



Doctorate Recipients in the Social, Behavioral, and Economic Sciences (SBE): 2017

Directorate Profiles | NSF 20-310

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About This Report

This report presents data on U.S.-trained doctorate recipients in the social, behavioral, and economic sciences (SBE) as they move from doctoral award to employment. Data are from the Survey of Earned Doctorates (SED) and the Survey of Doctorate Recipients (SDR), both collected by the National Center for Science and Engineering Statistics (NCSES), within the National Science Foundation (NSF).

Annual counts of doctorate recipients from U.S. universities are measures of the incremental investment in human resources devoted to science, engineering, research, and scholarship, and these counts can serve as leading indicators of the capacity for knowledge-creation and innovation in various domains. Within SBE, doctorate recipients in psychology, economics, sociology, political sciences, and other social sciences differ in terms of their demographic characteristics and educational history. They also differ in the pathways taken from doctoral award through their early career in the workforce (10 years or less from earning their doctorate). The goal of this report is to highlight the background characteristics and early career employment outcomes of recent doctorate recipients in these broad fields within SBE.

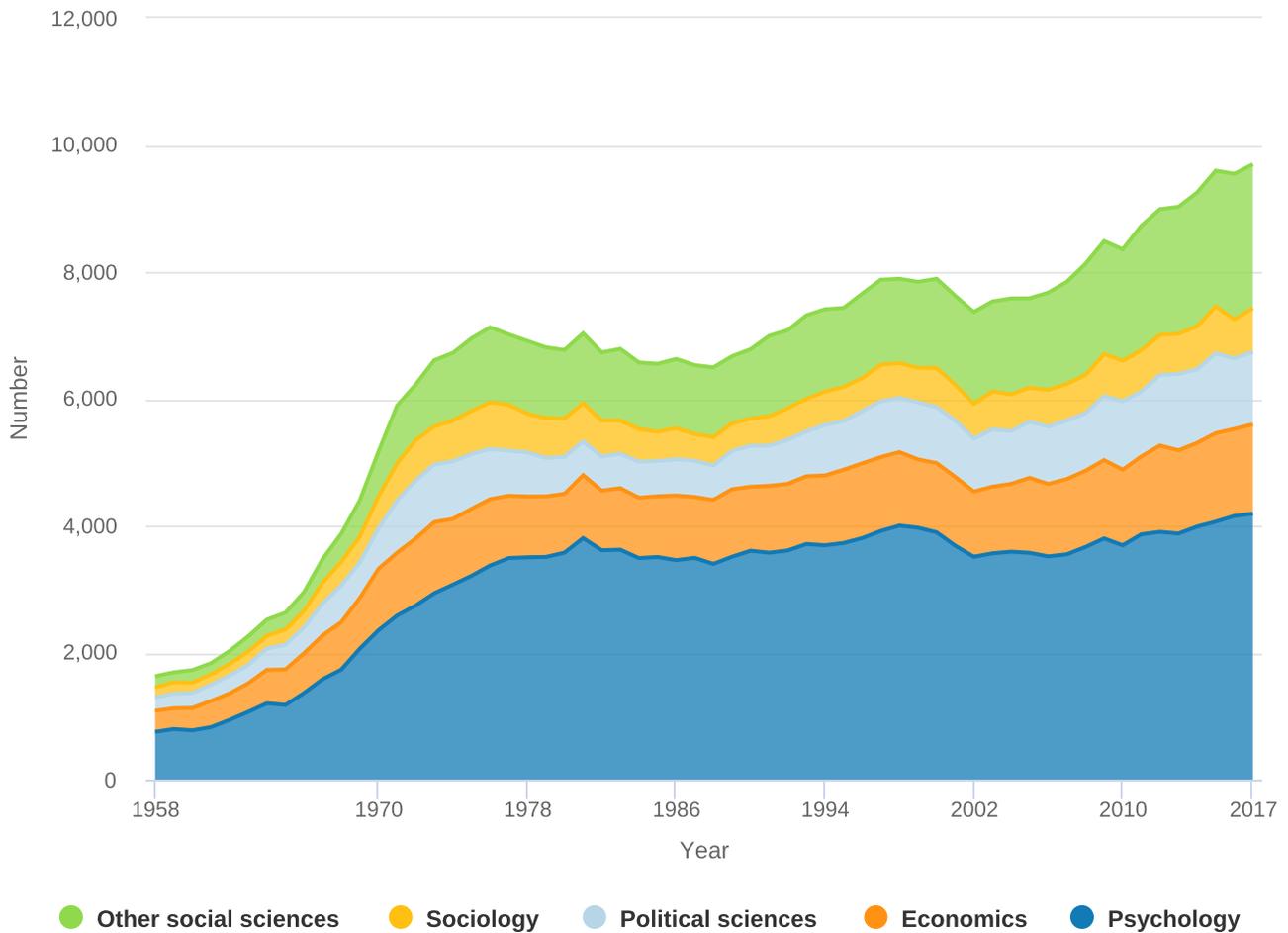
Snapshot of Education Characteristics of SBE Doctorate Recipients

This section provides a graphical overview of education characteristics of doctorate recipients in SBE as they complete their doctoral studies. The figures included in this section highlight statistics drawn from NCSES’s SED and are organized into four topical areas—demographic characteristics, education pathways, sources of education financial support, and postgraduation plans of SBE doctorate recipients.

Who earns an SBE doctorate?

FIGURE 1

Doctorates awarded in SBE fields: 1958–2017

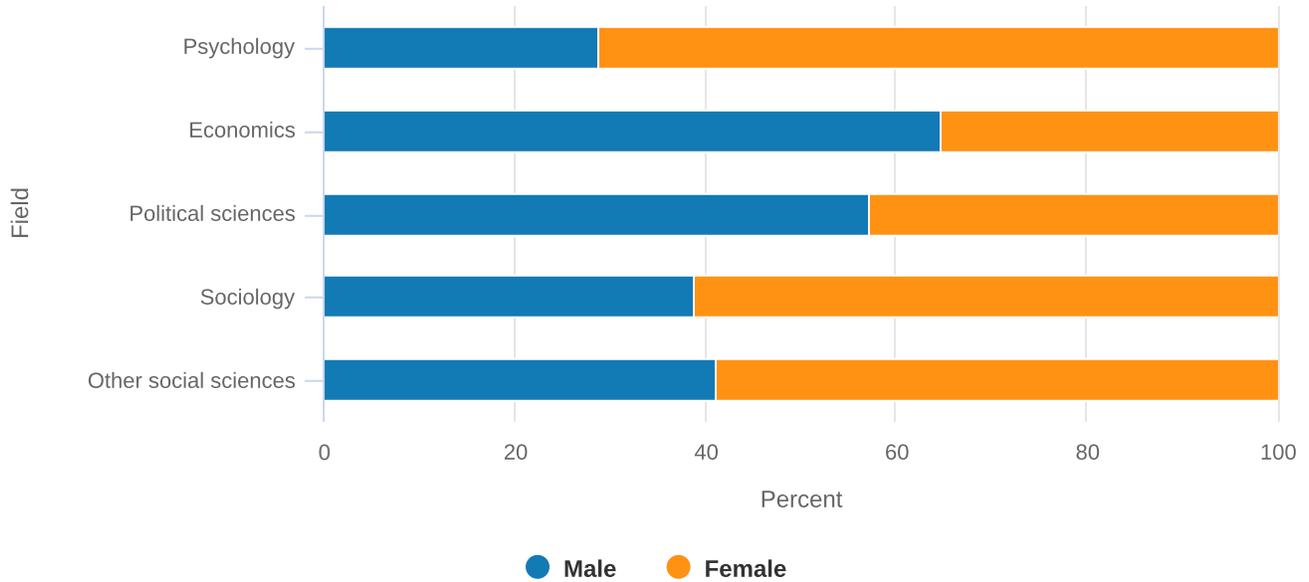


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates.

FIGURE 2

Sex of SBE doctorate recipients, by field: 2017

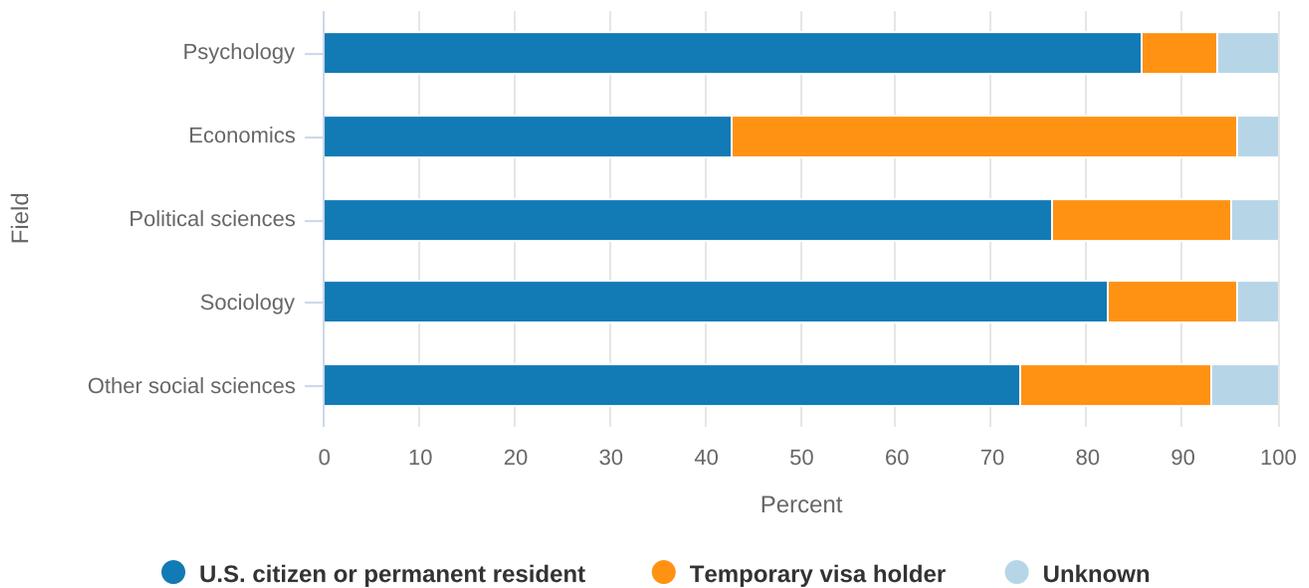


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data: appendix table 1.

FIGURE 3

Citizenship status of SBE doctorate recipients, by field: 2017

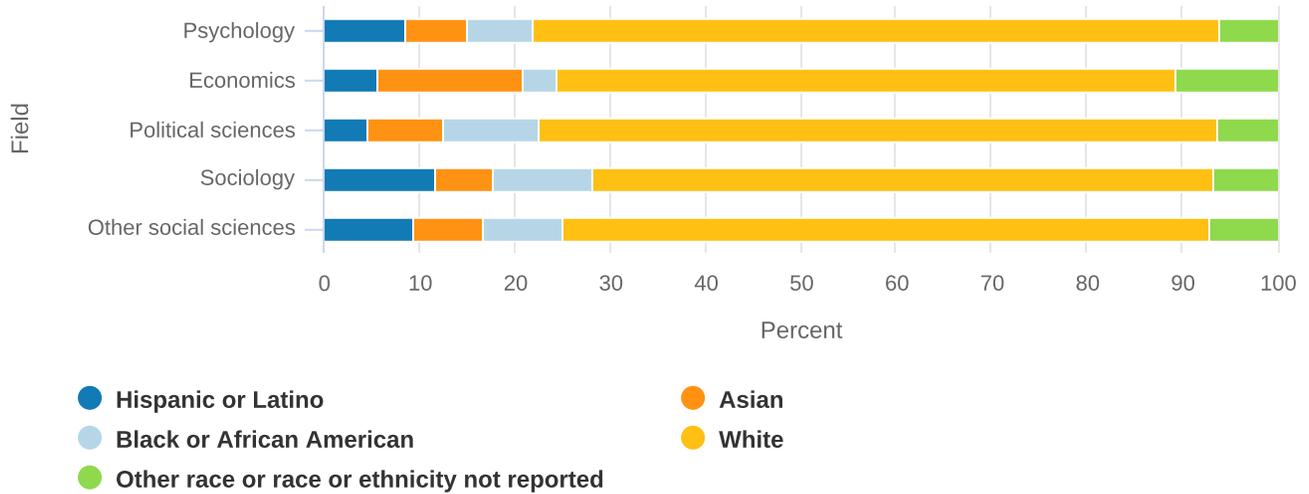


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 1.

FIGURE 4

Race and ethnicity of U.S. citizen and permanent resident SBE doctorate recipients, by field: 2017



Note(s)

Hispanic or Latino includes doctorate recipients who reported Hispanic ethnicity, whether singly or in combination with more than one race. Other race or race or ethnicity not reported includes: American Indians or Alaska Natives, Native Hawaiians or Other Pacific Islanders, non-Hispanic doctorate recipients who reported more than one race, non-Hispanic doctorate recipients who did not indicate their race, and doctorate recipients who did not report their ethnicity regardless of whether they reported their race.

