

Guide for Public Use Data Files

**National Science Foundation's
FFRDC Research and Development Survey:
Fiscal Year 2023**

May 2024

**National Science Foundation
National Center for Science and Engineering Statistics
Research and Development Statistics Program**

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This data users' guide provides a detailed description of the public use data files for the fiscal year (FY) 2023 FFRDC Research and Development Survey (FFRDC R&D Survey). The FFRDC R&D Survey is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation. The FFRDC R&D Survey replaced the previous annual collection, the Survey of Research and Development Expenditures at Federally Funded Research and Development Centers (FFRDC R&D Expenditures Survey), in FY 2010. The second and third sections of this guide provide a detailed description of the public use data files for each version of the survey. Each of these sections includes an overview of the two surveys and a detailed description of each data file structure. For additional information about the survey population and procedures, refer to the FY 2023 Survey Methodology Report and methodology reports from previous collection cycles (available upon request from the NCSES survey manager listed below [4.3]).

1. SURVEY POPULATION AND FRAME

The FFRDC R&D Survey has been an annual census of the population of eligible FFRDCs since FY 2001. Prior to FY 2001, the survey only included FFRDCs administered by academic institutions. The NCSES master list of FFRDCs identifies FFRDCs. NCSES is responsible for maintaining the master list and queries all federal agencies annually to determine changes, additions, or deletions to the list.

The number of FFRDCs included annually in the survey population since 1979 is as follows:

| Fiscal Year | Number of FFRDCs |
|-------------------|------------------|
| 1979 | 19 |
| 1980 | 19 |
| 1981 | 19 |
| 1982 | 19 |
| 1983 | 19 |
| 1984 | 17 |
| 1985 | 17 |
| 1986 | 17 |
| 1987 | 18 |
| 1988 | 18 |
| 1989 | 18 |
| 1990 | 18 |
| 1991 | 19 |
| 1992 | 19 |
| 1993 | 19 |
| 1994 | 18 |
| 1995 | 18 |
| 1996 | 18 |
| 1997 | 18 |
| 1998 | 17 |
| 1999 | 17 |
| 2000 | 16 |
| 2001 ⁺ | 36 |

| Fiscal Year | Number of FFRDCs |
|--------------------|-------------------------|
| 2002 ⁺ | 36 |
| 2003 ⁺ | 36 |
| 2004 ⁺ | 36 |
| 2005 ⁺ | 37 |
| 2006 ⁺ | 37 |
| 2007 ⁺ | 38 |
| 2008 ⁺ | 38 |
| 2009 ⁺ | 39 |
| 2010 ⁺ | 40 |
| 2011 ⁺ | 41 |
| 2012 ⁺ | 40 |
| 2013 ⁺ | 41 |
| 2014 ⁺ | 41 |
| 2015 ⁺ | 42 |
| 2016 ⁺ | 42 |
| 2017 ⁺ | 42 |
| 2018 ⁺ | 42 |
| 2019 ⁺ | 42 |
| 2020 ⁺ | 42 |
| 2021 ⁺ | 43 |
| 2022 ⁺ | 42 |
| 2023 ⁺ | 42 |

⁺ This year included FFRDCs administered by industrial organizations and FFRDCs administered by nonprofit organizations.

For a complete list of FY 2023 surveyed institutions, see the FY 2023 Survey Methodology Report.

2. FFRDC R&D SURVEY (FY 2010–Present)

2.1. Survey Instrument and Data Availability

With the introduction of the FFRDC R&D Survey in FY 2010, a number of changes were made to the questionnaire. Three new questions were added to the survey, and clinical trials and research training grants were explicitly included in the definition of R&D. In FY 2015, the question requesting federally financed R&D expenditures from ARRA funds was removed from the survey. In FY 2016, NCSSES added a question asking for R&D expenditures funded by seven specific federal agencies. In FY 2019, NCSSES added a question asking which federal agencies not specifically listed in the previous question funded the expenditures. In FY 2022, NCSSES reformatted the questionnaire to combine those two questions (Question 2). In FY 2022, NCSSES also added a question (Question 6) asking for full-time equivalents (FTEs) and headcounts for personnel by R&D function.

