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OMB Desk Officer for National Science Foundation Office of Information and Regulatory Affairs Office of Management and Budget 725 17th Street, NW Washington, DC 20503

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Via reginfo.gov and email

RE: National Science Foundation; Notice of Submission for OMB Review; 2021 National Survey of College Graduates (Federal Register Doc. 2020-21156)

#### Dear OMB and NSF Officials:

We are writing to request that the Office of Management and Budget (OMB) require amendment of the National Science Foundation's (NSF) proposed information collection request related to the 2021 National Survey of College Graduates (NSCG) to allow for inclusion of sexual orientation and gender identity (SOGI) demographic questions. *See* 85 Fed. Reg. 60494 (September 25, 2020). This public comment is in line with our previous comments regarding the NSCG and other NSF National Center for Science & Engineering Statistics (NCSES) surveys, including the Survey of Doctorate Recipients (SDR) and Survey of Earned Doctorates (SED), which were submitted to the Federal Register on August 13, 2018 and June 29, 2020 and are appended below. Our initial comment was cosigned by 17 scientific organizations and authorities in higher education research, including the American Association for the Advancement of Science and the American Educational Research Association, and 244 scientists, engineers, and legal and policy scholars, including 17 members of the National Academies.

We urge OMB and NSF to work together to ensure, prior to OMB's approval, that NSF either 1) add SOGI demographic questions to the 2021 NSCG; or 2) initiate piloting of SOGI questions by including SOGI items as part of NSF's testing of new survey modifications via its proposed NSCG non-production survey sample (see Section B-4 of SF-83-1 Supporting Statement). OMB has already approved the use of SOGI questions for highly similar surveys of other federal agencies, such as the Department of Education's 2016-2020 Baccalaureate & Beyond Longitudinal Study<sup>1</sup>, among many others.<sup>2</sup> NSF has also stated to OMB<sup>3</sup> and publicly to the media<sup>4</sup> that it would initiate piloting of SOGI questions. Stakeholders urgently need SOGI data, and further delays will incur costs for the U.S. STEM enterprise and lead NSF to fall short of its Congressionally mandated responsibilities. A recent National Academies' 2020 report

documented the importance of SOGI data collection across the federal government and explicitly recommended that NSF add SOGI questions to NCSES surveys.<sup>5</sup>

# Key Takeaways:

- I. We applaud NCSES' proposed testing of non-binary gender options, but a methodologically accurate measure of gender identity as well as sexual orientation is needed.
- II. Stakeholders urgently need SOGI data from NCSES surveys, and further delays will incur costs for the U.S. STEM enterprise.
- III. NCSES' stated concerns about adding SOGI questions (i.e., small samples and estimation; sensitivity, privacy, and confidentiality; identifiability) are not supported by evidence.
- IV. OMB has already approved SOGI questions for many population-based surveys, and federal statistical experts have studied them and recommend their inclusion.
- V. Conclusion: For the NSCG piloting sample, we urge NCSES to adopt the "two-step" method of measuring gender identity and to add a sexual orientation item to the pilot.

# I. Testing Non-Binary Gender Options is Commendable, But a Methodologically Accurate Measure of Gender Identity As Well As Sexual Orientation Is Needed

NCSES initially stated at a October 31, 2018 meeting that it would begin piloting SOGI questions, which was estimated to take two months and produce preliminary results by early 2019. NCSES has delayed the piloting for two years, citing limited time and resources.<sup>6</sup> Finally, NCSES has proposed to pilot three survey changes to the NSCG using a representative, non-production sample (n = 5,000), including modifying its gender item "to offer response options beyond the binary responses of male and female".<sup>7</sup> We applaud NCSES for its interest in testing better and more accurate measures of gender. However, NCSES' approach raises methodological concerns. We strongly urge NCSES to both revise its measurement approach to gender identity and add a sexual orientation measure to the pilot. Appendix A provides a suggested revision to Section B-4 of NCSES' Supporting Statement in line with these changes, and Appendix B provides suggested SOGI question wording that NCSES could consider testing.

*Gender identity.* NCSES' proposed approach of expanding its gender item to include non-binary options is inconsistent with recommendations from both federal statistical experts and the independent research community. The Federal Interagency Working Group on Improving Measurement of SOGI in Federal Surveys concluded that surveys should adopt the "two-step" method, i.e., using two separate questions to ask respondents' assigned sex at birth and current gender identity.<sup>8</sup> For instance, extensive piloting at the Census Bureau suggests that, if a standard gender item is merely expanded to include transgender or non-binary options as NCSES proposes, a sizeable portion of transgender respondents will tend not to use those options and instead select the binary option associated with their gender identity.<sup>9</sup> The approach NCSES proposes will likely introduce measurement error, adversely affect trends data, and underestimate the transgender population. The independent research community also recommends use of the two-step method, as outlined in the 2014 report on *Best Practices for Asking Questions to Identify Transgender and Other Gender Minority Respondents on Population-Based Surveys*.<sup>10</sup>

