



A Public Guide on NCSES's Efforts to Measure, Track, and Report Sexual Orientation and Gender Identity in the U.S. Science and Engineering Population

This document provides an overview of the commonly asked questions and ongoing work of the National Center for Science and Engineering Statistics (NCSES) regarding the measurement and reporting of sexual orientation and gender identity (SOGI) on its national surveys.

1. Why is understanding sexual orientation and gender identity (SOGI) important in the United States?

Researchers, policymakers, and other individuals have expressed an interest in better understanding the prevalence and experiences of lesbian, gay, bisexual, transgender, queer, intersex, and other sexual and gender minorities—the LGBTQI+ population—in the United States. Those interested in the topic recognize the importance of objective data to inform program and policy discussions related to diversity, equity, and inclusion.

On 15 June 2022, President Biden issued [Executive Order 14075](#) (Executive Order on Advancing Equality for Lesbian, Gay, Bisexual, Transgender, Queer, and Intersex Individuals). Section 11 (“Promoting Inclusive and Responsible Federal Data Collection Practices”) established a subcommittee on SOGI data within the federal Interagency Working Group on Equitable Data. The subcommittee developed and released a [Federal Evidence Agenda on LGBTQI+ Equity](#), to inform the development of SOGI Data Action Plans across federal agencies. The executive order also directed the Chief Statistician of the United States to issue recommendations for agencies [on the best practices for the collection of SOGI data on federal statistical surveys](#).

2. What role does NCSES play in measuring and understanding sexual orientation and gender identity (SOGI)?

[NCSES](#) is a federal principal statistical agency responsible for measuring and reporting on the condition and progress of the U.S. science and engineering (S&E) enterprise. It conducts over a dozen nationally representative data collections on various targeted populations, including those with an undergraduate or doctorate education in S&E fields and the nation’s doctorate workforce.

As part of its responsibility to provide objective data on the S&E enterprise, NCSES is exploring the inclusion of SOGI questions on its surveys. This exploration will shed light on the feasibility of collecting reliable data on sexual and gender minorities educated or employed in S&E fields.

3. Why can't NCSES just ask current survey respondents about their sexual orientation and gender identity (SOGI)?

NCSES is committed to providing information that is objective and transparent, adhering to all [directives and standards](#) set forth by the Office of Management and Budget (OMB). OMB has issued recommendations on [best practices for the collection of SOGI data on federal statistical surveys](#). To that end, NCSES is taking a measured approach to adding questions concerning SOGI to its surveys in alignment with the recommendations. The goal is to appropriately balance the agency's mission and programmatic goals while ensuring data quality, reducing respondent burden, protecting confidentiality, and meeting data user needs.

Other important considerations in NCSES's planning efforts for SOGI include investigating the utility, representation, and presentation of SOGI data. For example, SOGI questions may introduce (1) potential changes to survey designs and data collection techniques to accurately estimate SOGI in the population while ensuring the privacy and confidentiality of respondents, (2) implications for small sample or population counts for science and engineering education and workforce measures, and (3) potential disruptions to trend data patterns due to modifying gender reporting categories.

Learn more about [NCSES's commitment](#) to scientific integrity, quality, and transparency.

4. How does NCSES conduct research to assess whether it can deliver trusted, objective data on sexual orientation and gender identity (SOGI)?

As a principal statistical agency, NCSES follows federal [Office of Management and Budget \(OMB\) Standards and Guidelines for Statistical Surveys](#) to assemble reasonable evidence that questions asked on NCSES surveys demonstrate quality and utility. Other important principles that guide OMB's approval of collecting SOGI measures include minimization (i.e., collecting the minimum level of detail necessary to meet planned uses), inclusivity and sensitivity (i.e., using appropriate and respectful language), privacy, consistency (i.e., in data collections, as well as data governance across an agency), and compliance (i.e., making sure the agency has the statutory authority to collect SOGI data).

NCSES also actively engages across the federal statistical system and other federal partners, including the [Federal Committee on Statistical Methodology's working group on measuring SOGI](#) to collectively address issues surrounding the collection and availability of SOGI data on federal surveys.

Finally, NCSES conducts a wide array of research projects to explore SOGI data collection efforts and data use (see research activity highlighted below).

5. What exploratory research is NCSES conducting to assess the feasibility of adding new or changing existing SOGI questions on NCSES surveys?

