



National Center for Science and
Engineering Statistics

Postdocs at Federally Funded Research and Development Centers: Fall 2023

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General Notes

These data were compiled from the fall 2023 Survey of Postdocs at Federally Funded Research and Development Centers (FFRDC Postdoc Survey). The survey is intended to identify all FFRDCs that employed postdoctoral researchers (postdocs) as of 1 October 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 Postdoc 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 2023 Master Government List of FFRDCs used for this data collection can be found at <https://nces.nsf.gov/resource/master-gov-lists-ffrdc>. For data on R&D expenditures at FFRDCs, see <https://nces.nsf.gov/surveys/ffrdc-research-development/>. For data on federal R&D obligations and funding to FFRDCs, see <https://nces.nsf.gov/surveys/federal-funds-research-development/>.

This product has been reviewed for unauthorized disclosure of confidential information under NCSES-DRN24-021.

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TABLE 1

Postdocs at federally funded research and development centers: 2019, 2021, and 2023

(Number)

FFRDCs	2019	2021	2023
All postdocs	3,335	3,637	3,629
University-administered FFRDCs	1,398	1,405	1,428
Ames Laboratory	34	42	43
Argonne National Laboratory	310	331	369
Fermi National Accelerator Laboratory	68	70	83
Green Bank Observatory ^a	na	3	2
Jet Propulsion Laboratory	201	195	159
Lawrence Berkeley National Laboratory	509	507	517
Lincoln Laboratory	4	5	0
NSF's National Optical-Infrared Astronomy Research Laboratory ^b	1	4	9
National Center for Atmospheric Research	59	48	52
National Radio Astronomy Observatory	16	9	9
National Solar Observatory	4	3	4
Princeton Plasma Physics Laboratory	36	39	29
SLAC National Accelerator Laboratory	66	45	56
Thomas Jefferson National Accelerator Facility	90	104	96
Nonprofit-administered FFRDCs	959	1,128	1,059
Aerospace Federally Funded Research and Development Center	0	0	1
Brookhaven National Laboratory	159	173	174
Center for Communications and Computing	0	5	0
Idaho National Laboratory	46	60	71
National Defense Research Institute	1	0	0
National Renewable Energy Laboratory	189	195	211
Oak Ridge National Laboratory	285	314	261
Pacific Northwest National Laboratory	278	342	303
Savannah River National Laboratory	1	39	38
Industry-administered FFRDCs	978	1,104	1,142
Frederick National Laboratory for Cancer Research	15	8	10
Lawrence Livermore National Laboratory	253	300	321
Los Alamos National Laboratory	459	456	478
Sandia National Laboratories	251	340	333

na = not applicable.

FFRDC = federally funded research and development center.

^a The Green Bank Observatory was split out from the National Radio Observatory in 2016. The survey did not record this change until 2021.

^b The National Optical Astronomy Observatory, was renamed NSF's National Optical-Infrared Astronomy Research Laboratory in the 2021 survey. The new laboratory also incorporates operations of the International Gemini Observatory and the Vera C. Rubin Observatory.

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: 2023

(Number)

Citizenship, ethnicity, and race	Total	Male	Female
All postdocs	3,629	2,602	1,027
U.S. citizens and permanent residents ^a	1,619	1,125	494
Hispanic or Latino	136	93	43
Not Hispanic or Latino	1,448	1,007	441
American Indian or Alaska Native	4	1	3
Asian	266	185	81
Black or African American	42	29	13
Native Hawaiian or Other Pacific Islander	3	2	1
White	1,068	752	316
More than one race	65	38	27
Unknown ethnicity or race	35	25	10
Temporary visa holders	2,010	1,477	533

^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, 2023.

TABLE 3

Sex, citizenship, ethnicity, and race of postdocs at federally funded research and development centers, by FFRDC type: 2023

(Number)

Sex, citizenship, ethnicity, and race	Total	University administered	Nonprofit administered	Industry administered
All postdocs	3,629	1,428	1,059	1,142
Male	2,602	1,023	734	845
Female	1,027	405	325	297
U.S. citizens and permanent residents ^a	1,619	512	440	667
Hispanic or Latino	136	40	23	73
Not Hispanic or Latino	1,448	449	415	584
American Indian or Alaska Native	4	1	1	2
Asian	266	118	76	72
Black or African American	42	9	17	16
Native Hawaiian or Other Pacific Islander	3	1	1	1
White	1,068	292	309	467
More than one race	65	28	11	26
Unknown ethnicity or race	35	23	2	10
Temporary visa holders	2,010	916	619	475

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, 2023.

