



National Center for Science and
Engineering Statistics

Survey

FFRDC Research and Development Survey | 2023

The FFRDC Research and Development Survey is the primary source of information on separately accounted for R&D expenditures at federally funded research and development centers in the United States.

Survey Description

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Survey Overview (FY 2023 survey cycle)

Purpose

The FFRDC Research and Development Survey is conducted by the National Center for Science and Engineering Statistics (NCSES) within the U.S. National Science Foundation (NSF). It is the primary source of information on research and development (R&D) expenditures that are separately accounted for at federally funded research and development centers (FFRDCs) in the United States.

Data collection authority

The information 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 control number is 3145-0100, with an expiration date of 31 July 2025.

Major changes to recent survey cycle

None.

Key Survey Information

Frequency	Annual.
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Initial survey year	2001.
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Reference period	FY 2023.
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Response unit	Establishment.
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Sample or census	Census.
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Population size	42.
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Sample size	The survey is a census of all known eligible FFRDCs.
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Key variables	Key variables of interest are listed below.
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- R&D expenditures by source of funds (federal, state and local, business, nonprofit, or other)
- R&D expenditures by federal agency source
- R&D expenditures by type of R&D (basic research, applied research, or experimental development)
- R&D expenditures by type of costs (salaries, software, equipment, subcontracts, other direct costs, and indirect costs)
- Total operating budget
- R&D personnel headcounts and full-time equivalents by R&D function

Survey Design

Target population

All FFRDCs.

Sampling frame

The total survey universe is identified through the Master Government List of FFRDCs. NSF is responsible for maintaining this list and queries all federal agencies annually to determine any changes to, additions to, or deletions from the list.

Sample design

The FFRDC R&D Survey is a census of all current FFRDCs identified on the Master Government List of FFRDCs.

Data Collection and Processing

Data collection

The FY 2023 survey announcements were sent by e-mail to all FFRDCs in November 2023. The data collection period concluded in April 2024. Respondents could choose to complete a questionnaire downloaded from the Web or use a Web-based data collection system to respond to the survey. Every effort was made to maintain close contact with respondents to preserve the consistency and continuity of the resulting data. Survey data reports were available on the survey website for each FFRDC; these reports showed comparisons between the current year and the 2 prior years of data and noted any substantive disparities.

Data processing

Respondents using the Web-based data collection system were asked to explain significant differences between current and past year reporting while completing the questionnaire. Questionnaires were carefully examined by survey staff for completeness upon receipt. Reviews focused on unexplained missing data and explanations provided for changes in reporting patterns. If additional explanations or data revisions were needed, respondents were sent personalized e-mails asking them to provide any necessary revisions before the final processing and tabulation of data. Respondents were encouraged to correct prior year data, if necessary. When respondents updated or amended figures from past years, NCSES made corresponding changes to trend data in the FY 2023 data tables and to the underlying microdata. For accurate historical data, use only the most recently released data tables.

Estimation techniques

No data were imputed for FY 2023.

Survey Quality Measures

Sampling error

Because the FY 2023 survey was a survey distributed to all organizations in the universe, there was no sampling error.

Coverage error

Given the availability of a comprehensive FFRDC list, there is no known coverage error for this survey. FFRDCs are identified through the [Master Government List of FFRDCs](#). NSF is responsible for maintaining the master list and queries all federal agencies annually to determine changes to, additions to, or deletions from the list.

Nonresponse error

Most FFRDCs have incorporated the data needed to complete most of the survey questions into their record-keeping systems. Eleven FFRDCs chose not to complete any of Question 4 (R&D costs), which asks for expenditures by type of cost. Ten of those FFRDCs are managed by private companies for whom salary information is considered proprietary. One FFRDC, which is managed by a university, does not capture direct and indirect costs in its financial system in a way that is reportable on Question 4. Other FFRDCs did not answer all sections of Question 4: one FFRDC could not provide information on software, equipment, and other direct costs, another could not provide information on software and equipment expenditures, and one could not provide data on equipment expenditures. One FFRDC did not report its operating budget (Question 5). Eight FFRDCs chose not to complete Question 6, which asks for full-time equivalents and headcounts for R&D staff. Six of those FFRDCs are managed by private companies for whom staffing structure information is considered proprietary. Variables for Questions 4, 5, and 6 are not tabulated and are not included in the public use file.

