

# Survey of Graduate Students and Postdoctorates in Science and Engineering: Fall 2018

Mike Yamaner  
Project Officer  
Human Resources Statistics Program  
myamaner@nsf.gov

## Technical Notes

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### Survey Overview (2018 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 and its territories (Guam and Puerto Rico) 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 demographic and other characteristics, such as source and mechanism of financial support. Results are used to assess shifts in graduate enrollment, shifts in postdoc and NFR appointments, and 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 31 October 2020.

*Survey contractor.* RTI International.

*Survey sponsors.* NCSES and NIH.

### Key Survey Information

*Frequency.* Annual.

*Initial survey year.* 1966.

*Reference period.* Fall 2018.

*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 19,592 units at 715 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 2018, the survey universe included 715 institutions with 817 schools and 19,592 units.<sup>1</sup> There were 522 schools and 17,782 units within 421 doctorate-granting institutions and 295 schools and 1,810 units within 294 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 table A-1 through table A-5b.

*Sample frame.* The total universe in 2018 included 19,592 units at 715 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. Coordinators query their institutional databases and report data through a file upload. Those unable to provide file uploads can manually enter data into the GSS Web survey. In cases where coordinators are unable to obtain the requested data, coordinators may enlist the aid of others (unit respondents) in their reporting activity. Unit respondents are most commonly used to report detailed financial 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. On request, hard copies 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 submission for the 2018 GSS survey was due on 28 February 2019. The data collection team conducted periodic check-ins with coordinators to monitor survey progress.

*Mode.* A redesign of the GSS in 2018 utilized electronic data interchange (EDI) as the primary mode of data submission. Coordinators unable to use this method could manually enter their data in the GSS Web survey.

A paper worksheet was provided for informational purposes and to assist in preparing figures to be manually entered in the Web survey. The content and format of the worksheets were identical to the data grids of the Web survey. A very small number of coordinators provided data to the

survey contractor using an alternate method—typically, data tables in Microsoft Word, unformatted Excel documents, or PDFs. The survey contractor uploaded these data into the Web survey on behalf of the coordinators.

Response method calculations are better described at the coordinator level rather than at the school or institution level. It has become increasingly common for coordinators at the same school or institution to choose different response method options for each data type (students, postdocs, NFRs). For the 880 coordinators that submitted data in 2018, the modes of response were as follows:

- *EDI*. A total of 682 coordinators (77.5%) uploaded at least part of the requested data
- *Manual data entry*. A total of 196 coordinators (22.3%) reported all GSS data manually through the Web survey
- *Alternate methods*. Two coordinators (0.2%) provided data outside the official GSS Web instrument—typically, various file formats e-mailed directly to the survey contractor

*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 2016, a complete response required all grids to be completed without error (i.e., the sum of detail counts equaled the grid totals). A unit where some count data were reported—including confirming that there were no counts of a certain data type in that unit—but not all grids were complete was classified as a partial response. Nonresponse was limited to units where no data were reported for all grids. Beginning in 2017, the response calculation was revised to look only at the grids where data were expected to be reported for a particular unit. For example, if no students were reported or expected for a particular unit, response was calculated based on missingness within the postdoc and NFR grids only. 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* (<https://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 2018, the GSS received complete responses from 16,410 of the 19,592 eligible units (83.8%). An additional 2,974 units (15.2%) were partial respondents. The remaining 208 units (1.1%) were nonrespondents.

- *School response.* Of the 817 eligible schools, 788 schools (96.5%) were complete respondents, 8 schools (1.0%) were partial respondents, and 21 schools (2.6%) were nonrespondents.
- *Institutional response.* Institutional response rates were calculated using the same criteria for schools. Of the 715 eligible institutions, 691 institutions (96.6%) were complete respondents, 5 institutions (0.7%) were partial respondents, and 19 institutions (2.7%) 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 are prefilled with zeros. Respondents are asked to mark a checkbox if the unit does not have eligible data to report. If uploaded data for a unit only contains one type of student (e.g., the unit has master's students but no doctoral students), the appropriate checkbox indicating no students to report is autofilled by the system for the relevant grid. 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 Web survey contains edit checks to verify that the data entered are internally consistent and within an expected range, often based on the respondent's previous year data. In 2017, aggregate school-level edit checks were introduced, replacing unit-level checks. Reported aggregate school-level data are compared to the previous year for part-time, full-time, and first-time, full-time students as well as for postdoc and NFR counts. The survey contractor reviews all data submitted by institutions to ensure that data fields are complete and are internally consistent. The data collection team conducts a post-submission data review, whereby coordinators are asked to explain the discrepancy whenever counts differ substantially from those of the previous year. Follow-up with coordinators is also conducted when counts remain 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>

On the basis of follow-up contacts, necessary revisions are made directly in the Web survey by the coordinator, unit respondents, or the survey contractor at the direction of the coordinator. See section "Survey Quality Measures" below for a discussion of the types of measurement error detected in the data review and follow-up process.

*Imputation.* The 2018 GSS collected 543 data items related to enrollment and financial support for master's and doctoral full-time and part-time students, postdocs, and NFRs. Of the 543 data items collected in the GSS, the item nonresponse rates ranged from 0.76% to 6.24%. All missing data are were imputed.

Different imputation techniques were used for units with and for those without comparable historical data. For units missing a key total (total full-time master's, full-time doctoral, part-time master's, and part-time doctoral 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 six key totals to account for year-to-year change. The previous year's key totals were carried forward as the imputed values for the current year's key totals and imputed 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 (e.g., 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 by degree type. The imputed values were calculated by adjusting the donor’s values to account for the difference in full-time and part-time enrollment totals within degree type 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.