TABLE 4

Source of support and citizenship of postdocs at federally funded research and development centers, by FFRDC type: 2023

(Number)

Source of support and citizenship	Total	University administered	Nonprofit administered	Industry administered
All postdocs	3,629	1,428	1,059	1,142
Federal support	3,227	1,326	794	1,107
U.S. citizens and permanent residents	1,436	478	310	648
Temporary visa holders	1,791	848	484	459
Nonfederal support	402	102	265	35
U.S. citizens and permanent residents	183	34	130	19
Temporary visa holders	219	68	135	16
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, 2023.

TABLE 5

Field of research of postdocs at federally funded research and development centers, by FFRDC type: 2023

(Number)

Field of research	Total	University administered	Nonprofit administered	Industry administered
All postdocs	3,629	1,428	1,059	1,142
Science and engineering	3,518	1,411	1,016	1,091
Science	2,579	1,138	678	763
Agricultural and veterinary sciences	7	3	1	3
Biological and biomedical sciences	237	74	82	81
Chemistry	428	138	186	104
Computer and information sciences	188	56	60	72
Geosciences, atmospheric sciences, and ocean sciences	272	129	56	87
Materials science and chemistry	450	157	126	167
Mathematics and statistics	59	29	6	24
Natural resources and conservation	10	3	5	2
Physics and astronomy	838	495	124	219
Psychology	1	0	1	0
Social sciences	12	3	6	3
Other sciences	77	51	25	1
Engineering	939	273	338	328
Aerospace, aeronautical, and astronautical engineering	31	14	2	15
Biological, biomedical, and biosystems engineering	89	18	44	27
Chemical, petroleum, and related engineering fields	192	58	79	55
Civil, environmental, transportation, and related engineering fields	81	30	37	14
Electrical, electronics, communications, and computer engineering	153	59	37	57
Engineering science, mechanics, and physics	26	7	2	17
Industrial, manufacturing, systems engineering, and operations research	8	5	2	1
Mechanical engineering	155	59	63	33
Metallurgical, mining, materials, and related engineering fields	121	5	36	80
Nuclear engineering	58	7	27	24
Other engineering fields	25	11	9	5
Health	4	0	2	2
Multidisciplinary	85	7	34	44
Non-science or engineering	12	2	7	3
Field of research not known or reported	10	8	0	2

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, 2023.

TABLE 6

Field of research of postdocs at federally funded research and development centers, by citizenship: 2023

(Number)

Field of research	Total	U.S. citizens and permanent residents	Temporary visa holders
All postdocs	3,629	1,619	2,010
Science and engineering	3,518	1,571	1,947
Science	2,579	1,145	1,434
Agricultural and veterinary sciences	7	4	3
Biological and biomedical sciences	237	127	110
Chemistry	428	228	200
Computer and information sciences	188	92	96
Geosciences, atmospheric sciences, and ocean sciences	272	120	152
Materials science and chemistry	450	176	274
Mathematics and statistics	59	27	32
Natural resources and conservation	10	7	3
Physics and astronomy	838	335	503
Psychology	1	1	0
Social sciences	12	4	8
Other sciences	77	24	53
Engineering	939	426	513
Aerospace, aeronautical, and astronautical engineering	31	14	17
Biological, biomedical, and biosystems engineering	89	43	46
Chemical, petroleum, and related engineering fields	192	101	91
Civil, environmental, transportation, and related engineering fields	81	24	57
Electrical, electronics, communications, and computer engineering	153	69	84
Engineering science, mechanics, and physics	26	15	11
Industrial, manufacturing, systems engineering, and operations research	8	1	7
Mechanical engineering	155	53	102
Metallurgical, mining, materials, and related engineering fields	121	66	55
Nuclear engineering	58	32	26
Other engineering fields	25	8	17
Health	4	3	1
Multidisciplinary	85	34	51
Non-science or engineering	12	7	5
Field of research not known or reported	10	4	6

Source(s):

National Center for Science and Engineering Statistics, Survey of Postdocs at Federally Funded Research and Development Centers, 2023.

