



Postdocs at Federally Funded R&D Centers: Fall 2019

Data Tables | NSF 21-305 | December 07, 2020

General Notes	2
Data Tables	3
Technical Notes	11
Notes	14
Acknowledgments and Suggested Citation	15
Contact Us	16

General Notes

These data were compiled from the Fall 2019 Survey of Postdocs at Federally Funded Research and Development Centers (FFRDCs). The survey is intended to identify all FFRDCs that employed postdoctoral researchers (postdocs) as of October 1 of the survey year and to collect aggregate information on the demographic characteristics and fields of research of the postdocs employed at each FFRDC. The FFRDC Postdocs Survey began in 2005 and is administered in odd-numbered years as part of the Survey of Graduate Students and Postdoctorates in Science and Engineering.

The 2019 Master Government List of FFRDCs used for this data collection is available at <https://www.nsf.gov/statistics/ffrdclist/#archive>. For data on R&D expenditures at FFRDCs, see the *R&D Expenditures at FFRDCs* report series at <https://www.nsf.gov/statistics/ffrdc/>. For data on federal R&D obligations and funding to FFRDCs, see the *Federal Funds for R&D* report series at <https://www.nsf.gov/statistics/fedfunds/>.

Data Tables

Table Title

1	Postdocs at federally funded research and development centers: 2017 and 2019
2	Citizenship, ethnicity, and race of postdocs at federally funded research and development centers, by sex: 2019
3	Sex, citizenship, ethnicity, and race of postdocs at federally funded research and development centers, by FFRDC type: 2019
4	Source of support and citizenship of postdocs at federally funded research and development centers, by FFRDC type: 2019
5	Field of research of postdocs at federally funded research and development centers, by FFRDC type: 2019
6	Field of research of postdocs at federally funded research and development centers, by citizenship: 2019
7	Sex, citizenship, ethnicity, race, and source of support of postdocs at federally funded research and development centers: 2012–19

TABLE 1

Postdocs at federally funded research and development centers: 2017 and 2019

(Number)

FFRDCs	2017	2019
All postdocs	2,975	3,335
University-administered FFRDCs	1,296	1,398
Ames Laboratory	44	34
Argonne National Laboratory	297	310
Fermi National Accelerator Laboratory	97	68
Jet Propulsion Laboratory	188	201
Lawrence Berkeley National Laboratory	438	509
Lincoln Laboratory	4	4
National Center for Atmospheric Research	60	59
National Optical Astronomy Observatory	1	1
National Radio Astronomy Observatory	13	16
National Solar Observatory	2	4
Princeton Plasma Physics Laboratory	22	36
SLAC National Accelerator Laboratory	46	66
Thomas Jefferson National Accelerator Facility	84	90
Nonprofit-administered FFRDCs	788	912
Brookhaven National Laboratory	116	159
National Defense Research Institute	0	1
National Renewable Energy Laboratory	102	189
Oak Ridge National Laboratory	291	285
Pacific Northwest National Laboratory	279	278
Industry-administered FFRDCs	891	1,025
Frederick National Laboratory for Cancer Research	22	15
Idaho National Laboratory	34	46
Lawrence Livermore National Laboratory	228	253
Los Alamos National Laboratory	379	459
Sandia National Laboratories	221	251
Savannah River National Laboratory	7	1

FFRDC = federally funded research and development center.

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers.

TABLE 2

Citizenship, ethnicity, and race of postdocs at federally funded research and development centers, by sex: 2019

(Number)

Citizenship, ethnicity, and race	Total	Male	Female
All postdocs	3,335	2,476	859
U.S. citizens and permanent residents ^a	1,429	1,044	385
Hispanic or Latino	76	53	23
Not Hispanic or Latino	1,311	958	353
American Indian or Alaska Native	0	0	0
Asian	193	128	65
Black or African American	38	27	11
Native Hawaiian or Other Pacific Islander	2	2	0
White	1,043	782	261
More than one race	35	19	16
Unknown ethnicity or race	42	33	9
Temporary visa holders	1,906	1,432	474

^a Race and ethnicity data are available only for U.S. citizens and permanent residents.

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers, 2019.

TABLE 3

Sex, citizenship, ethnicity, and race of postdocs at federally funded research and development centers, by FFRDC type: 2019
(Number)

Sex, citizenship, ethnicity, and race	Total	University administered	Nonprofit administered	Industry administered
All postdocs	3,335	1,398	912	1,025
Male	2,476	1,033	670	773
Female	859	365	242	252
U.S. citizens and permanent residents ^a	1,429	446	365	618
Hispanic or Latino	76	25	15	36
Not Hispanic or Latino	1,311	384	350	577
American Indian or Alaska Native	0	0	0	0
Asian	193	62	46	85
Black or African American	38	10	11	17
Native Hawaiian or Other Pacific Islander	2	0	0	2
White	1,043	293	289	461
More than one race	35	19	4	12
Unknown ethnicity or race	42	37	0	5
Temporary visa holders	1,906	952	547	407

FFRDC = federally funded research and development center.

