National Center for Science and Engineering Statistics

InfoBrief

R&D Expenditures at U.S. Universities Increased by $6.8 Billion in FY 2025

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Total higher education research and development (R&D) expenditures reached $124.4 billion in FY 2025, an increase of $6.8 billion from FY 2024 (table 1). This total was 5.7% greater than R&D spending by academic institutions in FY 2024. Since FY 2015, higher education R&D has grown at an average compound annual rate of 6.1% in current dollars and 3.2% in constant dollars (figure 1).[1] R&D expenditures funded by federal sources increased by 4.2% and accounted for $2.7 billion of the total increase from FY 2024. Universities' internally funded R&D expenditures (institution funds) were $2.5 billion (8.2%) greater than in FY 2024, while R&D funded by state and local governments also increased in FY 2025 by $821 million (14%). R&D expenditures funded by businesses increased by $29 million (0.5%) and those funded by nonprofit organizations increased by $434 million (6.4%). R&D funded by all other sources increased by $254 million in FY 2025 (7.0%).

Table 1. Higher education R&D expenditures, by source of funds: FYs 2015–25

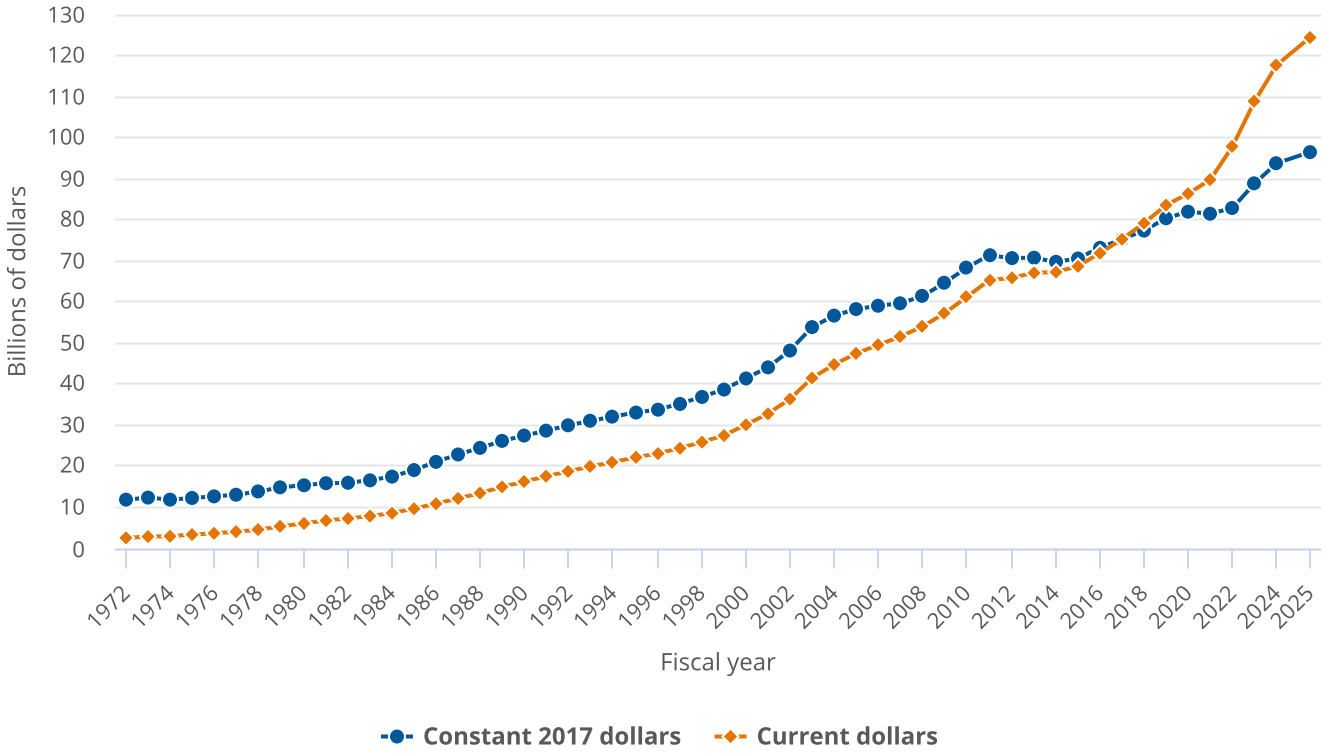
(Millions of current dollars)