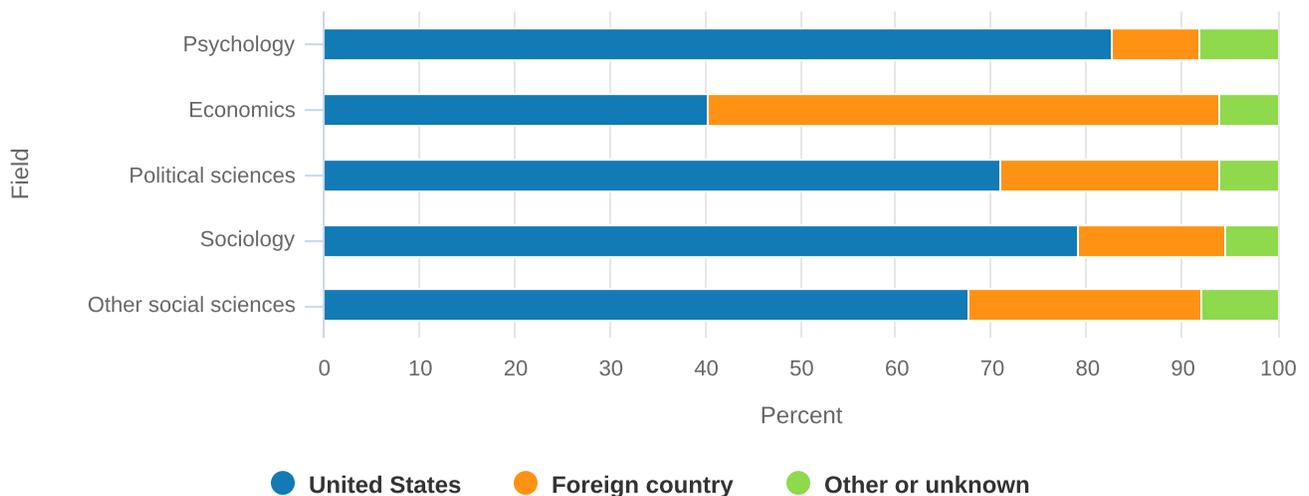
Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 1

What influences the education pathway to an SBE doctorate?

FIGURE 5

Location of baccalaureate-origin institution of SBE doctorate recipients, by field: 2017

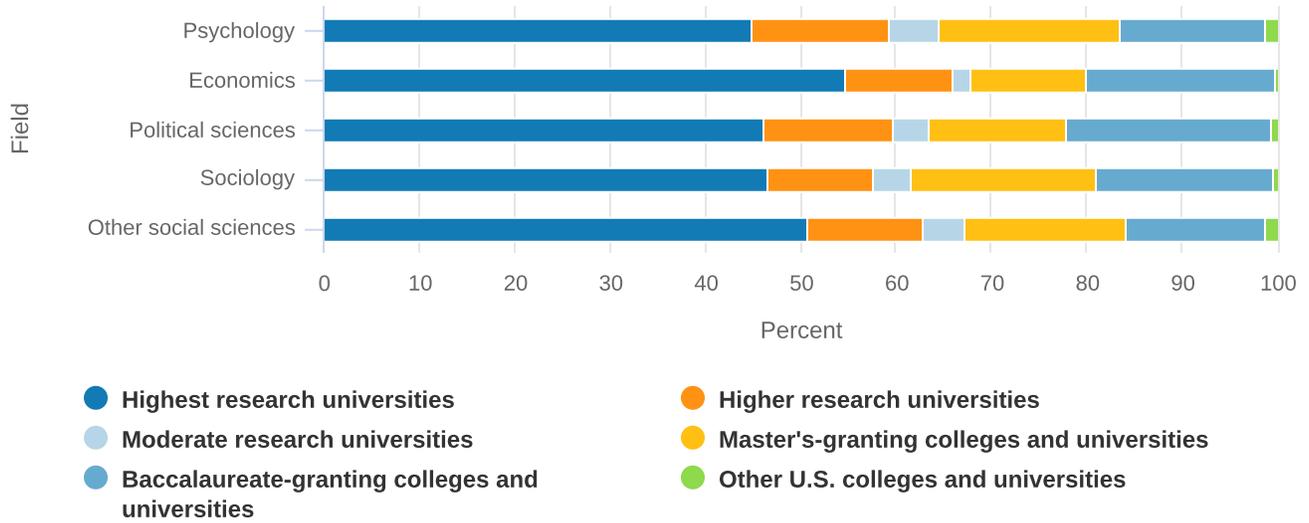


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 2.

FIGURE 6

Type of baccalaureate institution of SBE doctorate recipients with baccalaureates from U.S. institutions, by field: 2017



Note(s)

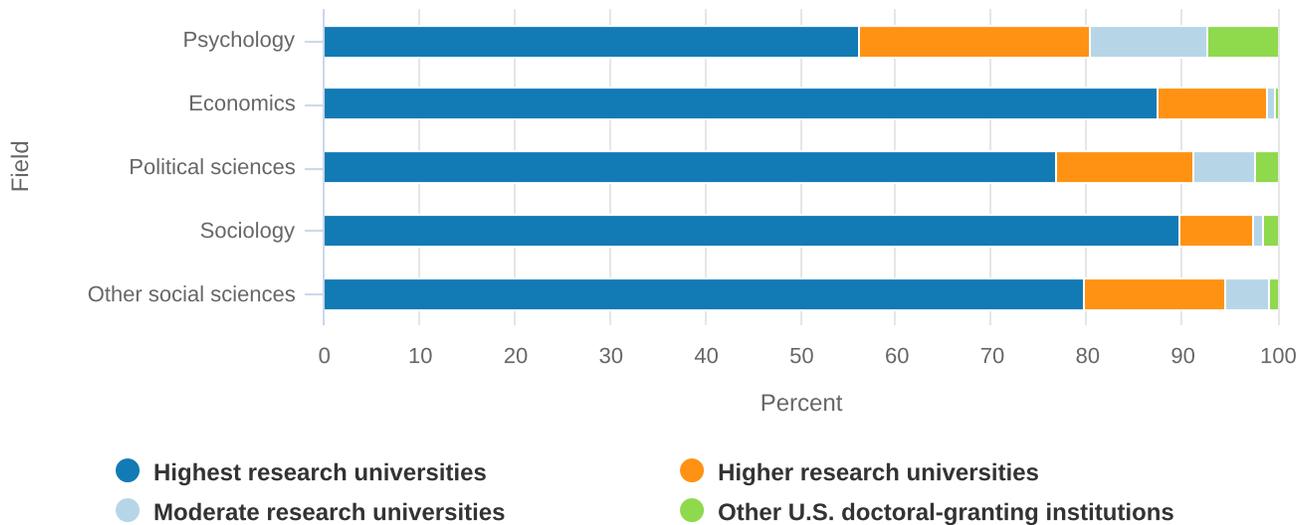
"Other U.S. colleges and universities" includes doctorate recipients with bachelor's degrees from institutions not classified under the 2015 Carnegie Classification system.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 2.

FIGURE 7

Carnegie Classification of doctoral institution of SBE doctorate recipients, by field: 2017



Note(s)

Percentages based on all doctorate recipients. Other U.S. doctoral-granting institutions includes doctorate recipients with doctoral degrees from institutions not classified under the 2015 Carnegie Classification system.

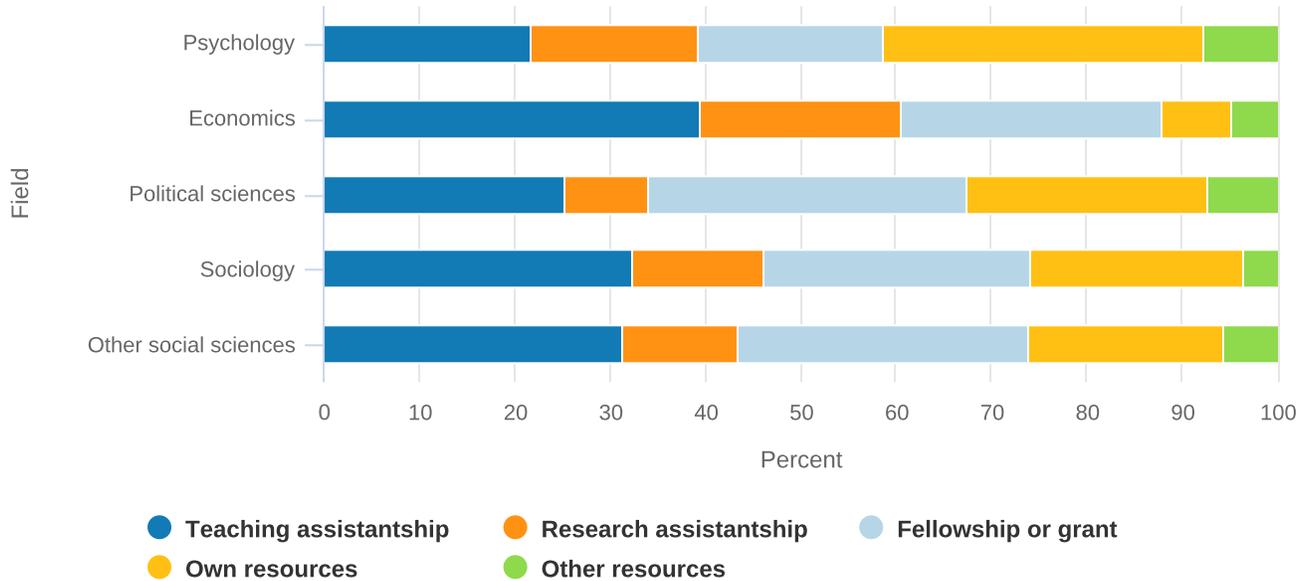
Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 2.

What are the sources of education financial support for an SBE doctorate?

FIGURE 8

Primary source of financial support of SBE doctorate recipients, by field: 2017



Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 2.

FIGURE 9

Graduate debt level of SBE doctorate recipients, by field: 2017

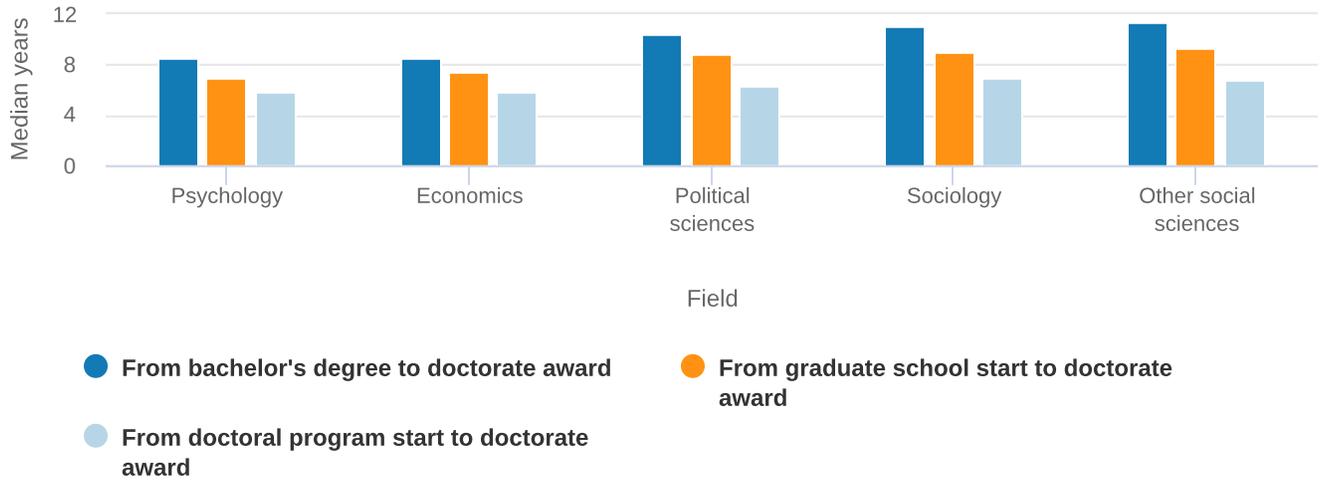


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 2.

FIGURE 10

Time to degree of SBE doctorate recipients, by field: 2017



Note(s)

Time to doctorate from doctoral program start is based on master's degree entry if the master's degree was at the doctoral institution in the same fine field of study or was a prerequisite to the doctorate; otherwise, it is based on doctoral program entry.

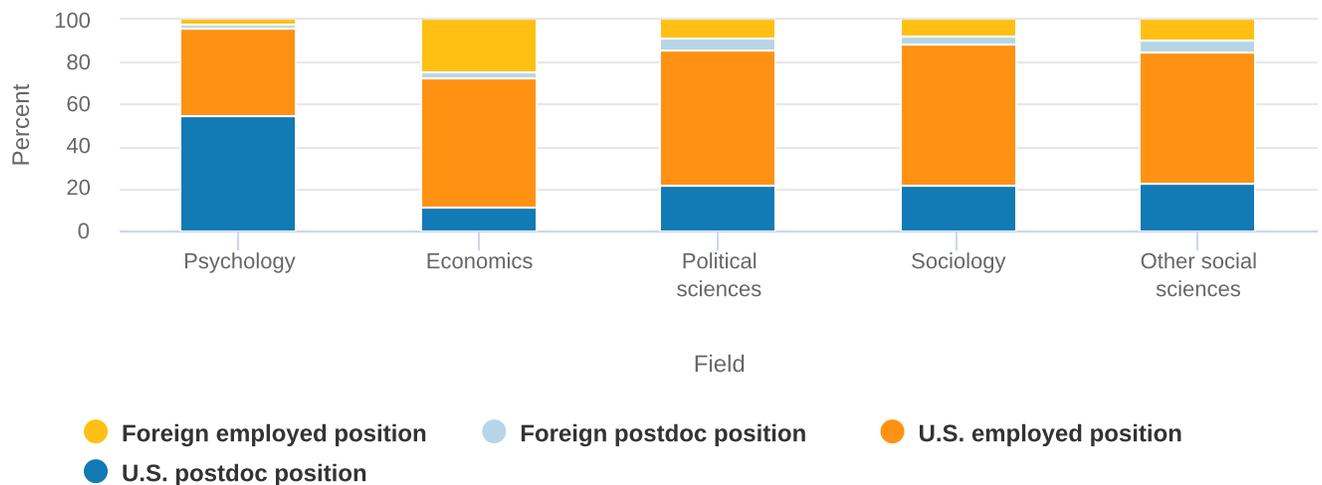
Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 2.

