

TABLE 13

## Federally financed higher education R&amp;D expenditures, by federal agency and R&amp;D field: FY 2019

(Dollars in thousands)

Field	All federal R&D expenditures	DOD	DOE	HHS	NASA	NSF	USDA	Other <sup>a</sup>
All R&D fields	44,455,265	6,654,613	1,939,175	24,413,353	1,644,687	5,330,711	1,221,317	3,251,409
Science	35,551,659	3,321,223	1,143,199	23,250,486	1,173,618	3,688,934	1,094,579	1,879,620
Computer and information sciences	1,794,548	854,034	50,085	119,910	22,845	629,898	6,362	111,414
Geosciences, atmospheric sciences, and ocean sciences	2,067,292	224,716	94,187	62,036	406,239	690,435	39,695	549,984
Atmospheric science and meteorology	460,463	53,869	21,472	3,834	133,889	85,358	2,293	159,748
Geological and earth sciences	676,742	43,864	57,519	7,596	209,087	240,882	24,965	92,829
Ocean sciences and marine sciences	698,401	111,126	6,814	9,469	41,994	319,681	3,063	206,254
Geosciences, atmospheric sciences, and ocean sciences nec	231,686	15,857	8,382	41,137	21,269	44,514	9,374	91,153
Life sciences	25,443,994	1,321,881	225,861	21,373,795	95,417	757,452	986,905	682,683
Agricultural sciences	989,573	15,827	37,778	61,630	7,517	80,383	667,128	119,310
Biological and biomedical sciences	9,260,282	386,876	129,021	7,829,721	34,424	524,944	154,680	200,616
Health sciences	14,185,253	824,641	13,225	12,949,992	44,086	66,651	53,857	232,801
Natural resources and conservation	367,864	67,248	32,297	16,871	8,672	52,161	92,836	97,779
Life sciences nec	641,022	27,289	13,540	515,581	718	33,313	18,404	32,177
Mathematics and statistics	466,937	123,327	8,274	66,235	4,370	223,352	5,184	36,195
Physical sciences	3,691,334	603,540	743,651	599,981	591,229	1,056,202	6,326	90,405
Astronomy and astrophysics	514,432	12,077	17,757	917	363,052	115,084	1,016	4,529
Chemistry	1,182,806	137,216	141,411	521,310	20,457	339,853	3,189	19,370
Materials science	165,880	72,337	25,753	8,438	3,342	49,199	278	6,533
Physics	1,657,419	346,714	530,051	57,424	172,997	499,732	1,428	49,073
Physical sciences nec	170,797	35,196	28,679	11,892	31,381	52,334	415	10,900
Psychology	786,985	54,448	362	545,727	21,168	75,240	10,962	79,078
Social sciences	936,238	77,670	4,954	373,777	24,816	149,412	31,662	273,947
Anthropology	42,816	5,467	969	7,512	114	18,512	1,502	8,740
Economics	91,072	3,005	510	33,771	47	20,100	14,203	19,436
Political science and government	86,244	15,394	1,784	17,959	1,825	19,810	1,663	27,809
Sociology, demography, and population studies	289,433	18,779	143	137,475	475	34,311	6,518	91,732
Social sciences nec	426,673	35,025	1,548	177,060	22,355	56,679	7,776	126,230
Sciences nec	364,331	61,607	15,825	109,025	7,534	106,943	7,483	55,914
Engineering	7,667,373	3,268,352	790,697	890,968	460,514	1,351,487	76,497	828,858
Aerospace, aeronautical, and astronautical engineering	820,512	535,001	21,945	6,189	155,912	35,829	577	65,059
Bioengineering and biomedical engineering	879,674	159,623	13,918	558,955	10,051	93,499	18,262	25,366
Chemical engineering	498,380	89,030	129,537	77,662	10,487	145,914	7,856	37,894
Civil engineering	620,862	69,997	78,804	21,265	16,143	147,583	11,122	275,948
Electrical, electronic, and communications engineering	2,049,254	1,194,376	148,365	71,050	111,269	401,511	3,357	119,326
Industrial and manufacturing engineering	366,535	212,785	20,296	11,830	19,685	42,843	1,503	57,593
Mechanical engineering	1,055,725	513,335	131,018	63,244	77,460	189,587	5,441	75,640

TABLE 13

**Federally financed higher education R&D expenditures, by federal agency and R&D field: FY 2019**

(Dollars in thousands)

<b>Field</b>	<b>All federal R&amp;D expenditures</b>	<b>DOD</b>	<b>DOE</b>	<b>HHS</b>	<b>NASA</b>	<b>NSF</b>	<b>USDA</b>	<b>Other<sup>a</sup></b>
Metallurgical and materials engineering	483,774	196,126	97,495	20,426	10,844	104,414	2,492	51,977
Engineering nec	892,657	298,079	149,319	60,347	48,663	190,307	25,887	120,055
Non-S&E	1,236,233	65,038	5,279	271,899	10,555	290,290	50,241	542,931
Business management and business administration	73,296	10,391	1,318	5,765	515	18,241	1,242	35,824
Communication and communications technologies	35,467	4,192	94	10,370	865	10,420	493	9,033
Education	662,423	12,030	994	76,330	6,380	206,074	5,011	355,604
Humanities	49,747	7,604	593	9,719	1	9,507	80	22,243
Law	31,585	442	82	6,905	0	1,487	979	21,690
Social work	133,080	2,980	61	113,971	631	872	858	13,707
Visual and performing arts	9,091	816	103	631	13	1,796	570	5,162
Non-S&E nec	241,544	26,583	2,034	48,208	2,150	41,893	41,008	79,668

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; nec = not elsewhere classified; S&E = science and engineering; USDA = Department of Agriculture.

<sup>a</sup> Includes all other agencies reported.

**Note(s):**

This table includes only institutions reporting \$1 million or more in total R&D expenditures in 2018. Institutions reporting less than \$1 million in total R&D expenditures in 2018 completed a shorter version of the survey form in FY 2019, and that form did not collect federally financed R&D expenditures by source and detailed field. For federally financed R&D expenditures by major field at institutions completing the shorter version of the survey, see table 83.

**Source(s):**

National Center for Science and Engineering Statistics, Higher Education Research and Development Survey, FY 2019.