

# Survey of Graduate Students and Postdoctorates in Science and Engineering: Fall 2016

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## Technical Notes

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### Survey Overview (2016 survey cycle)

*Purpose.* The Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS) is an annual census of all academic institutions in the United States granting research-based master's degrees or doctorates in science, engineering, or selected health (SEH) fields as of the fall of the survey year. Sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation and by the National Institutes of Health (NIH), the GSS collects counts of graduate students, postdoctoral researchers (postdocs), and other doctorate-holding nonfaculty researchers (NFRs) at these institutions by demographics and other characteristics, such as source of financial support. Results are used to assess shifts in graduate enrollment and in postdoc and NFR appointments and to examine trends in financial support.

*Data collection authority.* The information collected by the GSS is solicited under the authority of the National Science Foundation Act of 1950, as amended, and the America COMPETES Reauthorization Act of 2010. The Office of Management and Budget (OMB) control number is 3145-0062 and expires on 30 November 2017.

*Survey contractor.* RTI International.

*Survey sponsors.* NCSES and NIH.

### Key Survey Information

*Frequency.* Annual.

*Initial survey year.* 1966.

*Reference period.* Fall 2016.

*Response unit.* Organizational units (e.g., academic departments, degree-granting programs, university-affiliated research centers, and health care facilities) in academic institutions.

*Sample or census.* Census.

*Population size.* A total of 15,853 units at 714 academic institutions.

*Sample size.* Not applicable.

## Survey Design

*Target population.* The survey target population is all academic institutions in the United States and its territories (Guam and Puerto Rico) that grant research-oriented master's or doctorate degrees in SEH fields. This population includes branch campuses, affiliated research centers and health facilities, and separately organized components, such as medical or dental schools, schools of nursing, and schools of public health.

In 2016, the survey universe included 714 institutions with 828 schools and 15,853 units.<sup>1</sup> There were 529 schools and 14,188 units within 415 doctorate-granting institutions and 299 schools and 1,665 units within 299 master's-granting institutions. Data were collected at the organizational unit level. Detailed information on the changes to the survey universe and final number of institutions, schools, and units is provided in tables A-2 through A-5.

*Sample frame.* The total universe in 2016 included 15,853 units at 714 academic institutions in the United States that granted research-based master's degrees or doctorates in SEH fields.

*Sample design.* The GSS is a census in which eligible academic institutions are identified primarily through the Integrated Postsecondary Education Data System (IPEDS).

## Data Collection and Processing Methods

*Data collection.* The survey data are collected through coordinators at eligible institutions. Coordinators are assigned by their institution and are responsible for identifying all GSS eligible units, collecting the requested data, and submitting the data to the survey contractor. Although some coordinators complete the survey on their own, other coordinators enlist the aid of others (unit respondents) to gather the data. Institutions may assign multiple coordinators. For example, an institution may have one coordinator for each school within the institution or may have separate coordinators for graduate student data and for postdoc and NFR data. When a new coordinator is needed, the president's office at the institution is asked to designate as coordinator the person most knowledgeable about the graduate student or postdoc data.

Once coordinators are confirmed, they are provided access to the GSS Web survey. A hard copy of the survey worksheets and GSS-eligible code lists also are mailed to each coordinator as reference. Data are collected at the organizational unit level (e.g., departments, degree-granting programs, research centers, health facilities) and include demographic and funding information for graduate students and postdocs.

Data collection for the GSS is done in two parts. Part 1 requires the review and identification of organizational units ("units") within the school. Part 2 collects aggregated counts and selected characteristics of graduate students, postdocs, and nonfaculty researchers for the units. The 2016 survey cycle launched in November 2016 and concluded in June 2017. The deadline for Part 1 was 7 December 2016. The deadline for Part 2 was 28 February 2017.

The 2016 survey included a pilot data collection among a sample of 80 institutional coordinators. The pilot survey was designed to assess the feasibility of (1) separate reporting of master's and doctoral student data; (2) use of Classification of Instructional Programs (CIP) codes, instead of GSS codes, for reporting GSS data; and (3) expanded coordinator use of file uploads for data

submission, instead of manual entry of data in the GSS Web survey instrument. Data collected via the pilot survey are included in the 2016 data products.