^a Race and ethnicity data are available only for U.S. citizens and permanent residents.

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers, 2019.

TABLE 4

Source of support and citizenship of postdocs at federally funded research and development centers, by FFRDC type: 2019
(Number)

Source of support and citizenship	Total	University administered	Nonprofit administered	Industry administered
All postdocs	3,335	1,398	912	1,025
Federal support	2,956	1,300	666	990
U.S. citizens and permanent residents	1,276	423	251	602
Temporary visa holders	1,680	877	415	388
Nonfederal support	379	98	246	35
U.S. citizens and permanent residents	153	23	114	16
Temporary visa holders	226	75	132	19
Unknown support	0	0	0	0

FFRDC = federally funded research and development center.

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers, 2019.

TABLE 5

Field of research of postdocs at federally funded research and development centers, by FFRDC type: 2019

(Number)

Field of research	Total	University administered	Nonprofit administered	Industry administered
All postdocs	3,335	1,398	912	1,025
Science and engineering	3,160	1,269	896	995
Science	2,132	938	552	642
Agricultural sciences	3	1	1	1
Biological and biomedical sciences	222	89	62	71
Chemistry	467	151	161	155
Computer and information sciences	180	57	82	41
Geosciences, atmospheric sciences, and ocean sciences	262	158	42	62
Mathematics and statistics	70	26	8	36
Natural resources and conservation	27	2	19	6
Physics and astronomy	773	390	127	256
Psychology	0	0	0	0
Social sciences	7	1	0	6
Other sciences	121	63	50	8
Engineering	1,028	331	344	353
Aerospace, aeronautical and astronautical engineering	30	11	1	18
Agricultural engineering	0	0	0	0
Bioengineering and biomedical engineering	18	4	8	6
Chemical engineering	183	61	64	58
Civil engineering	61	19	26	16
Electrical, electronics and communications engineering	97	35	30	32
Engineering mechanics, physics and science	140	117	10	13
Industrial and manufacturing engineering	4	1	2	1
Mechanical engineering	176	43	48	85
Metallurgical and materials engineering	221	23	129	69
Nuclear engineering	66	9	20	37
Petroleum engineering	3	0	0	3
Other engineering fields	29	8	6	15
Health	1	0	1	0
Multidisciplinary	113	101	12	0
Non-science or engineering	15	5	3	7
Field of research not known/ reported	46	23	0	23

FFRDC = federally funded research and development center.

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers, 2019.

TABLE 6

Field of research of postdocs at federally funded research and development centers, by citizenship: 2019

(Number)

Field of research	Total	U.S. citizens and permanent residents	Temporary visa holders
All postdocs	3,335	1,429	1,906
Science and engineering	3,160	1,351	1,809
Science	2,132	921	1,211
Agricultural sciences	3	0	3
Biological and biomedical sciences	222	105	117
Chemistry	467	251	216
Computer and information sciences	180	61	119
Geosciences, atmospheric sciences, and ocean sciences	262	112	150
Mathematics and statistics	70	36	34
Natural resources and conservation	27	11	16
Physics and astronomy	773	300	473
Psychology	0	0	0
Social sciences	7	5	2
Other sciences	121	40	81
Engineering	1,028	430	598
Aerospace, aeronautical and astronautical engineering	30	11	19
Agricultural engineering	0	0	0
Bioengineering and biomedical engineering	18	12	6
Chemical engineering	183	88	95
Civil engineering	61	16	45
Electrical, electronics and communications engineering	97	30	67
Engineering mechanics, physics and science	140	47	93
Industrial and manufacturing engineering	4	1	3
Mechanical engineering	176	72	104
Metallurgical and materials engineering	221	95	126
Nuclear engineering	66	49	17
Petroleum engineering	3	0	3
Other engineering fields	29	9	20
Health	1	1	0
Multidisciplinary	113	46	67
Non-science or engineering	15	11	4
Field of research not known/ reported	46	20	26

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers, 2019.

