



National Center for Science and  
Engineering Statistics

## Survey

# Nonprofit Research Activities (NPRA) Survey | 2022

The NPRA Survey collects information on research and experimental development performed by tax-exempt nonprofit organizations in the United States.

## Survey Description

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### Survey Overview (FY 2022 Survey Cycle)

#### Purpose

The Nonprofit Research Activities (NPRA) module of the Annual Business Survey collects information on research and experimental development (R&D) performed or funded by tax-exempt nonprofit organizations in the United States.

#### Data collection authority

Title 13, United States Code, Sections 8(b), 131, and 182; Title 42, United States Code, Section 1861-76 (National Science Foundation Act of 1950, as amended); and Section 505 within the America COMPETES Reauthorization Act of 2010, authorize this collection. Sections 224 and 225 of Title 13 require mandatory response. Office of Management and Budget No. 0607-1004. The disclosure review number is NCSES-DRN24-060.

#### Major changes to recent survey cycle

None.

### Key Survey Information

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**Frequency** Annual.

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**Initial survey year** FY 2020. (The questions on the FY 2020 module were first developed and used on the FY 2016 Nonprofit Research Activities Survey, which was the first national survey of R&D activities in the U.S. nonprofit population since 1997. Due to the differences between the previous surveys and the new module, FY 2020 is considered the initial survey year for the annual series.)

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**Reference period** FY 2022.

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**Response unit** Organizations.

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**Sample or census** Sample.

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**Population size** 42,000 organizations.

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**Sample size** 8,000 organizations.

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**Key variables** Key variables of interest are listed below.

- R&D expenditures by source of funds (federal government, state and local government, business, foundations, universities, other nonprofits, internal funds, individual donors, and all other sources)
- R&D expenditures by type of R&D (basic research, applied research, and experimental development)
- R&D expenditures by type of cost (salaries, wages, and fringe benefits; depreciation and amortization; and all other costs)

- R&D expenditures by field of R&D (agricultural sciences and natural resources and conservation; biological, biomedical, and health sciences; engineering; geosciences, atmospheric sciences, and ocean sciences; mathematics, statistics, and computer and information sciences; physical sciences; psychology and social sciences; humanities; and other fields)
- Headcounts and full-time equivalent counts of R&D personnel (researchers, technicians, and other support personnel)
- Headcounts for contract employees and volunteers working on research activities
- R&D funding provided to others, by type of funding (grants and contracts vs. subawards and subcontracts)

## Survey Design

### Target population

Included are all nonfarm organizations with at least one in-scope location filing Internal Revenue Service (IRS) Form 990 as a tax-exempt organization and with an annual payroll of \$500,000 or more.

### Sampling frame

The sampling frame was constructed from the final 2021 Business Register and the Exempt Organizations Business Master File Extract (EO BMF). The Business Register is the Census Bureau's comprehensive database of U.S. businesses. Organizations were excluded from the frame if they were considered outside the scope of the survey (e.g., churches, government organizations, educational institutions, or organizations located outside the United States). A financial threshold was also imposed to increase the efficiency of reaching organizations that perform R&D.

### Sample design

The nonprofit R&D sampling frame is stratified by state and primary nonprofit activity (hospitals, other healthcare, science and technology, and all others), and is systematically sampled within each stratum. A standard type of estimation for stratified systematic sampling is used. Certainty cases have a selection probability of one and a sampling weight of one and represent only themselves. Specifically, organizations were selected with certainty based on the following criteria.

- Organizations with known R&D activity (950 organizations)
- Organizations larger than stratum-specific payroll cutoffs (1,200 organizations)

The nonprofit R&D sample consisted of 8,000 organizations, and 2,100 were selected with certainty.

The remaining 5,900 noncertainty cases were selected using systematic stratified random sample selection, with a maximum sample weight of 7.1.

## Data Collection and Processing

### Data collection

The survey was mailed to 8,000 nonprofit organizations in July 2023. The organizations were sent a letter informing them of their requirement to report under Title 13, United States Code, Sections 224 and 225. The letter also provided instructions on accessing and submitting the survey online. There were three mail follow-ups and four e-mail follow-ups conducted to increase response. The collection period closed on 29 December 2023.

