



National Center for Science and
Engineering Statistics

Survey

National Survey of College Graduates | 2021

The NSCG is a biennial survey that provides data on the characteristics of the nation's college graduates, with a focus on those in the science and engineering workforce.

Survey Description

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Survey Overview (2021 survey cycle)

Purpose

The National Survey of College Graduates (NSCG)—sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF)—provides data on the characteristics of the nation’s college graduates, with a focus on those in the science and engineering workforce. It samples individuals who are living in the United States during the survey reference week, have at least a bachelor’s degree, and are younger than 76. By surveying college graduates in all academic disciplines, the NSCG provides data useful in understanding the relationship between college education and career opportunities, as well as the relationship between degree field and occupation.

Data collection authority

The information collected in the NSCG is solicited under the authority of the NSF Act of 1950, as amended, and the America COMPETES Reauthorization Act of 2010. The Census Bureau collects the NSCG data under the authority of Title 13, Section 8 of the United States Code. The Office of Management and Budget control number is 3145-0141.

Major changes to recent survey cycle

The 2021 NSCG data collection instrument included new questions to gauge the effects of the coronavirus pandemic on employment, specifically on labor force status, number of hours worked per week, salary, benefits, telecommuting options, and total earned income.

Key Survey Information

Frequency	Biennial.
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Initial survey year	1993.
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Reference period	The week of 1 February 2021.
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Response unit	Individuals with at least a bachelor’s degree.
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Sample or census	Sample.
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Population size	Approximately 68.6 million individuals.
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Sample size	Approximately 164,000 individuals.
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Key variables	Key variables of interest are listed below. <ul style="list-style-type: none">• Demographics (e.g., age, race, sex, ethnicity, and citizenship)• Educational history• Employment status• Field of degree
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- Occupation

Survey Design

Target population

The NSCG target population includes individuals who meet the following criteria:

- Earned a bachelor's degree or higher prior to 1 January 2020,
- Are not institutionalized and reside in the United States or Puerto Rico as of 1 February 2021, and
- Are younger than 76 years as of 1 February 2021.

Sampling frame

The 2021 NSCG retains the four-panel rotating panel design that began with the 2010 NSCG. As part of this design, every new panel receives a baseline survey interview and three biennial follow-up interviews before rotating out of the survey.

The 2021 NSCG includes approximately 164,000 sample cases drawn from the following:

- Returning sample from the 2019 NSCG who were originally selected from the 2013 American Community Survey (ACS)
- Returning sample from the 2019 NSCG who were originally selected from the 2015 ACS
- Returning sample from the 2019 NSCG who were originally selected from the 2017 ACS
- New sample selected from the 2019 ACS

Approximately 90,000 cases were selected from the returning sample members for one of the three biennial follow-up interviews that are part of the rotating panel design. For the baseline survey interview, about 74,000 new sample cases were selected from the 2019 ACS.

Sample design

The NSCG uses a stratified sampling design to select its sample from the eligible sampling frame. Within the sampling strata, the NSCG uses probability proportional to size or systematic random sampling techniques to select the NSCG sample. The sampling strata were defined by the cross-classification of the following four variables:

- Young graduate oversample group eligibility indicator (2 levels)
- Demographic group (9 levels)
- Highest degree type (3 levels)
- Detailed occupation group (25 levels)

As has been the case since the 2013 NSCG, the 2021 NSCG includes an oversample of young graduates to improve the precision of estimates for this important population.

Data Collection and Processing

Data collection

The NSCG uses a trimodal data collection approach: Web survey, mail survey, and computer-assisted telephone interview (CATI). The 2021 NSCG data collection effort lasted approximately 7 months.

Data processing

The data collected in the NSCG are subject to both editing and imputation procedures. The NSCG uses both logical imputation and statistical (hot deck) imputation as part of the data processing effort.

Estimation techniques

Because the NSCG is based on a complex sampling design and subject to nonresponse bias, sampling weights were created for each respondent to support unbiased population estimates. The final analysis weights account for several factors, including the following:

- Adjustments to account for undercoverage of recent immigrants and undercoverage of recent degree-earners
- Adjustment for incorrect names or incomplete address information on the sampling frame
- Differential sampling rates
- Adjustments to account for non-locatability and unit nonresponse
- Adjustments to align the sample distribution with population controls
- Trimming of extreme weights
- Overlap procedures to convert weights that reflect the population of each individual frame (2013 ACS, 2015 ACS, 2017 ACS, and 2019 ACS) into a final sample weight that reflects the 2021 NSCG target population.

The final sample weights enable data users to derive survey-based estimates of the NSCG target population.

Survey Quality Measures

Sampling error

Estimates of sampling errors associated with this survey were calculated using the successive difference replication method. Please contact the NSCG Survey Manager to obtain the replicate weights.

Coverage error

Any missed housing units or missed individuals within sample households in the ACS would create undercoverage in the NSCG. Additional undercoverage errors may exist because of self-reporting errors in the NSCG sampling frame that led to incorrect classification of individuals as not having a bachelor's degree or higher when in fact they held such a degree.

Nonresponse error

The weighted response rate for the 2021 NSCG was 65%. Analyses of NSCG nonresponse trends were used to develop nonresponse weighting adjustments to minimize the potential for nonresponse bias in the NSCG estimates. A hot deck imputation method was used to compensate for item nonresponse.

Measurement error

The NSCG is subject to reporting errors from differences in interpretation of questions and by modality (Web, mail, or CATI). To reduce measurement errors, the NSCG questionnaire items were pretested in focus groups and cognitive interviews.

Data Availability and Comparability

Data availability

Data from 1993 to the present are available at the [NSCG Web page](#).

Data comparability

Year-to-year comparisons can be made among the 1993 to 2021 NSCG survey cycles because many of the core questions remained the same. Small but notable differences exist across some survey years, such as the collection of occupation and education data based on more recent taxonomies. Also, because of the use of different reference months in some survey cycles, seasonal differences may occur when making comparisons across years.

There is overlap in the cases included in the 2010 NSCG through the 2017 NSCG, in the 2013 NSCG through the 2019 NSCG, and in the 2015 NSCG through the 2021 NSCG. This sample overlap consists of cases that originated in the 2013 ACS, 2015 ACS, 2017 ACS, or 2019 ACS. The overlap among cases allows for the ability to conduct longitudinal analysis of this subset of the NSCG sample. To reduce the risk of disclosure, longitudinal analyses can be conducted only within a restricted environment. See the [NCSES Restricted-Use Data Licensing and Procedures](#) page to learn more.

Data Products

Publications

Data from the NSCG are published in NCSES InfoBriefs and data tables, available at <https://www.nsf.gov/statistics/srvygrads/>.

Information from this survey is also included in *Science and Engineering Indicators* and *Women, Minorities, and Persons with Disabilities in Science and Engineering*.

Electronic access

The NSCG public use data through 2021 are available in the [SESTAT data tool](#) and in downloadable files through the [NCSES data page](#). Data from 1993 to 2019 (2021 forthcoming) are also available in the new NCSES [interactive data tool](#). The NSCG restricted use data are available through the Census Bureau's [Federal Statistical Research Data Centers](#).