



## Demographic Characteristics of Postdoctoral Researchers at Federally Funded Research and Development Centers: 2010–17

by Serena E. Hinz, Caren A. Arbeit, and Michael Yamaner<sup>1</sup>

Federally funded research and development centers (FFRDCs) were created to help meet the research and analytic needs of federal agencies. FFRDCs also employ postdoctoral researchers (postdocs), which helps to support the work of the FFRDCs and to train the country's next generation of scientists and engineers. In 2017, postdoctoral research programs existed at 23 of the 42 FFRDCs listed in the Master Government List of FFRDCs.<sup>2</sup> In total, these 23 FFRDCs employed 2,975 postdocs.

Although the number of postdocs working at FFRDCs declined earlier in the decade, it has recently increased, and the count of postdocs in 2017 is close to the 3,011 employed in 2010 (table 1). While the number of FFRDCs increased between 2010 and 2017 (from 38 to 42), the number of FFRDCs with postdoc programs fluctuated between 21 and 24 during that period.

### Demographic Characteristics of Postdocs at FFRDCs

A majority of the postdocs employed by FFRDCs between 2010 and 2017

were temporary visa holders (table 2). However, the share of postdocs on temporary visas decreased from 60% in 2010 to 55% in 2017.

The number of U.S. citizen or resident postdocs increased by 13% between 2010 and 2017. A comparison in the number of postdocs by race and ethnicity indicates that, among U.S. citizens and permanent residents, postdocs employed at FFRDCs are gradually becoming more diverse. The number of postdocs who were underrepresented minorities was 38% higher in 2017 than in 2010, compared with a 13% increase among Asian postdocs and a 21% increase among white postdocs. Focusing on the more recent years, from 2015 to 2017, the number of underrepresented minority postdocs increased by 24%, compared to a 6% decrease in the number of Asian postdocs and a 9% increase in the number of white postdocs (figure 1).

Although the population of postdocs who are U.S. citizens and permanent residents is becoming more racially and ethnically diverse, the number of postdocs who are underrepresented minori-

ties remains considerably less than the number of white and Asian postdocs. In 2017, 7% of U.S. citizen and permanent resident postdocs were underrepresented minorities, up from 6% in 2010 (table 2).

### Data Sources, Limitations, and Availability

The 2017 Survey of Postdocs at FFRDCs collected data from FFRDCs contained in the Master Government List of FFRDCs dated March 2017 that is maintained by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation. The survey collects data on the number of postdocs employed by FFRDCs—categorized by citizenship, race, ethnicity, sex, and field of research—as of 1 October of the survey year. It is conducted as part of the Survey of Graduate Students and Postdoctorates in Science and Engineering (GSS), which is sponsored by NCSES and by the National Institutes of Health.

A postdoc is defined by the GSS as an appointee who holds a PhD or equivalent doctoral degree; whose doctorate was awarded recently, generally within

TABLE 1. Postdoctorates at federally funded research and development centers: 2010–17  
(Number and percent change)

