Table 9. Higher education R&D expenditures at institutions in the standard form survey population, by R&D field: FYs 2010–25

(Dollars in thousands)

Field	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
All R&D fields	61,286,610	65,274,393	65,730,064	66,978,647	67,161,428	68,520,986	71,737,194	75,150,488	79,027,030	83,490,430	86,308,537	89,706,305	97,684,505	108,703,229	117,501,503	124,273,460
Science	49,061,829	51,955,427	51,915,930	52,609,903	52,761,785	53,844,520	56,235,949	58,937,201	62,019,514	65,418,733	67,567,030	70,295,678	76,157,767	84,333,197	90,647,239	94,879,110
Computer and information sciences	1,638,047	1,742,486	1,822,293	2,067,846	1,927,578	1,962,030	2,079,423	2,192,261	2,397,559	2,637,121	2,924,931	2,953,932	3,201,158	3,615,282	3,959,615	4,256,408
Geosciences, atmospheric sciences, and ocean sciences	2,991,741	3,153,174	3,173,011	3,195,029	3,227,092	3,246,105	3,082,509	3,147,577	3,159,571	3,185,938	3,280,698	3,295,638	3,654,450	4,039,535	4,411,451	4,572,510
Atmospheric science and meteorology	429,354	481,275	476,729	493,385	501,517	573,913	626,676	623,507	608,041	590,386	612,497	624,278	668,852	723,927	737,331	777,060
Geological and earth sciences	1,083,969	1,142,630	1,168,945	1,163,446	1,159,067	1,113,536	997,675	1,084,096	1,131,931	1,121,272	1,158,214	1,242,415	1,348,424	1,489,632	1,689,746	1,738,554
Ocean sciences and marine sciences	1,021,857	1,049,630	1,025,472	1,051,418	1,071,370	1,049,538	1,097,679	1,098,356	1,061,409	1,100,775	1,137,181	1,035,365	1,212,107	1,366,543	1,500,576	1,529,444
Geosciences, atmospheric sciences, and ocean sciences nec	456,561	479,639	501,865	486,780	495,138	509,118	360,479	341,618	358,190	373,505	372,806	393,580	425,067	459,433	483,798	527,452
Life sciences	34,984,249	37,337,522	37,201,282	37,557,926	37,938,741	38,770,221	40,859,163	43,099,547	45,607,115	48,226,300	49,615,898	52,351,337	56,478,988	62,203,454	66,737,765	69,604,386
Agricultural sciences	3,011,150	3,116,840	3,300,100	3,347,688	3,381,853	3,479,612	3,287,678	3,274,578	3,307,241	3,426,776	3,625,713	3,553,345	3,936,027	4,285,578	4,804,640	5,078,093
Biological and biomedical sciences	10,946,456	11,855,468	11,611,610	11,679,127	11,699,720	11,703,907	13,027,574	13,723,185	14,517,900	15,391,056	15,767,001	16,570,118	18,133,187	19,522,748	20,731,754	21,297,808
Health sciences	19,268,085	20,398,377	20,331,575	20,454,413	20,707,633	21,299,364	22,387,269	23,991,315	25,774,594	27,265,062	27,992,213	29,856,130	31,874,482	35,726,499	38,466,518	40,354,124
Natural resources and conservation[a]	na	na	na	na	na	na	693,318	691,655	779,447	841,416	901,808	935,072	1,016,471	1,079,451	1,120,744	1,249,614
Life sciences nec	1,758,558	1,966,837	1,957,997	2,076,698	2,149,535	2,287,338	1,463,324	1,418,814	1,227,933	1,301,990	1,329,163	1,436,672	1,518,821	1,589,178	1,614,109	1,624,747
Mathematics and statistics	592,200	640,471	674,436	670,775	657,656	640,802	679,295	700,221	750,299	769,019	800,522	773,022	879,440	1,061,002	1,166,311	1,324,154
Physical sciences	4,621,772	4,768,816	4,709,948	4,646,587	4,613,739	4,648,415	4,876,304	5,049,922	5,231,993	5,550,678	5,672,351	5,737,313	6,168,435	6,948,693	7,458,924	7,719,392
Astronomy and astrophysics	573,229	583,847	706,544	558,635	566,965	626,589	621,738	648,813	668,227	734,987	780,259	740,845	813,970	967,028	1,078,997	1,064,681
Chemistry	1,748,465	1,783,604	1,748,727	1,703,866	1,723,214	1,757,329	1,773,336	1,791,330	1,865,977	1,965,378	1,929,263	1,996,422	2,127,517	2,302,294	2,519,943	2,515,371