2.1.1. Key Variables

The FY 2023 FFRDC R&D Expenditures Survey consisted of six questions requesting information on expenditures from current funds for separately budgeted R&D activities during the organization's 2023 fiscal year.

- **Question 1** requested that organizations report their total current expenditures for separately budgeted R&D by source of funds.
- **Question 2** requested that organizations report their federally financed R&D expenditures by federal agency. This question included a list of seven specific federal agencies and 10 additional spaces to list any other federal agencies funding R&D expenditures and the amount funded.
- **Question 3** requested the amount of federal and nonfederal R&D expenditures that were considered basic research, applied research, and/or experimental development.
- **Question 4** requested that institutions report their total R&D expenditures by type of direct and indirect cost.
- **Question 5** requested the institution's total operating budget, excluding capital construction costs.
- **Question 6** requested FTEs and headcounts for personnel by R&D function.
- **Question 7** requested the month that the FFRDC's fiscal year ended.

2.1.2. Changes to the Survey for FY 2023

There were no changes to the FFRDC survey questionnaire in FY 2023.

2.1.3. Excluded Data

Some data collected as part of the FFRDC R&D Survey are not included in the public use data files. At the discretion of NCSSES, information received from individual institutions regarding cost elements of R&D, their total operating budget, their FTEs and headcounts of personnel by R&D function, and their fiscal year end month is not published or released.

2.2. Public Use Data Files

After completion of the annual data processing cycle, the collected data are stored in files for public use and archival purposes. These files include any corrections to prior-year data that survey respondents have submitted. For each survey year, the data file contains two types of information: institution characteristics and questionnaire response values. The institutional characteristics provide basic identifying information for a given institution. Apart from alphabetic information (e.g., names of institutions, cities), numeric codes represent most of the identifying information in the survey data files. Questionnaire response values contain the numerical responses to the survey questionnaire items. These records are identified by survey questions and row numbers corresponding to the numbers on the FY 2023 questionnaire. All R&D expenditures data items are expressed in thousands of dollars. For each data line on the questionnaire to which a nonzero response has been received, a data record is present. For total lines in each survey question, a data record is present regardless of whether a zero or nonzero response has been received. Since each survey question can have up to three columns of data, the data record has three columns of

responses. A status code associated with each data column indicates the source of and/or special treatment for the data. The allowed values, together with their meanings, and file formats are described below.

| COLUMN | CONTENTS |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| inst_id | ID Code |
| year | Fiscal Year |
| ncses_inst_id | NCSES Institution ID |
| toi_code | Type of Institution = FFRDC |
| ffrdctype | FFRDC Type 1 = Administered by Academic Institution 2 = Administered by Industrial Organization 3 = Administered by Nonprofit Organization |
| inst_name_long | Institution Name |
| inst_city | City Name |
| inst_state_code | State Abbreviation |
| inst_zip | ZIP Code |
| questionnaire_no | Survey Question Number |
| question | Survey Question Description |
| row | Survey Question Row Description |
| column | Survey Question Column Description |
| data | Questionnaire Response Value |
| status | Status Code for Data Blank = Normal Response e = Estimated by NCSES i = Imputed by Computer for Nonresponse n = Data Not Available |
| othinfo | Other Information Specific Federal Agencies Listed in Survey Question 2 (FY 2019 and later) |
| standardized_agency_name | Standardized Name for Specific Federal Agency Listed in Question 2 |

3. FFRDC R&D EXPENDITURES SURVEY (FY 1979–FY 2009)

3.1. Survey Instrument and Data Availability

3.1.1. Key Variables

The FY 2009 FFRDC R&D Expenditures Survey consisted of two items requesting information on R&D expenditures from current funds for separately budgeted R&D activities during the institutions' 2009 fiscal year:

- **Item 1** requested that institutions report their total current expenditures for separately budgeted S&E R&D expenditures by source of funds.
- **Item 2** requested the amount of total expenditures and federally financed expenditures that were considered basic research, applied research, and/or development.

