             |
|                                    | Non-science and engineering        | 73.1                        | 5.0        | 77.5         | 0.7        |                    |
|                                    | Science and engineering related    | 18.6                        | 4.8        | 13.1         | 0.6        |                    |
|                                    | Total                              | 100.0                       | -          | 100.0        | -          |                    |
| Science and engineering degree     | Science and engineering degree     | 52.2                        | 7.0        | 47.1         | 1.4        | 0.4770             |
|                                    | Non-science and engineering degree | 47.8                        | 7.0        | 52.9         | 1.4        |                    |
|                                    | Total                              | 100.0                       | -          | 100.0        | -          |                    |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment

\*Denotes statistical significance at alpha 0.10

Note: Rao-Scott Chi-square test compared minority and not minority distributions

**Appendix I Salary and Earned Income by Broad Occupation Category**

Table 38: Mean salary by broad occupation category for 2021 NSCG production and bridge panel surveys

| Broad Occupation Category   | Production     |              | Bridge Panel  |               | Difference     |               |                |
|---|----------------|--------------|---------------|---------------|----------------|---------------|----------------|
|   | Mean           | Std. error   | Mean          | Std. error    | Difference     | Std. error    | p-value        |
| Biological/Life Scientists  | 83,180         | 3,931        | 85,020        | 12,960        | -1,845         | 13,700        | 0.8932         |
| Clerical/Administrative Support Occupations   | 42,970         | 1,442        | 39,510        | 2,960         | 3,456          | 3,092         | 0.2669         |
| Clergy/Other Religious Workers  | 48,820         | 5,334        | 45,080        | 5,428         | 3,741          | 7,516         | 0.6200         |
| Computer Occupations  | 105,800        | 1,335        | 107,600       | 4,747         | -1,759         | 4,951         | 0.7233         |
| Counselors  | 52,760         | 1,810        | 50,330        | 11,890        | 2,434          | 11,990        | 0.8397         |
| Engineers/Architects  | 115,100        | 1,766        | 110,200       | 6,091         | 4,967          | 6,332         | 0.4351         |
| <b>Engineering Technologists/Technicians/Surveyors</b>                                | <b>88,340</b>  | <b>2,984</b> | <b>72,670</b> | <b>7,326</b>  | <b>15,670</b>  | <b>8,043</b>  | <b>*0.0548</b> |
| <b>Farmers/Foresters/Fishermen</b>  | <b>46,110</b>  | <b>5,484</b> | <b>96,930</b> | <b>13,440</b> | <b>-50,820</b> | <b>15,360</b> | <b>*0.0014</b> |
| Health Occupations  | 102,600        | 3,755        | 112,500       | 7,184         | -9,910         | 8,380         | 0.2405         |
| Lawyers/Judges  | 175,100        | 26,550       | 174,600       | 34,200        | 514.40         | 41,950        | 0.9902         |
| <b>Librarians/Archivists/Curators</b>   | <b>51,280</b>  | <b>8,006</b> | <b>21,790</b> | <b>6,643</b>  | <b>29,490</b>  | <b>10,210</b> | <b>*0.0050</b> |
| Managers, Top-level Executives/Administrators   | 182,500        | 9,433        | 151,200       | 17,770        | 31,280         | 20,060        | 0.1228         |
| Managers, Other   | 137,000        | 4,718        | 136,500       | 9,037         | 453.60         | 10,250        | 0.9648         |
| Management-Related Occupations  | 97,550         | 2,801        | 97,730        | 5,259         | -185.00        | 5,762         | 0.9745         |
| <b>Mathematical Scientists</b>  | <b>105,400</b> | <b>5,067</b> | <b>78,100</b> | <b>8,589</b>  | <b>27,330</b>  | <b>10,920</b> | <b>*0.0144</b> |
| Physical Scientists   | 86,780         | 3,045        | 105,000       | 22,050        | -18,250        | 21,450        | 0.3974         |
| <b>Sales/Marketing Occupations</b>  | <b>82,740</b>  | <b>5,038</b> | <b>62,400</b> | <b>4,471</b>  | <b>20,340</b>  | <b>6,484</b>  | <b>*0.0024</b> |
| Service Occupations, Except Health  | 48,330         | 2,608        | 42,140        | 4,531         | 6,195          | 5,537         | 0.2666         |
| Social Scientists   | 81,930         | 5,067        | 84,970        | 10,310        | -3,036         | 11,130        | 0.7856         |
| Social Workers  | 54,110         | 1,953        | 51,370        | 7,142         | 2,744          | 7,407         | 0.7121         |
| Teachers—Precollege   | 57,240         | 2,110        | 56,330        | 2,669         | 913.00         | 3,454         | 0.7922         |
| Teachers/Professors—Postsecondary   | 74,400         | 2,995        | 70,720        | 8,253         | 3,684          | 8,427         | 0.6632         |
| Teachers—Other  | 32,790         | 6,293        | 38,380        | 6,527         | -5,592         | 9,311         | 0.5498         |
| <b>Writers/Editors/Public Relations Specialists/Artists/Entertainers/Broadcasters</b> | <b>56,620</b>  | <b>4,839</b> | <b>35,330</b> | <b>6,141</b>  | <b>21,290</b>  | <b>6,576</b>  | <b>*0.0018</b> |
| Other Professions   | 65,920         | 6,009        | 65,350        | 9,685         | 573.20         | 12,110        | 0.9624         |
| Other Occupations   | 64,050         | 4,640        | 132,000       | 41,980        | -67,940        | 42,070        | 0.1103         |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment, SALARY by N2OCPR-recoded to broad category

\*Denotes statistical significance at alpha 0.10.