NCSES conducts and collaborates on several SOGI-related exploratory projects to help inform data collection and data use. These ongoing efforts are important to ensure the validity, reliability, utility, and confidentiality of the data prior to survey implementation and to inform program development and public policy.

Below is a snapshot of completed, current, or planned research in this area.

a) Bridge Panels for the NCSES National Survey of College Graduates and the NCSES National Training, Education, and Workforce Survey (Completed)

The goal of these bridge panels was to introduce SOGI questions into two existing NCSES surveys (the National Survey of College Graduates and the National Training, Education, and Workforce Survey) in a non-production setting to understand the prevalence of sexual and gender minorities in the college-educated population and skilled technical workforce. Official estimates will not be derived from this task. This work helped to identify gaps or anomalies in these data collections, including nonresponse, missing data, and respondent breakoffs. Bridge panel analysis results can be found [here](#).

b) Cognitive Interviews for the NCSES Survey of Earned Doctorates (SED) (Completed)

The goal of these interviews was to assess question wording options, question comprehension, and sensitivities to collecting SOGI information from doctorate recipients and potentially releasing the information to academic institutions. The project also aimed to understand how temporary visa holders interpreted and answered SOGI questions.

c) Experiment in the 2024 NCSES Survey of Earned Doctorates (SED) (Completed)

In the 2024 Survey of Earned Doctorates (SED), NCSES conducted an experiment to compare several versions of SOGI questions to determine which wording yielded the most accurate and usable data. The experiment also assessed the sensitivity of the proposed SOGI questions and the concerns respondents might have about answering these questions. Results of this experiment can be found [here](#).

d) Cognitive Testing for the 2024 and 2025 NCSES and Census Annual Business Survey (ABS) (Partially Completed)

The Annual Business Survey (ABS) is an establishment survey with questions about owner demographics. As a result, respondents may be answering questions about colleagues or supervisors. The 2024 ABS implemented cognitive testing to ask respondents and possibly proxy respondents about the sexual orientation and gender identity of business owners. As

A Public Guide on NCSES's Efforts to Measure, Track, and Report Sexual Orientation and Gender Identity in the U.S. Science and Engineering Population

part of the 2024 ABS, online cognitive testing was also conducted on the topic of sexual orientation and gender identity. To explore the feasibility of adding SOGI questions to the 2025 ABS, focus groups were conducted to collect feedback on the questions, targeting question wording, usability, and respondent perspectives.

e) Experiment in the NCSES National Training, Education, and Workforce Survey (NTEWS) (Planned)

NCSES is proposing to conduct an experiment to test two sets of SOGI questions for the general population in the upcoming cycle of the National Training, Education, and Workforce Survey (NTEWS). The first set draws from [OMB's Recommendations on Best Practices for the Collection of Sexual Orientation and Gender Identity Data on Federal Statistical Surveys](#). The second set comes from the forthcoming 2024 National Postsecondary Student Aid Survey (NPSAS:24) from the Department of Education's National Center for Education Statistics (NCES). Analysis from this experiment will be used for research purposes to inform the feasibility of adding specific SOGI questions on future cycles of the NTEWS.

6. What other types of research projects relevant to SOGI does NCSES conduct?

f) Amazon's Mechanical Turk (MTurk) for experimentation with the NCSES National Survey of College Graduates (Completed)

This project included survey methodological experiments to explore whether different ways of asking about sexual identity and gender identity in the college-educated population affected estimates and response distributions. The results from this project informed the question wording used on subsequent exploratory research projects including the NSCG bridge panel.

g) Asking about Sexual Orientation and Gender Identity (SOGI) in the Spanish-Speaking Community (Current)

This project, conducted in collaboration with the Census Bureau, aims to explore the effectiveness of Spanish translation of SOGI questions on federal surveys to ensure that accurate statistics are derived. To date, focus groups have been conducted with monolingual Spanish speakers to obtain general reactions to terms, existing measures, and being asked about identities in surveys. Results from focus groups will be used to inform upcoming cognitive interviews aimed at providing a deeper examination of the population of interest.

A Public Guide on NCSES's Efforts to Measure, Track, and Report Sexual Orientation and Gender Identity in the U.S. Science and Engineering Population

h) Sexual Harassment and Discrimination in the Science and Engineering Enterprise (Completed)

The goal of this project was to create detailed implementation plans for measuring the incidence and impact of sexual harassment in the science, technology, engineering, and mathematics (STEM) workforce and educational system, including sexual and gender minorities in STEM fields and occupations. A literature review and focus groups were conducted to better understand sexual harassment and how to measure it. The resulting implementation plan will be executed to develop measures of sexual harassment.