Measurement error

NCSES discovered during the FY 2011 survey cycle that seven FFRDCs included capital project expenditures in the R&D totals reported on the survey. Corrections made for the FY 2011 survey cycle lowered total expenditures by \$468 million. However, previous years still include an unknown amount of capital expenditures in the total. The amount is estimated to be less than \$500 million per year.

Prior to the FY 2011 survey, the five FFRDCs administered by the MITRE Corporation had reported only internally funded R&D expenditures. After discussions with NCSES, these five FFRDCs agreed to report all FY 2011 operating expenditures for R&D and to revise their data for FYs 2008–10.

NCSES discovered during the FY 2013 survey cycle that Los Alamos National Laboratory (LANL) was reporting some expenditures that were not for R&D as defined by this survey. Corrections made for the FY 2013 survey cycle lowered the laboratory's total expenditures by \$349 million. LANL also was incorrectly reporting that all expenditures were for basic research. In corrections made for FY 2013, LANL reported that \$1,554 million (91%) of its total research expenditures was for applied research. LANL data from previous years still include an unknown amount of expenditures that were not for R&D and categorize all expenditures as basic research.

Prior to FY 2014, the Aerospace FFRDC reported only expenditures on internal R&D projects. After discussions with NCSES, the Aerospace Corporation agreed to report all R&D expenditures for FY 2014 and provide revised data to include all R&D expenditures for FYs 2010–13. R&D expenditures increased by more than \$800 million each year.

Prior to the FY 2021 collection, NCSES discovered that the Green Bank Observatory had split from the National Radio Astronomy Observatory on 1 October 2016, both retained FFRDC status. For FYs 2017–20, R&D expenditures reported for the National Radio Astronomy Observatory include the expenditures for the Green Bank Observatory. The Green Bank Observatory began reporting separately on the FY 2021 survey.

NCSES discovered during the FY 2022 survey cycle that two FFRDCs, Idaho National Laboratory and Savannah River National Laboratory, were incorrectly classified as industry-administered FFRDCs for select years. Idaho National Laboratory's industrial firm administrator, Bechtel BWXT Idaho, LLC, was replaced by a nonprofit administrator, Battelle Energy Alliance, LLC, in February 2005. The classification was corrected for FY 2022, and Idaho National Laboratory's FYs 2005–21 data were reclassified as coming from a nonprofit-administered FFRDC. Savannah River National Laboratory's industrial firm administrator, Savannah River Nuclear Solutions, LLC, was replaced by a nonprofit administrator, Battelle Savannah River Alliance, LLC, in December 2020. The classification was corrected for FY 2022 and Savannah River National Laboratory's FY 2021 data were reclassified as coming from a nonprofit-administered FFRDC.

NCSES discovered during the FY 2023 survey cycle that LANL reported non-R&D expenditures in the FY 2022 survey that should have been excluded. This included \$356.5 million in the federally funded expenditures and \$160.5 million in the business-funded expenditures. The FY 2022 LANL and national totals were revised in the FY 2023 publications, lowering the laboratory's total expenditures by \$517 million.

Data Availability and Comparability

Data availability

Annual data are available for all FFRDCs for FYs 2001–23.

Data comparability

When the review for consistency between each year's data and submissions in prior years reveals discrepancies, it is sometimes necessary to modify prior years' data. For accurate historical data, use only the most recently released data tables. Individuals wishing to analyze trends other than those in the most recent NCSES publication are encouraged to contact the Survey Manager for more information about the comparability of data over time.

Data Products

Publications

The data from this survey are published annually and available at <https://ncses.nsf.gov/surveys/ffrdc-research-development/>. Information from this survey is also included in *Science and Engineering Indicators*.

Electronic access

Public use files are available at <https://ncses.nsf.gov/explore-data/microdata/ffrdc-research-development>.