Fiscal year	All R&D expenditures	Source of funds					
		Federal government	State and local government	Institution funds	Business	Nonprofit organizations	All other sources
2015	68,665	37,911	3,864	16,609	4,009	4,235	2,037
2016	71,881	38,856	4,053	17,912	4,220	4,635	2,204
2017	75,294	40,319	4,186	18,887	4,440	5,159	2,303
2018	79,177	41,934	4,326	20,222	4,726	5,459	2,511
2019	83,647	44,538	4,520	21,115	5,066	5,705	2,702
2020	86,448	46,184	4,603	22,024	5,189	5,758	2,688
2021	89,846	49,195	4,752	22,480	5,123	5,607	2,689
2022	97,851	54,056	4,918	24,546	5,706	5,978	2,646
2023	108,864	59,683	5,451	27,690	6,230	6,682	3,127
2024	117,666	64,702	6,075	30,150	6,359	6,730	3,651
2025	124,425	67,446	6,896	32,625	6,388	7,164	3,905

Note(s):
Because of rounding, detail may not add to total. This table includes all institutions surveyed in the fiscal years shown.

Source(s):
National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

Figure 1. Higher education R&D expenditures: FYs 1972–2025



Note(s):
Dollars adjusted for inflation (i.e., constant dollars) are based on the gross domestic product (GDP) implicit price deflator, currently in 2017 dollars, as published by the Bureau of Economic Analysis (BEA) under Section 1 Domestic Product and Income at https://apps.bea.gov/iTable/?isuri=1&reqid=19&step=4&categories=flatfiles&nipa_table_list=1, accessed on 4 May 2026. Note that GDP deflators are calculated on an economy-wide scale and do not explicitly focus on R&D.

Source(s):
National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

The data discussed in this report are from the Higher Education Research and Development (HERD) Survey, sponsored by the National Center for Science and Engineering Statistics (NCSES) within the U.S. National Science Foundation (NSF). For more information on the survey, see "Data Sources, Limitations, and Availability."

R&D Expenditures, by Federal Funding Sources

Federally funded R&D at universities surpassed $67 billion in FY 2025, which accounted for 54% of total R&D (table 2). The largest federal source of R&D expenditures for higher education institutions was the Department of Health and Human Services (HHS)—which includes the National Institutes of Health—at $36.3 billion, up $819 million from FY 2024. HHS accounted for 54% of FY 2025 federally funded R&D and 30% of the overall FY 2025 increase in federally funded R&D. HHS funds supported $31.5 billion in life sciences R&D, which notably includes biological and biomedical sciences and health sciences (figure 2).[2] HHS funds also supported $1.6 billion in engineering R&D expenditures.

Table 2. Federally financed higher education R&D expenditures, by federal agency: FYs 2015–25

(Millions of current dollars)