*Sexual orientation.* We are concerned that NCSES has omitted sexual orientation from its proposed piloting. Other agencies, including the Census Bureau and Department of

Education, have already extensively piloted both sexual orientation and gender identity questions for similar surveys, and agencies have used the results of these precedents to add SOGI questions without new agency-specific piloting (see Section IV). Asking about sexual orientation on NCSES surveys does not raise unique concerns of sensitivity, privacy, confidentiality, or identifiability (see Section III), and many other population-based federal surveys collect data on sexual orientation, such as the Baccalaureate & Beyond Longitudinal Study<sup>1</sup> and National Health Interview Survey<sup>2</sup> (see Section V). Moreover, analyses of such federal surveys have already demonstrated alarming disparities in STEM related to sexual orientation (see Section II) that inclusion in NCSES surveys would help address.<sup>11</sup> NCSES' omission also directly contradicts the National Academies' recent recommendation that NCSES add SOGI items to its surveys.<sup>5</sup>

## II. Stakeholders Urgently Need Sexual Orientation and Gender Identity (SOGI) Data: Further Delays Will Incur Costs for the U.S. STEM Enterprise

For years, the U.S. STEM enterprise has faced a crisis, with the demand for STEM jobs having rapidly outpaced its supply.<sup>12</sup> For instance, some estimates suggest that a total of 2.4 million STEM jobs went unfilled in 2018 due to a lack of qualified STEM workers.<sup>12</sup> Although the long-term effects of the coronavirus pandemic on STEM labor markets remain uncertain, it is reasonable to assume that U.S. STEM fields will continue to face urgent STEM talent gaps. A key solution identified by Congress is to broaden the participation of underrepresented groups, as "underrepresented populations are the largest untapped STEM talent pools in the United States", with Congress declaring in 2015 that "the United States should encourage full participation of individuals from underrepresented populations in STEM fields" (42 U.S.C. § 1862).

Although NCSES has not tracked the STEM participation of LGBTQ people, also called sexual and gender minorities, via its surveys, evidence for LGBTQ people's underrepresentation in STEM and other disparities is now substantial. LGBTQ people are estimated to be 17-21% less represented in STEM fields than statistically expected, and they are less likely than non-LGBTQ people to major in STEM, persist in STEM, earn STEM degrees, and be in STEM occupations.<sup>11</sup> Estimates suggest that the U.S. may have lost approximately 54,000-121,000 LGBTQ people who would currently otherwise be in the STEM workforce.<sup>11</sup> Data suggest that these disparities are due to non-supportive STEM environments and harmful biases, and are not due to a lack of interest among LGBTQ people; to the contrary, LGBTQ people show greater signs of interest in STEM than their non-LGBTQ peers.<sup>11</sup>

Unlike NCSES, other agencies that collect data on scientific workers such as the National Institutes of Health (NIH) have regularly included SOGI questions on surveys. For instance, a 2019 NIH survey found that across the NIH research workforce LGBTQ people faced some of the highest amounts of harassment and discrimination.<sup>13</sup> Because NCSES omits SOGI questions, researchers have been forced to look to other population-based federal surveys that do collect SOGI data, such as the National Health Interview Survey, to examine these issues; such analyses have demonstrated large and robust LGBTQ disparities in STEM.<sup>14</sup> By not collecting and properly tracking SOGI data, NCSES is preventing NSF, NIH, other federal agencies, Congress, and STEM stakeholders from addressing the challenges and educational and career barriers LGBTQ people are facing in STEM. As such, NSF is falling short of its mandate to "[ensure] the full use of human resources in science and engineering" (42 U.S.C. § 1885).

## III. NCSES' Stated Concerns About SOGI Questions Are Not Supported by Evidence

NCSES initially raised two concerns regarding SOGI questions. It stated on July 16, 2018 that its survey populations "are not likely to have sufficient sample to produce reliable estimates. The comparatively small population of [LGBTQ] persons in the United States suggests that relatively small sampling or reporting errors can lead to significant errors in estimation and description." NCSES' second concern was that "[g]ender and sexuality can be sensitive topics in American society, and the privacy and confidentiality of respondents must be handled with care." These concerns were addressed in our August 13, 2018 comment and in our meeting with NCSES leadership on October 31, 2018, after which NCSES stated piloting of SOGI questions would be initiated. In NCSES' July 17, 2020 response to our more recent public comment, it identified a new concern: "A challenge is that some of our respondent populations are small and specialized when compared to populations surveyed by other agencies. These population attributes raise identifiability concerns. Developing and evaluating new questions requires us to calibrate federal requirements for accuracy with a need to protect privacy. In particular, we want to include the most accurate questions possible while avoiding a significant likelihood that the resulting data can be used to identify individual persons. Given the nature of our respondent populations, this calibration exercise is a significant task." We address each concern below.

