



## InfoBrief

# U.S. Nonprofits' R&D Performance Totaled \$27 Billion in FY 2021

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U.S. nonprofits spent an estimated \$27.2 billion on research and experimental development (R&D) performed within their organizations in FY 2021 ([table 1](#)).<sup>1</sup>

**Table 1**

**Total expenditures for R&D performed by nonprofit organizations, by source of funds and type of nonprofit organization: FY 2021**

(Dollars in thousands)

Source of funds	Type of nonprofit organization <sup>a</sup>			
	All organizations	Healthcare	Science and technology	Other nonprofit organizations
All R&D expenditures	27,190,025	13,549,636	11,217,704	2,422,685
Internal funds	7,538,477	4,683,093	1,882,976	972,408
Federal government	11,619,826	4,673,876	6,512,232	433,718
State and local government	327,686	103,791	205,441	18,453
Businesses	3,010,298	1,543,437	1,088,336	378,526
Universities	274,268	183,360	84,760	6,147
Foundations	1,727,747	751,126	748,921	227,700
All other nonprofits	671,772	347,439	197,267	127,066
Individual donors	1,379,891	955,638	291,407	132,845
Other	640,062	307,876	206,364	125,822

<sup>a</sup> Nonprofit organizations are classified using the 2017 North American Industry Classification System code that accounts for the majority of their payroll. This classification may differ from the National Taxonomy of Exempt Entities Core Codes system used by the Internal Revenue Service and National Center for Charitable Statistics.

**Note(s):**

These data exclude nonprofit universities and colleges and federally funded research and development centers administered by nonprofit organizations. Detail may not add to total because of rounding.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Nonprofit Research Activities FY 2021 module of the 2022 Annual Business Survey.

Data in this InfoBrief are from the Nonprofit Research Activities (NPRA) FY 2021 module of the 2022 Annual Business Survey, conducted by the Census Bureau for the National Center for Science and Engineering Statistics (NCSES) within the National Science Foundation. It is the second collection of nonprofit R&D data by the Annual Business Survey and the continuation of an annual data series for this population.<sup>2</sup>

## Sources of Funding for Nonprofit R&D Performance

The largest funding source for nonprofit R&D performance was the federal government, contributing \$11.6 billion, or 43%, of the total. Nonprofit organizations' own internal funds were the next largest source at \$7.5 billion, or 28%, of the total. For-profit businesses funded \$3.0 billion (11%), nonprofit foundations contributed \$1.7 billion (6%), and individual donors contributed \$1.4 billion (5%). The remaining sources each contributed 2% or less to total nonprofit R&D performance.

There was variation in the distribution of funding sources across the different types of nonprofits ([table 1](#)). Science and technology organizations reported a much smaller proportion of their total R&D performance was internally funded (17% or \$1.9 billion) than healthcare organizations (35% or \$4.7 billion) and other nonprofits (40% or \$972 million) did. On the other hand, science and technology organizations reported a much larger proportion of R&D funded by the federal government (\$6.5 billion or 58%) than healthcare organizations (\$4.7 billion or 34%) or all other nonprofits (\$434 million or 18%) did.

## Nonprofit R&D Performance by Type

Nonprofits reported that 44% (\$11.9 billion) of their FY 2021 R&D performance was categorized as basic research and 37% (\$10.0 billion) was applied research ([table 2](#)). The remaining 19% (\$5.3 billion) was categorized as experimental development. A higher proportion of the federally funded R&D total was spent on applied research (44%) compared to the nonfederally funded R&D total (31%).

**Table 2**

### Total expenditures for R&D performed by nonprofit organizations, by type of R&D and source of funds: FY 2021

(Dollars in thousands)

Type of R&D	Total	Federally funded	Nonfederally funded
All R&D	27,190,025	11,619,826	15,570,199
Basic research	11,926,223	4,645,896	7,280,327
Applied research	9,977,233	5,080,062	4,897,171
Experimental development	5,286,569	1,893,868	3,392,701

**Note(s):**

These data exclude nonprofit universities and colleges and federally funded research and development centers administered by nonprofit organizations. Detail may not add to total because of rounding.