TABLE 7

Sex, citizenship, ethnicity, race, and source of support of postdocs at federally funded research and development centers: 2012–19

(Number)

Characteristic	2012	2013	2015	2017	2019
FFRDCs with postdocs	21	21	24	23	24
All postdocs	2,793	2,613	2,696	2,975	3,335
Male	2,115	2,020	2,048	2,259	2,476
Female	678	593	648	716	859
Unknown sex	0	0	0	0	0
U.S. citizens and permanent residents ^a	1,156	1,150	1,246	1,341	1,429
Hispanic or Latino	54	52	55	67	76
Not Hispanic or Latino	1,045	1,065	1,140	1,217	1,311
American Indian or Alaska Native	4	3	5	4	0
Asian	137	171	181	170	193
Black or African American	14	14	19	27	38
Native Hawaiian or Other Pacific Islander	3	2	0	0	2
White	853	861	908	991	1,043
More than one race	34	14	27	25	35
Unknown ethnicity or race	57	33	51	57	42
Temporary visa holders	1,637	1,463	1,450	1,634	1,906
Unknown citizenship	0	0	0	0	0
Source of support					
Federal support	2,707	2,531	2,543	2,544	2,956
Nonfederal support	86	82	150	116	379
Unknown support source	0	0	3	315	0

FFRDC = federally funded research and development center.

^a Race and ethnicity data are available only for U.S. citizens and permanent residents.**Note(s):**

The survey was not conducted in 2014, 2016, or 2018. Exercise caution in using trend data because the changes in how FFRDCs define their postdocs, maintain their administrative data, and report unknown responses affect data comparability trends. See <https://www.nsf.gov/statistics/srvyffrdcpd/> for more details.

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers.

Technical Notes

Survey Overview (2019 Survey Cycle)

Purpose. The Survey of Postdocs at Federally Funded Research and Development Centers (FFRDC Postdoc Survey) is a census of all FFRDCs in the United States that employed postdoctoral researchers (postdocs) as of the survey reference date.

Data collection authority. The information collected in the FFRDC Postdoc Survey is solicited under the authority of the National Science Foundation Act of 1950, as amended, and the America COMPETES Reauthorization Act of 2010. The Office of Management and Budget (OMB) control number is 3145-0062 and expires on 31 October 2020.

Survey contractor. RTI International.

Survey sponsors. The FFRDC Postdoc Survey is conducted as part of the Survey of Graduate Students and Postdoctorates in Science and Engineering, which is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation (NSF) and by the National Institutes of Health. The Department of Energy provided funding until 2010.

Key Survey Information

Frequency. Periodic.

Initial survey year. 2005.

Reference period. 1 October 2019.

Response unit. Establishment.

Sample or census. Census.

Population size. 42 FFRDCs.

Sample size. Not applicable.

Survey Design

Target population. The survey target population includes all FFRDCs that employed postdocs as of 1 October 2019.

Sample frame. The survey is a census of all FFRDCs in the Master Government List of FFRDCs in the United States as of May 2019. The list is maintained by NSF (<https://www.nsf.gov/statistics/ffrdclist/>). NCSES maintains the list by querying all federal agencies annually to determine changes, additions, or deletions to the list. FFRDCs are engaged in basic research, applied research, development, or management of R&D activities, either on direct request of the government or under a broad charter from the government—in both cases, under the monitorship of the government. FFRDCs are operated, managed, and administered as separate organizational units within a parent organization or as separately incorporated organizations. They receive the majority of their financial support (70% or more) from the federal government, usually from one agency, and are expected to have a long-term relationship with their sponsoring agency.

Sample design. Not applicable.

Data Collection and Processing Methods

Data collection. On 4 February 2020, before starting data collection, prior survey coordinators were contacted via e-mail to confirm whether they were still the most appropriate contact. Additional follow-up contacts through e-mails and telephone calls were made to staff at those FFRDCs that did not immediately confirm the contact person. These efforts resulted in identifying a contact person for all returning FFRDCs. On 6 February 2020, FFRDC directors were sent a letter inviting their FFRDC to participate in the 2019 survey. On 12 February 2020, the FFRDC coordinators received a survey launch e-mail that provided them with their Web access information and indicated the due date of 27 March 2020. Due to the COVID-19 pandemic, the deadline was extended to 30 April 2020. Coordinators received an e-mail informing them of the changed deadline and one additional reminder. All but six FFRDCs had replied by the extended due date. The survey was closed out on 14 May 2020, after determining that the two remaining nonresponse FFRDCs had reported zero postdocs in 2017 and were not planning to respond this cycle.

Mode. Self-administered online questionnaire (Web).

Response rates. All but two of the 42 FFRDCs responded to the survey, including all 23 FFRDCs that employed postdocs in 2017. One FFRDC that had previously not employed postdocs reported a postdoc in 2019. Thus, the overall FFRDC response rate was 95% and the response rate for FFRDCs that employed postdocs was 100%. The response rate calculations adhere to American Association for Public Opinion Research standards for computing response rates.^[1]

Data editing. All the data submitted by the FFRDCs were reviewed to ensure that all data fields were completed, and that data were internally consistent. Any FFRDC with cell counts that were more than 20% above or 20% below its corresponding prior-year data was flagged for edit verification. In cases where survey staff determined that confirmation was needed, FFRDC respondents were contacted by e-mail and asked to correct and resubmit the survey data.