3.1.2. Historical Changes to the Survey Instrument

The following major changes in the survey data items occurred since 1979, the first year of data included in the accompanying data file.

- From FY 1979–89, the survey requested data on capital expenditures for facilities and equipment for research, development, and instruction. Capital expenditures may include fixed or movable furnishings and scientific equipment, facilities ancillary or integral to R&D efforts, and special separate facilities to house S&E apparatuses. These expenditures may also refer to any article of nonexpendable, tangible personal property having a useful life of more than 2 years and an acquisition cost of \$500 or more per unit. This survey item was removed from the survey in 1990. Because the classification systems and the methods used to capture capital expenditures differed widely among institutions, data analysts should interpret these data with care.
- In FY 1981, a question about expenditures for research equipment by S&E field (Item 3) was added to the survey. It was removed from the FFRDC survey in 2002.
- Beginning in FY 1996, the survey collected data on funds passed through to subrecipients (Item 1a). This item was removed from the FFRDC survey in 2002.
- In FY 2000, an item asking for funds received as a subrecipient was added to the survey (Item 1b). This item was removed from the FFRDC survey in 2002.
- In FY 2007, the character of work question was expanded on the FFRDC version of the survey to include basic research, applied research, and development.

Some of the S&E fields in the questionnaire have also been modified:

- Beginning in FY 1980, data were collected separately for the engineering and environmental science specialties.
- In FY 1990, a metallurgical and materials engineering category was added.
- In FY 1997, a bioengineering/biomedical engineering category was added.

3.1.3. Excluded Data

The public use data file does not include some data collected as part of the R&D expenditures surveys. The public use files also do not include institution-level data collected prior to FY 1979 because they have not been integrated with current databases. Due to incomplete data for FY 1996 Item 1a, expenditures passed through to subrecipients, these data are not included in the public use files. The publicly available data also exclude information categorized as confidential. Information received from individual institutions regarding the distinction between separately budgeted institutional funding and unrecovered indirect costs and cost sharing is not published or released; only aggregate totals appear in tabulations. Similarly, institution-level reports of basic, applied, and developmental research expenditures for FY 2009 and earlier years are not released to the public. Also, data that are collected as part of an optional survey are not published or included in public use data files.

3.1.4. Data Element Availability by Year

The following tables list the data variables included in the public use files by survey year and population type. Data cells that were collected but do not correspond to the current files are not included. Availability is indicated by these symbols:

- A = All qualifying FFRDCs
- = Not available (in most cases, not collected)

These lists should be used in conjunction with the survey questionnaire.

Item 1. R&D Expenditures by Source

| Line | Source of Funds | Fiscal Year 1979–2009 |
|-------------|-----------------------------|----------------------------------|
| 1100 | Total | A |
| 1110 | Federal government | A |
| 1125 | State and local governments | A |
| 1150 | Industry | A |
| 1160 | Institution funds | A |
| 1175 | All other sources | A |

Item 1A. R&D Expenditures Passed Through to Subrecipients

| Line | Source of Funds | Fiscal Year 1997–2001 | Fiscal Year 2002–09 |
|-------------|-----------------------------------|----------------------------------|--------------------------------|
| 1900 | Total | A | — |
| 1910 | To higher education subrecipients | A | — |
| 1920 | To other subrecipients | A | — |

Item 1b. R&D Expenditures Received as a Subrecipient

| Line | Source of Funds | Fiscal Year 2000–01 | Fiscal Year 2002–09 |
|-------------|---------------------------------------------|--------------------------------|--------------------------------|
| 1600 | Total | A | — |
| 1610 | From higher education pass-through entities | A | — |
| 1620 | From other pass-through entities | A | — |