**Source(s):**

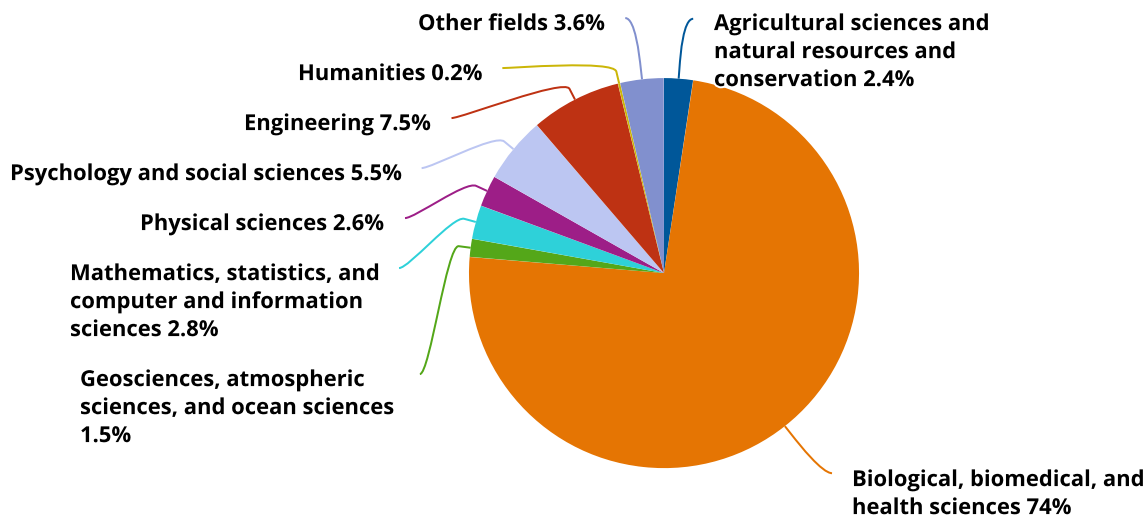
National Center for Science and Engineering Statistics and Census Bureau, Nonprofit Research Activities FY 2021 module of the 2022 Annual Business Survey.

## Nonprofit R&D Performance by Field

The vast majority (74%, or \$20 billion) of FY 2021 nonprofit R&D spending was in biological, biomedical, and health sciences ([figure 1](#)). Nonprofits also spent 7.5% (\$2.0 billion) on R&D within engineering fields. Another 5.5% (\$1.5 billion) was devoted to psychology and social sciences R&D.

**Figure 1**

Total expenditures for R&D performed by nonprofit organizations, by field: FY 2021

**Note(s):**

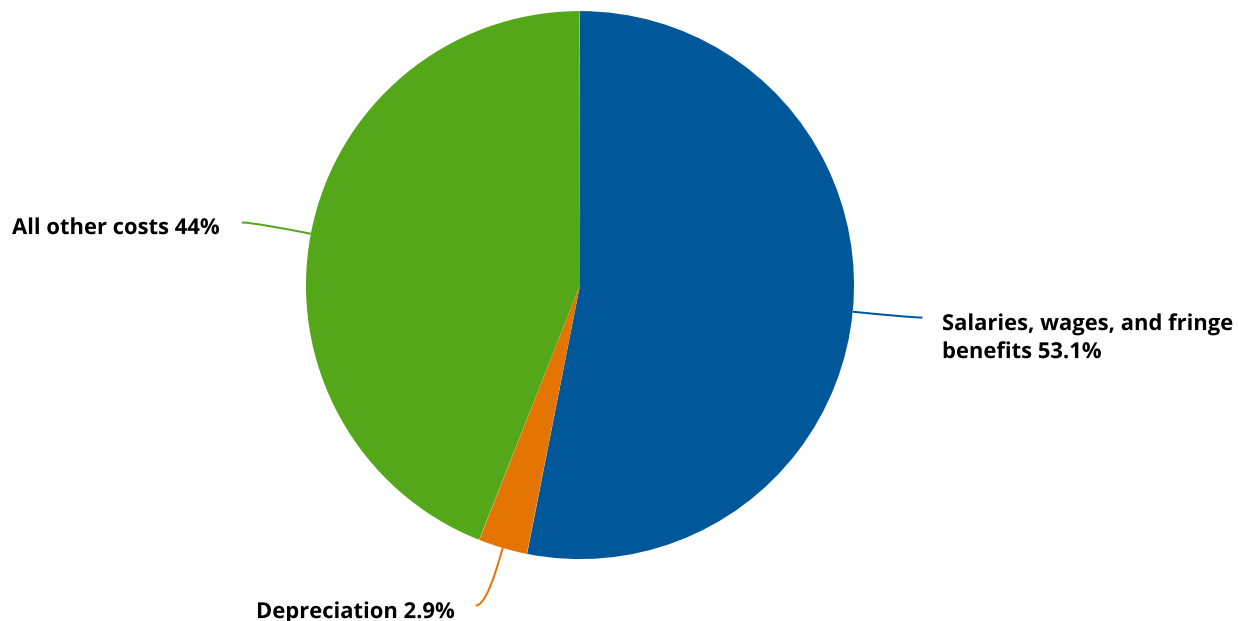
These data exclude nonprofit universities and colleges and federally funded research and development centers administered by nonprofit organizations. Detail may not add to total because of rounding.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Nonprofit Research Activities FY 2021 module of the 2022 Annual Business Survey.

## Nonprofit R&D Performance by Type of Cost

A new question added to the survey for FY 2021 requested R&D expenditures by type of cost. Over half (53%) of the total R&D expenditures was for salaries, wages, and fringe benefits of the employees working on the R&D ([figure 2](#)). Nearly 3% was spent on depreciation of tangible research assets, such as buildings or equipment, and amortization of intangible assets, such as patents. The remaining 44% was spent on all other costs, including administrative and overhead costs associated with research.