## Data processing

Prior to tabulating the data, survey responses were reviewed and edited to correct any reporting errors detected. Nonprofit organizations reporting less than \$50,000 in R&D expenditures were not included in the final tabulations. Survey analysts reviewed the R&D data reported by the respondents. The data were evaluated by calculating the reported R&D expenses to expense ratios and reviewing the organization's website information.

Additional reporting errors were detected and corrected using an automated data edit system designed to review the data for reasonableness and consistency. The editing process interactively corrected detected errors using standard procedures. Quality control techniques were used to verify that procedures were carried out as specified.

## Estimation techniques

Where possible, missing data were imputed using previous survey data or other publicly available documents such as annual reports and financial statements. Survey weights were used to compensate for unequal probabilities of selection and nonresponse, and to calibrate sample estimates of expenses to match total expenses on the sampling frame. Measures of sampling variability were estimated using the delete-a-group jackknife variance estimator.

## Survey Quality Measures

### Sampling error

Sampling error is the difference between estimates obtained from the sample and results theoretically obtainable from a comparable complete enumeration of the sampling frame. This error results because only a subset of the sampling frame is measured in a sample survey. For published estimates from NPRA, standard errors are produced for estimated percentages, while relative standard errors (RSEs) are produced for all other estimates. Tables of the estimated measures of sampling variability corresponding to each data table are available upon request.

### Coverage error

Coverage error occurs when the sampling frame fails to completely enumerate the population of interest. There can be both undercoverage error, where organizations are not included in the frame, and overcoverage error, where organizations included in the frame are out of scope for the population of interest. The NPRA module uses the prior year's Business Register to construct the frame so any changes in organizations that would change the inclusion or exclusion of the organization to the survey scope could be sources of coverage error. Prior to tabulation, the survey unit's information is updated with the most recent available Business Register data to mitigate this source of error.

### Nonresponse error

Nonresponse error refers to the differences in key estimates between organizations in the sampling frame that were sampled for data collection and those that responded. Unit nonresponse is treated by adjusting weighted reported and imputed data by multiplying each organization's sampling weight by a nonresponse adjustment factor. The "Technical Notes" provide detailed descriptions of the adjustments for nonresponse.

### Measurement error

The most common source of measurement error is misreporting the units (e.g., reporting whole dollars rather than thousands of dollars). This type of error was corrected during data processing. Another source of error involved the incorrect inclusion of organizations already represented in other R&D data collections. The R&D expenditures of these respondents was set to 0 where it was determined their R&D was already represented in other NCSSES surveys. These cases included nonprofit organizations managing federal laboratories and some university-affiliated hospitals.

## Data Availability and Comparability

### Data availability

Data are available at <https://nces.nsf.gov/surveys/nonprofit-research-activities/>.

### Data comparability

The questions in the FY 2020 module were first developed and used on the FY 2016 Nonprofit Research Activities Survey—which was the first national survey of R&D activities in the U.S. nonprofit population since 1997. Due to the differences in the surveys prior to FY 2020, those data are not comparable for trend analysis.

## Data Products

### Publications

NPRA data are published in data tables and analytic reports available at <https://nces.nsf.gov/surveys/nonprofit-research-activities/>.

### Electronic access

The NPRA module contains confidential data that are protected under Title 13 and Title 26 of the United States Code. Two types of data are currently available: public-use tabular statistics and restricted microdata. Public-use tabular statistics can be obtained on the NCSES website (<https://nces.nsf.gov/>) and by contacting NCSES. Restricted microdata will be available at any of the 15 secure Research Data Centers administered by the Center for Economic Studies (CES) at the Census Bureau. Researchers interested in accessing microdata can apply for a restricted-use license by submitting a proposal to the CES, which evaluates proposals based on their benefit to the Census Bureau, scientific merit, feasibility, and risk of disclosure. To learn more about the Research Data Centers and how to apply, please visit the [CES page on research with restricted-use data](#). For additional information about the application process, including how to initiate a project, please contact the administrator at the primary site where the research will be conducted. Per the Federal Cybersecurity Enhancement Act of 2015, the data are protected from cybersecurity risks through screening of the systems that transmit the data.