Concern of small samples and estimation issues. The current sample sizes of the NSCG and other NCSES surveys are all sufficiently large. Other federal surveys, such as the National Health Interview Survey; the Census Barriers, Attitudes, and Motivators Survey; and the Baccalaureate & Beyond Longitudinal Study, entailed sample sizes of 87,500, 55,000, and 28,000, respectively, and these surveys routinely collect SOGI information. The sample sizes of NCSES surveys are far larger: NSCG n = 164,000; SDR n = 120,000; SED n = 55,000. Moreover, many of the race and ethnicity classifications tracked by NCSES surveys have a prevalence in the U.S. population that is far smaller than that of LGBTQ people. The most recent estimate of the prevalence of LGBTQ people in the U.S. population is 4.5%, which rises to 8.2% among early-career age people (18-37 year-olds).<sup>16</sup> Thus, LGBTQ people have a higher prevalence in the U.S. than several other racial and ethnic groups that have long been measured in NCSES surveys, including Asians (5.3%), American Indians or Alaska Natives (0.7%), and Native Hawaiian or other Pacific Islanders (0.2%).<sup>15</sup> As NCSES surveys have larger samples than other federal surveys currently collecting SOGI data, and NCSES surveys have long tracked race and ethnicity classifications that are less prevalent in the U.S. than LGBTQ people, NCSES' concerns of small samples and estimation issues are unwarranted.

*Concern of sensitivity, privacy, and confidentiality.* Government surveys on the U.S. population have allowed respondents to voluntarily disclose SOGI data for many years, and the privacy and confidentiality of any personally identifiable data in NCSES surveys are strongly protected by federal law. NCSES and the Census Bureau (who administers the NSCG) remove names and all identifying information, as well as take other measures out of an abundance of caution (e.g., suppress data cells with too few respondents), to protect confidentiality. In fact, the Federal Interagency Working Group warned that it is these types of misguided concerns that often prevent federal agencies from adopting SOGI measures even when "inclusion of these measures would support agency mission and data needs" and even though the concerns are inconsistent with past survey experience.<sup>16</sup> For instance, SOGI questions in federal surveys do

not cause issues such as survey break-off or high non-response rates, and they behave on par with other potentially sensitive questions, such as income or disability. Moreover, SOGI questions are voluntary, and options such as "I don't know" or "I don't wish to respond" are always available.<sup>16</sup> NCSES' singling out of SOGI questions as raising unique concerns of sensitivity, privacy, or confidentiality is not justified.

*Concern of identifiability.* OMB provides clear guidance on the issue of identifiability in Statistical Policy Working Paper 22, including detailed procedures for federal statistical agencies to use, namely data suppression techniques, and NCSES already uses such techniques in the data it makes available.<sup>17</sup> As mentioned earlier, many of the race and ethnicity classifications measured by NCSES surveys have a prevalence in the U.S. that is smaller than that of LGBTQ people, including Asians, American Indians or Alaska Natives, and Native Hawaiian or other Pacific Islanders. Neither do OMB guidance or the Federal Interagency Working Group suggest piloting to calibrate identifiability issues; instead, such issues are handled per OMB guidance using suppression techniques for data cells lacking sufficient sample. Moreover, as federal statistical experts have described, SOGI piloting at other agencies has not been used to address identifiability issues.<sup>9</sup> Thus, the claim that SOGI questions raise special concerns of identifiability as compared with other demographic data has no rational basis.

## IV. OMB has Already Approved SOGI Questions for Surveys, and Federal Statistical Experts Have Studied SOGI Questions and Recommend Their Inclusion

SOGI questions have already been extensively piloted by other federal agencies. In 2015-2016, the Census Bureau conducted debriefing questionnaires, focus groups, and targeted interviews, and found that respondents reacted favorably to SOGI items, did not have any difficulty understanding them, and non-response and break-off rates were extremely low.<sup>9</sup> Numerous federal surveys, including education- and employment-related surveys similar to NCSES surveys, have included SOGI questions for years, including the Baccalaureate & Beyond Longitudinal Study and High School Longitudinal Study (Department of Education), Current Population Survey (Department of Labor), National Health Interview Survey (Center for Disease Control & Prevention), and National Crime Victimization Survey (Department of Justice).<sup>2</sup> Moreover, recent surveys of NIH (a major sponsor of NCSES surveys), which are conducted on similar samples of scientific workers, have also included SOGI questions, such as the 2019 Workplace Climate & Harassment Survey<sup>13</sup> and 2020 Workforce COVID-19 Impact Survey<sup>18</sup>.