Item 2. R&D Expenditures by Field

| Line | Field of S&E | Fiscal Year 1979 | Fiscal Year 1980–89 | Fiscal Year 1990–2001 | Fiscal Year 2002–09 |
|-------------|----------------------------------------|-----------------------------|------------------------------------|--------------------------------------|------------------------------------|
| 1400 | Total | A | A | A | — |
| 1410 | Engineering | A | A | A | — |
| 1411 | Aeronautical and astronautical eng. | — | A | A | — |
| 1418 | Bioengineering/ biomedical eng. | — | — | A | — |
| 1412 | Chemical eng. | — | A | A | — |
| 1413 | Civil eng. | — | A | A | — |
| 1414 | Electrical eng. | — | A | A | — |
| 1415 | Mechanical eng. | — | A | A | — |
| 1417 | Metallurgical and materials eng. | — | — | A | — |
| 1416 | Other | — | A | A | — |
| 1420 | Physical sciences | A | A | A | — |
| 1421 | Astronomy | A | A | A | — |
| 1422 | Chemistry | A | A | A | — |
| 1423 | Physics | A | A | A | — |
| 1424 | Other | A | A | A | — |
| 1430 | Environmental sciences | A | A | A | — |
| 1431 | Atmospheric sciences | — | A | A | — |
| 1432 | Earth sciences | — | A | A | — |
| 1433 | Oceanography | — | A | A | — |
| 1434 | Other | — | A | A | — |
| 1441 | Mathematical sciences | A | A | A | — |
| 1442 | Computer sciences | A | A | A | — |

| Line | Field of S&E | Fiscal Year 1979 | Fiscal Year 1980–89 | Fiscal Year 1990–2001 | Fiscal Year 2002–09 |
|-------------|-------------------------|-------------------------|----------------------------|------------------------------|----------------------------|
| 1450 | Life sciences | A | A | A | — |
| 1451 | Agricultural sciences | A | A | A | — |
| 1452 | Biological sciences | A | A | A | — |
| 1453 | Medical sciences | A | A | A | — |
| 1454 | Other | A | A | A | — |
| 1460 | Psychology | A | A | A | — |
| 1470 | Social sciences | A | A | A | — |
| 1471 | Economics | A | A | A | — |
| 1472 | Political science | A | A | A | — |
| 1473 | Sociology | A | A | A | — |
| 1474 | Other | A | A | A | — |
| 1480 | Other sciences, nec* | A | A | A | — |

* nec = not elsewhere classified

Item 3. Current Fund Research Equipment Expenditures by Field

| Line | Field of S&E | Fiscal Year 1981–83 | Fiscal Year 1984–89 | Fiscal Year 1990–2001 | Fiscal Year 2002–09 |
|-------------|-----------------------------------|----------------------------|----------------------------|------------------------------|----------------------------|
| 1800 | Total | A | A | A | — |
| 1810 | Engineering (total) | A | A | A | — |
| 1811 | Aeronautical & astronautical eng. | A | A | A | — |
| 1818 | Bioengineering/biomedical eng. | — | — | A | — |
| 1812 | Chemical eng. | A | A | A | — |
| 1813 | Civil eng. | A | A | A | — |
| 1814 | Electrical eng. | A | A | A | — |
| 1815 | Mechanical eng. | A | A | A | — |
| 1817 | Metallurgical & materials eng. | — | — | A | — |
| 1816 | Other | A | A | A | — |
| 1820 | Physical sciences (total) | A | A | A | — |
| 1821 | Astronomy | A | A | A | — |
| 1822 | Chemistry | A | A | A | — |
| 1823 | Physics | A | A | A | — |

| Line | Field of S&E | Fiscal Year 1981–83 | Fiscal Year 1984–89 | Fiscal Year 1990–2001 | Fiscal Year 2002–09 |
|-------------|--------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|
| 1824 | Other | A | A | A | — |
| 1830 | Environmental sciences (total) | A | A | A | — |
| 1831 | Atmospheric sciences | A | A | A | — |
| 1832 | Earth sciences | A | A | A | — |
| 1833 | Oceanography | A | A | A | — |
| 1834 | Other | A | A | A | — |
| 1841 | Mathematical sciences | A | A | A | — |
| 1842 | Computer sciences | A | A | A | — |
| 1850 | Life sciences (total) | A | A | A | — |
| 1851 | Agricultural sciences | A | A | A | — |
| 1852 | Biological sciences | A | A | A | — |
| 1853 | Medical sciences | A | A | A | — |
| 1854 | Other | A | A | A | — |
| 1860 | Psychology (total) | A | A | A | — |
| 1870 | Social sciences (total) | A | A | A | — |
| 1871 | Economics | A | A | A | — |
| 1872 | Political science | A | A | A | — |
| 1873 | Sociology | A | A | A | — |
| 1874 | Other | A | A | A | — |
| 1880 | Other sciences, nec* (total) | A | A | A | — |