Materials science[a]	na	na	na	na	na	na	172,271	227,825	254,447	259,316	253,173	285,999	286,685	320,848	349,158	374,831
Physics	1,998,732	2,108,340	1,985,954	2,097,089	2,054,772	2,037,057	2,108,936	2,155,653	2,206,576	2,327,059	2,435,133	2,463,415	2,669,357	2,967,894	3,107,519	3,330,937
Physical sciences nec	301,346	293,025	268,723	286,997	268,788	227,440	200,023	226,301	236,766	263,938	274,523	250,632	270,906	390,629	403,307	433,572
Psychology	1,077,655	1,159,180	1,179,310	1,128,320	1,143,065	1,183,558	1,222,998	1,246,510	1,261,399	1,328,432	1,364,875	1,329,356	1,445,922	1,642,023	1,732,064	1,852,944
Social sciences	1,999,942	2,063,007	2,053,848	2,172,421	2,210,266	2,315,308	2,361,489	2,554,806	2,721,851	2,805,686	2,951,839	2,828,295	3,164,661	3,623,437	3,912,725	4,176,188
Anthropology[a]	na	na	na	na	na	na	95,935	110,924	118,227	124,403	119,477	108,192	132,782	152,399	178,664	189,394
Economics	352,890	387,036	383,402	408,255	428,076	453,576	395,598	433,995	455,912	458,124	559,122	550,427	665,186	723,888	781,386	797,951
Political science and government	374,903	370,694	390,068	427,428	426,375	459,248	383,995	412,098	438,056	447,752	425,194	423,922	488,391	557,305	600,664	643,988
Sociology, demography, and population studies	419,895	433,484	461,007	482,275	504,735	524,188	503,300	551,845	608,705	610,133	594,100	553,195	616,054	734,588	770,870	833,730
Social sciences nec	852,254	871,793	819,371	854,463	851,080	878,296	982,661	1,045,944	1,100,951	1,165,274	1,253,946	1,192,559	1,262,248	1,455,257	1,581,141	1,711,125
Sciences nec	1,156,223	1,090,771	1,101,802	1,170,999	1,043,648	1,078,081	1,074,768	946,357	889,727	915,559	955,916	1,026,785	1,164,713	1,199,771	1,268,384	1,373,128
Engineering	9,325,722	10,032,590	10,284,075	10,733,918	10,971,498	11,062,770	11,367,246	11,911,242	12,363,331	13,214,302	13,702,266	14,292,584	15,662,733	17,476,420	19,275,480	21,222,336
Aerospace, aeronautical, and astronautical engineering	635,234	667,757	662,444	689,553	662,479	732,092	881,970	990,726	1,010,499	1,170,171	1,293,605	1,452,254	1,647,246	1,913,724	2,053,837	2,233,532
Bioengineering and biomedical engineering	745,277	817,389	871,917	884,421	951,058	1,003,096	1,085,842	1,220,693	1,343,576	1,450,846	1,470,154	1,560,357	1,727,176	1,893,985	2,081,970	2,255,457
Chemical engineering	821,163	913,905	903,613	910,222	906,471	914,308	884,190	934,538	931,038	977,586	1,001,307	1,024,238	1,108,239	1,246,926	1,409,387	1,484,418
Civil engineering	1,106,759	1,208,592	1,232,932	1,296,955	1,256,412	1,284,828	1,328,617	1,302,323	1,354,779	1,432,985	1,425,058	1,482,140	1,686,234	1,900,720	2,096,895	2,247,863
Electrical, electronic, and communications engineering	2,050,292	2,206,894	2,311,665	2,408,824	2,478,216	2,492,197	2,512,469	2,726,470	2,843,768	2,937,896	3,052,778	3,078,784	3,462,331	3,837,943	4,416,098	4,944,736
Industrial and manufacturing engineering[a]	na	na	na	na	na	na	236,679	351,082	514,775	556,355	587,061	574,212	615,574	707,413	748,184	811,930
Mechanical engineering	1,458,382	1,556,892	1,550,119	1,647,610	1,503,710	1,513,911	1,434,699	1,535,869	1,630,564	1,705,001	1,813,738	1,882,557	2,062,905	2,325,363	2,574,748	2,796,154
Metallurgical and materials engineering	703,332	738,892	757,994	812,259	1,202,757	1,101,625	743,980	735,699	762,686	792,373	818,672	841,720	886,659	1,039,160	1,141,081	1,234,260