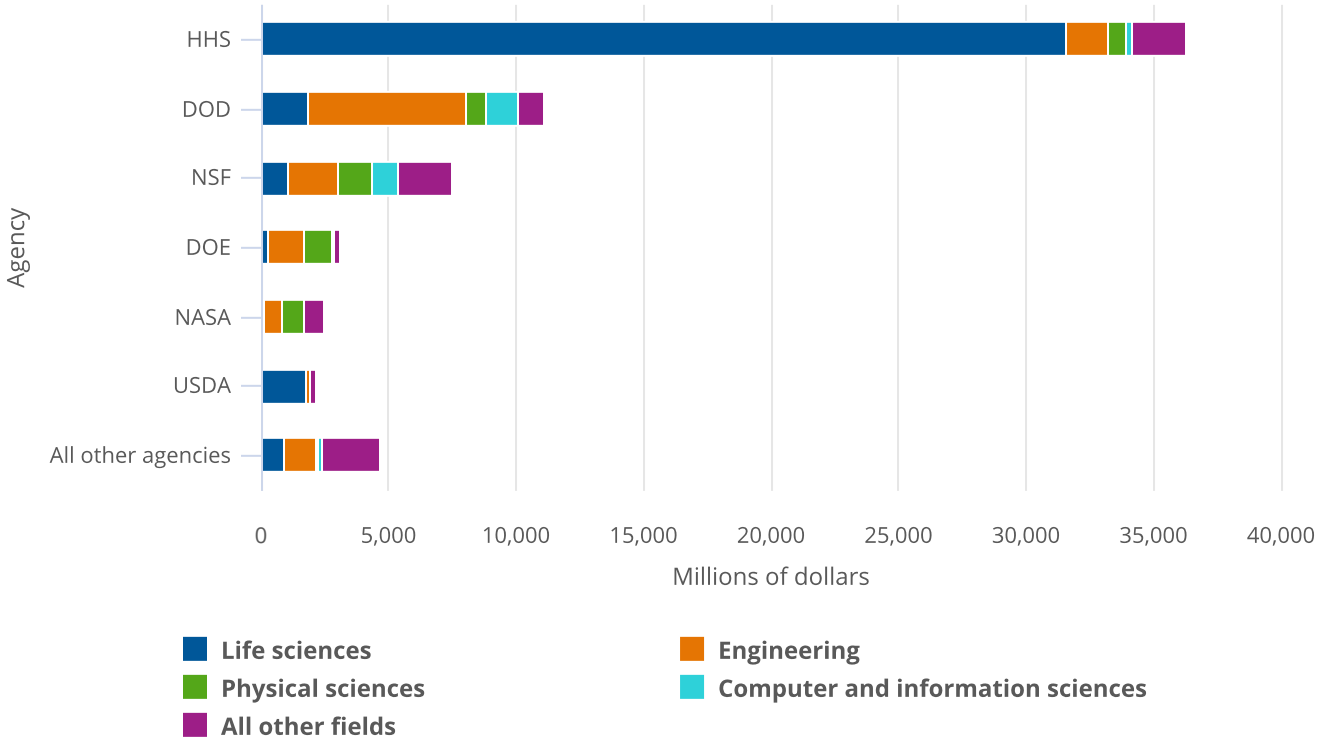
Source of funds	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	% change 2024–25
All higher education R&D expenditures	68,521	71,737	75,150	79,027	83,490	86,309	89,706	97,685	108,703	117,502	124,273	5.8
All federally financed higher education R&D expenditures	37,846	38,788	40,248	41,860	44,460	46,109	49,121	53,975	59,610	64,622	67,362	4.2
DOD	5,090	5,313	5,634	5,892	6,652	7,078	7,363	7,979	9,046	10,167	11,095	9.1
DOE	1,710	1,772	1,821	1,819	1,940	2,038	2,218	2,488	2,671	2,942	3,137	6.6
HHS	19,994	20,663	21,627	22,837	24,407	25,365	27,521	30,273	33,103	35,488	36,307	2.3
NASA	1,418	1,491	1,406	1,516	1,644	1,758	1,768	2,045	2,296	2,368	2,480	4.7
NSF	5,119	5,114	5,206	5,271	5,333	5,414	5,408	6,037	6,701	7,175	7,522	4.8
USDA	1,119	1,209	1,223	1,186	1,224	1,250	1,304	1,513	1,702	1,978	2,162	9.3
Other	3,397	3,226	3,330	3,339	3,260	3,206	3,538	3,641	4,092	4,504	4,659	3.4

DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture.

Note(s):
Because of rounding, detail may not add to total. Institutions reporting less than $1 million in total R&D expenditures completed a shorter version of the survey questionnaire and those totals are not reflected here. R&D expenditures from institutions reporting less than $1 million in R&D in FY 2025 were $151 million. Total federally funded R&D for these institutions in FY 2025 was $84 million.

Source(s):
National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

Figure 2. Federally financed higher education R&D expenditures, by agency and field: FY 2025



DOD = Department of Defense; DOE = Department of Energy; HHS = Department of Health and Human Services; NASA = National Aeronautics and Space Administration; NSF = National Science Foundation; USDA = Department of Agriculture.

Note(s):
All other agencies includes all other agencies reported. All other fields includes social sciences; psychology; mathematics and statistics; geosciences, atmospheric sciences, and ocean sciences; sciences not elsewhere classified; and non-science and engineering fields.

