



Number of Postdocs at Federally Funded Research and Development Centers Rebounds After Several Years of Decline

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In 2015, federally funded research and development centers (FFRDCs) in the United States employed a total of 2,696 postdoctoral researchers (postdocs). Although this number is lower than the peak of 3,011 reported in 2010, it shows a rebound after two consecutive survey years of decline (see table 1).

FFRDCs serve to meet the research and analytic needs of federal agencies, and their employment of postdocs helps to train the country's next generation of scientists and engineers. In 2015, postdocs were employed by 24 of the 42 FFRDCs listed in the Master Government List of FFRDCs, maintained by the National Center for Science and Engineering Statistics (NCSES), National Science Foundation (NSF). Two FFRDCs—Lincoln Laboratory and Project Air Force—reported having a new postdoc program for the first time in 2015.

Characteristics of Postdocs at FFRDCs

As in the past decade, more postdocs employed by FFRDCs in 2015 were on temporary visas than were U.S. citizens or permanent residents (1,450 versus 1,246). However, the share of postdocs

on temporary visas decreased over time (61.5% in 2005 to 53.8% in 2015) (table 2). Although the majority of postdocs in FFRDCs were men, the share of women postdocs grew over the past 10 years. Almost one-quarter of the FFRDC postdocs in 2015 were women, compared with 21% in 2005.

Postdocs in FFRDCs work in a wide range of science, engineering, and health fields (table 3). Between 2010 and 2015, there was a large increase in the proportion of postdocs in engineering fields (21.0% to 25.4%). The largest proportion of postdocs at FFRDCs in both 2010 and 2015 were engaged in research in physics and astronomy (28.1% and 27.7%), followed by chemistry (16.3% and 16.0%) and materials and metallurgical engineering (7.4% and 8.0%).

Data Sources, Limitations, and Availability

The 2015 Survey of Postdocs at FFRDCs collected data from the centers in existence at the beginning of FY 2015. The survey collects data on the number of postdocs employed by FFRDCs—categorized by citizenship, sex, ethnicity and race, 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 within NSF 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 the past 5 years; whose appointment is for a limited term, generally no more than 5 to 7 years; who works under the supervision of a senior researcher; and whose appointment is primarily for the purpose of training in research or through scholarship.

Use caution in 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, the Frederick National Laboratory for Cancer Research (FNLRCR) revised their postdoc reporting to include only FFRDC contract employees after it was reorganized and renamed from the National Cancer Institute of

TABLE 1. Postdocs at federally funded research and development centers: Surveyed years, 2010–15

| FFRDCs | 2010 | 2012 | 2013 | 2015 |
|--|-------|-------|-------|-------|
| Total FFRDCs | 39 | 39 | 40 | 42 |
| FFRDCs with a postdoc program | 22 | 21 | 21 | 24 |
| Total postdocs in FFRDCs | 3,011 | 2,793 | 2,613 | 2,696 |
| University-administered FFRDCs | 1,234 | 1,248 | 1,204 | 1,227 |
| Ames Laboratory | 47 | 51 | 42 | 44 |
| Argonne National Laboratory | 300 | 301 | 279 | 304 |
| Fermi National Accelerator Laboratory | 61 | 54 | 55 | 79 |
| Jet Propulsion Laboratory | 107 | 115 | 159 | 165 |
| Lawrence Berkeley National Laboratory | 519 | 516 | 475 | 449 |
| Lincoln Laboratory ^a | 0 | 0 | 0 | 3 |
| National Astronomy and Ionosphere Center | 4 | - | - | - |
| National Center for Atmospheric Research | 39 | 40 | 37 | 33 |
| National Optical Astronomy Observatory ^b | 6 | 13 | 11 | 4 |
| National Radio Astronomy Observatory | 21 | 21 | 21 | 12 |
| National Solar Observatory ^b | 0 | 0 | 0 | 1 |
| Princeton Plasma Physics Laboratory | 17 | 18 | 15 | 17 |
| SLAC National Accelerator Laboratory | 54 | 44 | 41 | 41 |
| Thomas Jefferson National Accelerator Facility | 59 | 75 | 69 | 75 |
| Industry-administered FFRDCs | 1,058 | 864 | 756 | 771 |
| Frederick National Laboratory for Cancer Research ^c | 286 | 25 | 18 | 14 |
| Idaho National Laboratory | 15 | 10 | 8 | 32 |
| Lawrence Livermore National Laboratory | 148 | 191 | 152 | 182 |
| Los Alamos National Laboratory | 416 | 439 | 397 | 343 |
| Sandia National Laboratories | 181 | 189 | 175 | 189 |
| Savannah River National Laboratory | 12 | 10 | 6 | 11 |
| Nonprofit-administered FFRDCs | 719 | 681 | 653 | 698 |
| Brookhaven National Laboratory | 153 | 181 | 151 | 133 |
| National Renewable Energy Laboratory | 107 | 70 | 71 | 92 |
| Oak Ridge National Laboratory | 245 | 237 | 236 | 230 |
| Pacific Northwest National Laboratory | 214 | 193 | 195 | 242 |
| Project Air Force ^a | 0 | 0 | 0 | 1 |

