

Technical Notes

Data presented in *Doctorate Recipients from U.S. Universities: 2017* were collected by the Survey of Earned Doctorates (SED). The survey is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF) and by five other federal agencies: the National Institutes of Health (NIH), Department of Education (ED), Department of Agriculture (USDA), National Endowment for the Humanities (NEH), and National Aeronautics and Space Administration (NASA). This report presents the summary of these survey data.

SURVEY OVERVIEW (2017 SURVEY CYCLE)

Purpose. SED collects data on the number and characteristics of individuals receiving research doctoral degrees from U.S. academic institutions.

Data collection authority. The information collected by the SED 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 control number is 3145-0019, expiration date 31 May 2020.

Survey contractor. RTI International.

Survey sponsors. The SED is sponsored by NCSES within NSF and by NIH, ED, USDA, NEH, and NASA.

KEY SURVEY INFORMATION

Frequency. Annual.

Initial survey year. Academic year 1957–58.

Reference period. Academic year 2016–17 (1 July 2016 to 30 June 2017).

Response unit. Individuals.

Sample or census. Census.

Population size. 54,644.

Sample size. Not applicable.

SURVEY DESIGN

Target population. The population for the 2017 SED consists of all individuals receiving a research doctorate from a U.S. academic institution in the 12-month period beginning 1 July 2016 and ending 30 June 2017. A research doctorate is a doctoral degree that (1) requires completion of an original intellectual contribution in the form of a dissertation or an equivalent culminating project (e.g., musical composition) and (2) is not primarily intended as a degree for the practice of a profession. The SED recognized 18 distinct types of research doctorates in 2017 (table A-1). Recipients of professional doctoral degrees, such as MD, DDS, DVM, JD, DPharm, DMin, and PsyD, are not included in the SED.

The doctor of philosophy (PhD) constitutes the vast majority of research doctoral degrees. Of the 54,664 new research doctorates granted in 2017, 98.0% were PhDs (table A-2). The next most frequently occurring type of research doctorate was the doctor of education (EdD), which accounted for 1.1% of the total in 2017. No other type of doctoral degree accounted for more than 0.3% of the new research doctorates in 2017.

Sample frame. The population eligible for the 2017 survey consisted of all individuals who received a research doctorate from a U.S. academic institution in the 12-month period ending 30 June 2017. The total universe consisted of 54,664 persons in 428 institutions that conferred research doctorates in 2017.

Sample design. The SED is a census.

DATA COLLECTION AND PROCESSING METHODS

Data collection. Three modes of data collection are used in the SED: self-administered Web survey, self-administered paper questionnaire, and computer-assisted telephone interviewing (CATI).

The self-administered Web survey is the primary mode of SED completion. When students apply for graduation, institutional coordinators at the universities give students the link to the survey registration website (institutional coordinators at a small number of universities hand out both a paper questionnaire and the link to the survey registration website). Students who sign up at the survey registration website receive PIN and password information via e-mail, as well as the URL of the SED Web survey. The proportion of SED completions using the Web has increased each year since it was introduced in 2001, and it reached 94.9% in 2017.

Paper questionnaires are mailed to institutional coordinators at the universities. For most institutions, paper questionnaires are used as reference copies. For a small number of institutions, the institutional coordinator distributes the paper questionnaires to students receiving research doctorates. The institutional coordinators then collect the completed questionnaires and return them to the survey contractor for editing and data entry.

Both the Web survey and paper questionnaire are used in follow-up contacts via e-mail and mail to nonrespondents. If the series of follow-up emails and mailings is unsuccessful, the survey contractor attempts to reach nonrespondents to complete an abbreviated survey by CATI. Approximately 2% of SED completions each year are from CATI. At the end of data collection phase, institutional coordinators are contacted to obtain information on a small number of critical SED data items for nonrespondents from their institution.

A small but growing number of research doctoral degrees are awarded as a part of joint doctoral programs (i.e., a research doctorate recipient studied at more than one institution in pursuit of the doctoral degree). In these instances, the survey contractor relies on information provided by the institutions to appropriately attribute the doctorate to one of the doctorate-granting institutions.

The survey collects a complete college education history. To code U.S. postsecondary degree-granting institutions, survey staff use the Integrated Postsecondary Education Data System (IPEDS) institution codes. To code the degree-granting institutions of respondents from foreign countries, survey staff use the coding manual *Mapping the World of Education: The Comparative Database System*, augmented with approximately 6,000 additional institutions from the *Europa World of Learning* and the International Association of Universities' *International Handbook of Universities* and *World Higher Education Database*.^[1] About one-third of 2017 U.S. research doctorate recipients received undergraduate degrees from foreign institutions.