Imputation. One FFRDC reported suppressing data for a small number of cells with counts less than 5 (reporting the counts as unknown); counts for the cells reported to be suppressed were imputed.

Weighting. Not applicable.

Variance estimation. Not applicable.

Survey Quality Measures

Sampling error. Not applicable.

Coverage error. There is no coverage error for this survey other than that, if any, from the Master Government List of FFRDCs maintained by NSF.

Nonresponse error. The nonresponse error is minimal. All responding FFRDCs reported data on every section of the Web survey instrument.

Measurement error. The most likely source of measurement error is from respondents' misreporting of information. To minimize reporting errors, substantial changes in counts and inconsistent data in the survey responses are subject to follow-up contacts to verify changes and correct anomalies in the data. The survey Web instrument was also designed to allow respondents to indicate that they have postdocs but do not have the information about them for a particular grid, which allows missing information to be distinguished from the reporting of zero counts.

Data Comparability (Changes)

Changes in survey coverage and population. There were no changes in the population of FFRDCs since the 2017 survey cycle.

In 2012, the Frederick National Laboratory for Cancer Research (FNLCR) was reorganized and renamed from the National Cancer Institute at Frederick, and it revised its postdoc reporting to include only FFRDC contract employees. Consequently, the total number of postdocs reported by the FNLCR dropped from 286 in 2010 to 25 in 2012. All comparisons of FFRDC postdoc data spanning this period need to account for these differences.

Changes in questionnaire. None.

Changes in reporting procedures or classification. Not applicable.

Definitions

Ethnicity. OMB provides guidance to collect Hispanic ethnicity separately from race. In this survey, Hispanic ethnicity refers to whether an individual is of Hispanic or Latino descent.

Federal financial support. Postdoctoral support provided by a federal agency such as the Department of Defense, Department of Energy, National Institutes of Health, or National Science Foundation.

Field of research. The area in which a postdoc's research was focused. It may or may not be the field in which a postdoc received his or her degree.

Hispanic or Latino ethnicity. Individuals of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.

Largest source of support. The source of funds that provides the largest amount (highest percentage) of financial support for postdocs.

Nonfederal financial support. Support from state and local government; support from institutions, such as stipends; support from foreign sources, such as foreign governments, foreign firms, and agencies of the United Nations; and support from other U.S. sources, such as support from nonprofit institutions, private industry, and all other nonfederal U.S. sources.

Postdoctoral researchers (postdocs). The definition of a postdoc varies by institution. Respondents were instructed to use their institution's definition of a postdoc. NCSSES defines a postdoc as meeting both of the following qualifications:

- Holds a recent doctoral degree, generally awarded within the last 5 years, such as a PhD or equivalent (e.g., ScD, DEng); a first professional degree in a medical or related field (e.g., MD, DDS, DO, DVM); or a foreign degree equivalent to a U.S. doctoral degree.
- Has a limited-term appointment, generally no more than 5–7 years, primarily for training in research or scholarship and working under the supervision of a senior scholar in a unit affiliated with the institution.

Temporary visa holders. Individuals in the United States on temporary U.S. resident visas.

U.S. citizens and permanent residents. U.S. citizens, including those from Puerto Rico and the U.S. territories, and permanent residents holding permanent U.S. resident visas (Green Cards).

U.S. territories. American Samoa, Guam, the Federated States of Micronesia, the Northern Mariana Islands, and the U.S. Virgin Islands.

Notes

¹ See response rate 1 calculation in American Association for Political Opinion Research (AAPOR). 2016. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*, 9th ed, page 61. Deerfield, IL: AAPOR.

Acknowledgments and Suggested Citation

Acknowledgments

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Under contract to NCSES, RTI International conducted the survey and prepared the tables. RTI staff members who made significant contributions include Caren Arbeit and Patricia Green. Publication processing support was provided by Devi Mishra, Catherine Corlies, and Tanya Gore (NCSES).

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Contact Us

Report Author

Michael Yamaner
Survey Manager
Human Resources Statistics Program, NCSES
Tel: (703) 292-7815
E-mail: myamaner@nsf.gov

NCSES

National Center for Science and Engineering Statistics
Directorate for Social, Behavioral and Economic Sciences
National Science Foundation
2415 Eisenhower Avenue, Suite W14200
Alexandria, VA 22314
Tel: (703) 292-8780
FIRS: (800) 877-8339
TDD: (800) 281-8749
E-mail: ncsesweb@nsf.gov