What are the postgraduation plans for an SBE doctorate recipient?

FIGURE 11

Doctorate recipients with definite commitment for postgraduate position, by position type, postgraduate location, and field: 2017



Note(s)

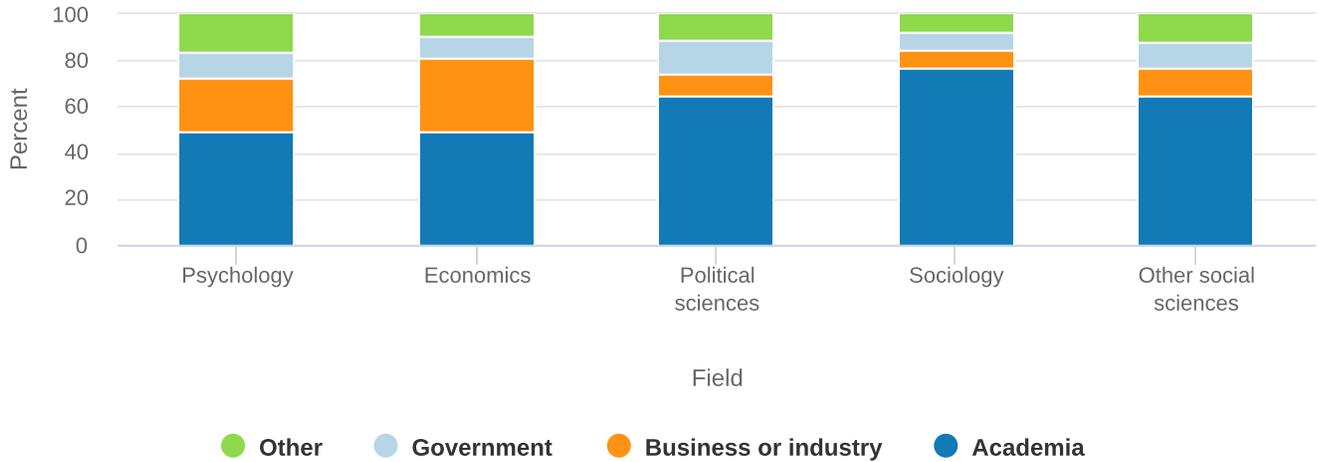
Definite commitment refers to a doctorate recipient who is either returning to pre-doctoral employment or has signed a contract (or otherwise made a definite commitment) for employment or a postdoc position in the coming year. Percentages are based on the doctorate recipients responding to the survey items on postgraduate commitment, position type, and location.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017.

FIGURE 12

Employment sector of SBE doctorate recipients with definite commitment for U.S. employment, by field: 2017



Note(s)

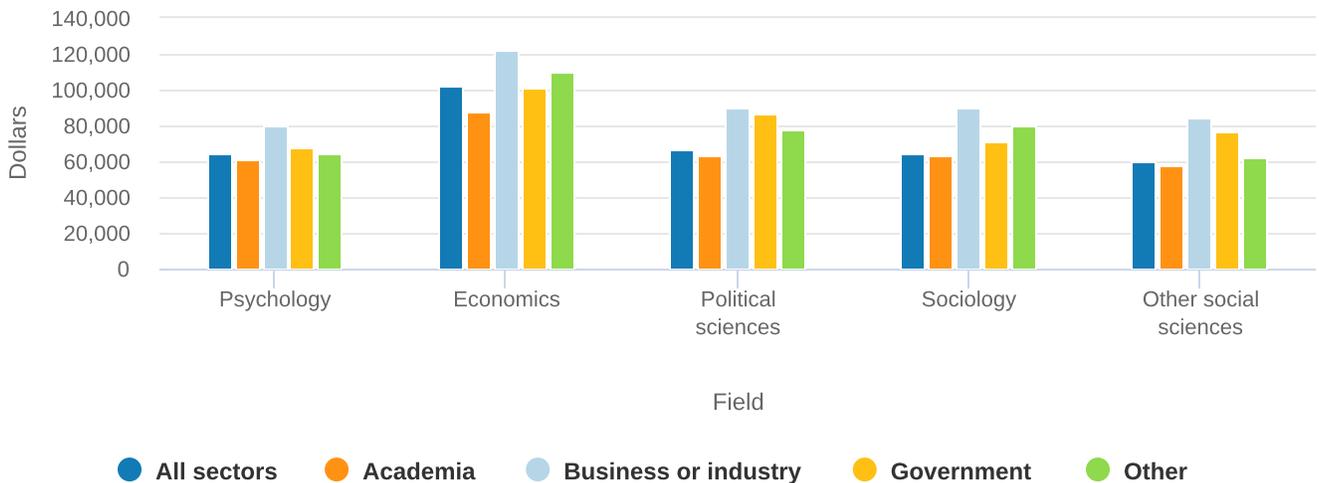
Percentages are based on the doctorate recipients reporting definite commitments for (non-postdoc) employment in the United States, with response to the employment sector item. Business or industry includes doctorate recipients who indicated self-employment. Other is mainly composed of not-for-profit organizations and K-12 schools or school systems.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 3.

FIGURE 13

Median annual salary by employment sector of SBE doctorate recipients with definite commitment for U.S. employment, by field: 2017



Note(s)

Business or industry includes doctorate recipients who indicated self-employment. Other is mainly composed of not-for-profit organizations and K-12 schools or school systems.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Related detailed data in appendix table 3.

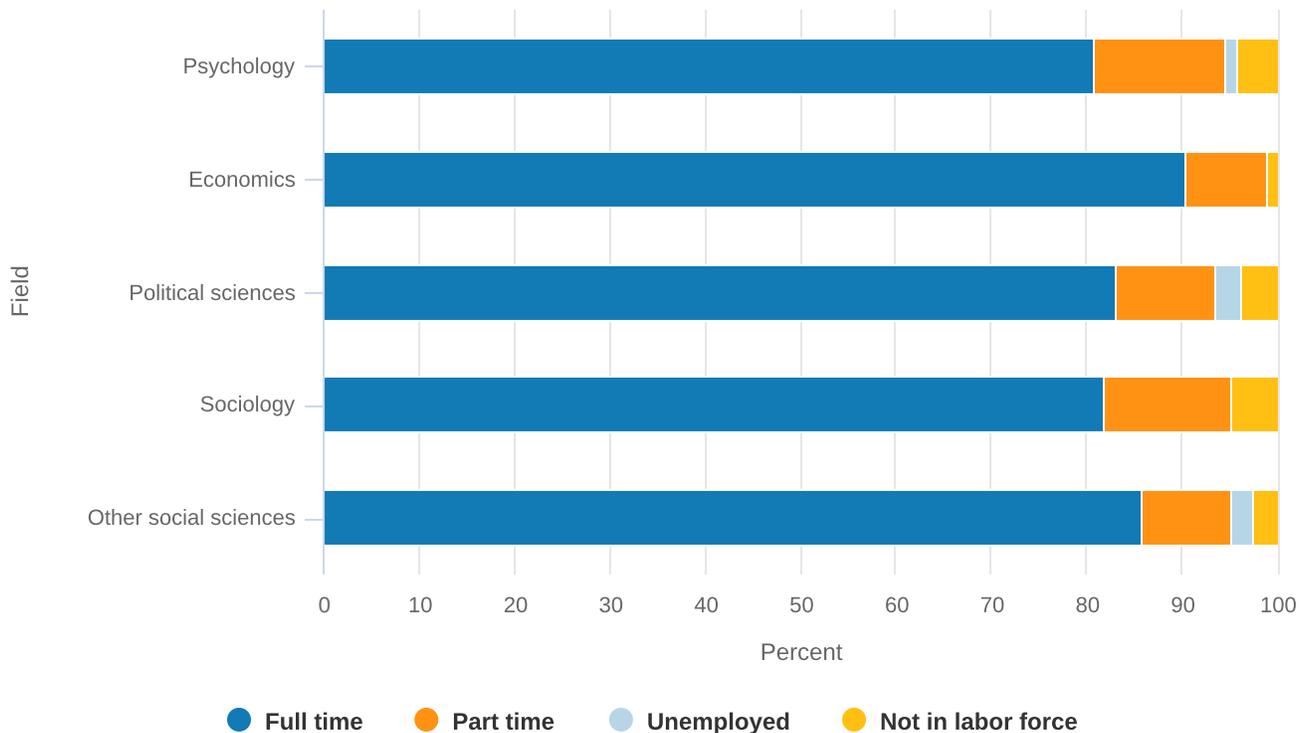
Snapshot of Workforce Characteristics of SBE Early Career Doctorate Holders

This section provides a graphical overview of workforce characteristics of early career doctorate recipients trained in SBE. In this report, we define early career doctorate holders as individuals who earned their doctorate within the past 10 years. The figures included in this section highlight statistics drawn from NCSES's SDR and are organized into four topical areas—employment characteristics, academic positions, job satisfaction, and unemployment of SBE early career doctorate holders.

What are the employment characteristics of an SBE early career doctorate holder?

FIGURE 14

Employment status of early career doctorate holders in SBE fields, by field: 2017



Note(s)

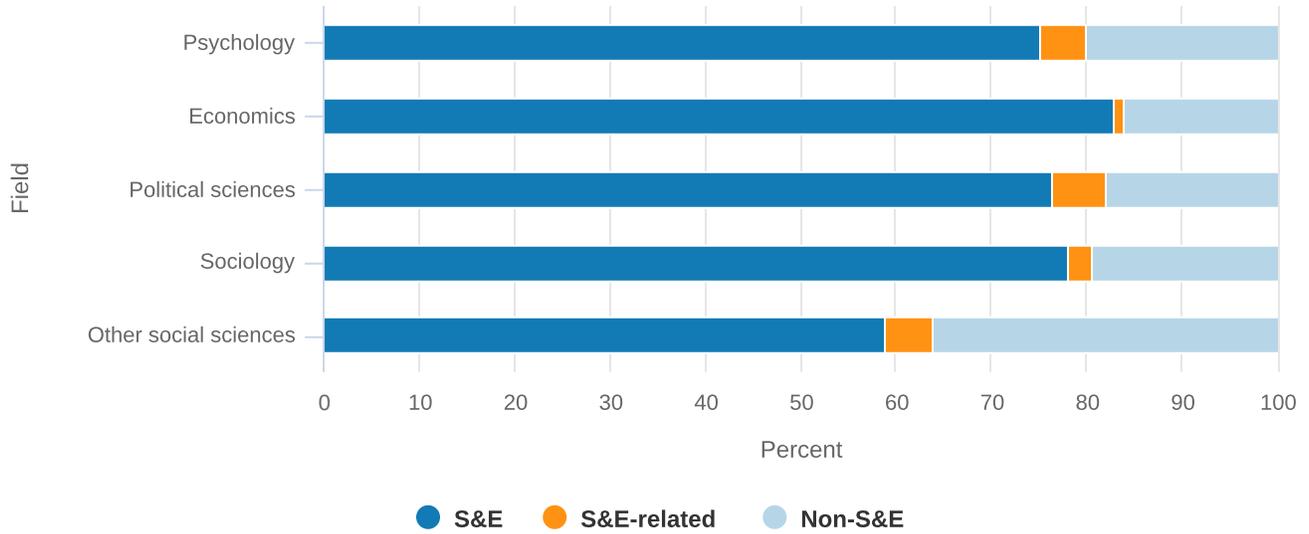
In the unemployed category for economics and sociology, data were suppressed to avoid disclosure of confidential information. Full time and part time are based on "principal job." "Unemployed" includes doctorate recipients who reported not working but looking for work as well as those who reported being laid off and not looking for work.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 5.

FIGURE 15

Occupation of all employed early career doctorate holders in SBE fields, by field: 2017

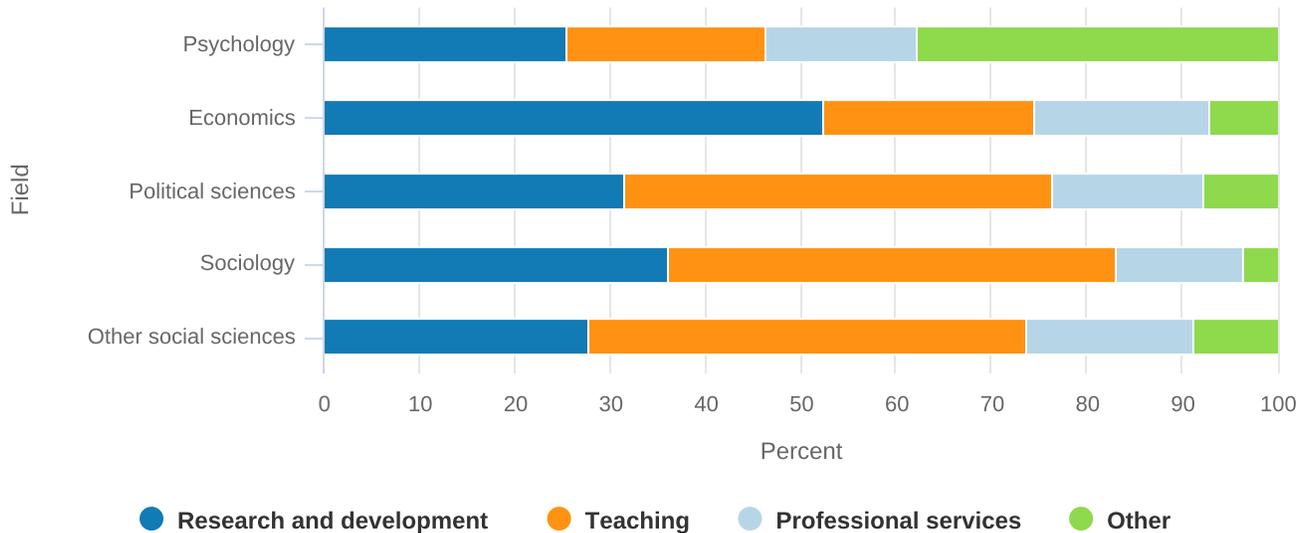


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 5.