*Mode.* Manual data entry through the Web survey was the primary mode of data submission. Automated “upload” of preliminary data followed by review and revision in the Web survey was the second most common mode. This method was much more common in 2016 than in prior years, because it was the default method for the pilot data collection. A paper worksheet was provided for informational purposes and to assist in preparing figures to be entered in Part 2 of the Web survey. The content and format of the paper worksheet were identical to Part 2 of the Web survey. A small number of coordinators chose not to use the Web survey but submitted their Part 2 data in an Excel spreadsheet. The survey contractor loaded this Excel data into the Web survey.

Of the 703 institutions that submitted data in 2016, the modes of response were as follows:

- Web survey: A total of 554 institutions reported all of their GSS data using the Web survey.
- Upload tool on the GSS website: A total of 144 institutions, including 74 institutions where one or more schools participated in the pilot data collection, uploaded all or some portion of the data via the data upload feature available in the GSS website or provided files for upload by the survey contractor.
- Excel spreadsheet: Five institutions provided their data in a nonstandard format which was manually entered by the survey contractor into the GSS website.

*Response rates.* Response rates are calculated based on responses to the survey’s various data-collection grids (graduate student and postdoc counts, by ethnicity and race; full-time graduate student and postdoc counts, by primary source or mechanism of support; counts of postdocs, by type of doctoral degree and primary mechanism of support; counts of postdocs, by type of doctoral degree and citizenship; counts of postdocs, by origin of doctoral degree; and counts of NFRs, by type of doctoral degree and sex).

The method for calculating response rates for units has changed over time. From 2007 to the present, complete row and column totals for all grids and all details summing to the totals were complete responses; some data reported (e.g., only grand totals but data incomplete for any of the grids) were partial responses; no data reported in any grid was a nonresponse. School and institution response rates are based on the overall status of the units within the school or institution. If at least 90% of the units in a school (or institution) provided complete or partial data, the school (or institution) is considered a complete respondent. If at least 50%, but less than 90% of the units provided complete or partial data, the school (or institution) was considered a partial respondent. If less than 50% of the units provided data, the school (or institution) was considered a nonrespondent.

For information about the methods used before 2007, please see the Technical Notes section of NCSES publication *Graduate Students and Postdoctorates in Science and Engineering: Fall 2007* at <http://wayback.archive-it.org/5902/20160210141752/http://www.nsf.gov/statistics/nsf10307/>.

Response-rate calculations for 2007 and beyond adhere to the American Association for Public Opinion Research standards for computing response rates.<sup>2</sup>

- Unit response. In 2016, the GSS received complete responses from 13,617 (85.9%) of the 15,853 eligible units. An additional 2,157 units (13.6%) were partial respondents. The remaining 79 units (0.5%) were nonrespondents.
- School responses. Of the 828 eligible schools, 814 schools (98.3%) were complete respondents, 3 schools (0.4%) were partial respondents, and 11 schools (1.3%) were nonrespondents.
- Institutional response. Institutional response rates were calculated using the same criteria for schools. Of the 714 eligible institutions, 700 institutions (98.0%) were complete respondents, 3 institutions (0.4%) were partial respondents, and 11 institutions (1.5%) were nonrespondents.

*Data editing.* Data quality is ensured by interactive edit checks built into the Web survey and by a comprehensive review after the coordinator submits the data. Data collection grids in the Web survey were prefilled with zeros. Respondents were asked to mark a checkbox if the unit does not have eligible data to report. Grids with a marked checkbox contributed to a complete response for the unit. Grids with unchanged prefilled zeros and an unmarked checkbox disqualified the unit from complete response status.