Source(s):
National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

The Department of Defense (DOD) funded $11.1 billion in higher education R&D expenditures in FY 2025, an increase of $928 million from FY 2024 that accounted for the largest portion (34%) of the overall FY 2025 increase. The largest share of DOD funds supported engineering R&D (56%, or $6.2 billion) followed by life sciences (17%, or $1.8 billion), and computer and information sciences R&D (11%, or $1.2 billion). DOD had the largest percentage increase in funded higher education R&D expenditures from 2015 to 2025 (71% in constant dollars). NSF funded $7.5 billion in higher education R&D in FY 2025, up $347 million from FY 2024, with $2.0 billion supporting engineering R&D and $1.3 billion supporting physical sciences R&D. NSF had the smallest percentage increase in funded R&D expenditures from 2015 to 2025 (15% in constant dollars).

Department of Energy (DOE) funds ($3.1 billion total, $195 million increase) primarily supported R&D in engineering ($1.4 billion, 46% of total) and physical sciences ($1.1 billion, 34% of total). The National Aeronautics and Space Administration (NASA) ($2.5 billion total, $112 million increase) and the Department of Agriculture (USDA) ($2.2 billion total, $184 million increase) were the only other agencies where funded higher education R&D expenditures reached or exceeded $2 billion in FY 2025. NASA funds primarily supported physical sciences ($827 million, 33% of total) and engineering ($764 million, 31% of total) R&D, while USDA funds in FY 2025 mainly supported life sciences ($1.8 billion, 81% of total). R&D expenditures funded by all other federal sources totaled $4.7 billion in FY 2025, an increase of 3.4% from FY 2024 (table 2).

R&D Expenditures, by Field

In FY 2025, R&D expenditures in science fields increased by 4.7% ($4.2 billion), reaching $94.9 billion, and engineering fields increased by 10.1% ($1.9 billion), reaching $21.2 billion (table 3). R&D expenditures in non-science and engineering (non-S&E) fields ($8.2 billion) increased by 7.8% ($593 million). R&D expenditures in two life sciences subfields, health sciences ($40.4 billion, a $1.9 billion increase) and biological and biomedical sciences ($21.3 billion, a $566 million increase), showed the largest dollar increases from FY 2024, accounting for 36% of the total university R&D growth in FY 2025. Combined, these two fields also accounted for 50% of total higher education R&D.

Table 3. Higher education R&D expenditures, by FY 2024 total, source of funds, and R&D field: FY 2025

(Millions of dollars)

Field	Total 2024 R&D expenditures	Total 2025 R&D expenditures	% change FYs 2024–25	Source of funds, 2025					
				Federal government	State and local government	Institution funds	Business	Nonprofit organizations	All other sources
All R&D fields	117,502	124,273	5.8	67,362	6,885	32,589	6,383	7,154	3,900
Science	90,647	94,879	4.7	51,978	4,926	24,088	4,915	5,891	3,082
Computer and information sciences	3,960	4,256	7.5	2,753	110	953	189	121	130
Geosciences, atmospheric sciences, and ocean sciences	4,411	4,573	3.7	2,957	332	910	92	192	89
Atmospheric science and meteorology	737	777	5.4	610	23	109	9	16	11

Table 3. Higher education R&D expenditures, by FY 2024 total, source of funds, and R&D field: FY 2025

(Millions of dollars)