FIGURE 16

Primary work activity of employed early career doctorate holders in SBE fields, by field: 2017



Note(s)

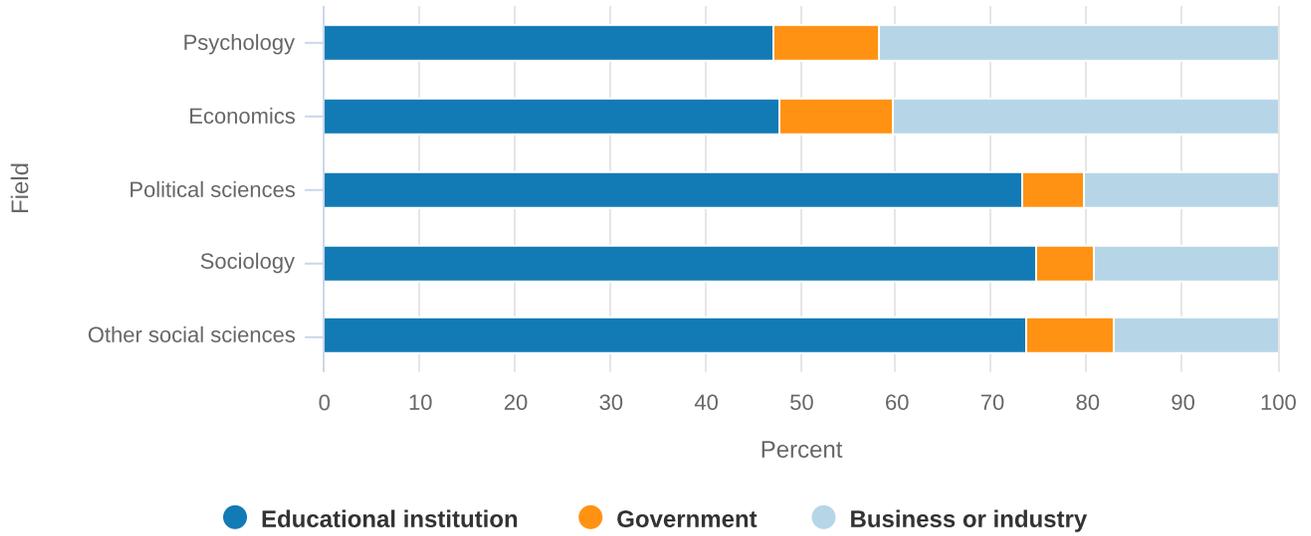
Research and development includes applied research, basic research, design, and development.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 5.

FIGURE 17

Employment sector of early career doctorate holders in SBE fields, by field: 2017

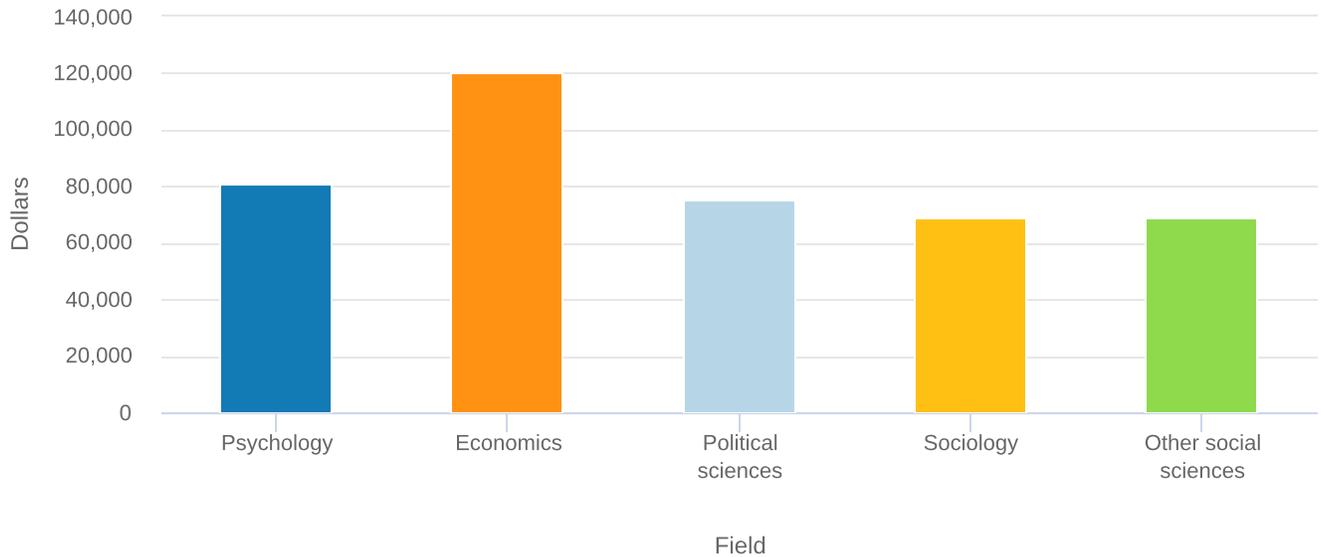


Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 5.

FIGURE 18

Median salary of employed early career doctorate holders in SBE fields, by field: 2017



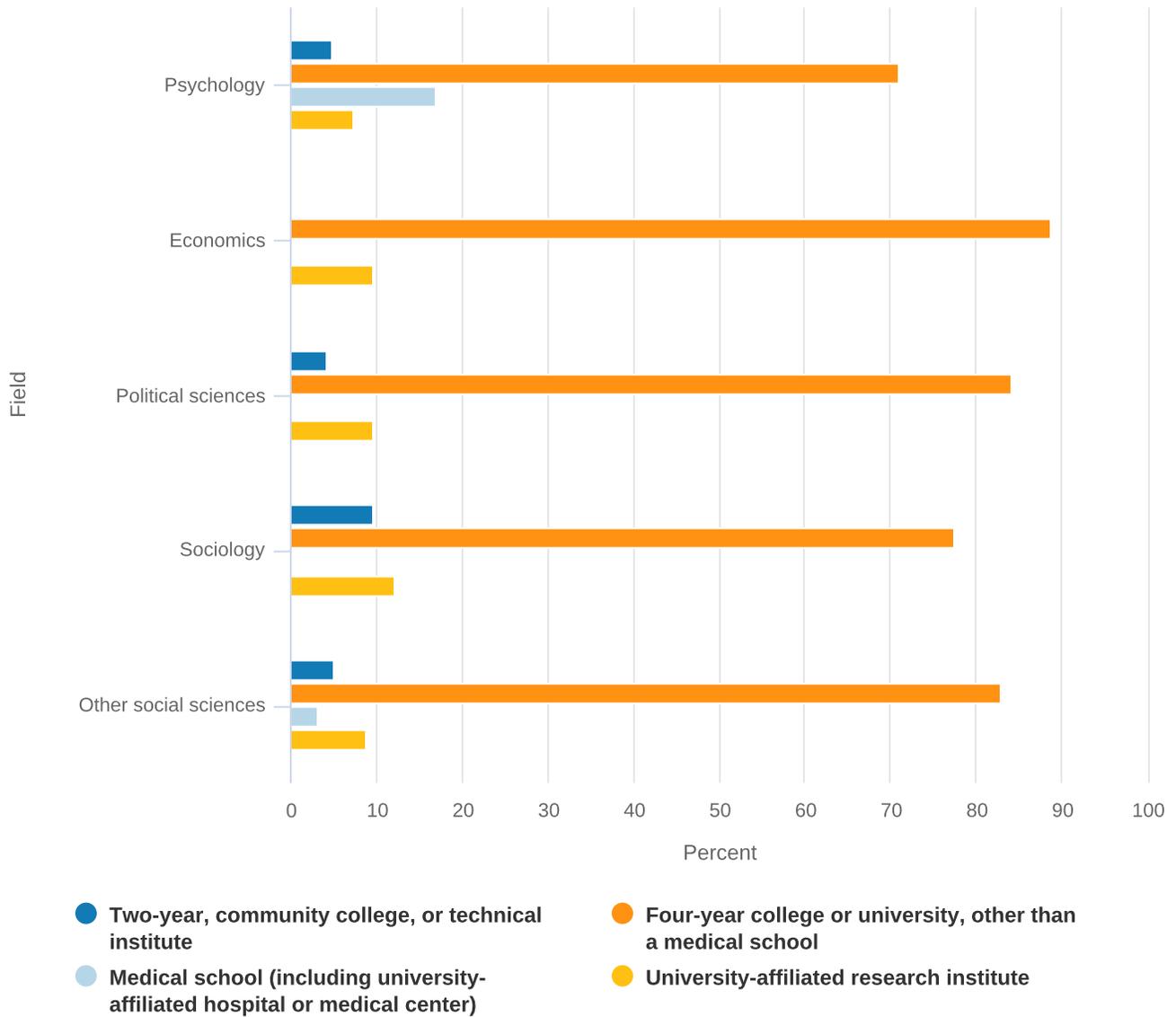
Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 5.

What are the characteristics of the academic positions held by SBE early career doctorate holders?

FIGURE 19

Type of employing higher education institution of early career doctorate holders in SBE fields who were employed in academia, by field: 2017



Note(s)

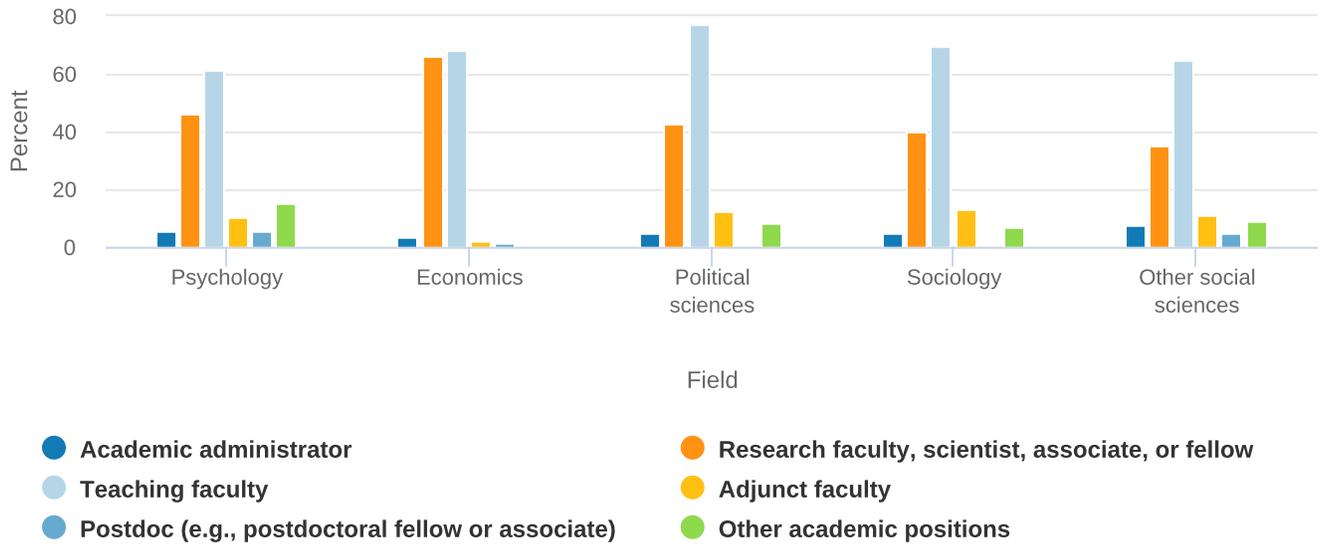
Data were suppressed to avoid disclosure of confidential information for economics, two-year, community college, or technical institute and for sociology, medical school. Data were suppressed for reliability (coefficient of variation exceeds publication standards) for economics and political sciences, medical school.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 6.