The edit checks built in the Web survey verify that the data entered are internally consistent and are within an expected range, often based on the previous year's data. During follow-up, unit respondents are asked to explain the discrepancy whenever counts differ substantially from those of the previous year. The survey contractor reviews all data submitted by the academic institutions to ensure that all data fields are complete and are internally consistent. These quality checks are also conducted when counts remained identical to the previous year and when there are notable changes to a school's unit list, including unit additions and deletions, changes to the highest-degree-granted status, GSS code, or unit name.<sup>3</sup>

Data fluctuations that were not sufficiently explained by the comments provided by the respondents during data collection were flagged for follow-up by e-mail or telephone call to the coordinator. Revisions were made directly in the Web survey by the coordinator, unit respondents, or the survey contractor at the direction of the coordinator. See "Survey Quality Measures" below for a discussion of the types of measurement error detected in the data review and follow-up process.

*Imputation.* Of the 355 data items collected in the GSS, the item nonresponse rates ranged from 0.9% to 6.3%. All missing data are subject to imputation. The master's and doctoral student data collected separately in the pilot survey were combined before imputation so the pilot data could be rolled up into the full GSS.

Different imputation techniques were used for units with and for those without comparable historical data. For units missing a key total (total part-time students, total postdocs, or total NFRs) with at least 1 year of qualified historical data, a carry-forward imputation method was

used. Inflation factors were calculated for the key totals to account for year-to-year change. The previous year's key totals were then multiplied by these inflation factors to calculate the imputed values for the current year's key totals. Finally, all other variables were imputed by distributing the imputed key totals according to the previous year's proportions.

For units that reported totals but no details, details were imputed according to the prior distribution if qualified historical details were available. Otherwise, a nearest neighbor imputation method was used. In this method, a donor unit that was "nearest" to the unit whose data were being imputed (imputee) was identified among all responding units having similar characteristics as the imputee (such as having the same GSS code for program fields and offering a doctoral degree). When graduate student details were imputed, the nearest neighbor selected had full-time and part-time graduate enrollments that were most similar to the imputee's enrollments. The imputed values were calculated by adjusting the donor's values to account for the difference in full-time and part-time enrollment totals between the two units.

Similarly, when postdoc or NFR details were imputed, the total number of postdocs or NFRs, respectively, was used to choose the nearest neighbor. If the postdoc or NFR total was missing, the graduate student totals were used to select the nearest neighbor to impute the postdoc or NFR variables. If either the postdoc or NFR key total (or both) was missing, other available key totals were used to select the nearest neighbor to impute the data. The same donor was then used to impute the details corresponding to the imputed key totals.

In rare circumstances, when no graduate student data were available from a new unit, IPEDS completions and enrollment data were used to estimate graduate student totals. On the basis of the imputed totals, the details were then imputed by the nearest neighbor method described above. Because IPEDS does not collect data on postdocs and NFRs, a nearest neighbor was selected from the GSS data to estimate these counts, if necessary, using the graduate student totals to select a donor. For nonresponding units in institutions that had not been in the GSS before, postdoc and NFR values were imputed as zero rather than using IPEDS-based imputation.

Detailed information on the institutions, schools, units, fields, response rates, imputation rates, and a crosswalk between the 2010 CIP codes and the GSS codes are provided in 17 technical tables for the 2016 GSS. This information is also available in the 2016 GSS Methodology Report available through the Project Officer.

*Weighting.* Not applicable.

*Variance estimation.* Not applicable.

## **Survey Quality Measures**

*Sampling error.* Not applicable because the GSS is a census.

*Coverage error.* The availability of comprehensive lists of the master's- and doctorate-granting institutions in the United States and their high levels of participation in the survey ensures that the coverage error of institutions is minimal. The universe of higher education institutions is reviewed annually to identify potentially eligible institutions. Sources for this review include

IPEDS, the Carnegie Classification of Institutions of Higher Education, the Higher Education Directory, the NSF Higher Education Research and Development Survey, and professional association membership lists.

*Nonresponse error.* The GSS typically has high response rates. In 2016, 99.5% of units provided complete or partial data and the overall institutional response rate was 98.5%. Of the 355 data items collected in the GSS, the item nonresponse rates ranged from 0.9% to 6.3%.

*Measurement error.* The GSS is subject to measurement error that arises when variables of interest cannot be measured accurately or precisely. Review of the data, cognitive interviews, usability tests, pilot tests, site visits and other methodological activities with the institutions have pointed to a number of possible sources of measurement error, listed below.