FFRDCs	2010	2012	2013	2015	2017 <sup>a</sup>	Change 2010–17	Change 2015–17 <sup>b</sup>
Total FFRDCs	38	39	40	42	42	4	0
FFRDCs with a postdoc program	22	22	21	24	23	1	-1
All postdocs	3,011	2,793	2,613	2,696	2,975	-36	279
University-administered FFRDCs	1,234	1,248	1,204	1,227	1,296	62	69
Ames Laboratory	47	51	42	44	44	-3	0
Argonne National Laboratory	300	301	279	304	297	-3	-7
Fermi National Accelerator Laboratory	61	54	55	79	97	36	18
Jet Propulsion Laboratory	107	115	159	165	188	81	23
Lawrence Berkeley National Laboratory	519	516	475	449	438	-81	-11
Lincoln Laboratory	0	0	0	3	4	4	1
National Astronomy and Ionosphere Center	4	na	na	na	na	na	na
National Center for Atmospheric Research	39	40	37	33	60	21	27
National Optical Astronomy Observatory <sup>c</sup>	6	13	11	4	1	-5	-3
National Radio Astronomy Observatory	21	21	21	12	13	-8	1
National Solar Observatory <sup>c</sup>	na	na	na	1	2	na	1
Princeton Plasma Physics Laboratory	17	18	15	17	22	5	5
SLAC National Accelerator Laboratory	54	44	41	41	46	-8	5
Thomas Jefferson National Accelerator Facility	59	75	69	75	84	25	9
Nonprofit-administered FFRDCs	719	681	653	698	788	69	90
Brookhaven National Laboratory	153	181	151	133	116	-37	-17
National Renewable Energy Laboratory	107	70	71	92	102	-5	10
Oak Ridge National Laboratory	245	237	236	230	291	46	61
Pacific Northwest National Laboratory	214	193	195	242	279	65	37
Project Air Force	0	0	0	1	0	0	-1
Industry-administered FFRDCs	1,058	864	756	771	891	-167	120
Frederick National Laboratory for Cancer Research <sup>d</sup>	286	25	18	14	22	-264	8
Idaho National Laboratory	15	10	8	32	34	19	2
Lawrence Livermore National Laboratory	148	191	152	182	228	80	46
Los Alamos National Laboratory	416	439	397	343	379	-37	36
Sandia National Laboratories	181	189	175	189	221	40	32
Savannah River National Laboratory	12	10	6	11	7	-5	-4

na = not applicable.

FFRDC = federally funded research and development center.

<sup>a</sup> The NCSSES Master Government List of FFRDCs contains 43 FFRDCs with the two locations of the National Security Engineering Center listed separately. In the Survey of Postdocs at FFRDCs, the two locations were surveyed together and did not report any postdocs.

<sup>b</sup> Although there was no change in the number of FFRDCs between the 2015 and 2017 survey, the Homeland Security Studies and Analysis Institute was replaced by the Homeland Security Operational Analysis Center—neither of which reported any postdocs.

<sup>c</sup> Prior to 2015, the National Solar Observatory was included as part of the National Optical Astronomy Observatory.

<sup>d</sup> In 2012, the National Cancer Institute at Frederick changed its name to the Frederick National Laboratory for Cancer Research (FNLCR); between the 2010 and 2012 surveys, FNLCR revised its definition of postdoc to include only FFRDC contract employees. Correspondingly, the total postdoc count for FNLCR dropped from 286 in 2010 to 25 in 2012.

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

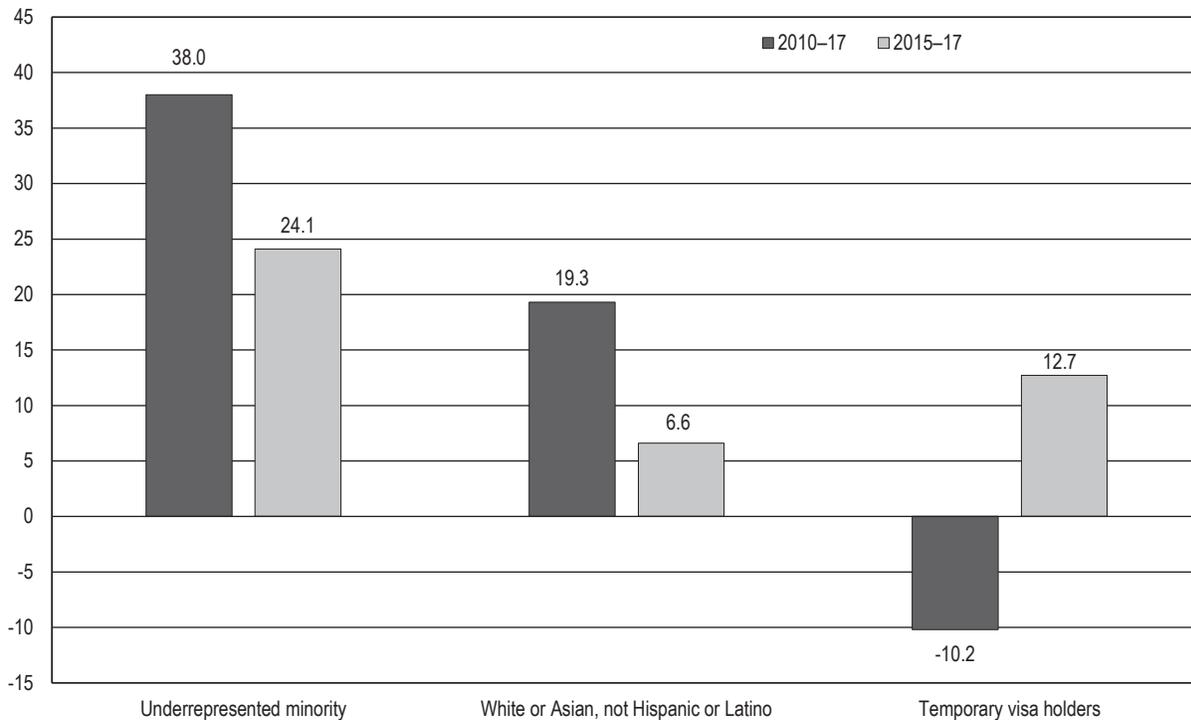
TABLE 2. Postdoctorates at federally funded research and development centers, by citizenship, ethnicity, and race: 2010–17  
(Number and percent change)