Note: T-test compared means between production and Bridge Panel

Table 39: Mean earned income by broad occupation category for 2021 NSCG production and bridge panel surveys

| Broad Occupation Category   | Production     |               | Bridge Panel   |               | Difference      |               |                |
|---|----------------|---------------|----------------|---------------|-----------------|---------------|----------------|
|   | Mean           | Std. error    | Mean           | Std. error    | Difference      | Std. error    | p-value        |
| Biological/Life Scientists  | 86,460         | 5,592         | 89,340         | 17,730        | (2,881)         | 18,910        | 0.8793         |
| Clerical/Administrative Support Occupations   | 43,820         | 1,688         | 43,290         | 4,672         | 526.60          | 4,854         | 0.9139         |
| Clergy/Other Religious Workers  | 55,210         | 5,197         | 47,400         | 4,369         | 7,806           | 7,026         | 0.2699         |
| Computer Occupations  | 112,400        | 2,091         | 114,400        | 6,527         | (2,059)         | 7,108         | 0.7728         |
| Counselors  | 50,940         | 2,454         | 50,870         | 12,050        | 72.95           | 12,180        | 0.9952         |
| <b>Engineers/Architects</b>   | <b>129,800</b> | <b>5,655</b>  | <b>114,900</b> | <b>6,365</b>  | <b>14,920</b>   | <b>8,687</b>  | <b>*0.0898</b> |
| <b>Engineering Technologists/Technicians/Surveyors</b>                                | <b>96,490</b>  | <b>4,142</b>  | <b>76,260</b>  | <b>8,483</b>  | <b>20,230</b>   | <b>9,761</b>  | <b>*0.0415</b> |
| <b>Farmers/Foresters/Fishermen</b>  | <b>46,190</b>  | <b>6,034</b>  | <b>87,500</b>  | <b>8,356</b>  | <b>(41,300)</b> | <b>10,490</b> | <b>*0.0002</b> |
| <b>Health Occupations</b>   | <b>100,400</b> | <b>3,992</b>  | <b>127,000</b> | <b>11,220</b> | <b>(26,590)</b> | <b>12,380</b> | <b>*0.0348</b> |
| Lawyers/Judges  | 249,000        | 55,490        | 187,500        | 46,800        | 61,510          | 72,170        | 0.3966         |
| <b>Librarians/Archivists/Curators</b>   | <b>51,440</b>  | <b>8,039</b>  | <b>28,740</b>  | <b>3,219</b>  | <b>22,700</b>   | <b>8,585</b>  | <b>*0.0098</b> |
| <b>Managers, Top-level Executives/Administrators</b>                                  | <b>259,200</b> | <b>20,400</b> | <b>183,300</b> | <b>19,580</b> | <b>75,890</b>   | <b>26,880</b> | <b>*0.0060</b> |
| Managers, Other   | 154,000        | 6,293         | 260,600        | 111,800       | (106,600)       | 111,800       | 0.3433         |
| Management-Related Occupations  | 109,500        | 4,668         | 112,200        | 8,630         | (2,644)         | 10,260        | 0.7973         |
| <b>Mathematical Scientists</b>  | <b>113,800</b> | <b>8,317</b>  | <b>80,430</b>  | <b>9,027</b>  | <b>33,380</b>   | <b>13,280</b> | <b>*0.0139</b> |
| Physical Scientists   | 85,280         | 2,995         | 138,700        | 36,610        | (53,390)        | 36,330        | 0.1456         |
| <b>Sales/Marketing Occupations</b>  | <b>89,250</b>  | <b>5,922</b>  | <b>66,920</b>  | <b>4,909</b>  | <b>22,340</b>   | <b>7,749</b>  | <b>*0.0051</b> |
| Service Occupations, Except Health  | 51,480         | 3,653         | 43,870         | 4,563         | 7,613           | 6,164         | 0.2204         |
| Social Scientists   | 82,290         | 5,855         | 86,800         | 9,620         | (4,510)         | 10,870        | 0.6794         |
| Social Workers  | 53,230         | 1,858         | 50,500         | 6,216         | 2,723           | 6,392         | 0.6713         |
| Teachers—Precollege   | 54,430         | 1,259         | 55,070         | 3,225         | (645.70)        | 3,597         | 0.8580         |
| Teachers/Professors—Postsecondary   | 80,510         | 3,386         | 81,910         | 10,130        | (1,402)         | 10,330        | 0.8924         |
| Teachers—Other  | 32,850         | 6,882         | 37,160         | 6,157         | (4,301)         | 9,389         | 0.6481         |
| <b>Writers/Editors/Public Relations Specialists/Artists/Entertainers/Broadcasters</b> | <b>53,960</b>  | <b>4,581</b>  | <b>35,620</b>  | <b>5,201</b>  | <b>18,340</b>   | <b>6,167</b>  | <b>*0.0039</b> |
| Other Professions   | 66,240         | 5,986         | 58,660         | 9,002         | 7,579           | 11,350        | 0.5064         |
| <b>Other Occupations</b>  | <b>62,770</b>  | <b>4,729</b>  | <b>109,500</b> | <b>26,040</b> | <b>(46,700)</b> | <b>26,240</b> | <b>*0.0790</b> |
| Respondents Not Working During the Reference Week                                     | 40,380         | 2,201         | 36,270         | 4,271         | 4,109           | 4,596         | 0.3741         |

Source: U.S. Census Bureau, 2021 National Survey of College Graduates Bridge Panel Experiment, EARN by N2OCPR-recoded to broad category

\*Denotes statistical significance at alpha 0.10.

Note: T-test compared means between production and Bridge Panel