- Double counting. Anecdotal evidence indicates some misreporting may occur when an institution has more than one coordinator or offers joint programs. To reduce double counting, facilitate communication, and allow sharing of reported data, a screen in the Web survey provides names and contact information for all coordinators at the institution. Interactive and post-submission checks are also used to confirm that similarly named units within institutions are distinct eligible units.
- Inclusion of practitioner degrees. Graduate students working toward practitioner degrees, particularly in health fields with explicit exclusions may sometimes be over reported. Starting with the 2007 survey cycle, survey materials indicated that students should be excluded from the counts if they are pursuing DDS or MD degrees or master's and certain other degrees in specified fields. During the imputation process, new units that were suspected of having reported graduate students in excluded degree-field programs based on the GSS code were set to having zero graduate students to be conservative, in the absence of other information. In the 2011 survey cycle, checks were built into the Web survey to remind respondents to exclude students pursuing practitioner-based degrees.
- Difficulty in reporting source and mechanism of support. Feedback from respondents and methodological research indicates that financial support data are often difficult for respondents to report. The information may not be stored in one centralized database; financial support may not always be channeled through the institution (e.g., self-support); and foreign sources of support may not always be known. Respondents may also have difficulty categorizing financial information by field, such as when a student is enrolled in one unit but receives support from another. Therefore, these data may be more prone to measurement error than other survey data items. Finally, institutions define mechanisms of support differently (e.g., fellowships versus traineeships) and may report individuals according to the institution's definition rather than that provided by the GSS. Beginning with the 2010 survey, the grids include "unknown" categories.
- Difficulty in reporting postdocs and NFRs. Many respondents indicate in the Web survey that they are unable to provide data on their units' postdocs or NFRs because they do not know all of the units that employ postdocs and NFRs. Starting with the 2010 survey

cycle, schools were given the option of appointing a separate postdoc coordinator who may be more knowledgeable about a school's postdocs or NFRs to provide these data.

## Data Comparability

### *Changes in survey coverage and population.*

- Fields of study.

2011: GSS-eligible, degree-granting programs were updated from the 2000 CIP taxonomy to the 2010 CIP taxonomy. A total of 58 new 2010 CIP fields were mapped to GSS codes, 14 CIP fields were moved between GSS codes, and 24 CIP fields were removed as ineligible. The impact on field-level counts was typically small and did not change the overall trend from 2010 to 2011. A crosswalk between the 2010 CIP codes and the GSS codes are provided in table A-16. The taxonomy changes yielded a net increase of 0.2%, 0.1%, and 0.2% in 2011 for the total number of graduate students, postdocs, and NFRs, respectively. For more details, see the Technical Notes section of *Graduate Students and Postdoctorates in Science and Engineering: Fall 2011* at <https://www.nsf.gov/statistics/nsf13331/>.

- Institutions and units.

2014: The survey frame was updated following a comprehensive frame evaluation study. The study identified potentially eligible but not previously surveyed academic institutions in the United States with master's- or doctorate-granting programs in SEH. Eligible units at 151 newly eligible institutions were added, and two private for-profit institutions offering mostly practitioner-based graduate degrees were determined to be ineligible. Four additional institutions dropped out of the data collection in 2014 because they no longer grant graduate degrees in SEH fields; two merged with previously eligible institutions; and one began reporting data under another institution. As a result, the total number of institutions included in the GSS increased from 564 in 2013 to 706 in 2014. The total net increase in the number of GSS-eligible units was 826, rising to 14,845 in 2014 from 14,019 in 2013 (see table A-1). For more information on the survey frame update, see the special report *Assessing the Impact of Frame Changes on Trend Data from the Survey of Graduate Students and Postdoctorates in Science and Engineering* at <https://www.nsf.gov/statistics/2016/nsf16314/>.

- Eligibility and degree-granting status.