Field	Total 2024 R&D expenditures	Total 2025 R&D expenditures	% change FYs 2024–25	Source of funds, 2025					
				Federal government	State and local government	Institution funds	Business	Nonprofit organizations	All other sources
Geological and earth sciences	1,690	1,739	2.9	1,064	116	410	49	60	40
Ocean sciences and marine sciences	1,501	1,529	1.9	945	153	289	21	89	33
Geosciences, atmospheric sciences, and ocean sciences nec	484	527	8.9	338	41	102	14	27	6
Life sciences	66,738	69,604	4.3	37,412	3,818	17,238	4,318	4,479	2,341
Agricultural sciences	4,805	5,078	5.7	1,800	1,204	1,585	163	170	157
Biological and biomedical sciences	20,732	21,298	2.7	12,643	704	5,135	835	1,426	554
Health sciences	38,467	40,354	4.9	21,626	1,571	9,645	3,252	2,737	1,523
Natural resources and conservation	1,121	1,250	11.5	565	209	356	20	59	40
Life sciences nec	1,614	1,625	0.7	778	130	516	48	87	66
Mathematics and statistics	1,166	1,324	13.6	839	44	357	12	58	14
Physical sciences	7,459	7,719	3.5	4,979	168	1,838	208	305	221
Astronomy and astrophysics	1,079	1,065	-1.3	689	7	179	4	64	121
Chemistry	2,520	2,515	-0.2	1,494	79	688	85	118	51
Materials science	349	375	7.5	235	11	104	15	6	4
Physics	3,108	3,331	7.2	2,347	51	732	59	105	38
Physical sciences nec	403	434	7.7	214	20	135	46	12	7
Psychology	1,732	1,853	7.0	1,074	84	550	11	110	24
Social sciences	3,913	4,176	6.7	1,412	285	1,658	54	564	202
Anthropology	179	189	5.6	62	4	100	2	14	7
Economics	781	798	2.2	229	60	314	14	133	48
Political science and government	601	644	7.2	129	27	320	4	114	50
Sociology, demography, and population studies	771	834	8.2	363	51	277	13	110	19
Social sciences nec	1,581	1,711	8.2	629	143	647	21	193	78
Sciences nec	1,268	1,373	8.3	552	84	583	31	62	61
Engineering	19,275	21,222	10.1	13,408	1,341	4,137	1,289	548	500
Aerospace, aeronautical, and astronautical engineering	2,054	2,234	8.8	1,750	52	227	179	9	18
Bioengineering and biomedical engineering	2,082	2,255	8.3	1,422	87	480	73	160	34
Chemical engineering	1,409	1,484	5.3	873	55	344	115	65	32
Civil engineering	2,097	2,248	7.2	1,087	388	559	100	68	46

Table 3. Higher education R&D expenditures, by FY 2024 total, source of funds, and R&D field: FY 2025

(Millions of dollars)

Field	Total 2024 R&D expenditures	Total 2025 R&D expenditures	% change FYs 2024–25	Source of funds, 2025					
				Federal government	State and local government	Institution funds	Business	Nonprofit organizations	All other sources
Electrical, electronic, and communications engineering	4,416	4,945	12.0	3,642	130	795	181	92	105
Industrial and manufacturing engineering	748	812	8.6	566	47	149	31	10	9
Mechanical engineering	2,575	2,796	8.6	1,899	100	506	200	47	44
Metallurgical and materials engineering	1,141	1,234	8.2	816	55	227	77	32	27
Engineering nec	2,753	3,214	16.7	1,354	427	849	333	66	185
Non-S&E	7,579	8,172	7.8	1,977	619	4,364	179	715	318
Business management and business administration	1,356	1,538	13.4	130	79	1,138	42	62	88
Communication and communications technologies	265	283	6.8	63	14	154	7	32	12
Education	2,219	2,277	2.6	995	225	723	53	242	38
Humanities	930	993	6.8	67	30	714	18	115	48
Law	445	445	0.0	47	42	246	7	71	32
Social work	461	451	-2.2	199	67	134	3	42	5
Visual and performing arts	308	331	7.5	22	12	263	2	23	10
Non-S&E nec	1,596	1,854	16.2	454	149	993	48	127	84

nec = not elsewhere classified; S&E = science and engineering.

Note(s):
This table includes only institutions reporting $1 million or more in total R&D expenditures in FY 2024. Institutions reporting less than $1 million in total R&D expenditures in FY 2024 completed a shorter version of the survey form in FY 2025, and that form did not collect R&D expenditures by source and detailed field. Total expenditures from institutions reporting less than $1 million in R&D in FY 2025 was $151 million.