7. What NCSES surveys currently include or plan to include questions related to sexual orientation and gender identity (SOGI)? When will the first SOGI data collected by these surveys be available?

i) NCSES's National Survey of College Graduates (NSCG) (Current)

The 2023 National Survey of College Graduates (NSCG) includes [two new questions that measure sex at birth and gender identity](#). These data will be available in early 2025.

j) NCSES's Survey of Earned Doctorates (SED) (Planned)

Based on experimental results in the 2024 Survey of Earned Doctorates (SED), NCSES is proposing to add questions on sex at birth, gender identity, and sexual orientation to the SED in a manner that ensures the confidentiality and privacy of respondents and their responses. If approved by the Office of Management and Budget (OMB), these SOGI questions would be included in the 2025 SED data collection effort that begins in June 2024.

8. How does NCSES protect respondent privacy and minimize disclosure risk? Why is this important?

As a principal statistical agency, NCSES adheres to federal laws, directives, and standards to use the information it collects for statistical purposes only, to protect respondent privacy, and to maximize data quality. The confidentiality laws that NCSES strictly follows include the [National Science Foundation Act of 1950](#), the [Privacy Act of 1974](#), and the 2018 reauthorization of the [Confidential Information Protection and Statistical Efficiency Act](#), among others.

NCSES regularly employs privacy-preserving methods and conducts research to ensure avoidance of intentional or unintentional disclosure of person-level sensitive or confidential information. This includes, but is not limited to, information such as sexual orientation, gender identity, or other unique identifiers that could be used to target a respondent's identity or livelihood.

NCSES is committed to building and sustaining trust among the public and data providers by protecting respondent privacy and minimizing disclosure of personally identifying or other sensitive information. Following the National Academy of Science's report, [Principles and Practices for a Federal Statistical Agency](#), fostering trust among the public and data providers is a

A Public Guide on NCSES's Efforts to Measure, Track, and Report Sexual Orientation and Gender Identity in the U.S. Science and Engineering Population

key principle that NCSES adheres to as a statistical agency. This practice ultimately leads to greater data quality.

9. What other federal activities and efforts inform measuring and understanding of sexual orientation and gender identity (SOGI)?

In addition to conducting internal research to help inform the potential addition of SOGI-related questions to its national surveys, NCSES actively collaborates with other federal statistical agencies through the [Sexual Orientation, Gender Identity, and Sex Characteristics Subcommittee](#) of the Federal Committee on Statistical Methodology (FCSM) to explore best practices of measuring SOGI in the context of federal information collections.

The Census Bureau, a federal statistical agency and partner to NCSES, continues to test and monitor the performance of SOGI questions on its surveys and data products, including the experimental [Household Pulse Survey \(HPS\)](#) and the publishing of a [Federal Register](#) notice asking for public comment on a proposed test of SOGI questions on the American Community Survey (ACS). More information on the work of the Census Bureau around SOGI can be found [here](#).

Other federal partners, such as the National Institutes of Health, through sponsorship of a [National Academies consensus panel report](#), continue to explore measurement of SOGI to ensure high-quality information and best practices for collecting this information in research and non-research surveys.

The U.S. National Science Foundation (NSF), NCSES's parent agency, [funds research](#) across its many Directorates' portfolios and programs that explore questions around gender equity in STEM (science, technology, engineering, and mathematics) fields, academia, information systems, and other related sectors. NSF's SOGI Data Action Plan can be found [here](#).

10. How do I contact NCSES to further discuss its efforts around sexual orientation and gender identity (SOGI)?

NCSES remains open to stakeholder input and partnerships that further advance the knowledge base and potential implementation of SOGI questions on its surveys of the U.S. science and engineering enterprise.

Interested parties can e-mail their questions or comments to NCSES at ncsesinfo@nsf.gov and check the [NCSES website](#) often for updates to these ongoing data collection and research efforts.

For information on research grants from the National Science Foundation that explore this topic more widely, please e-mail info@nsf.gov.

A Public Guide on NCSES's Efforts to Measure, Track, and Report Sexual Orientation and Gender Identity in the U.S. Science and Engineering Population

Revision History

Version		Date	Section	Description	Approver
1.0		06/28/2022	N/A	Initial Version	May Aydin
2.0		05/14/2024	N/A	Update	May Aydin