* nec = not elsewhere classified

Capital Expenditures by Area

| Line | Field of S&E | Fiscal Year 1979–89 |
|------|----------------------------------|------------------------|
| 1700 | Total | A |
| 1710 | Engineering | A |
| 1720 | Physical sciences | A |
| 1730 | Environmental sciences | A |
| 1740 | Mathematical & computer sciences | A |
| 1750 | Life sciences | A |
| 1760 | Psychology | A |
| 1770 | Social sciences | A |
| 1780 | Other sciences, nec* | A |

* nec = not elsewhere classified

3.2. Public Use Data Files

After completion of the annual data processing cycle, the collected data are stored in files for public use and archival purposes. These files include any corrections to prior-year data that survey respondents have submitted. For each survey year, the data file contains two types of information: institution characteristics and questionnaire response values. The institutional characteristics provide basic identifying information for a given institution. Apart from alphabetic information (e.g., names of institutions, cities), most of the identifying information in the survey data files is represented by numeric codes. Questionnaire response values contain the numerical responses to the survey questionnaire items. These records are identified by line numbers corresponding to the line numbers on the FY 2009 questionnaire. It should be noted that although the meaning of some line numbers changed during the period from FY 1972 to FY 2009, the line references for these years have been made consistent with the FY 2009 format to facilitate data trend analyses. All data items are expressed in thousands of dollars. For each data line on the questionnaire to which a nonzero response has been received, a data record is present. For total lines (i.e., line numbers that end in “00”) in each questionnaire item, a data record is present, regardless of whether a zero or nonzero response has been received. Since each questionnaire line can have up to nine columns of data, the data record has nine columns of responses. A status code associated with each data column indicates the source of and/or special treatment for the data. The data file format is as follows:

| COLUMN | CONTENTS |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fice | ID Code |
| fice_combined | Combined ID (“000000” if not to be combined) |
| year | Fiscal Year |
| toi_code | Type of Institution 3 = FFRDC |
| ffrdctype | Type of FFRDC 1 = Administered by Academic Institution 2 = Administered by Industrial Organization 3 = Administered by Nonprofit Organization |
| inst_name_long | Institution Name |
| inst_city | City Name |
| inst_state | State Abbreviation |
| inst_zip | ZIP Code |
| questionnaire_no | Survey Question Number |
| question | Survey Question Description |
| row | Survey Question Row Description |
| column | Survey Question Column Description |
| data | Data Status Code for Data Blank = Normal Response e = Estimated by NCSES i = Imputed by Computer for Nonresponse n = Data Not Available |
| status | ADDITIONAL RESOURCES |

3.3. Publications

The data from this survey are summarized in an *InfoBrief* and are published annually in the detailed statistical tables. Data for FY 2008–23 of the FFRDC R&D Survey are available at <http://www.nsf.gov/statistics/ffrdc/>. Data from FY 2008 and prior years of the FFRDC R&D Expenditures Survey are included in the Academic R&D Expenditures series of detailed statistical tables, available by fiscal year at <http://www.nsf.gov/statistics/rdexpenditures/>.

Data for major elements are available, starting in 1972.

Information from the survey is also included in the series *Science and Engineering Indicators* and *National Patterns of R&D*.

3.4. Electronic Access

All data from this survey are available on the NCSES website. Selected aggregate data are provided in public use data files upon request. Special-purpose data files with selected data variables can be produced to meet particular analytical needs. Individuals interested in special-purpose files should contact the NCSES survey manager.

3.5. Contact for More Information

Learn additional information about this survey by contacting:

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