Source(s):
National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

While the federal government funded 54% of all FY 2025 higher education R&D expenditures, federally funded expenditures in several fields accounted for 70% or more of their respective totals: atmospheric science and meteorology (79%); aerospace, aeronautical, and astronautical engineering (78%); electrical, electronic, and communications engineering (74%); physics (70%); and industrial and manufacturing engineering (70%). State and local governments funded 5.5% of total academic R&D, but these sources supported higher percentages of the respective total in five fields: agricultural sciences (24%), civil engineering (17%), natural resources and conservation (17%), social work (15%), and education (10%). The science and engineering (S&E) fields with the highest shares of institutionally funded R&D were anthropology (53%) and political science and government (50%). Non-S&E fields as a whole had 53% institutional funding. Within the non-S&E fields, only two fields received less than 50% of their support from institutional funds: education (32%) and social work (30%). Nonprofit organizations and businesses provided similar levels of R&D support in FY 2025 at 5.8% and 5.1%, respectively. However, nonprofits funded at least 16% of R&D in three fields: political science and government (18%), economics (17%), and law (16%), while businesses funded 10% or more in two fields: physical sciences, not elsewhere classified (11%); and engineering, not elsewhere classified (10%).[3]

Top University Research Performers

The top 30 institutions in terms of R&D expenditures accounted for 42% of the total spent on R&D within the higher education sector in FY 2025, which is consistent with FYs 2023 and 2024 (table 4). Thirty-seven institutions reported at least $1 billion in R&D expenditures in FY 2025, which is consistent with FY 2024, and four more than the 33 institutions in FY 2023.[4] Seventeen of the top 30 institutions were public, accounting for $28.7 billion in total R&D expenditures; 13 were private, accounting for $23.6 billion.[5] Almost all of the institutions (28 of the 30) had medical schools.[6] Institutions in California comprised 4 of the top 10 and 5 of the top 30 institutions. New York, Pennsylvania, and Texas each had 3 institutions in the top 30, while Georgia, Maryland, and North Carolina had 2 apiece. The University of Texas, Austin moved onto the list of 30 universities with the highest R&D totals in FY 2025, ranking at number 27 (previously ranked 31), replacing Northwestern University (previously ranked 28). Only two other institutions changed more than 3 positions: Yale University moved up 7 positions to number 9, and Washington University, Saint Louis moved up 14 positions to number 16.[7]

Table 4. Thirty institutions reporting the largest R&D expenditures, ranked by FY 2025 expenditures: FYs 2023–25

(Millions of current dollars)

Institution	State	Rank	2023	2024	2025	% change 2024–25
All institutions	-	-	108,703	117,502	124,273	5.8
Leading 30 institutions	-	-	45,884	49,459	52,346	5.8
Johns Hopkins U.[a]	MD	1	3,802	4,129	4,531	9.7
U. California, San Francisco	CA	2	2,047	2,128	2,270	6.7
U. Michigan, Ann Arbor	MI	3	1,926	2,111	2,213	4.8
U. Pennsylvania	PA	4	1,954	2,168	2,207	1.8
U. California, Los Angeles	CA	5	1,722	1,896	2,011	6.1
U. California, San Diego	CA	6	1,705	1,881	1,951	3.7
U. Wisconsin-Madison	WI	7	1,732	1,933	1,946	0.7
U. Washington, Seattle	WA	8	1,734	1,691	1,839	8.7
Yale U.	CT	9	1,327	1,520	1,714	12.8
Stanford U.	CA	10	1,538	1,642	1,710	4.2
Ohio State U.	OH	11	1,449	1,582	1,676	6.0
U. North Carolina, Chapel Hill	NC	12	1,550	1,599	1,657	3.7
Cornell U.	NY	13	1,452	1,614	1,657	2.7
Georgia Institute of Technology	GA	14	1,405	1,529	1,656	8.4
Duke U.	NC	15	1,508	1,581	1,625	2.8
Washington U., Saint Louis	MO	16	1,169	1,243	1,613	29.8
U. Pittsburgh, Pittsburgh	PA	17	1,398	1,505	1,539	2.3
Harvard U.	MA	18	1,435	1,495	1,536	2.8
U. Maryland	MD	19	1,385	1,540	1,525	-0.9
New York U.	NY	20	1,457	1,501	1,489	-0.8
Columbia U. in the City of New York	NY	21	1,342	1,450	1,475	1.7
U. Minnesota, Twin Cities	MN	22	1,320	1,410	1,465	3.9
U. Texas M. D. Anderson Cancer Center	TX	23	1,255	1,363	1,446	6.1
Texas A&M U., College Station and Health Science Center	TX	24	1,278	1,394	1,433	2.8
Pennsylvania State U., University Park and Hershey Medical Center	PA	25	1,207	1,303	1,407	8.0
Vanderbilt U. and Vanderbilt U. Medical Center	TN	26	1,253	1,328	1,404	5.7
U. Texas, Austin	TX	27	1,036	1,144	1,373	20.0
U. Southern California	CA	28	1,155	1,264	1,359	7.5
U. Florida	FL	29	1,250	1,272	1,335	4.9
Emory U.	GA	30	1,094	1,247	1,283	2.9

[a] Johns Hopkins University includes the Applied Physics Laboratory, with $2,844 million in total R&D expenditures in FY 2025.