- = decertified as FFRDC.

FFRDC = federally funded research and development center.

^a Lincoln Laboratory and Project Air Force reported postdocs for the first time in 2015.

^b The National Solar Observatory reported under the National Optical Astronomy Observatory prior to 2015.

^c In 2012, Frederick National Laboratory for Cancer Research (FNLCR) changed its name from National Cancer Institute at Frederick and 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.

Frederick in 2012. Consequently, the total number of postdocs reported by FNLCR has dropped significantly since then.

Detailed data from this survey are available at <http://www.nsf.gov/statistics/>

srvyffrdcpd/. For more information on the Survey of Postdocs at FFRDCs, contact NCSSES author Kelly H. Kang.

Notes

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TABLE 2. Percent of postdocs at federally funded research and development centers by sex and citizenship status: 2005 and 2015 (Percent)

| Characteristic | 2005 | 2015 |
|---------------------------------------|-------|-------|
| Total number of postdocs | 1,820 | 2,696 |
| Male | 78.6 | 76.0 |
| Female | 21.4 | 24.0 |
| U.S. citizens and permanent residents | 35.9 | 46.2 |
| Temporary visa holders | 61.5 | 53.8 |

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

TABLE 3. Field of research of postdocs at federally funded research and development centers: 2010 and 2015

| Field of research | 2010 | | 2015 | |
|--|-------|------------|-------|------------|
| | Total | % of total | Total | % of total |
| All postdocs | 3,011 | 100.0 | 2,696 | 100.0 |
| Science | 2,036 | 67.6 | 1,854 | 68.8 |
| Agricultural sciences | 1 | 0.0 | 1 | 0.0 |
| Biological sciences | 223 | 7.4 | 177 | 6.6 |
| Chemistry | 492 | 16.3 | 432 | 16.0 |
| Computer sciences | 122 | 4.1 | 115 | 4.3 |
| Earth, atmospheric, and ocean sciences | 209 | 6.9 | 212 | 7.9 |
| Mathematical sciences | 44 | 1.5 | 57 | 2.1 |
| Physics and astronomy | 847 | 28.1 | 746 | 27.7 |
| Psychology | 1 | 0.0 | 1 | 0.0 |
| Other sciences | 84 | 2.8 | 111 | 4.1 |
| Social sciences | 13 | 0.4 | 2 | 0.1 |
| Engineering | 633 | 21.0 | 686 | 25.4 |
| Aerospace engineering | 10 | 0.3 | 20 | 0.7 |
| Agricultural engineering | 0 | 0.0 | 5 | 0.2 |
| Biomedical engineering | 17 | 0.6 | 22 | 0.8 |
| Chemical engineering | 100 | 3.3 | 89 | 3.3 |
| Civil engineering | 21 | 0.7 | 29 | 1.1 |
| Electrical engineering | 58 | 1.9 | 70 | 2.6 |
| Engineering science and physics | 18 | 0.6 | 23 | 0.9 |
| Industrial and manufacturing engineering | 4 | 0.1 | 2 | 0.1 |
| Materials and metallurgical engineering | 224 | 7.4 | 216 | 8.0 |
| Mechanical engineering | 102 | 3.4 | 112 | 4.2 |
| Mining engineering | 0 | 0.0 | 0 | 0.0 |
| Nuclear engineering | 54 | 1.8 | 41 | 1.5 |
| Petroleum engineering | 0 | 0.0 | 1 | 0.0 |
| Other engineering | 25 | 0.8 | 56 | 2.1 |
| Health | 17 | 0.6 | 5 | 0.2 |
| Multidisciplinary | 8 | 0.3 | 21 | 0.8 |
| Non-science or engineering | 4 | 0.1 | 15 | 0.6 |
| Field of research not known | 313 | 10.4 | 115 | 4.3 |

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

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