Institutions are classified as doctorate-granting if at least one GSS-eligible unit confers doctoral degrees. In 2016, 10 institutions became newly eligible for GSS and six became ineligible. Five institutions changed GSS degree-granting status; one from doctorate-granting to master's-granting institutions and four from master's-granting to doctorate-granting institutions. One institution merged into another institution (see table A-2). As a result, the total number of institutions included in the GSS increased from 711 in 2015 to 714 in 2016 (see table A-3).

*Changes in survey content.*

- Sex.

2010: Began collecting citizenship, ethnicity, and race data on postdocs by sex, and began collecting type of doctoral degree data on NFRs by sex.

2008: Began collecting the number of first-time, full-time male graduate students by ethnicity and race; full-time male graduate students by source of support; male postdocs by source of support; and male NFRs. Previously, the number of men was inferred by subtracting the number of women from the total.

- Ethnicity and race.

2010: Began collecting ethnicity and race data for postdocs who are U.S. citizens and permanent residents using the same categories as used for graduate students.

2008: Revised ethnicity and race categories to correspond to IPEDS by combining “Hispanic/Latino, One race only” and “Hispanic/Latino, More than one race” categories into “Hispanic/Latino (one or more races).”

- Citizenship.

2010: Began collecting citizenship data on postdocs using the same categories that are used for graduate students. In previous years, only counts of postdocs who are foreign nationals holding temporary visas were collected.

2008: Clarification made for “non-U.S. citizens” to exclude non-U.S. citizens residing outside of the United States who are enrolled in an online degree program at a U.S. institution.

- Financial support.

2010: Began collecting data on the largest source of financial support and on the largest mechanism of support separately for postdocs. For mechanism of support, “nonfederal sources” was replaced with “other support.”

2008: Graduate student data no longer collected for NIH teaching assistantships because NIH does not offer financial support for students through this mechanism.

2008: Began collecting number of full-time graduate students whose largest source of support came from a non-U.S. source via teaching assistantship.

- Doctoral degree.

2010: Began collecting more detailed information on postdocs’ and NFRs’ doctoral degree type. Categories were added for those holding a doctoral degree (e.g., PhD, ScD, DEng), a professional degree (e.g., MD, DVM, DO, DDS), and dual degrees (MD-PhD,

DVM-PhD), as well as for those for whom type of degree was unknown. In previous years, the GSS collected degree-type information by asking respondents to indicate how many of the total number of postdocs (or NFRs) had MD, DO, DDS, or DVM degrees. This number was used to estimate the number of postdocs (or NFRs) with medical degrees; the number with research degrees was estimated as the difference between the total counts and the counts of those with medical degrees.

2010: Began collecting postdocs' doctoral degree type by citizenship and by country of origin (United States, foreign, unknown) of doctoral degrees. Also began collecting NFRs' doctoral degree type by sex.

*Changes in Web survey instrument.* The following modifications were made to the 2016 GSS Web survey instrument:

- Data upload options: Two new method for uploading the GSS data were added in 2016. The first option enabled coordinators to utilize an excel template file to construct a de-identified, individual-level data file. This file could then be uploaded directly into the Web survey. The second option was similar to the first, but enabled the coordinator to aggregate the individual-level data to the unit level using an Excel macro provided in the template file. Coordinators then uploaded the unit-level data, eliminating the communication of any individual-level data to NSF. Coordinators could also upload their data using the unit-level method available in previous GSS data collections.
- Pilot Web instrument: The Web instrument looked slightly different for coordinators who responded to the pilot survey because the grids for student enrollment, demographics, and financial support were split into master's and doctoral students. Additionally, unit lists for schools in the pilot survey were generated from the data files uploaded by the coordinator. The generated units were linked to historical records from that unit via automatic and manual matching processes.