FIGURE 20

Type of academic position held by early career doctorate holders in SBE fields working in academia, by field: 2017



Note(s)

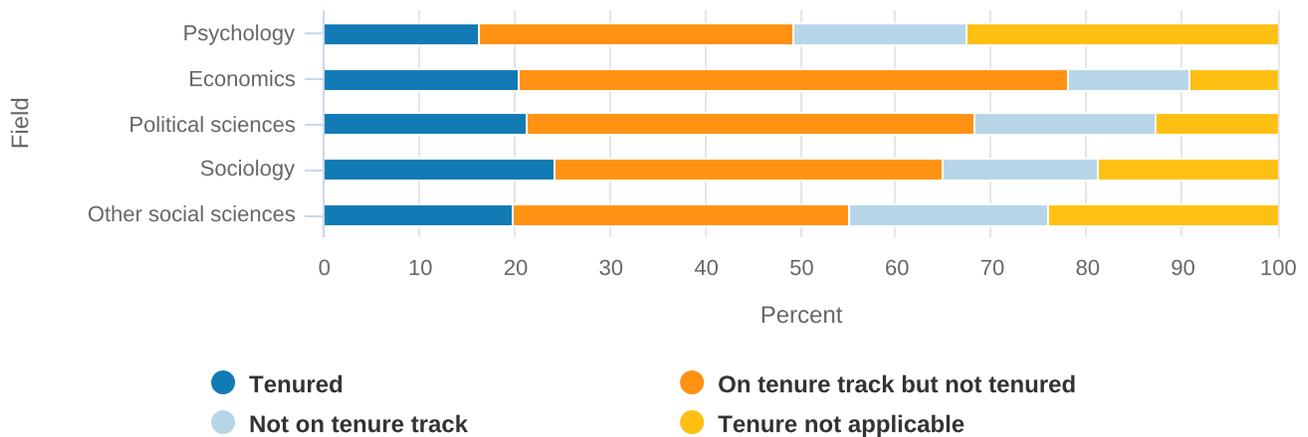
Data were suppressed to avoid disclosure of confidential information for political sciences and sociology, postdoc. Data were suppressed for reliability (coefficient of variation exceeds publication standards) for economics, other academic positions. Respondents could report holding more than one type of academic position. Percentages do not sum to 100. Academic administrator includes doctorate recipients who reported president, provost, chancellor (any level), dean (any level), department head, or department chair. Other academic positions includes doctorate recipients who reported research assistant, teaching assistant, or other academic position.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 6.

FIGURE 21

Academic employment characteristics of early career doctorate holders in SBE fields, by field: 2017



Note(s)

Tenure not applicable includes doctorate recipients who reported no tenure system at their institution or no tenure system for their position.

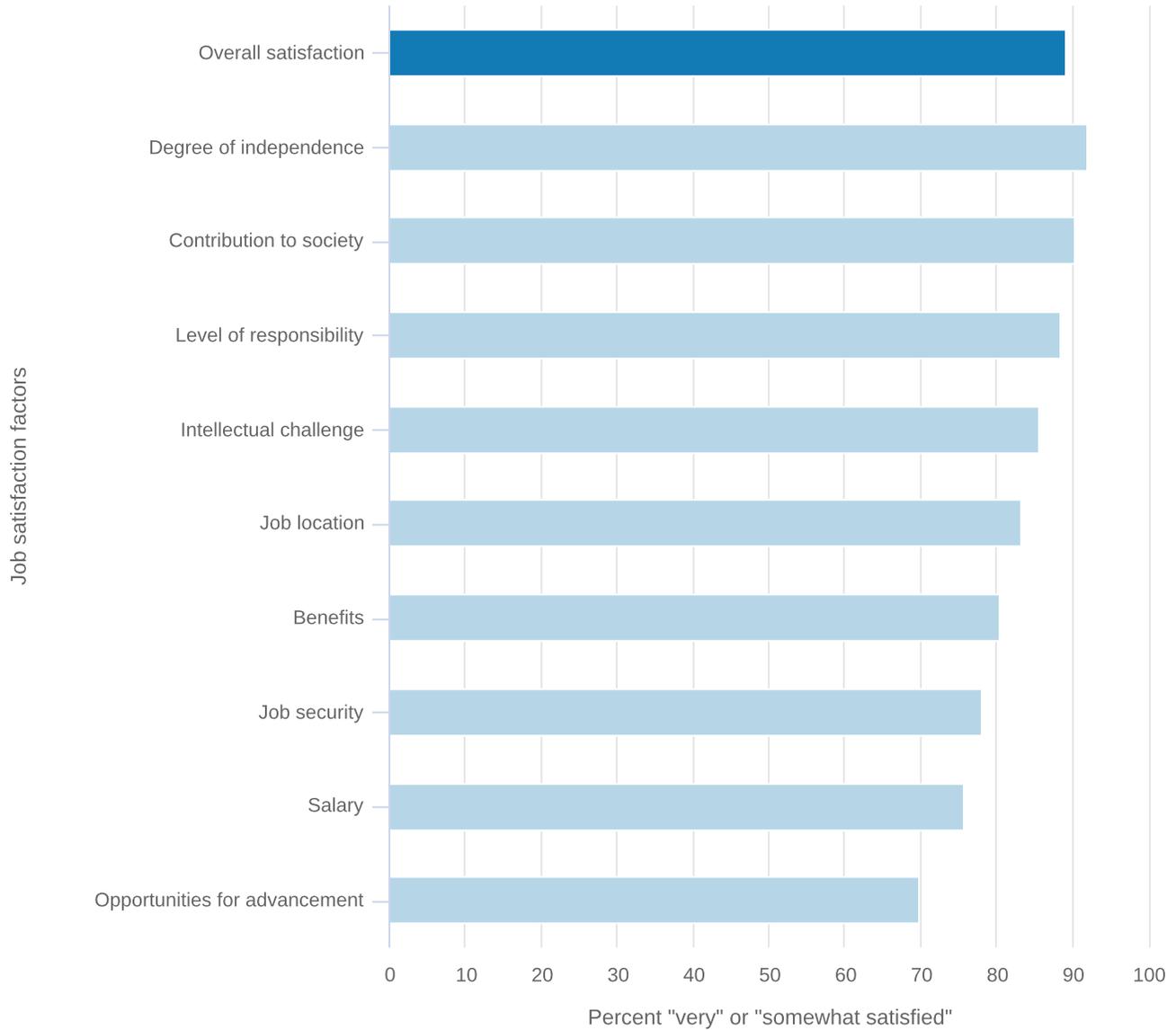
Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 6.

How satisfied are early career doctorate holders with their jobs?

FIGURE 22

Job satisfaction factors of employed early career doctorate holders in SBE fields: 2017



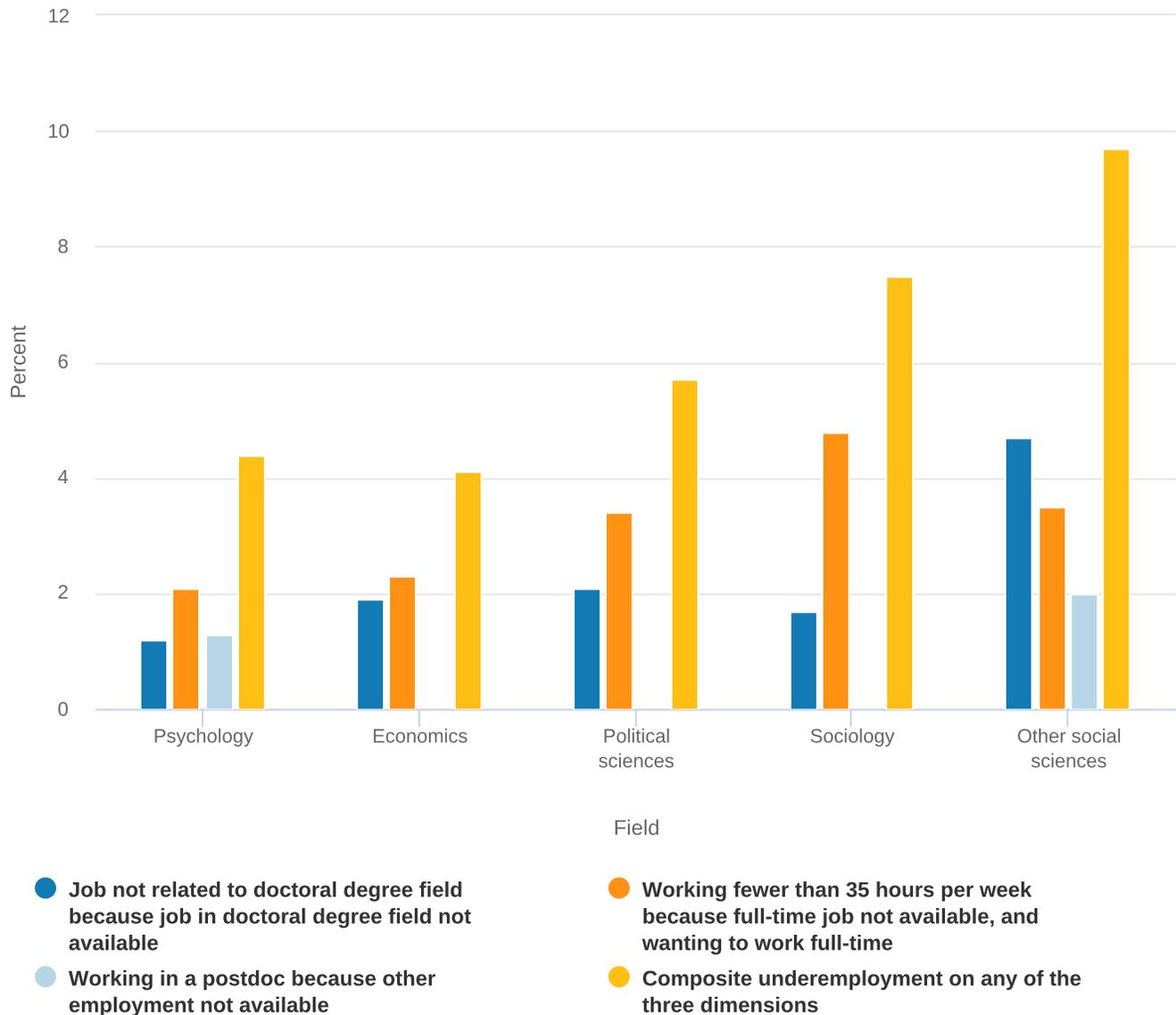
Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 8.

To what extent are SBE early career doctorate holders underemployed?

FIGURE 23

Underemployment of early career doctorate holders in SBE fields, by field: 2017



Note(s)

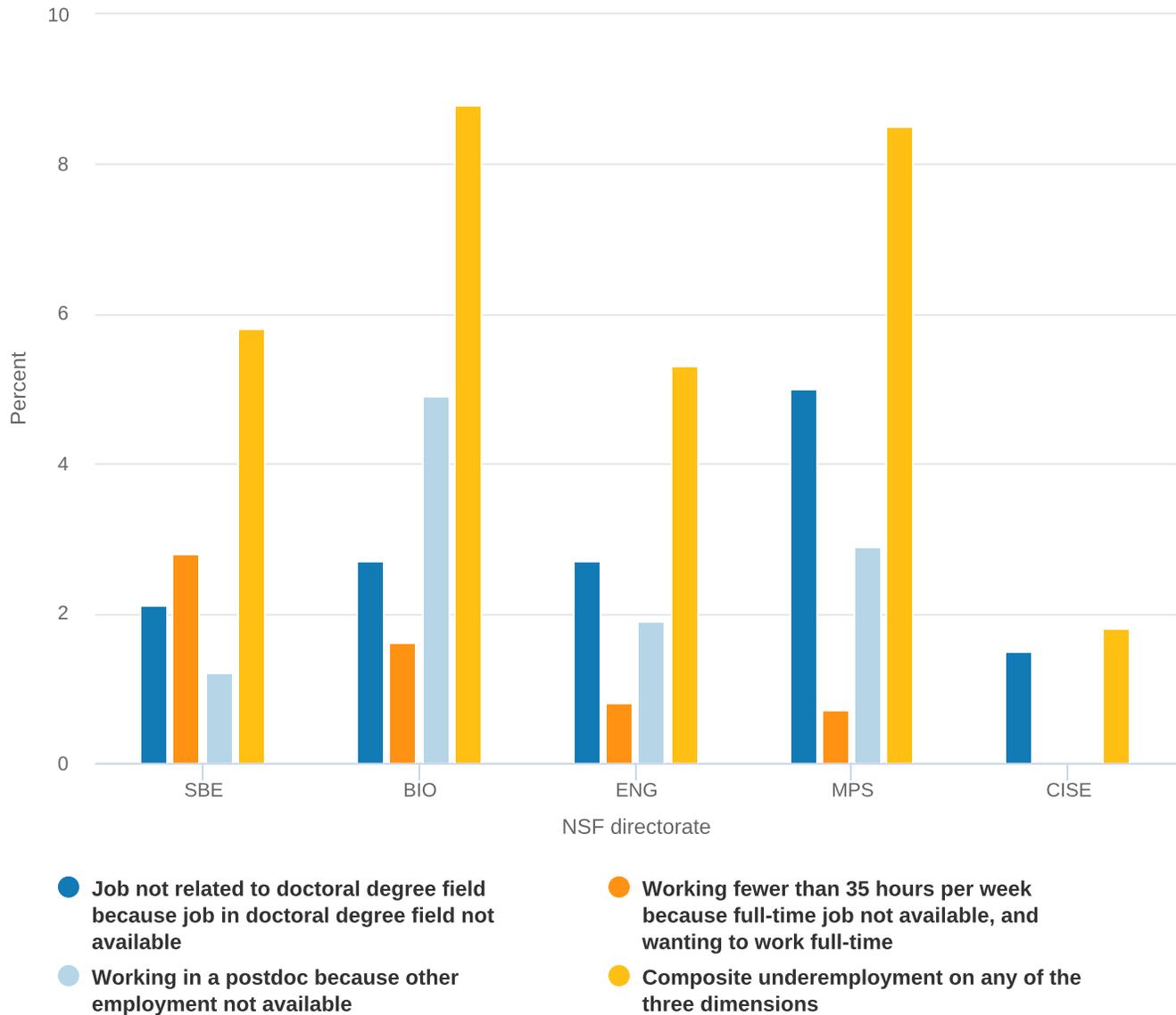
For the category working in a postdoc because other employment not available, data were suppressed to avoid disclosure of confidential information for political sciences and sociology and were suppressed for reliability (coefficient of variation exceeds publication standards) for economics. Composite underemployment indicates that the individual was underemployed with respect to one or more of the three dimensions: (1) job not related to doctoral degree field because job in doctoral field not available, (2) working fewer than 35 hours because full-time job not available, and wanting to work full-time, or (3) working in a postdoc because other employment not available.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017. Related detailed data in appendix table 7.