For institutions or schools that did not respond, all data at the unit level were imputed. These schools are *total institution or school nonrespondents*. For these institutions or schools, if prior unit-level data were available, counts were carried forward, and if no prior data were available then the nearest-neighbor imputation method was used.

Detailed information on the institutions, schools, units, fields, response rates, imputation rates, and a crosswalk between the 2010 Classification of Instructional Programs (CIP) codes and the GSS codes are provided in 17 technical tables for the 2018 GSS. This information is also available in the 2018 GSS Methodology Report available through the GSS 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 these institutions’ 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 NCSES Higher Education Research and Development Survey, and professional association membership lists.

*Nonresponse error.* The GSS typically has high response rates. In 2018, 98.9% of units provided complete or partial data, and the overall institutional response rate was 97.3%. Of the 543 data items collected in the GSS, the item nonresponse rates ranged from 0.76% to 6.24%. All missing data are imputed.

*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 several 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 overreported. 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—and to be conservative in the absence of other information—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. In the 2011 survey cycle, checks were built into the Web survey to remind respondents to exclude students pursuing practitioner-based degrees. The 2017 redesign included a requirement that coordinators confirm via a pop-up dialogue that they excluded practitioner degrees from the data provided in their upload files.
- *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 vs. 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.*

2017: The list of GSS-eligible disciplinary fields was updated in 2017 to align with the NCSES Taxonomy of Disciplines. Among the major changes in the update: several fields became ineligible—architecture, communications, and public administration; portions of nutrition and of family and consumer and human sciences also became ineligible. Several fields changed names. A new broad field titled “natural resources and conservation” was split from agricultural sciences. Computer sciences was split into three fields, and the

biological and biomedical sciences was reorganized. The taxonomy changes resulted in previously reported units being split across separate GSS codes or moving between codes or broad fields. For more information on the 2017 taxonomy updates, see appendix table A-1 in the technical notes section of *Graduate Students and Postdoctorates in Science and Engineering: Fall 2017* (<https://ncesdata.nsf.gov/gradpostdoc/2017>).

Due to the taxonomy and data collection changes (described below), a set of bridge estimates was created to permit comparisons to previous years and for trend analyses. These estimates are labeled *2017old* and are available at the broad-field level for all combined graduate student variables as well as postdoc variables. Due to a large increase in counts attributable to prior underreporting, *2017old* estimates are not available for NFR data. The data reported as *2017new* utilize the updated GSS taxonomy, are comparable to 2018 data, but they are not comparable to prior year data. Please note that in tables that compare only 2017 and 2018 data, the *2017new* data are reported as 2017.

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 appendix table A-1 in the technical notes section of *Graduate Students and Postdoctorates in Science and Engineering: Fall 2014* (<https://ncesdata.nsf.gov/gradpostdoc/2014>).

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* (<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 2018, 15 institutions became newly eligible for GSS, 2 became ineligible, and 2 institutions merged into one. Thirty institutions changed GSS degree-granting status: 4 from doctorate-granting to master's-granting institutions, and 26 from master's-granting to doctorate-granting institutions. As a result, the total number of institutions included in the GSS increased from 703 in 2017 to 715 in 2018 (see table A-3).

#### *Changes in survey content.*

- *Sex.*

2010: Began collecting ethnicity, race, and citizenship 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.

- *Degree level.*

2017: Began separate collection of demographic and financial data by master’s and doctoral students.

- *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 (e.g., 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.*

2017: Grids for demographics of part-time, of full-time, and of first-time, full-time master's students were added to the instrument. Grids for source and mechanism of financial support of full-time master's students were also added.

#### *Changes in survey procedures.*

2017: Coordinators were asked to report master's and doctoral student data separately and to use CIP codes to categorize their organizational units when reporting student data. Coordinators could report organizational units with postdocs and NFRs using either CIP or GSS codes. Two alternative methods for uploading the GSS data were expected of coordinators in 2017. 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 enabled the coordinator to aggregate the individual-level data to the unit level using an Excel macro provided in the template file rather than transmit any individual-level data. A manual data entry option was available to those unable to provide an uploaded file. Coordinators had access to data file templates, a sample SQL SELECT statement containing all GSS-eligible CIP codes that could be used to query their information systems, online training videos, and additional support from the survey contractor on the new data collection changes. Coordinators could continue to use unit respondents to provide part or all of the data request. Organizational units that reported using CIP codes were automatically re-coded to the updated GSS taxonomy by the Web instrument. Coordinators reporting data using GSS rather than CIP codes were asked to re-code their organizational units to the updated GSS taxonomy.

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* (<https://www.nsf.gov/statistics/infbrief/nsf13334/>); 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* (<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* (<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 of the 2007 report (<https://www.nsf.gov/statistics/nsf10307/>).

## Definitions

### *Degree level.*

- *Master's degree.* A post-baccalaureate, research-focused degree; includes MA, MS, MAsC, and PSM in GSS-eligible disciplines.
- *PhD or PhD equivalent degree.* An advanced, research-focused academic degree—typically, the highest degree granted in a particular field; includes doctorates such as PhD, ScD, DSc, and DEng.

### *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 2018. 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 for which most of the student's responsibilities are devoted primarily to research.
- *Teaching assistantship.* A financial award given to a graduate student for which 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 and whose principal mission was, and is, the education of black Americans. The list of HBCUs is maintained by the White House Initiative on HBCUs (<https://sites.ed.gov/whhbcu/>).

*Nonfaculty researchers (NFRs).* 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 NFRs*.

*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). 2016. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. 9th ed, p. 62. 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 being 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).”