Mode. As noted earlier, three modes of data collection are used in the SED: Web survey, paper questionnaire, and CATI. In 2017, 94.9% of survey responses were obtained via the Web survey, 2.7% via the paper questionnaire, and 2.4% via CATI.

Response rate. Of the 54,664 individuals who received a research doctorate in 2017, 91.4% completed the SED. Additional information on response rate can be found below, under "Nonresponse error."

Data editing. Approved automated edits are applied to the SED, a number of which pertain to the education history section. In addition, completed paper questionnaires undergo review and editing prior to data entry.

Imputation. No imputation was used in producing the 2017 SED Doctorate Records File (DRF) except for the following variables:

- *Age at doctorate.* Months (of birth and doctorate award) were included in the calculation of median age whenever available. If birth month was missing, the month value was randomly imputed.
- *Time to degree from bachelor's completion.* Months (of bachelor's completion and doctorate award) were included in the calculation of total time to degree. If months were missing, month values were logically imputed to the modal value for doctorate recipients who provided month of bachelor's completion and converted to the number of days corresponding to that month.
- *Time to degree from graduate school entry.* Months (of graduate school entry and doctorate award) were included in the calculation of graduate school time to degree. If months were missing, month values were logically imputed to the modal value for doctorate recipients who provided month of graduate entry.
- *Time to degree from doctoral program entry.* Doctoral program entry is based on master's degree program entry if the master's degree was at the doctoral institution in the same fine field of study or if it was a prerequisite to the doctorate; otherwise, it is based on doctoral program entry. Months are included in the calculation of doctoral program time to degree. If the month of entry used in the calculation (master's degree program entry or doctoral program entry) was not reported, the entry month was logically imputed to the modal value for all cases that did report the entry month in the academic year the case was added to the doctoral records file (typically the academic year matching the graduation date of the case).

Weighting. Survey data were not weighted.

Variance estimation. The SED is a census of all research doctorates with no weights calculated, so no variance estimation techniques were used.

Disclosure protection. Two strategies are used in data table production to protect against the disclosure of confidential information provided by SED respondents. In the first, used since 2004, data cell values based on counts of respondents that fall below a predetermined threshold are deemed to be sensitive to potential disclosure and are suppressed. The symbol "D" replaces the cell value. If a suppressed cell does not provide sufficient disclosure protection in tables that include marginal totals, additional (complementary) suppressions of above-threshold data cells are necessary, and the suppression symbol "D" is used to replace those cell values as well.

The second disclosure protection strategy is field aggregation. Field aggregation was applied to data table 16 and table 22 in the current report, which present counts of doctorate recipients classified by fine fields of study and by either sex (table 16) or race and ethnicity (table 22). Because some fine fields of study award relatively few doctorates in a single year, the degree counts by race, ethnicity, or sex within these fields can be quite small, leading to extensive cell suppression. The field aggregation technique combines data from small fields of study with the data from related fields, so that the degree counts in the aggregated fields are sufficiently large to protect the confidentiality of respondent information.

Data by race, ethnicity, and sex in the fine fields shown in table 16 and table 22 are reported for fields in which at least 25 U.S. citizen or permanent resident individuals earn a doctoral degree in a given year, regardless of how small the count may be in a particular cell. Counts of doctorate recipients in fields having fewer than 25 U.S. citizen or permanent resident doctorates awarded are aggregated with those of one or more related fields until the total number of doctorates in the aggregated field reaches at least 25 U.S. citizens and permanent residents. The related fields chosen for aggregation to protect below-threshold fields may or may not also be below-threshold. The degree count in each racial, ethnic, or sex category of these aggregated fields is reported in table 16 and table 22, but the constituent fine fields of the aggregated fields are not displayed.

In 2017, fewer than 25 doctorates were awarded to U.S. citizens or permanent residents in 72 of the 331 fine fields of study collected in the SED. These below-threshold fine fields were combined with 70 related fields of study to produce 43 aggregated fields in 2017. Table 16 and table 22 report data on the 43 aggregated fields and the remaining 189 unaggregated fine fields. Table A-5 lists the aggregated fields that appear in table 16 and table 22 and identifies their constituent fine fields.