**Figure 2****Total expenditures for R&D performed by nonprofit organizations, by type of cost: FY 2021****Note(s):**

These data exclude nonprofit universities and colleges and federally funded research and development centers administered by nonprofit organizations. Detail may not add to total because of rounding.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Nonprofit Research Activities FY 2021 module of the 2022 Annual Business Survey.

## Nonprofit R&D Personnel

An estimated total of 196,418 employees worked on R&D within U.S. nonprofit organizations in FY 2021, including 147,578 full-time equivalent (FTE) employees.<sup>3</sup> Of the FTE total, 39% were classified as researchers, 39% were classified as technicians, and the remaining 22% were other support personnel ([table 3](#)). Healthcare organizations accounted for over half of the FTE totals (54%). Other nonprofit organizations had a higher proportion of researchers (52% of their total) compared to healthcare and science and technology organizations (36% and 40%, respectively).

**Table 3****Headcount and full-time equivalent (FTE) counts of R&D employees of nonprofit organizations, by occupation category and type of nonprofit organization: FY 2021**

(Number)

Occupation category	Type of nonprofit organization <sup>a</sup>							
	Headcount				FTE			
	All organizations	Healthcare	Science and technology	Other nonprofit organizations	All organizations	Healthcare	Science and technology	Other nonprofit organizations
All R&D employees	196,418	114,871	64,075	17,473	147,578	80,211	55,527	11,839
Researchers	77,265	44,216	25,583	7,466	57,434	28,946	22,364	6,124
Technicians	72,145	42,276	25,953	3,916	57,427	31,552	23,136	2,739
Other support personnel	47,008	28,379	12,539	6,090	32,716	19,713	10,027	2,977

i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

<sup>a</sup> Nonprofit organizations are classified using the 2017 North American Industry Classification System code that accounts for the majority of their payroll. This classification may differ from the National Taxonomy of Exempt Entities Core Codes system used by the Internal Revenue Service and National Center for Charitable Statistics.

**Note(s):**

These data exclude nonprofit universities and colleges and federally funded research and development centers administered by nonprofit organizations. Detail may not add to total because of rounding.

**Source(s):**

National Center for Science and Engineering Statistics and Census Bureau, Nonprofit Research Activities FY 2021 module of the 2022 Annual Business Survey.

## Survey Information and Data Availability

The NPRA FY 2021 module of the 2022 Annual Business Survey was conducted in 2022 with a sample of 8,050 nonprofit organizations representing 40,650 total eligible nonprofit organizations in the United States.<sup>4</sup> Higher education institutions and nonprofit-administered federally funded research and development centers (FFRDCs) are not included in this survey, as these populations are already included in NCSES's Higher Education R&D Survey and FFRDC R&D Survey. The fiscal year referred to throughout this report was the nonprofit organizations' fiscal year; for the majority of organizations reporting R&D performance, this fiscal year ended in either September or December 2021.

The response rate was 81%. The estimates in this InfoBrief are based on responses from a sample of the population and may differ from actual values because of sampling variability or other factors. As a result, apparent differences between the estimates for two or more groups may not be statistically significant. All comparative statements in this InfoBrief have undergone statistical testing and are significant at the 90% confidence level unless otherwise noted. The variances of estimates in this report were calculated using the delete-a-group jackknife replication method.

The full set of data tables for FY 2021 are available at <https://nces.nsf.gov/surveys/nonprofit-research-activities/2021#data>. For more information, please contact the author.

## Notes

1 All amounts in this report are shown in current dollars.

2 Data and information specific to the Nonprofit Research Activities module is found at <https://nces.nsf.gov/surveys/nonprofit-research-activities>. Other data and information from the Annual Business Survey is available at <https://nces.nsf.gov/surveys/annual-business-survey>.

**3** Employee numbers were reported both as total headcounts and as full-time equivalents (FTE). Headcounts represent every individual employed by the organization during FY 2021 regardless of their total hours worked. The FTE counts convert the headcounts to a total of full-time equivalent employees using the following calculation: 1 FTE equals 40 hours per week for 52 weeks per year. If an employee works 20 hours per week, they count as half of an FTE.

**4** See the “Technical Notes” to the FY 2021 data tables for details on the survey frame and exclusions (<https://nces.nsf.gov/surveys/nonprofit-research-activities/2021#technical-notes>).

## Correction(s)

**29 November 2023:** In [table 2](#), the estimates for FY 2021 were generated from microdata that included some uncorrected balance errors. This affected all cells except for the one with All R&D, Total. This error was also seen in the text describing the table findings, where the proportion of nonfederally funded R&D total was listed as 32% instead of 31%. The table and the text have been corrected, so text now reads, “A higher proportion of the federally funded R&D total was spent on applied research (44%) compared to the nonfederally funded R&D total (31%).”

## Suggested Citation

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