FIGURE 24

Underemployment of early career doctorate holders by NSF directorate: 2017



BIO = Directorate for Biological Sciences; CISE = Directorate for Computer and Information Science and Engineering; ENG = Directorate for Engineering; MPS = Directorate for Mathematical and Physical Sciences; NSF = National Science Foundation; SBE = Directorate for Social, Behavioral and Economic Sciences.

Note(s)

Data for the Directorate for Geosciences is not currently available. Data for two categories under CISE were suppressed to avoid disclosure of confidential information. Composite underemployment indicates that the individual was underemployed with respect to one or more of the three dimensions: (1) job not related to doctoral degree field because job in doctoral field not available, (2) working fewer than 35 hours because full-time job not available, and wanting to work full-time, or (3) working in a postdoc because other employment not available.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

Education Highlights

Each new cohort of doctorate recipients in SBE augments the supply of prospective social scientists. This section highlights education statistics from NCSES's SED to examine the major trends in doctoral education in SBE.

In all the SBE fields (psychology, economics, political sciences, sociology, and other social sciences), the number of doctorate recipients increased substantially between 1958 and the 1970s, more than tripling in most fields. Since then, growth in all SBE fields continued but in a slower fashion (**figure 1**).

In 2017, psychology was the largest SBE field, representing 43% of all 9,695 SBE doctorate recipients. Other large fields in SBE were economics and political sciences (15% and 12%, respectively) and sociology (7%). The group "other social sciences fields," which includes anthropology, geography, public policy, and linguistics, represented 23% of all SBE doctorate recipients in 2017.

Demographics: Sex, Citizenship Status, and Race and Ethnicity

In 2017, doctorate recipients in the SBE fields differed in their demographic characteristics. Psychology had the largest proportion of women doctorate recipients, followed by sociology and other social sciences. Economics had the lowest proportion of women, followed by political sciences (**figure 2**).

In economics, over half of all the doctorate recipients were temporary visa holders. In other fields, the proportion of temporary visa holders was much lower (20% or less) (**figure 3**).

In all the SBE fields, between 65% and 72% of doctorate recipients who were U.S. citizen and permanent residents were white. Asians made up the second-largest proportion of doctorate recipients in economics (15%). Hispanics were the second-largest proportion of doctorate recipients in sociology (12% of the field's population). Blacks or African Americans were the third-largest proportion of doctorate recipients in sociology and the second-largest proportion in political sciences (10% in each field) (see "Glossary" for more details on race and ethnicity) (**figure 4**).

Educational Background: Type of Institution of Baccalaureate Degree and Doctoral Degree, Source of Financial Support, and Levels of Debt

Doctoral institutions differ in terms of the students they attract and the mix of degree programs they offer. In 2017, about 80% of U.S. doctorate recipients in psychology and in sociology obtained their baccalaureate degree in the United States; in political sciences, the proportion was over two-thirds. In contrast, in economics, given its a large proportion of temporary visa holders, more than half had obtained their baccalaureate in a foreign country (**figure 5**).

Among SBE doctorate recipients who earned their baccalaureate degree from a U.S. institution, between 45% and 55% received their doctorate award from the highest research-intensive universities, according to Carnegie Classification (see "Glossary" for definition). In 2017, that proportion was highest in economics (55%) and lowest in psychology (45%) (**figure 6**).

Doctorate recipients in SBE differ in the type of doctoral institution they attended. The vast majority of doctorate recipients in economics (88%), sociology (90%), and political sciences (77%) earned their doctoral degree in the highest research-intensive institutions, compared to just over half in psychology (56%). Those in psychology were more likely than those in the other SBE fields to receive their doctoral award from less research-intensive institutions (**figure 7**).

Doctorate recipients' primary sources of financial support varied by field of study. Psychology doctorate recipients were more likely than those in other SBE fields to use their own funds, whereas those in economics were the least likely to do so, and in turn, they were more likely than those in other SBE fields to have teaching assistantships and research assistantships (**figure 8**).

In terms of debt related to graduate education, doctorate recipients in economics were the most likely to report no debt (74%). Those in psychology were the most likely to report graduate debt of at least \$30,001 (39%) (**figure 9**).

In 2017, doctorate recipients in economics and in psychology had a shorter time to degree (see “Glossary”) than did those in political sciences, sociology, or other social sciences (**figure 10**).

Postgraduation Plans

In 2017, at graduation, doctorate recipients in psychology were less likely to report a definite commitment for an employed position in the United States (42%) than were those in economics (61%), sociology (67%), political sciences (64%), and other social sciences (63%). In turn, doctorate recipients in psychology were more likely to report a definite commitment for a U.S. postdoc position (55%) than were those in other SBE fields (between 12% and 22%). Doctorate recipients in economics, a field where more than half are temporary visa holders, were more likely to report definite commitments for an employed position abroad (24%) than were those in other SBE fields (political sciences, 9%; sociology, 8%; and psychology, 2%) (**figure 11**). (See “Glossary” for definitions of definite commitment and definite employment commitment.)

Among doctorate recipients with definite commitments for employment in the United States, 77% of those in sociology and 65% of those in political sciences were going into academia. In economics and psychology, lower proportions had committed to academia (about 50% in each). However, graduates in economics and psychology were more likely than those with doctorates in other SBE fields to have a definite commitment in business or industry (32% in economics and 23% in psychology) (**figure 12**).

Doctorate recipients in economics reported the highest expected median salaries of all SBE fields, regardless of whether the job they had committed to was in academia, business or industry, government, or another sector. Expected median salaries in academia were the lowest of all sectors regardless of the SBE field, and expected median salaries in business were higher than those in government across all fields (**figure 13**).

Workforce Highlights

The SDR provides demographic, education, and career history information from individuals who received their doctoral degree in a science, engineering, or health field from a U.S. institution. The following sections use that data to provide a picture of the employment landscape of doctorate holders who had earned their doctorate in an SBE field in the previous 10 years.

In 2017, the vast majority of early career doctorate holders in each of the SBE fields were employed full time (between 81% and 89%) or part time (between 9% and 14%). The proportion of early career doctorate holders unemployed or “not in labor force” (i.e., those who were not seeking work) combined was lower than 7% in every SBE field. The proportion of early career doctorate holders in economics working full time was somewhat larger than in other SBE fields (89% in economics versus other SBE fields where the proportion ranged between 81% and 86%). Economics also had the lowest proportion not in the labor force compared with the other SBE fields (**figure 14**).

In 2017, large proportions of early career doctorate holders trained in economics, sociology, political sciences, and psychology reported that their occupation was in an S&E field (83%, 78%, 76%, and 75%, respectively). However, more than one-third of those in other social sciences were employed in non-S&E fields (see “Glossary”) (**figure 15**).

Employment Characteristics of Early Career Doctorate Holders

Early career doctorate holders trained in economics were more likely to report primary work activities in research and development (R&D; see “Glossary”) than were those in other SBE fields (53% compared to between 26% and 36% among those in other SBE fields). Those in political sciences, sociology, and other social sciences were more likely to report teaching as their primary work activity (45%, 47%, and 46%, respectively) than were those in psychology or economics (over 20% for each) (**figure 16**).

Consistent with the employment sector reported by doctorate recipients with definite work commitments at graduation, early career doctorate holders in sociology, political sciences, and other social sciences were more likely to be employed in educational institutions than were those with degrees in psychology and economics (about 75% versus around 47% for psychology and economics). In contrast, early career doctorate holders with degrees in psychology and economics were more likely to be working in business or industry or in government than were early career doctorate holders in the other SBE fields (**figure 17**).

In addition, consistent with the median salaries reported by doctorate recipients at graduation, early career doctorate holders in economics reported the highest median salary^[1] (\$120,000), followed by those in psychology (\$81,000) and in political sciences (\$75,000). Median salaries of early career doctorate holders in sociology and other social sciences were both about \$69,000 (**figure 18**).

Academic Employment of Early Career Doctorate Holders

More than three-quarters of early career doctorate holders trained in economics, political sciences, sociology, and other social sciences and employed in academia worked in four-year colleges or universities other than a medical school. This proportion was lower among their counterparts trained in psychology (71%), who were more likely to work in medical schools than those trained in other SBE fields (**figure 19**).

More than three-quarters of early career doctorate holders trained in political sciences and working in academia indicated they were teaching faculty—a considerably higher proportion than those trained in SBE fields other than sociology.^[2] Doctorate holders trained in economics and working in academia were more likely than those trained in other SBE fields to report positions as research faculty, scientists, associates, or fellows (66% compared to proportions under 47% in other SBE fields) (**figure 20**).

Between 16% and 24% of early career doctorate holders trained in SBE and working in academia were tenured, with those trained in sociology more likely to be tenured than those in psychology. The proportion on tenure track but not tenured was higher in economics (58%) than in other SBE fields. About one-third of early doctorate recipients trained in psychology and employed in academia indicated that tenure was not applicable in their institution or position, higher than in any other SBE field (**figure 21**).

Job Satisfaction of Early Career Doctorate Holders

NCSES's SDR includes a set of questions about job satisfaction on nine factors: salary, benefits, job security, job location, opportunities for advancement, intellectual challenge, level of responsibility, degree of independence, and contribution to society. In 2017, the proportion of early career doctorate holders in SBE who indicated they were satisfied overall (very satisfied and somewhat satisfied^[3]) with their principal job was high in all broad SBE fields, that is, between 86% and 90% of them had overall satisfaction (**appendix table 8**).

In 2017, the top-three job characteristics that early career doctorate holders trained in SBE were most satisfied with were their degree of independence (92%), their contribution to society (90%), and their level of responsibility (88%). They were least satisfied with their opportunities for advancement (70%) (**figure 22**).

Underemployment

The SDR includes three questions pertaining to part-time work, out-of-field work, and postdoc employment that aim at determining the level of underemployment (see "Glossary") of doctorate holders. The responses to these questions are combined to obtain a composite index of underemployment.

In 2017, based on this composite index, early career doctorate holders who had earned degrees in other social sciences had a higher level of underemployment than those in political sciences, economics, and psychology (**figure 23**).

When comparing the composite index of underemployment across the field groups of the other directorates at NSF, early career doctorate holders in fields for Computer and Information Science and Engineering (CISE) had the lowest level of underemployment, followed by those in Engineering (ENG) and those in SBE (**figure 24**).

Notes

[1] This amount does not include bonuses, overtime, or additional compensation for summertime teaching or research.

[2] Respondents could report holding more than one type of academic position.

[3] The response categories for this question were: satisfied, somewhat satisfied, somewhat dissatisfied, and dissatisfied.

Appendix: Data Tables

The appendix tables in this section present detailed data from NCSES's Survey of Earned Doctorates (SED) and Survey of Doctorate Recipients (SDR) on the demographic characteristics, educational history, sources of financial support, postgraduation plan, and employment characteristic of doctorate recipients in the social, behavioral, and economic sciences (SBE). The information in these tables provides further detail related to the statistics highlighted in the previous sections of this report. Summary information for the data tables included in this section is provided below.

Table Title

1	Demographic characteristics of doctorate recipients in SBE fields: 2017
2	Educational pathways and outcomes of doctorate recipients in SBE fields: 2017
3	Employment sector distribution and median annual salary by employment sector of doctorate recipients in SBE fields who had definite commitment for U.S. employment at graduation: 2017
4	Demographic characteristics of early career doctorate holders trained in SBE fields: 2017
5	Employment characteristics of early career doctorate holders trained in SBE fields: 2017
6	Academic employment characteristics of early career doctorate holders trained in SBE fields: 2017
7	Underemployment of early career doctorate holders trained in SBE fields: 2017
8	Job satisfaction of early career doctorate holders trained in SBE fields: 2017
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APPENDIX TABLE 1

Demographic characteristics of doctorate recipients in SBE fields: 2017

(Percent)

Demographic characteristic	Psychology	Economics	Political sciences	Sociology	Other social sciences
All doctorate recipients (number)	4,189	1,407	1,141	689	2,269
Sex					
Male	28.8	64.6	57.1	38.8	41.1
Female	71.1	35.2	42.8	61.1	58.9
Unknown	*	0.2	0.1	0.1	0.0
Citizenship					
U.S. citizen or permanent resident	85.8	42.9	76.5	82.3	73.1
Temporary visa holder	7.9	53.1	18.6	13.6	20.1
Unknown	6.3	4.1	4.9	4.1	6.8
U.S. citizens and permanent residents (number)	3,595	603	873	567	1,659
Ethnicity and race					
Hispanic or Latino ^a	8.5	5.6	4.6	11.6	9.4
Not Hispanic or Latino					
American Indian or Alaska Native	0.3	0.2	0.1	0.2	0.9
Asian	6.6	15.3	7.9	6.2	7.4
Black or African American	6.8	3.5	10.0	10.4	8.3
White	72.0	65.0	71.2	65.1	67.8
Other race or race not reported ^b	3.6	4.3	4.4	4.6	4.0
Ethnicity not reported ^c	2.2	6.1	1.8	1.9	2.3

* = value between 0.00% and 0.05%.