The 72 below-threshold fine fields do not include “other” fine fields (i.e., fine fields that have the word “other” in their label). Data reported for “other” fine fields are not considered confidential. However, a total of 22 “other” fine fields, including 6 that fall under the threshold, are used as aggregation partner fields.

[1] U.S. Department of Education. 1996. *Mapping the World of Education: The Comparative Database System (CDS)*. Vols. 1, 2, and 3. Alexandria, VA: National Science Foundation. Available at <https://www.nsf.gov/statistics/mapping/>. Routledge-Taylor & Francis Group. 2015. *Europa World of Learning*. London. Serial and online database available at <http://www.worldoflearning.com/>. 2015. *International Handbook of Universities 2016*. London: Palgrave Macmillan UK. International Association of Universities. World Higher Education Database. <http://www.whed.net/home.php>.

SURVEY QUALITY MEASURES

Sampling error. Not applicable because the SED is a census.

Coverage error. Due to the availability of comprehensive lists of doctorate-granting institutions and the institutions’ high levels of participation in the survey, coverage error of institutions is minimal. Because the graduate schools collect the survey data from degree recipients at the time of doctorate completion, coverage error for the universe of doctorate recipients is also minimal. Comparisons of the institutions and the number of research doctorate recipients covered by the SED with the total number of doctorate recipients (including nonresearch doctorate degree recipients) reported by institutions to the [National Center for Education Statistics](#) confirm that there is minimal coverage error of doctorate recipients. Institutions that begin to confer research doctorates are invited to join the SED. If a university that confers research doctorates does not wish to participate in the SED, slight undercounts may result. In 2017, a small number of doctorate-granting universities declined to fully enumerate their doctorate recipients for AY 2017, resulting in a small percentage (approximately 0.1%) of under-coverage in the universe.

Nonresponse error.

- *Unit nonresponse.* Of the 54,664 individuals who received a research doctorate in 2017, 91.4% completed the survey (table A-3). This percentage is referred to as the self-report rate. Limited number of SED critical data items (doctoral institution, year of doctorate, field of doctorate, type of doctorate, and, if available, baccalaureate institution, master’s degree institution, and sex) are constructed for nonrespondents from administrative records of the

university such as commencement programs, graduation lists, and other public records, and are included in the reported total of 54,664 doctorate recipients for 2017.

Nonresponse was concentrated in certain institutions: 6 of the 428 doctorate-granting institutions accounted for 25% of the total nonrespondents, and 43 of these institutions accounted for 69% of the total nonrespondents.

Counts for previous years were corrected by the addition of data from surveys received after the close of data collection for a given year.

- *Item nonresponse.* Among the 54,664 individuals who received a research doctorate in 2017, item nonresponse rates for the five key SED demographic variables—sex, citizenship, country of citizenship, race and ethnicity, and location after graduation—range from 0.0% for sex to 7.6% for location after graduation. Table A-4 shows item response rates for 2008–17 for all variables, by variable name (see clarifying notes in table A-4).

Measurement error. Measurement error in the SED is attributable to several sources including errors in respondent reporting and errors that occur during data processing. Data reported by respondents about their educational history, including degree institutions and field of study that are not coded within the survey instrument are reviewed and coded by trained coders. Average coding error rates were 0.24% for institution coding, 0.58% for fields of study coding, and 0.17% for “Other—specify” back coding.

DATA COMPARABILITY

Changes in questionnaire. There were significant changes to the questionnaire in 2017:

New questions.

- *Associate’s degree information.* As part of the educational history, the survey asked respondents to report the institution name and location, field, and start and end dates for up to three associate’s degrees.
- *Double major for the first bachelor’s degree.* Respondents were asked to indicate whether a double major was completed for each bachelor’s degree reported and, if so, the second field of the double major.
- *Relationship between the master’s degree and doctoral degree.* For each reported master’s degree, respondents were asked to indicate whether the degree was a prerequisite to enter or continue in the doctoral program or fulfilled any credits for the doctoral program. For respondents indicating the master’s degree fulfilled credits for their doctoral program, a follow-up question asked how many credits counted toward the doctoral degree.
- *Professional doctoral degree information.* Respondents were asked to provide the institution name and location, degree type, and start and end dates for any professional doctoral degree they are earning or have earned.
- *Same employer during or before the start of the doctoral program.* Respondents were asked to indicate whether the postgraduate position is with the same employer as the one during or before the start of their doctoral studies.

Question dropped.

- *Intention to take a postdoc position.* Removed question that asked whether the respondent intends to take a “postdoc” position.