Given the extensive precedents, OMB has tended to approve agencies' use of SOGI questions on surveys without requiring new piloting, so long as identical questions are taken from existing surveys. Moreover, recent reviews on SOGI measurement by federal statistical experts<sup>19</sup> and the latest 2020 white paper from the Federal Interagency Working Group<sup>8</sup> all urge agencies to adopt SOGI measures; they do not recommend agencies to wait for any additional directives, nor is it in the purview of the Federal Interagency Working Group to make such directives.<sup>20</sup> Given that OMB guidance states that agencies "need to weigh the importance and use of pretests against the time and resources needed to conduct them",<sup>21</sup> we hope that NCSES carefully considers whether it requires additional piloting in order to implement SOGI questions.

## V. Conclusion

The U.S. STEM enterprise and its stakeholders cannot afford to wait for further delays in the piloting and inclusion of SOGI demographic questions for NCSES surveys. With NCSES not providing stakeholders the necessary SOGI data to understand LGBTQ disparities in STEM and the estimated 54,000-121,000 LGBTQ scientists and engineers who are missing from STEM fields, NSF is falling short of its responsibilities to ensure the full use of human resources in STEM fields and to broaden the participation of the largest untapped STEM talent pools in the U.S.: underrepresented populations (42 U.S.C. § 1862, 1885). While we applaud NCSES' proposed piloting of non-binary gender options, we strongly urge NCSES instead to pilot a methodologically accurate measure of gender identity via the two-step method and to add a sexual orientation item to the pilot (see Appendices), as recommended by both the National Academies and federal statistical experts. The piloting and inclusion of SOGI questions for NCSES surveys is critical to resolving the current challenges faced by the STEM workforce. Thank you for your consideration. Please direct any correspondence to jon.freeman@nyu.edu.

Respectfully Submitted,

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#### Notes

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## Appendix A

Section B-4 of NCSES' Supporting Statement<sup>7</sup>, p. 18, currently reads:

#### Questionnaire and Survey Content

The 2021 NSCG bridge panel questionnaire will include content similar to the new sample questionnaire included in Appendix E with three modifications:

1) The educational history section will first ask respondents to provide a roster of each degree earned, and then use this roster to solicit their degree history.

2) For the questionnaire items that were modified for 2021 to include coronavirus pandemic response options (i.e., employment status, part-time employment, job benefits, earnings, and conference attendance), the question wording from 2019 without the coronavirus pandemic response options will be used.

3) The questionnaire item measuring gender will be modified to offer response options beyond the binary responses of male and female.

We suggest that it be replaced with the following (**bold** text reflects changes):

#### Questionnaire and Survey Content

The 2021 NSCG bridge panel questionnaire will include content similar to the new sample questionnaire included in Appendix E with three modifications:

1) The educational history section will first ask respondents to provide a roster of each degree earned, and then use this roster to solicit their degree history.

2) For the questionnaire items that were modified for 2021 to include coronavirus pandemic response options (i.e., employment status, part-time employment, job benefits, earnings, and conference attendance), the question wording from 2019 without the coronavirus pandemic response options will be used.

3) The questionnaire item measuring gender will be modified so that it refers to assigned sex at birth. An additional questionnaire item will be added asking about gender identity, which will offer response options beyond the binary responses of male and female.

4) An additional questionnaire item will be added asking about sexual orientation.

## **Appendix B**

Extensive piloting conducted by the Census Bureau (who administers the NSCG) provides a firm foundation for using the following SOGI items in NCSES surveys, which are currently used in numerous population-based federal surveys, such as the Current Population Survey.<sup>9</sup>

Which of the following best represents how you think of yourself?

- Gay or Lesbian
- Straight, that is, not gay, lesbian, or bisexual
- Bisexual
- Something else

Was your sex recorded as male or female at birth?

- Male
- Female

Do you describe yourself as male, female, or transgender?

- Male
- Female
- Transgender

The Department of Education also conducted extensive piloting and uses similar questions in its Baccalaureate & Beyond Longitudinal Study and High School Longitudinal Study. Below are SOGI items from the 2016-2020 Baccalaureate & Beyond Longitudinal Study.<sup>1</sup>

Which of the following best represents how you think of yourself?

- Lesbian or gay, that is, homosexual
- Straight, that is, heterosexual
- Bisexual
- Another sexual orientation
- Questioning or unsure

What sex were you assigned at birth (what the doctor put on your birth certificate)?

- Male
- Female

What is your gender? (Your gender is how you feel inside and can be the same or different from your biological or birth sex.)

- Male
- Female
- Transgender, male-to-female
- Transgender, female-to-male
- Genderqueer or gender nonconforming
- A different gender identity
- Questioning or unsure