Citizenship, race, and ethnicity	2010	2012	2013	2015	2017	Change 2010–17	Change 2015–17	Percent change 2010–17	Percent change 2015–17
All postdocs	3,011	2,793	2,613	2,696	2,975	-36	279	-1.2	10.3
U.S. citizens and permanent residents <sup>a</sup>	1,191	1,156	1,150	1,246	1,341	150	95	12.6	7.6
Underrepresented minorities	71	75	71	79	98	27	19	38.0	24.1
Hispanic or Latino	48	54	52	55	67	19	12	39.6	21.8
Not Hispanic or Latino	1,005	1,045	1,065	1,140	1,217	212	77	21.1	6.8
American Indian or Alaska Native	4	4	3	5	4	0	-1	0.0	-20.0
Black or African American	16	14	14	19	27	11	8	68.8	42.1
Native Hawaiian or Other Pacific Islander	3	3	2	0	0	-3	0	-100.0	0.0
White and Asian, not Hispanic or Latino	973	990	1,032	1,089	1,161	188	72	19.3	6.6
Asian	151	137	171	181	170	19	-11	12.6	-6.1
White	822	853	861	908	991	169	83	20.6	9.1
More than one race	9	34	14	27	25	16	-2	177.8	-7.4
Unknown ethnicity or race	138	57	33	51	57	-81	6	-58.7	11.8
Temporary visa holders	1,820	1,637	1,463	1,450	1,634	-186	184	-10.2	12.7

<sup>a</sup> Race and ethnicity data are available only for U.S. citizens and permanent residents.

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

FIGURE 1. Postdoctorates at federally funded research and development centers, by citizenship, ethnicity, and race: 2010–17  
Percent change



NOTE: Race and ethnicity data are available only for U.S. citizens and permanent residents.

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

the past 5 years; whose appointment is for a limited term, generally no more than 5–7 years; who works under the supervision of a senior researcher; and whose appointment is primarily for the purpose of training in research or scholarship.

Use caution when using trend data because data comparability trends are affected by changes in how FFRDCs define their postdocs, maintain their administrative data, and report unknown responses. For example, after it was reorganized in 2011, the Frederick National Laboratory for Cancer

Research (FNLCR) revised its postdoc reporting to include only FFRDC contract employees. Consequently, the total number of postdocs reported by FNLCR dropped significantly in 2012.

Detailed data from this survey are available at <https://www.nsf.gov/statistics/srvyffrdcpd/>. For more information on the Survey of Postdocs at FFRDCs, please contact NCSES author Michael Yamaner.

## Notes

1. Serena E. Hinz and Caren A. Arbeit, RTI International, Research Triangle

Park, NC. Michael Yamaner, Human Resources Statistics Program, National Center for Science and Engineering Statistics, National Science Foundation, 2415 Eisenhower Avenue, Suite W14200, Alexandria, VA 22314 (myamaner@nsf.gov; 703-292-7815).

2. The FFRDC Master Government List, maintained by the National Center for Science and Engineering Statistics within the National Science Foundation, is available at <https://www.nsf.gov/statistics/ffrdclist/>.