Question response options changed.

- *Source of financial support during graduate school.* The response option “grant” was changed to “dissertation grant.”
- *Additional bachelor’s and master’s degrees.* In past years, respondents were asked to provide information on any additional degrees beyond their first bachelor’s degree and most recent master’s degree. In 2017, respondents were asked to specifically provide information on up to three bachelor’s degrees and up to three master’s degrees.
- *Postgraduate plans.* The Web survey included a response option not available on the paper survey, “I am returning to, or continuing in, predoctoral employment.”
- *Nature of postdoc or other training.* The response options “postdoc fellowship” and “postdoc research associateship” were combined to “postdoc fellowship or research associateship.”
- *Main source of financial support for their postdoc or other training.* Added a new response option, “No financial support (unpaid position).”

Changes in reporting procedures or classification.

- *Citizenship.* The citizenship status variable is used to identify the appropriate citizenship category of respondents, including the citizenship category of respondents who did not respond to the citizenship status survey item on the SED. The code framework for the citizenship status variable is outlined below.

Code	Citizenship category
0	U.S. native born
1	U.S. naturalized citizen
2	Non-U.S. immigrant (permanent resident)
3	Non-U.S. non-immigrant (temporary U.S. visa)
4	Non-U.S., visa status unknown
U	U.S. citizen, unspecified
Blank	Missing or citizenship unknown

Respondents who indicated a U.S. birthplace, regardless of what they reported for citizenship status, were assigned code 0.

In 1999, code 4 (non-U.S., visa status unknown) was introduced and data were back-coded through 1997. Respondents who designated a non-U.S. country for the country of citizenship item but did not respond to the citizenship status item were assigned code 4 for citizenship status. From 1997 to 2003, non-U.S.-born respondents who did not indicate their country of citizenship or citizenship status were assigned to code 4 if three out of four geographic variables—place of birth, place of high school, place of college entry, and postgraduation location—were non-U.S. locations. Beginning with the 2004 SED, the variable “place of baccalaureate institution” replaced “place of college entry” in the assignment of a citizenship code for respondents who did not indicate citizenship status.

For tabulations in this report, code 4 was combined with code 3—that is, counts of doctorate recipients in the temporary visa holder category include non-U.S. citizens with unknown visa status. This is consistent with coding

procedures in previous data collections. However, the existence of code 4 allows the microdata user to exclude cases for which visa status is unknown. Prospective data users should note, however, that the number of cases in the code 4 group is not sufficient to warrant analysis as a separate citizenship category.

Non-U.S. citizens who did not report a country of citizenship but reported the same non-U.S. country for three out of four geographic variables—place of birth, place of high school, place of baccalaureate institution, and postgraduation location—were assigned that reported country as their country of citizenship.

- *Debt.* Since 2001, respondents have been asked to indicate the amount of education-related debt they owe, with separate response categories for graduate and undergraduate education. To estimate overall debt, the midpoint of the chosen range for undergraduate and for graduate debt was selected and summed to yield a total debt amount. Where mean debt levels are presented in this report (i.e., table 38 and table 40), the individual values for debt are assigned as the midpoint of the chosen range for graduate and undergraduate debt. Doctorate recipients who chose the lowest debt category (no debt) were assigned a value of \$0 for the computation of mean debt levels. Doctorate recipients who chose the uppermost category (\$90,001 or more) were assigned a value of \$95,000 for the computation of mean debt levels. All valid responses, including “no debt,” were included in the computation of all average debt figures in this report. See item A18 on the survey questionnaire for a complete listing of the debt ranges on which the midpoint figures were based.
- *Field of study.* Beginning in 2015, the broad field of study of “physical sciences” was broken out into two separate broad fields: “physical sciences and earth sciences” and “mathematics and computer sciences.” Also beginning in 2015, the major fields of “mathematics and statistics” and “computer and information sciences” are listed under the new broad field of “mathematics and computer science.” Prior to 2015, these major fields were listed under physical sciences.
- *Functional limitations (previously, disability).* Beginning in 2012, item C12 (the functional limitations item) assesses both the presence and severity of functional limitations in each of several domains, which do not precisely overlap with the domains in prior surveys.
- *Median computation.* Since 1994, medians have been computed as outlined below. When months are included, they are converted to the number of days corresponding to the first day of the month. In 2017, the method for accounting for leap days changed to reflect the actual number leap days during the time period specified, rather than the prior method of adding 0.25 days to each year.
 - *Median age.* Months (of birth and doctorate award) are included in the calculation of median age whenever available. Beginning in 2015, if birth month is missing, the month value is randomly imputed. Prior to 2015, the missing month value was assigned to the month the doctorate was received.
 - *Time to degree from bachelor’s completion.* Months are included in the calculation of total time to degree. If months are missing, month values are assigned to the modal value for doctorate recipients who provide month of bachelor’s completion and converted to the number of days corresponding to that month.
 - *Time to degree from graduate school entry.* Months are included in the calculation of graduate school time to degree. If months are missing in the calculation of graduate school time to degree, month values are assigned to the modal value for doctorate recipients who provided month of graduate entry. Reports published before 2004 reported a different time-to-degree measure: registered time to degree. Comparisons of graduate school time-to-degree data with pre-2004 registered time-to-degree data should be interpreted cautiously. For an