*Changes in survey procedures.*

- 2016: Two new upload formats were made available in 2016, and master's and doctoral student data were collected separately and by CIP code for schools selected for the 2016 pilot data collection. Coordinators who responded to the pilot survey received a different series of communications than the standard series of contacts received by coordinators of the standard GSS in 2016 and all coordinators in prior years. Coordinators who responded to the pilot survey were contacted by phone, e-mail, and letter and informed of the pilot survey. These coordinators had access to an informational website, online training, and additional support from the survey contractor on the data collection changes being tested in the pilot. Coordinators who responded to the pilot survey were asked to (1) report master's and doctoral student data separately; (2) use CIP codes, instead of GSS codes, to categorize their organizational units; and (3) upload data using a provided file template instead of manually entering data into the Web survey instrument. The pilot data collection replaced the regular data collection for selected schools, and the pilot data were aggregated to the standard part-time, full-time, and first-time full-time graduate student counts and to the GSS fields for comparability and use in the 2016 data products.

- 2013: Three different versions of the launch e-mail were used. One version was sent to coordinators who used the data file upload feature in 2012, informing them of updates. An alternate version was sent to coordinators who might benefit from using the upload feature (i.e., coordinators with a large number of units and who were not currently using the upload feature). The third version was the standard launch e-mail, with no mention of the upload. In addition, the data review and retrieval efforts began in January, earlier than in prior years.
- 2010: Significant effort was made to ensure that appropriate personnel were providing postdoc and NFR data. As a result, it is unclear how much of the increase reported in 2010 represented actual growth in postdocs and how much resulted from improved data collection. For information on the improved data collection and changes in postdoc data, see Counts of Postdoctoral Appointees in Science, Engineering, and Health Rise with Reporting Improvements at <http://www.nsf.gov/statistics/infbrief/nsf13334/>, and for changes in NFR data, see Examining the Reporting of Nonfaculty Doctorate Researchers in the Survey of Graduate Students and Postdoctorates in Science and Engineering at <https://nsf.gov/statistics/2015/ncses15201/>.

*Historical changes.* Changes have been made over the years to the coverage and content of the GSS to keep it relevant to the needs of data users. Such changes impact analysis of trend data, so data comparisons across years should be made with caution. This is especially true for counts; however, proportions or shares are typically robust enough to allow for such comparisons.

Due to the survey frame update, the data comparisons between 2014 and earlier years should use the “2014old” data, and those between 2014 and 2016 should use the “2014new” data. The impact of frame updates can be evaluated using the “2014old” and “2014new” data. For more information on the survey frame update, see the special report *Assessing the Impact of Frame Changes on Trend Data from the Survey of Graduate Students and Postdoctorates in Science and Engineering* at <https://www.nsf.gov/statistics/2016/nsf16314/>. For more information on the changes prior to 2010, see the Technical Notes section of *Graduate Students and Postdoctorates in Science and Engineering: Fall 2009* at <https://www.nsf.gov/statistics/nsf12300/>. For specific changes from the major survey redesign in 2007 see the Technical Notes section at <https://wayback.archive-it.org/5902/20160210141752/http://www.nsf.gov/statistics/nsf10307/>.

## Definitions

*Enrollment status.*

- Full-time and part-time—Coordinators were instructed to use their institution’s definitions.
- First-time, full-time—Students enrolled for credit in a graduate degree program in an organizational unit for the first time in fall 2016. This may include graduate students previously enrolled in another graduate degree program at the institution or at another institution and students who already hold another graduate or professional degree.

*Ethnicity and race*—The GSS uses definitions of ethnicity and race that are based on the OMB’s “Standards for the Classification of Federal Data on Race and Ethnicity.”

- Hispanic/Latino ethnicity (one or more races)<sup>4</sup>—All individuals of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. This category includes individuals who are Hispanic or Latino and any other race(s).
- Not Hispanic/Latino—Individuals who are not of Hispanic or Latino descent, regardless of race.
- American Indian or Alaska Native—A person of only one race having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.
- Asian—A person of only one race having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent—for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- Black or African American—A person of only one race having origins in any of the black racial groups of Africa.
- Native Hawaiian or Other Pacific Islander—A person of only one race having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific islands.
- White—A person of only one race having origins in any of the original peoples of Europe, the Middle East, or North Africa.
- More than one race—A person of two or more of the race categories listed above.
- Unknown ethnicity or race—A person whose ethnicity or race is unknown or not stated.

