



National Center for Science and
Engineering Statistics

Survey

Federal Facilities Research and Development Survey | 2022

The Federal Facilities Research and Development Survey collects information on R&D performed by facilities owned and operated by the federal government.

Survey Description

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Survey Overview (FY 2022 Survey Cycle)

Purpose

The Federal Facilities Research and Development (R&D) Survey will fill a longstanding gap in data on federal R&D. This new Federal Facilities R&D (FFRD) Survey will be the unique source of federal performer-reported data on R&D expenditures and R&D personnel. In conjunction with performer-reported data for the remaining sectors of the economy—the Business Enterprise R&D Survey (businesses with more than nine employees), the Survey of State Government R&D (state agencies), the Federally Funded Research and Development Center (FFRDC) R&D Survey (the nation’s 43 designated FFRDCs), the Higher Education R&D Survey (colleges and universities), the Annual Business Survey (micro-businesses with one to nine employees), and the Nonprofit Research Activities Survey (nonprofit organizations)—the FFRD Survey data will be used to estimate total national R&D performance and other critical statistics increasingly important in the analysis of global R&D competitiveness. The FFRD Survey is sponsored by the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation.

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 survey is conducted by NCSES.

Major changes to recent survey cycle

The administration of the FY 2022 FFRD Survey will be the first cycle of the survey.

Key Survey Information

Frequency	Annual.
Initial survey year	2023.
Reference period	The federal fiscal year ending in 2022.
Response unit	Establishment.
Sample or census	Census.
Population size	Approximately 1,900 federal facilities performing intramural R&D.
Sample size	Not applicable.
Key variables	<p>Key variables of interest are listed below.</p> <ul style="list-style-type: none"> • R&D expenditures by type of R&D (basic research, applied research, and experimental development) • R&D expenditures by source of funds (federal government, state and local government, business, nonprofits, and other) • Federally funded R&D expenditures by funding agency

- Funding provided through public-private partnerships (yes or no)
- R&D expenditures by field of R&D
- R&D funding to others by type of funding
- R&D funding to others by type of recipient organization
- Total headcounts of facility R&D personnel by job category (federal employees or military personnel, contract employees, and all other personnel) and function (researchers, technicians, and support staff)
- Full-time equivalent counts of federal R&D personnel by function

Survey Design

Target population

The target population for the FY 2022 FFRD Survey is all federal facilities where any amount of R&D is being performed.

Sampling frame

The starting point for the frame was a list of federal agencies with FY 2020 R&D obligations for intramural R&D, identified from data reported in the NCSES Survey of Federal Funds for R&D (Federal Funds Survey). Seventy-eight agencies were identified with intramural R&D obligations totaling \$42 billion. The process for identifying eligible facilities within each of these agencies included multiple sources of data, including a Federal Laboratory Consortium census, previous collections of facility lists via the Federal Funds Survey, individual agency websites, and individual contacts with various agencies. The frame was also compared with the FY 2022 R&D obligations for intramural R&D from the Federal Funds Survey to identify additional agencies eligible for the survey.

Sample design

Not applicable.

Data Collection and Processing

Data collection

Data collection for the FY 2022 FFRD Survey will be done through a Web survey, with phone and e-mail contacts. The data collection effort will last approximately 4 months in late 2023.

Data processing

All data submitted by facilities will be reviewed to ensure that data fields are complete and that data are internally consistent. Automated edit checks will be applied to improve the efficiency of data review and correction. Edit checks will be designed to catch arithmetic errors and logically inconsistent responses (balance edits).

Estimation techniques

Weights will be developed to account for complete or partial nonresponse from the agencies.

Survey Quality Measures

Sampling error

Not applicable.

Coverage error

Coverage error is minimal. The frame is based on agencies reporting nonzero intramural R&D obligations in the NCSES Federal Funds Survey. Agencies that did not report any intramural R&D obligations but performed intramural R&D activities would not be covered in the frame. This is expected to be a rare occurrence resulting in a negligible amount of R&D. Further, the frame is updated annually based on information provided by contacts at agency headquarters to reconfirm the facilities conducting R&D. Agencies' accounting systems are capable of identifying individual facilities that receive funding; therefore, coverage error will be extremely low.

Nonresponse error

NCSES will perform outreach to facilities to improve response. However, complete or partial facility nonresponse is anticipated, and nonresponse weighting adjustments will be used to mitigate the risk of nonresponse bias. Imputation of items with missing data will be conducted to minimize the impact of item nonresponse for key variables. Item nonresponse will include logical imputation as well as model-based predictions.

Measurement error

To reduce measurement errors, the FFRD questionnaire was pretested in cognitive interviews and in a pilot test of the survey. Common measurement errors on the pilot test included reporting R&D obligations rather than R&D expenditures and not rounding expenditures to the \$1,000s. Improvements were made to the questionnaire to address these common errors.

Data Availability and Comparability

Data availability

The FY 2022 data will be released to the public when available.

Data comparability

Not applicable.

Data Products

Publications

Data from the FFRD Survey will be published in NCSES InfoBriefs and data tables available at <https://nces.nsf.gov/surveys/federal-facilities-research-development/>. Information from this survey will also be included in future versions of a congressionally mandated report produced by NCSES: *Science and Engineering Indicators*.

Electronic access

Not available.