explanation of registered time to degree, see the technical notes section of any *Doctorate Recipients from United States Universities: Summary Report* published before 2004.

- *Time to degree from doctoral program entry.* This variable was first included in 2015. Doctoral program entry is based on master's degree program entry if the master's degree was at the doctoral institution in the same fine field of study or if it was a prerequisite to the doctorate; otherwise, it is based on doctoral program entry. Months are included in the calculation of doctoral program time to degree. If the month of entry used in the calculation (master's degree program entry or doctoral program entry) was not reported, the entry month is assigned to the modal value for all cases that did report the entry month in the academic year the case was added to the doctoral records file (typically the academic year matching the graduation date of the case).
- *Salary.* Median salary is calculated from exact salary values when provided by the respondent. Salary imputation was dropped as of 2015 due to the increase in exact salary response rate. From 2011–14, if a respondent selected a salary range instead of providing an exact salary value, exact salary values were imputed for median salary calculation purposes by applying hot-deck imputation based on salary range and other relevant respondent characteristics. Prior to 2011, median salary was calculated directly from the salary range values via interpolation methods, and exact salary values were not used in the calculation of median salary. Only salary data from doctorate recipients reporting definite commitments for employment or for a postdoc position in the United States are included in median salary calculations.
- *Postdoctoral plans to stay in the United States.* In 1997, the planned postdoctoral location of doctorate recipients began being coded in a new variable using Federal Information Processing Standards codes both for the United States and its territories and for countries.

Also in 1997, a dichotomous variable was created to index whether the planned postdoctoral location reported by the respondent was in the United States or in a foreign location, even if the respondent did not indicate a specific state or country.

- *Race and Hispanic ethnicity.* Since 2001, respondents have been asked to first indicate whether they are Hispanic or Latino and then to check one or more racial group categories (i.e., American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, black or African American, or white).

In data tables, doctorate recipients who report Hispanic or Latino ethnicity, regardless of race, are counted as Hispanic or Latino, and as of 2013, those who did not answer the Hispanic or Latino question are counted as "ethnicity not reported." Respondents who indicate that they are not Hispanic or Latino and indicate a single race are reported in their respective racial groups, except for those indicating Native Hawaiian or Other Pacific Islander, who are included in "other race or race not reported." Beginning in 2007, doctorate recipients who indicate they are not Hispanic or Latino and indicate more than one race are reported in the group "two or more races."

- *Research doctoral degree.* As doctoral degree programs change to meet the needs of students, the orientation of the degrees they award may change from research to professional, and vice versa. Survey staff review degree programs to ensure that the designation of research doctorate remains appropriate. As a result of degree reviews in past data collections, survey staff identified several research doctoral degrees that shifted to a professional orientation. The doctor of music (DM) and the doctor of industrial technology (DIT) were both dropped from the SED in 2008, and the graduates (approximately 40 to 60 per year) who earn these doctoral degrees are no longer included in the SED.

After a multiyear review of doctoral programs offering the EdD degree, most were determined to have a professional orientation and were dropped from the SED in 2010 and 2011, and graduates earning EdD degrees from those programs are no longer included in the SED. As a result, the proportion of EdD degrees among the total number of research doctorate recipients fell from 5.5% in 2009 to 1.1% in 2017. Table A-1 lists the doctoral degrees that were eligible for inclusion in the SED in 2017.