Table 9. Higher education R&D expenditures at institutions in the standard form survey population, by R&D field: FYs 2010–25

(Dollars in thousands)

Field	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Engineering nec	1,805,283	1,922,269	1,993,391	2,084,074	2,010,395	2,020,713	2,258,800	2,113,842	1,971,646	2,191,089	2,239,893	2,396,322	2,466,369	2,611,186	2,753,280	3,213,986
Non-S&E	2,899,059	3,286,376	3,530,059	3,634,826	3,428,145	3,613,696	4,133,999	4,302,045	4,644,185	4,857,395	5,039,241	5,118,043	5,864,005	6,893,612	7,578,784	8,172,014
Business management and business administration	370,015	400,376	443,061	473,136	481,154	569,521	642,332	725,487	784,587	868,197	888,099	934,725	1,080,584	1,218,704	1,355,598	1,538,310
Communication and communications technologies	130,396	153,743	159,935	148,510	166,040	168,522	166,414	202,576	191,654	206,796	192,573	186,847	213,735	253,129	264,585	282,659
Education	993,588	1,120,766	1,233,364	1,220,814	1,243,226	1,292,051	1,340,553	1,384,531	1,503,879	1,522,064	1,606,371	1,614,195	1,741,118	2,037,846	2,218,845	2,276,769
Humanities	260,374	313,032	339,626	386,719	402,173	430,091	443,912	493,662	505,198	539,318	565,835	561,272	712,171	844,743	930,148	992,995
Law	98,109	124,779	131,581	173,558	149,235	174,765	184,344	223,922	266,440	255,830	267,827	282,773	358,762	431,185	444,842	445,007
Social work	177,331	194,667	199,043	212,320	225,897	214,205	211,548	235,296	245,120	285,655	306,409	319,611	363,126	417,518	461,383	451,233
Visual and performing arts	68,717	77,358	84,639	87,333	95,837	100,701	133,699	124,836	137,372	159,288	174,980	178,511	228,488	284,182	307,715	331,156
Non-S&E nec	800,529	901,655	938,810	932,436	664,583	663,840	1,011,197	911,735	1,009,935	1,020,247	1,037,147	1,040,109	1,166,021	1,406,305	1,595,668	1,853,885

na = not applicable; separate data for natural resources and conservation, materials science, anthropology, and industrial and manufacturing engineering were not collected prior to FY 2016.

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

[a] Prior to FY 2016, expenditures for natural resources and conservation, materials science, anthropology, and industrial and manufacturing engineering were not collected separately. See the FY 2016 Technical Notes, Appendix A (https://ncsesdata.nsf.gov/herd/2016) for information detailing where these fields were previously reported.

Note(s):
FY 2016 R&D expenditure amounts in various fields may show increases or decreases from amounts reported in FY 2015 because of the reclassification of disciplines. See the FY 2016 Technical Notes, Appendix A (https://ncsesdata.nsf.gov/herd/2016) for specific details about discipline changes.

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