^a Includes doctorate recipients who reported Hispanic ethnicity, whether singly or in combination with more than one race.^b Includes Native Hawaiians and Other Pacific Islanders, non-Hispanic doctorate recipients who reported more than one race, and non-Hispanic doctorate recipients who did not indicate their race.^c Includes doctorate recipients who did not report their ethnicity regardless of whether they reported their race.**Source(s)**

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017.

APPENDIX TABLE 2

Educational pathways and outcomes of doctorate recipients in SBE fields: 2017

(Percent)

Characteristics of educational pathways and outcomes	Psychology	Economics	Political sciences	Sociology	Other social sciences
All doctorate recipients (number)	4,189	1,407	1,141	689	2,269
Location of baccalaureate-origin institution					
United States	82.6	40.2	71.0	79.1	67.7
Foreign country	9.1	53.7	23.0	15.5	24.3
Other or unknown ^a	8.2	6.0	6.0	5.4	8.0
Doctorate recipients from U.S. baccalaureate-origin institutions (number)	3,464	566	810	546	1,536
Doctorate recipients by Carnegie Classification category of their baccalaureate-origin institution					
Highest research universities	44.8	54.6	46.0	46.5	50.8
Higher research universities	14.5	11.3	13.7	11.2	12.0
Moderate research universities	5.3	1.9	3.7	3.8	4.4
Master's-granting colleges and universities	18.9	12.2	14.3	19.4	16.9
Baccalaureate-granting colleges and universities	15.2	19.8	21.6	18.7	14.7
Other U.S. colleges and universities ^b	1.3	0.2	0.6	0.4	1.2
Minority doctorate recipients by minority-serving institution category of their baccalaureate-origin institution					
Black or African American doctorate recipients with bachelor's degree from historically black college or university (HBCU)	16.7	D	17.2	18.6	12.3
Hispanic or Latino doctorate recipients with bachelor's degree from high-Hispanic-enrollment institution (HHE)	29.8	D	25.0	19.7	26.3
Minority doctorate recipients with bachelor's degree from minority-serving institution (MSI)	24.5	11.5	24.0	23.6	21.5
Carnegie Classification category of doctoral institution ^c					
Highest research universities	56.2	87.6	76.9	89.8	79.8
Higher research universities	24.3	11.4	14.4	7.7	14.8
Moderate research universities	12.2	0.8	6.6	1.0	4.6
Other U.S. doctoral-granting institutions ^d	7.4	0.3	2.2	1.5	0.9
Doctorate recipients reporting financial support (number)	3,481	1,237	1,011	610	1,959
Primary source of financial support					
Teaching assistantship	21.7	39.4	25.3	32.3	31.4
Research assistantship	17.5	21.2	8.6	13.9	12.1
Fellowship or grant	19.5	27.4	33.4	27.9	30.5
Own resources	33.5	7.3	25.3	22.3	20.3
Other resources	7.7	4.8	7.3	3.6	5.7
Doctorate recipients reporting graduate debt (number)	3,611	1,258	1,035	627	2,003
Graduate debt level					
No debt	42.9	74.4	53.0	47.2	52.5
\$10,000 or less	7.2	6.5	10.5	8.6	9.6
\$10,001 to \$30,000	11.0	8.8	9.7	12.8	10.5
\$30,001 or greater	39.0	10.3	26.8	31.4	27.3
Time to doctorate (median years)					
From bachelor's degree to doctorate award	8.6	8.5	10.4	11.0	11.3
From graduate school start to doctorate award	7.0	7.5	8.8	9.0	9.3
From doctoral program start to doctorate award ^e	5.9	5.8	6.3	7.0	6.8

D = suppressed to avoid disclosure of confidential information.

^a Includes doctorate recipients who did not report their baccalaureate institution and doctorate recipients who did not earn a bachelor's degree.^b Includes doctorate recipients with bachelor's degrees from institutions not classified under the 2015 Carnegie Classification system.^c Percentages based on all doctorate recipients.^d Includes doctorate recipients with doctoral degrees from institutions not classified under the 2015 Carnegie Classification system.

^e Time to doctorate from doctoral program start is based on master's degree entry if the master's degree was at the doctoral institution in the same fine field of study or was a prerequisite to the doctorate; otherwise, it is based on doctoral program entry.

Note(s)

High-Hispanic-enrollment institutions are those in which Hispanic or Latino students constitute at least 25% of total full-time undergraduate enrollment. Minority-serving institutions are those in which minority students (Hispanic or Latino, American Indian or Alaska Native, Asian or Other Pacific Islander, and black or African American students) constitute at least 50% of total full-time undergraduate enrollment.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017. Determination of high Hispanic institution status based on data from Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2016 Fall Enrollment Survey. Determination of minority-serving institution status based on data from Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) 2014 Fall Enrollment Survey.

APPENDIX TABLE 3

Employment sector distribution and median annual salary by employment sector of doctorate recipients in SBE fields who had definite commitment for U.S. employment at graduation: 2017

(Number, percent, and dollars)

Employment sector and salary	Psychology	Economics	Political sciences	Sociology	Other social sciences
Doctorate recipients (number)	4,189	1,407	1,141	689	2,269
Definite commitments for U.S. employment (number) ^a	1,127	621	439	279	734
Employment sector (%)					
Academia	49.3	49.1	64.5	77.1	64.9
Business or industry ^b	23.2	32.0	9.8	7.2	11.9
Government	10.9	9.0	14.4	7.9	11.0
Other ^c	16.6	9.8	11.4	7.9	12.3
Median annual salary (dollars)	65,000	102,000	67,000	65,000	60,000
Academia	61,000	88,000	63,250	63,000	58,000
Business or industry ^b	80,000	122,000	90,000	90,000	85,000
Government	68,000	100,736	87,040	71,500	76,500
Other ^c	65,000	110,000	78,000	80,000	62,500

^a Numbers and percentages are based on the doctorate recipients reporting definite commitments for (non-postdoc) employment in the United States, with response to the employment sector item.

^b Includes doctorate recipients who indicated self-employment.

^c "Other" is mainly composed of not-for-profit organizations and K-12 schools or school systems.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017.

APPENDIX TABLE 4

Demographic characteristics of early career doctorate holders trained in SBE fields: 2017

(Percent)

Demographic characteristic	All early career	Psychology	Economics	Political sciences	Sociology	Other social sciences
All doctorate recipients (number)	65,300	31,550	8,100	7,600	5,250	12,750
Sex						
Male	39.9	29.3	61.8	58.4	40.0	41.2
Female	60.1	70.7	38.2	41.6	60.0	58.8
Citizenship						
U.S. citizen	86.7	94.4	58.8	84.2	90.8	84.9
Permanent resident	8.4	4.0	20.7	11.5	6.9	10.4
Temporary visa holder	4.9	1.5	20.6	4.3	D	4.8
U.S. citizens and permanent residents (number)	62,050	31,100	6,450	7,250	5,150	12,150
Ethnicity and race						
Hispanic or Latino ^a	7.7	8.1	6.0	5.3	8.5	9.0
Not Hispanic or Latino						
Asian or Other Pacific Islander	10.3	8.2	22.9	10.1	9.7	9.3
Black or African American	6.3	6.1	3.5	7.6	9.7	6.0
White	72.2	74.0	66.0	73.0	68.2	72.2
Other race or race not reported ^b	3.4	3.6	1.7	3.9	3.9	3.5

D = suppressed to avoid disclosure of confidential information.

^a Includes doctorate recipients who reported Hispanic ethnicity, whether singly or in combination with more than one race.^b Includes non-Hispanic doctorate recipients who reported more than one race, non-Hispanic doctorate recipients who did not indicate their race and American Indians or Alaska Natives.**Source(s)**

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

APPENDIX TABLE 5

Employment characteristics of early career doctorate holders trained in SBE fields: 2017

(Percent)

Employment characteristic	All early career	Psychology	Economics	Political sciences	Sociology	Other social sciences
All doctorate recipients (number)	65,300	31,550	8,100	7,600	5,250	12,750
Employment status						
Full time	83.1	80.8	89.4	83.1	80.9	85.8
Part time	11.8	13.7	8.5	10.5	13.2	9.3
Unemployed ^a	1.6	1.3	S	2.8	D	2.4
Not in labor force	3.5	4.2	1.1	3.7	4.8	2.5
All active doctorate labor force (number)	63,000	30,250	8,000	7,300	5,000	12,450
Unemployed but looking for work	1.4	1.1	*	2.9	D	2.4
All employed doctorate recipients (number)	61,950	29,850	7,950	7,100	4,950	12,150
Occupation type						
S&E	73.3	75.1	82.9	76.4	78.1	58.9
S&E-related	4.3	4.8	1.0	5.6	2.5	4.9
Non-S&E	22.4	20.1	16.1	18.0	19.4	36.1
Primary work activity						
Research & development	30.9	25.5	52.5	31.5	36.1	27.8
Teaching	30.8	20.9	22.2	44.8	47.0	45.8
Professional services	16.3	15.8	18.2	15.8	13.4	17.7
Other	22.0	37.9	7.2	7.8	3.5	8.7
Employment sector						
Educational institution	57.7	47.2	47.9	73.4	74.7	73.6
Government	9.9	11.1	11.9	6.5	6.0	9.2
Business or industry	32.5	41.7	40.2	20.2	19.3	17.2
Median salary (\$, full-time employed only)	80,000	81,000	120,000	75,000	69,000	69,000

* = value < 25. D = suppressed to avoid disclosure of confidential information. S = suppressed for reliability; coefficient of variation exceeds publication standards.

S&E = science and engineering.

^a Includes doctorate recipients who reported not working but looking for work as well as those who reported being laid off and not looking for work.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

APPENDIX TABLE 6

Academic employment characteristics of early career doctorate holders trained in SBE fields: 2017

(Percent)

Employment characteristic	All early career	Psychology	Economics	Political sciences	Sociology	Other social sciences
All doctorate recipients employed in academia (number)	34,150	13,000	3,800	5,050	3,600	8,650
Type of employing higher education institution						
Two-year, community college, or technical institute	4.8	4.8	D	4.1	9.6	5.1
Four-year college or university, other than a medical school	78.6	70.9	88.7	84.2	77.5	82.9
Medical school (including university-affiliated hospital or medical center)	7.8	17.0	S	S	D	3.2
University-affiliated research institute	8.8	7.3	9.5	9.5	12.2	8.8
Type of academic position(s) held at this institution ^a						
Academic administrator ^b	5.6	5.4	3.4	5.0	4.9	7.6
Research faculty, scientist, associate, or fellow	44.6	46.5	66.3	42.5	39.9	35.4
Teaching faculty	66.1	61.2	68.5	77.2	69.4	64.7
Adjunct faculty	10.2	10.3	2.2	12.4	13.1	11.0
Postdoc (e.g., postdoctoral fellow or associate)	3.8	5.4	1.3	D	D	4.8
Other academic positions ^c	10.3	15.1	S	8.5	6.8	9.2
Tenure status						
Tenured	19.2	16.3	20.4	21.3	24.2	19.8
On tenure track but not tenured	39.2	32.9	57.7	47.0	40.8	35.4
Not on tenure track	18.2	18.3	12.7	18.9	16.2	20.8
Tenure not applicable ^d	23.4	32.5	9.2	12.8	18.8	24.0

D = suppressed to avoid disclosure of confidential information. S = suppressed for reliability; coefficient of variation exceeds publication standards.

^a Respondents could report holding more than one type of academic position. Percentages do not sum to 100.

^b Includes doctorate recipients who reported president, provost, chancellor (any level), dean (any level), department head, or department chair.

^c Includes doctorate recipients who reported research assistant, teaching assistant, or other academic position.

^d Includes doctorate recipients who reported no tenure system at their institution or no tenure system for their position.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

APPENDIX TABLE 7

Underemployment of early career doctorate holders trained in SBE fields: 2017

(Percent)

Employment characteristic	All early career	Psychology	Economics	Political sciences	Sociology	Other social sciences
All employed doctorate recipients (number)	61,950	29,850	7,950	7,100	4,950	12,150
Job not related to doctoral degree field, job in doctoral degree field not available	2.1	1.2	1.9	2.1	1.7	4.7
Working fewer than 35 hours per week because full-time job not available, and wanting to work full-time	2.8	2.1	2.3	3.4	4.8	3.5
Working in a postdoc because other employment not available	1.2	1.3	S	D	D	2.0
Composite underemployment on any of the three dimensions ^a	5.8	4.4	4.1	5.7	7.5	9.7

D = suppressed to avoid disclosure of confidential information. S = suppressed for reliability; coefficient of variation exceeds publication standards.

^a Composite underemployment indicates that the individual was underemployed with respect to one or more of the three dimensions: (1) job not related to doctoral degree field because job in doctoral field not available, (2) working fewer than 35 hours because full-time job not available, and wanting to work full-time, or (3) working in a postdoc because other employment not available.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

APPENDIX TABLE 8

Job satisfaction of early career doctorate holders trained in SBE fields: 2017

(Percent)

Employment characteristic	All early career	Psychology	Economics	Political sciences	Sociology	Other social sciences
All employed doctorate recipients (number)	61,950	29,850	7,950	7,100	4,950	12,150
Overall satisfaction with principal job						
"Very satisfied" or "Somewhat satisfied"	89.1	90.1	90.3	87.3	85.8	88.4
"Very" or "somewhat satisfied" with job's . . .						
Salary	75.8	76.2	86.4	73.5	70.2	71.4
Benefits	80.5	77.4	91.1	83.8	77.2	80.9
Job security	78.0	81.0	82.2	77.8	70.7	71.2
Job location	83.2	83.9	86.0	84.1	80.8	80.3
Opportunities for advancement	69.9	69.7	78.2	73.4	67.3	63.8
Intellectual challenge	85.7	88.4	86.8	87.3	78.3	80.6
Level of responsibility	88.4	89.4	91.3	86.1	83.2	87.3
Degree of independence	92.0	92.6	91.9	90.0	90.4	92.2
Contribution to society	90.3	92.0	87.3	89.2	87.0	90.0

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2017.