DEFINITIONS

- *Basic annual salary.* Annual salary expected to be earned from the doctorate recipient's principal job in the next year after receiving the doctorate, not including bonuses or additional compensation for summertime teaching or research.
- *Carnegie classification (institution categories).* In this report, four types of doctorate-granting institutions identified in the figures and tabulations are defined according to the Carnegie classification scheme as updated in 2015: doctoral highest research, doctoral higher research, doctoral moderate research, and other universities (comprised of all classifications). Institutions are classified according to their aggregate and per-capita levels of research activity, using indicators of research and development expenditures, staffing (including postdoctoral appointees and other nonfaculty research staff with doctorates), and doctoral conferrals in science and engineering and other fields.
- *Definite plans to stay in the United States.* A respondent is coded as having definite plans to stay in the United States if the reported postgraduation location was in the United States and the reported postgraduation plans for employment or postdoc were coded "definite."
- *Definite postgraduation plans.* The status of postgraduation plans is coded using the values from item B2 of the survey questionnaire, which indicate whether the doctorate recipient's postgraduation plans for employment or a postdoc position were definite at the time the survey was completed.
- *Field of study.* The SED has 331 fine fields of doctoral study, which are grouped into 35 major fields of study. The major field groupings are further aggregated into eight broad fields: life sciences, psychology and social sciences, physical sciences and earth sciences, mathematics and computer sciences, engineering, education, humanities and arts, and other fields. The levels of this variable were derived by grouping related fine fields of study from the field of study taxonomy used in the SED (table A-6). See the survey questionnaire for a full listing of the fine fields of study in 2017.

Doctorate recipients indicate their fields of specialty. Their choices may differ from departmental names. Field groupings may differ from those in other reports published by federal sponsors of the SED. The "general" field categories (e.g., "chemistry, general") include individuals who either received the doctorate in the general subject area or who did not indicate a particular specialty field. The "other" field categories (e.g., "chemistry, other") include individuals whose specified doctoral discipline was not among the specialty fields listed.

- *Median age at doctorate.* One-half of the respondents received the doctorate at or before this age. A recipient's age is obtained by subtracting the month and year of birth from the month and year of doctorate.
- *Percentage with master's.* This variable is the percentage of doctorate recipients in a field who received a master's degree in any field before earning the doctorate.

- *Research doctorate.* A research doctoral degree is oriented toward preparing students to make original intellectual contributions in a field of study and is not primarily intended for the practice of a profession. Research doctorates require the completion of a dissertation or equivalent project.
- *Time to doctorate.* The time it takes to complete a doctoral degree is measured in three ways: (1) the time elapsed from completion of the baccalaureate to completion of the doctorate (total time to degree), (2) the time elapsed from the start of any graduate school program to completion of the doctorate (graduate school time to degree), and (3) the time elapsed from the start of the doctoral program. Time-to-doctorate measures herein are reported as medians. In 2017, the method for accounting for leap days changed to reflect the actual number leap days during the time period specified, rather than the prior method of adding 0.25 days to each year.
 - *Total time to degree.* This variable is the total elapsed time between the baccalaureate and the doctorate, including time not enrolled in school. It can be computed only for individuals whose baccalaureate year is known. Baccalaureate year is often obtained from commencement programs or doctorate institutions when not reported by the recipient.
 - *Graduate school time to degree.* This variable is the elapsed time from the initiation of graduate study, in any program or capacity at any university, and the award of the doctorate. This variable can be computed only for individuals who provided the year they started graduate school. If an individual did not respond to question A13, which asks for the month and year of first entry into any graduate school, then values for graduate school month and year of entry are imputed from the month and year of entry into the most recent master's degree program (A14c) or, if that is missing, the month and year of entry into the doctoral degree program (A1). Months are included in the computation.
 - *Doctoral program time to degree.* This variable is either (1) the elapsed time from the master's degree program entry, if the master's degree was awarded at the doctoral institution and was in the same fine field as the doctorate or if the master's degree was a prerequisite to the doctoral program until doctorate completion; otherwise, it is (2) the elapsed time from the doctoral program entry until doctorate completion. This variable is only computed for academic year 2015 and later doctorates.
- *U.S. regions of employment.* This variable is used to classify the location of U.S. employment after award of the doctorate.

New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Middle Atlantic	New Jersey, New York, Pennsylvania
East North Central	Illinois, Indiana, Michigan, Ohio, Wisconsin
West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
South Atlantic	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
East South Central	Alabama, Kentucky, Mississippi, Tennessee
West South Central	Arkansas, Louisiana, Oklahoma, Texas
Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming

Pacific and Insular Alaska, California, Hawaii, Oregon, Washington, American Samoa, Guam, Puerto Rico, Trust Territories, Virgin Islands