Note(s):
Because of rounding, detail may not add to total. Rankings are based on unrounded totals. This table reflects the leading 30 institutions for FY 2025; the institutions listed may not be in the top 30 of prior fiscal years.

Source(s):
National Center for Science and Engineering Statistics, Higher Education Research and Development Survey.

Data Sources, Limitations, and Availability

The FY 2025 higher education R&D expenditures data were collected from a census of 934 universities and colleges that grant a bachelor's degree or higher and expended at least $150,000 in R&D in FY 2024. Since this is a census, sampling error is not applicable. Nonsampling error is unmeasured. To reduce respondent burden, the HERD Survey requests abbreviated data (short form) from institutions reporting less than $1 million in R&D expenditures during the previous fiscal year (FY 2024). Except for the totals reported in table 1 and figure 1, all other totals shown in this report exclude expenditures from the 240 institutions that completed the short form version of the survey. The institutions completing the short form survey accounted for $151 million (0.12%) of total higher education R&D expenditures in FY 2025.

The fiscal year referred to throughout this report is the academic fiscal year. For most academic institutions, FY 2025 represents 1 July 2024 through 30 June 2025.

The amounts reported include all funds expended for activities specifically organized to produce research outcomes and either sponsored by an outside organization or separately accounted-for using institution funds. R&D expenditures at university-administered federally funded research and development centers (FFRDCs) are collected in a separate NCSES survey, the FFRDC Research and Development Survey.

The full set of data tables and technical information from this survey are available at https://ncses.nsf.gov/surveys/higher-education-research-development/2025.

NCSES has reviewed this product for unauthorized disclosure of confidential information and approved its release (NCSES-DRN26-064).

Notes

1 Dollars adjusted for inflation (i.e., constant dollars) are based on the gross domestic product (GDP) implicit price deflator, currently in 2017 dollars, as published by the Bureau of Economic Analysis (BEA) under Section 1 Domestic Product and Income at https://apps.bea.gov/iTable/?isuri=1&reqid=19&step=4&categories=flatfiles&nipa_table_list=1, accessed on 4 May 2026. Note that GDP deflators are calculated on an economy-wide scale and do not explicitly focus on R&D.

2 See table 3 in this InfoBrief for the full breakdown of all R&D fields and subfields.

3 Physical sciences, not elsewhere classified includes other physical sciences fields that cannot be classified using the fields provided on the HERD questionnaire. Engineering, not elsewhere classified could include agricultural engineering, engineering design, engineering mechanics, engineering physics, engineering science, forest engineering, nanotechnology, naval architecture and marine engineering, nuclear engineering, ocean engineering, petroleum engineering, and other engineering fields that cannot be classified using the fields provided on the HERD questionnaire.

4 For more details on institutions ranked by total R&D expenditures, see tables 4, 6, and 13–15 in the survey's FY 2025 detailed data tables.

5 Additional detailed data on institutional control of colleges and universities is available in the NCSES Table Builder tool, using the dimension "Institution Characteristics/Public or Private." See the article How to Build a Table for instructions on creating custom tables within this tool.

6 Additional detailed data on medical school R&D expenditures are available in the NCSES Table Builder tool, using the measure "For Medical School R&D." See the article How to Build a Table for instructions on creating custom tables within this tool.

7 In FY 2025, Washington University, Saint Louis improved its reporting to the HERD Survey through a new accounting system that enabled it to capture eligible institutionally funded research expenditures that had previously been tracked separately but omitted. The university maintains strict internal financial controls to systematically separate faculty research activity from instruction and administrative service at the transactional level. The reporting change contributed significantly to the large increase in reported R&D expenditures from FY 2024. NCSES worked with the university to verify the previously omitted expenditures.

Suggested Citation

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