APPENDIX TABLE 9

SED detailed fields of doctoral study in the SBE fields, with codes, labels, and start and end year

(Crosswalk)

SBE field	SED detailed field of study information				
	Code	Label	Start year	End year	
Psychology	600	Clinical psychology	1958	Present	
	609	Counseling	1958	Present	
	610	Marriage and family therapy/ counseling	2016	Present	
	822	Educational psychology (education)	1958	Present	
	618	Educational psychology (psychology)	1958	Present	
	615	Experimental psychology	1958	Present	
	648	Psychology, general	1958	Present	
	621	Industrial and organizational psychology	1958	Present	
	639	Social psychology	1958	Present	
	602	Behavioral analysis	2012	Present	
	626	Cognitive neuroscience	2014	Present	
	603	Cognitive psychology and psycholinguistics	1983	Present	
	642	Community psychology	2016	Present	
	606	Comparative psychology	1962	2009	
	612	Developmental and child psychology	1958	Present	
	616	Experimental, comparative and physiological psychology	1958	1961	
	620	Family psychology	1995	Present	
	614	Health and medical psychology	2012	Present	
	613	Human development and family studies	1994	Present	
	619	Human engineering	1958	1962	
	624	Personality psychology	1958	Present	
	627	Neuropsychology, physiological psychology	1961	Present	
	649	Psychology, other	1958	Present	
	630	Psychometrics	1958	2003	
	633	Psychometrics and quantitative psychology	1983	Present	
	636	School psychology	1960	Present	
	Economics	002	Agricultural business and management	1989	2003
		000	Agricultural economics	1969	Present
667		Economics	1958	Present	
668		Econometrics	1958	Present	
003		Natural resource/ environmental economics	2012	Present	
665		Natural resource/ environmental economics (social sciences)	2012	Present	
Political sciences	674	International relations/ affairs	1958	Present	
	678	Political science and government	1976	Present	
	679	Political science/ public administration	1958	1976	
	682	Public policy analysis	1983	Present	
Sociology	686	Sociology	1958	Present	
Other social sciences	655	Anthropology, cultural	2014	Present	
	650	Anthropology, general	1958	Present	
	656	Anthropology, physical and biological	2014	Present	
	773	Archaeology	1958	Present	
	770	American/ U.S. studies	1975	Present	
	652	Area/ ethnic/ cultural studies	1958	Present	
	651	Gender and women's studies	2014	Present	
	658	Criminology	1980	Present	
	670	Geography	1958	Present	
	710	History, science and technology and society	1971	Present	
	675	Applied linguistics	2016	Present	
	676	Linguistics	1958	Present	
	662	Demography/ population studies	1983	Present	

APPENDIX TABLE 9

SED detailed fields of doctoral study in the SBE fields, with codes, labels, and start and end year

(Crosswalk)

SBE field	SED detailed field of study information			
	Code	Label	Start year	End year
	684	Gerontology	2010	Present
	698	Social sciences, general	1958	Present
	699	Social sciences, other	1958	Present
	694	Urban affairs/ studies	1959	Present
	695	Urban /city, community, and regional planning	2007	Present

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Earned Doctorates, 2017 and Survey of Doctorate Recipients, 2017.

Glossary

Basic annual salary. Annual salary to be earned from the doctorate recipient's principal job in the next year, not including bonuses or additional compensation for summertime teaching or research.

Carnegie Classification. The Carnegie Classification of academic institutions is a commonly used classification of postsecondary institutions based on highest level of degree awarded, fields in which degrees are conferred, and, in some cases, enrollment, federal research support, and selectivity of admissions criteria. The categories used here are from the 2015 version of the classification and include highest research universities, higher research universities, moderate research universities, and other universities.

Definite commitment. A commitment, through a contract or other method, by doctorate recipients to accept employment, including a postdoc study, in the coming year or to return to pre-doctoral employment.

Definite employment commitment. A definite commitment by doctorate recipients for employment in a non-postdoc position in the coming year.

Early career doctorate holders. Individuals who earned their doctorate from 1 July 2006 through 30 June 2015.

Field of study. The Survey of Earned Doctorates (SED) collects data on 331 fields of doctoral study. For reporting purposes, these fields are grouped into 35 major fields and are further aggregated into eight broad fields: life sciences, physical sciences and earth sciences, mathematics and computer sciences, psychology and social sciences, engineering, education, humanities and arts, and other non-science and engineering fields. **Appendix table 9** identifies the SED detailed fields of doctoral study that define the SBE fields of psychology, economics, political sciences, sociology, and other social sciences.

Graduate education-related debt. The amount of debt owed by a doctorate recipient at the time the doctorate is awarded that is directly related to graduate education.

Non-S&E. Non-science and engineering: A grouping of broad fields of study that includes education, humanities and arts, and other non-S&E fields, such as business.

Postdoc position. As defined on the questionnaire form, a temporary position primarily for gaining additional education and training in research, usually awarded in academe, industry, government, or a nonprofit organization.

Postdoc rate. The proportion of doctorate recipients who have definite commitments for a postdoc position among all doctorate recipients with definite commitments in the coming year, who reported whether their commitment was for postdoc study or other employment, and who plan to live in the United States.

Race and ethnicity. Doctorate recipients who report Hispanic or Latino heritage, regardless of racial designation, are counted as Hispanic or Latino, and as of 2013, those who do not answer the Hispanic or Latino ethnicity 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 2001, respondents who are not Hispanic or Latino and who indicate more than one race are reported in the category "more than one race." Data for this category were not collected before 2001. Before 2001, respondents who are not Hispanic or Latino and who indicate more than one race were categorized as "other or unknown." For 2001 and later data, the "other or unknown" category includes doctorate recipients who indicated that they were not Hispanic or Latino and either did not respond to the race item or reported their race as Native Hawaiian and Other Pacific Islander. For 2000 and earlier data, Native Hawaiians and Other Pacific Islanders are counted in the Asian group.

R&D. Research and development: This aggregated primary work activity includes applied research, basic research, design, and development. Applied research is study directed toward gaining scientific knowledge to meet a recognized need. Basic research is study directed toward gaining scientific knowledge primarily for its own sake. Development is defined as using knowledge gained from research for the production of materials and devices. Design refers to the design of equipment, processes, structures, or models. This typology used in the SDR differs from the one adopted by the Organisation of Economic Co-operation and Development (OECD) Frascati Manual 2015 that only identifies three types of R&D activities: basic research, applied research, and experimental development.

Research doctorate. A doctoral degree that is oriented toward preparing students to make original intellectual contributions in a field of study and that is not primarily intended for the practice of a profession. Research doctorates require the completion of a dissertation or equivalent project. In this report, the terms “doctorate” and “doctoral degree” are used to represent any of the research doctoral degrees covered by the survey. Professional doctorates, such as the MD, DDS, JD, and PsyD, are not covered by the Survey of Earned Doctorates.

S&E. Science and engineering: A grouping of broad fields of study that includes science (life sciences, physical sciences and earth sciences, mathematics and computer sciences, psychology and social sciences) and engineering fields.

Sources of financial support. Sources of financial support are grouped into the following five categories: fellowships (includes scholarships and grants), teaching assistantships, research assistantships (includes traineeships, internships, clinical residencies, and other assistantships), own resources (includes loans, personal savings, personal earnings, and earnings or savings of spouse, partner, or family), and other (includes employer reimbursements and support from non-U.S. sources).

Time to degree. The median time elapsed from the start of any graduate school program to completion of the doctoral degree. In addition to this measure, two other measures of time to degree are also reported in the data tables: median time elapsed from completion of the bachelor’s degree to completion of the doctorate, and median time elapsed from the start of the doctoral program.

Underemployment. A composite index that indicates the individual was underemployed with respect to one or more of the three dimensions: (1) job not related to doctoral degree field because job in doctoral field not available, (2) working fewer than 35 hours because full-time job not available, and wanting to work full-time, or (3) working in a postdoc because other employment not available.

Underrepresented minority. The following groups are underrepresented in science and engineering, relative to their numbers in the U.S. population: American Indian or Alaska Native, black or African American, and Hispanic or Latino.

Data Sources

Survey of Earned Doctorates

The Survey of Earned Doctorates (SED) is an annual census conducted since 1957 of all individuals receiving a research doctorate from an accredited U.S. institution in a given academic year. The principal elements of the SED are described in the sections that follow. More detailed information is available at <https://www.nsf.gov/statistics/sed/>.

Survey eligibility. The SED collects information on research doctorate recipients only. Research doctorates require the completion of a dissertation or equivalent project, are oriented toward preparing students to make original intellectual contributions in a field of study and are not primarily intended for the practice of a profession. The 2017 SED recognized 18 distinct types of research doctorates. In 2017, 98% of research doctorate recipients earned the PhD.

Survey universe. The population eligible for the survey consisted of all individuals who received a research doctorate from an accredited U.S. academic institution in the 12-month academic period from 1 July 2016 to 30 June 2017. The total universe in the 2017 SED consisted of 54,664 persons in 428 institutions that conferred research doctorates in academic year 2017.

Data collection. Institutional coordinators at each doctorate awarding institution distributed the SED Web survey link (or paper survey form) to individuals receiving a research doctorate. Nonresponding graduates were contacted by e-mail, mail, or phone to request response to the questionnaire.

Survey questionnaire. The SED questionnaire is available at <https://www.nsf.gov/statistics/srvydoctorates/#qs>.

Survey response rates. In the 2017 SED, 91.4% of research doctorate recipients completed the survey.

Survey of Doctorate Recipients

The Survey of Doctorate Recipients (SDR) is a biennial survey of individuals with a U.S. research doctoral degree in a science, engineering, or health (SEH) field. The principal elements of the SDR are described in the sections that follow. More detailed information is available at <https://www.nsf.gov/statistics/srvydoctoratework/>.

Survey eligibility. The SDR samples individuals who have earned an SEH research doctoral degree from a U.S. academic institution, are less than 76 years of age, and are not institutionalized or terminally ill.

Survey universe and sample. The SDR used the Doctorates Records File, constructed from the annual SED, as its sampling frame. In the 2017 SDR, 124,580 cases were selected for sample to represent the 1,103,200 U.S.-trained SEH doctorate recipients less than 76 years of age.

Data collection. The SDR uses a trimodal data collection approach: self-administered questionnaire (via mail), self-administered online survey, and computer-assisted telephone interview (CATI). Individuals in the sample were started in one mode depending on their past preference and their available contact information. After an initial survey invitation, the data collection protocol included sequential contacts by postal mail, telephone, and e-mail that ran throughout the data collection period. At any time during data collection, sample members could choose to complete the survey using any of the three modes. Nonrespondents to the initial survey invitation received follow-up with alternate survey modes.

Survey questionnaire. The 2017 SDR questionnaire is available at <https://www.nsf.gov/statistics/srvydoctoratework/#qs>.

Survey response rates. In the 2017 SDR, the weighted response rate was 69%.

Statistical significance. When this report mentions statements about differences in the SDR data, the differences are statistically significant at least at the 10% level. This means that, if there were not true difference in the population, the chance of drawing a sample with the observed or greater difference would be no more than 10%.

NCSES Data Products

Additional context and details on U.S. doctoral education from the Survey of Earned Doctorates (SED) are provided in summary reports for previous years (*Doctorate Recipients from U.S. Universities*), available at <https://www.nsf.gov/statistics/doctorates/>. For an overarching view of long-term trends in U.S. doctoral education, please see *U.S. Doctorates in the 20th Century* (NSF 06-319, October 2006, <https://www.nsf.gov/statistics/nsf06319/>).

Additional context and details on the demographic, education, and career history from individuals with a U.S. research doctoral degree in a science, engineering, or health field from the Survey of Doctorate Recipients are available at <https://nsf.gov/statistics/srvydoctoratework/>.

Relevant data are also found in these Congressionally mandated reports: *Women, Minorities, and Persons with Disabilities in Science and Engineering* (<https://nces.nsf.gov/pubs/nsf19304/>) and *Science and Engineering Indicators* (<https://nsf.gov/statistics/2018/nsb20181/>).

Online Resources

Online data tools. Data from the Survey of Earned Doctorates (SED) can be further explored in an interactive data tool at <https://ncesdata.nsf.gov/ids/sed>. Data from the Survey of Doctorate Recipients (SDR) can be further explored in the Scientists and Engineers Statistical Data System at <https://ncesdata.nsf.gov/sestat/sestat.html>.

Data tables. Data on the full range of survey items collected by the SED and SDR are presented in data tables. These tables present detailed data on the demographic characteristics, educational history, sources of financial support, postgraduation plans, and employment characteristics of U.S.-trained doctorate recipients. The full set of data tables is available for download, either as PDF or Excel files at <https://www.nsf.gov/statistics/srvydoctorates/#tabs-2> for the SED and at <https://www.nsf.gov/statistics/srvydoctoratework/#tabs-2> for the SDR.

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