TABLE 7

Sex, citizenship, ethnicity, race, and source of support of postdocs at federally funded research and development centers: 2012–23

(Number)

Characteristic	2012	2013	2015	2017	2019	2021	2023
FFRDCs with postdocs	21	21	24	23	24	25	24
All postdocs	2,793	2,613	2,696	2,975	3,335	3,637	3,629
Male	2,115	2,020	2,048	2,259	2,476	2,657	2,602
Female	678	593	648	716	859	980	1,027
Unknown sex	0	0	0	0	0	0	0
U.S. citizens and permanent residents ^a	1,156	1,150	1,246	1,341	1,429	1,779	1,619
Hispanic or Latino	54	52	55	67	76	120	136
Not Hispanic or Latino	1,045	1,065	1,140	1,217	1,311	1,615	1,448
American Indian or Alaska Native	4	3	5	4	0	2	4
Asian	137	171	181	170	193	251	266
Black or African American	14	14	19	27	38	38	42
Native Hawaiian or Other Pacific Islander	3	2	0	0	2	1	3
White	853	861	908	991	1,043	1,259	1,068
More than one race	34	14	27	25	35	64	65
Unknown ethnicity or race	57	33	51	57	42	44	35
Temporary visa holders	1,637	1,463	1,450	1,634	1,906	1,858	2,010
Unknown citizenship	0	0	0	0	0	0	0
Source of support							
Federal support	2,707	2,531	2,543	2,544	2,956	3,091	3,227
Nonfederal support	86	82	150	116	379	411	402
Unknown support source	0	0	3	315	0	135	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, 2018, 2020, or 2022. 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://nces.nsf.gov/surveys/ffrdc-postdocs> 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 (2023 Survey Cycle)

Purpose. The Survey of Postdocs at Federally Funded Research and Development Centers (FFRDC Postdoc Survey) is intended to identify all FFRDCs that employed postdoctoral researchers (postdocs) as of 1 October 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 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 U.S. National Science Foundation (NSF) and by the National Institutes of Health.

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 30 August 2026. The disclosure review number is NCSES-DRN24-021.

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 NCSES within 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 2023.

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 2023.

Sampling frame. The survey is a census of all FFRDCs in the Master Government List of FFRDCs in the United States as of March 2023.¹ The list is maintained by NSF. NSF maintains the master 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.

Sample design. Not applicable.

Data Collection and Processing Methods

Data collection. On 1 January 2024, 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 14 February 2024, FFRDC directors were sent an e-mail inviting their FFRDC to participate in the 2023 survey. On 14 February 2024, 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 2024.

Mode. Self-administered online questionnaire (Web).

Response rates. All of the 42 FFRDCs responded to the survey. Thus, the overall FFRDC response rate was 100%, 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.²

Data editing. All 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 differ by more than 20% from 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. No imputation was applied to data collected in the 2023 survey cycle.

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 survey typically has high response rates. For the 2023 cycle, 100% of FFRDCs provided complete or partial data.

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 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.

In 2023, the survey removed the National Institutes of Health Intramural Research Program (NIH IRP) because it was out of scope.

In 2021, the FFRDC Postdoc Survey started recording the following changes for the first time. The survey added the Green Bank Observatory, which was split out from the National Radio Astronomy Observatory in 2016; both retained FFRDC status. In October 2019, the National Optical Astronomy Observatory was renamed NSF's National Optical-Infrared Astronomy Research Laboratory. The new laboratory also incorporates operations of the International Gemini Observatory and the Vera C. Rubin Observatory. All other changes to the master list did not impact FFRDCs reporting postdocs.

In 2012, the Frederick National Laboratory for Cancer Research (FNLCR) was reorganized and renamed from the National Cancer Institute at Frederick and 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 of 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 past 5 years, such as PhD or equivalent (e.g., ScD or DEng), a first professional degree in a medical or related field (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 The 2023 version of FFRDC list used for this data collection can be found at <https://www.nsf.gov/statistics/ffrdclist/archive/ffrdc-2023.xlsx>.

2 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., p. 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, Jack Stoetzel, and Jon Gordon.

Suggested Citation

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