*Graduate student mechanisms of financial support.*

- Fellowship—A competitive award (often from a national competition) given to a graduate student that requires no work of the recipient.
- Traineeship—A financial award given to a graduate student selected by the institution.
- Research assistantship—A financial award given to a graduate student where most of the student's responsibilities are devoted primarily to research.
- Teaching assistantship—A financial award given to a graduate student where most of the student's responsibilities are devoted primarily to teaching assistant activities.
- Other support—All other mechanisms of support for graduate students.

*Graduate student sources of financial support.*

- Federal sources—Financial support provided by the federal agencies. Excludes federally guaranteed student loans.
- Nonfederal sources—Financial support from state and local governments; support from the institution, such as tuition waivers and stipends; support from foreign sources, such as foreign governments, foreign firms, and agencies of the United Nations; and other U.S. sources, such as support from nonprofit institutions, private industry, and all other nonfederal U.S. sources.
- Self-support—Loans (including federal loans) or personal or family financial contributions.

*Historically black colleges and universities (HBCUs)*—Institutions of higher education that were established prior to 1964, whose principal mission was, and is, the education of black Americans. The list of HBCUs is maintained by the White House Initiative on HBCUs at <http://sites.ed.gov/whhbcu/>.

*Nonfaculty researchers*—All doctorate-holding researchers who (1) are not considered either postdocs or members of the faculty and (2) are involved principally in SEH research activities. Also referred to as Other doctorate-holding nonfaculty researchers.

*Postdoctoral researchers (postdocs)*—The definition of a postdoc varies by institution. Respondents were instructed to use their institution's definition. NCSES defines a postdoc as meeting both of the following qualifications: (1) holds a recent doctoral degree, generally awarded within the past 5–7 years, such as PhD or equivalent (e.g., ScD, DEng); or first-professional degree in a medical or related field (e.g., MD, DDS, DO, DVM); or foreign degree equivalent to a U.S. doctoral degree and (2) has a limited-term appointment, generally no more than 5–7 years, primarily for training in research or scholarship, and working under the supervision of a senior scholar in a unit affiliated with the institution.

*Postdoc mechanisms of financial support.*

- Traineeship—A financial award given to a postdoc selected by the institution.
- Research grant—A financial assistance award given to an organization or an individual postdoc that supports specific research goals.
- Other support—All other mechanisms of support for postdocs.

*Postdoc sources of financial support.*

- Federal sources—Financial support provided by U.S. federal agencies.
- Nonfederal sources—Financial support from state and local governments; support from the institution; support from foreign sources, such as foreign governments, foreign firms,

and agencies of the United Nations; and other U.S. sources, such as support from nonprofit institutions, private industry, and all other nonfederal U.S. sources.

- Personal resources—Personal and family financial resources, including federal and other loans.
- Unknown or not stated—Sources of financial support for the postdoc are unknown or cannot be determined.

## Notes

<sup>1</sup> In this report, the term school refers to a graduate school, medical school, dental school, nursing school, or school of public health; an affiliated research center; a branch campus; or any other organizational component within an academic institution that grants an SEH degree.

<sup>2</sup> See response rate 3 calculation in American Association for Public Opinion Research (AAPOR). 2011. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. 7th ed, p. 45. Deerfield, IL: AAPOR.

<sup>3</sup> The number of units added and deleted by coordinators who responded to the 2016 pilot survey was much greater than is typical for GSS coordinators. These increases are largely due to how data are organized in institutional information systems and the increased granularity of CIP codes relative to GSS codes, rather than a reflection of increased organizational complexity.

<sup>4</sup> The OMB standards designate Hispanics as an ethnic group rather than a racial group. Following these standards, Hispanic is not counted as a race in GSS. Cognitive interviews with respondents have shown that this is a source of considerable confusion. For example, black Hispanics and white Hispanics may be counted as “Hispanic, More than one race” rather than “Only one race, Hispanic.” The ethnicity and race categories were aligned to IPEDS by combining the “Hispanic/Latino, More than one race” and “Hispanic/Latino, One race only” categories. In 2008 these two Hispanic categories were collapsed into one: “Hispanic/Latino ethnicity (one or more races).”