

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
All institutions	-	8,119,848	8,713,515	9,694,378	1,246,002	1,100,258	646,644	784,286	2,484,203	434,246	1,409,792	589,129	999,818
Johns Hopkins U. ^a	1	1,154,993	1,183,154	1,264,048	159,473	72,410	23,486	16,038	546,944	97,517	236,186	32,584	79,410
Georgia Institute of Technology	2	537,693	666,235	739,429	259,142	31,909	17,733	14,211	304,352	52,520	40,734	12,566	6,262
Pennsylvania State U., University Park and Hershey Medical Center	3	277,345	284,244	300,829	14,713	13,957	10,634	7,832	112,295	6,065	92,718	42,615	0
Utah State U.	4	206,998	228,986	239,736	224,735	1,165	0	3,402	7,830	0	1,880	0	724
U. Texas, Austin	5	175,426	194,110	216,881	12,350	6,462	18,372	9,422	66,044	49	65,345	18,650	20,187
Massachusetts Institute of Technology	6	213,108	193,246	215,477	23,398	68,994	19,336	4,478	32,876	55	22,905	11,403	32,032
U. Michigan, Ann Arbor	7	176,141	180,607	189,405	9,894	20,220	7,676	8,063	51,136	3,355	31,627	8,593	48,841
U. Dayton	8	145,508	171,865	189,150	18,846	198	6,315	733	7,245	53,995	7,966	82,728	11,124
Purdue U., West Lafayette	9	122,469	137,052	163,895	19,139	8,963	12,148	8,992	39,070	3,689	30,587	11,077	30,230
U. Colorado Boulder	10	105,890	132,769	148,185	89,374	9,269	10,437	12,830	9,618	0	11,057	1,283	4,317
U. Illinois, Urbana-Champaign	11	131,529	139,887	144,390	11,797	10,964	13,284	18,410	37,006	0	22,511	12,670	17,748
Texas A&M U., College Station and Health Science Center	12	95,138	123,286	138,068	20,840	19,364	6,188	27,518	14,549	7,168	10,203	7,666	24,572
U. California, San Diego	13	97,602	100,212	129,923	0	50,173	52	175	52,667	0	16,534	1,254	9,068
U. Washington, Seattle	14	114,031	119,758	127,827	7,012	23,702	8,210	13,959	31,054	1,325	10,812	3,420	28,333
Virginia Polytechnic Institute and State U.	15	107,677	108,080	114,336	12,674	15,769	2,761	10,557	36,203	12,975	11,427	6,911	5,059
U. Maryland ^b	16	86,398	95,898	104,247	10,119	17,093	10,001	16,021	11,816	484	13,249	9,274	16,190
Ohio State U.	17	85,038	88,435	103,560	244	2,364	8,064	10,252	18,756	5,956	34,318	12,968	10,638
U. California, Berkeley	18	79,645	78,026	93,638	0	0	3,867	8,416	70,634	0	0	0	10,721
Stanford U.	19	81,391	89,861	89,919	12,679	17,395	8,117	7,521	14,712	5,351	16,183	6,823	1,138
North Carolina State U.	20	94,592	91,430	88,636	1,865	7,583	13,782	8,072	15,399	2,723	9,364	10,891	18,957
U. Delaware	21	53,448	68,504	88,552	0	8,112	54,839	8,259	11,084	0	6,180	0	78
Wichita State U.	22	46,023	64,692	88,257	86,506	0	0	0	841	487	395	0	28
U. Wisconsin-Madison	23	73,412	75,104	85,549	0	7,721	9,328	5,739	11,794	2,732	11,612	7,565	29,058
Arizona State U.	24	80,121	73,746	85,208	0	8,935	4,872	16,853	27,343	8,774	6,962	3,347	8,122
Carnegie Mellon U.	25	56,175	63,083	84,680	1,773	13,835	6,043	3,109	17,467	2,393	27,722	6,389	5,949
U. Minnesota, Twin Cities	26	74,167	78,808	84,060	8,568	22,600	13,713	5,489	13,011	670	15,300	4,709	0
Woods Hole Oceanographic Institution	27	75,442	93,266	82,286	i 8,414	i 0	i 0	i 8,665	i 43,112	i 0	i 22,095	i 0	i 0
Duke U.	28	73,605	74,308	80,356	0	36,517	0	4,669	28,986	0	8,419	1,723	42
U. Florida	29	62,573	72,191	79,991	3,150	12,360	3,287	14,279	25,232	1,082	11,848	8,179	574

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
Cornell U.	30	69,870	72,771	73,646	1,114	14,003	10,409	7,198	11,580	2,808	13,110	10,877	2,547
Columbia U. in the City of New York	31	62,020	64,962	73,487	1,961	24,055	9,263	2,347	3,579	1,122	4,080	0	27,080
Northeastern U.	32	66,614	69,550	72,409	0	6,009	3,662	9,663	29,564	6,981	12,575	0	3,955
U. Tennessee, Knoxville ^c	33	66,562	66,556	70,892	20,634	1,631	3,413	6,223	11,446	5,967	0	5,782	15,796
SUNY, U. Buffalo	34	61,140	66,790	67,985	10,385	4,474	7,527	3,648	3,387	5,208	22,039	1,333	9,984
U. California, Santa Barbara	35	43,340	44,958	67,267	0	17,891	4,765	0	34,129	0	6,577	3,478	427
Iowa State U.	36	62,369	62,113	66,024	5,017	12,096	4,252	8,706	5,734	0	4,933	6,638	18,648
U. California, Los Angeles	37	49,163	53,761	65,455	0	6,850	4,932	5,399	24,999	0	14,643	4,229	4,403
Clemson U.	38	38,214	46,693	62,349	0	9,397	2,962	7,818	10,271	1,472	18,985	6,860	4,584
Northwestern U.	39	49,383	55,739	56,993	0	12,224	8,794	4,082	5,896	2,673	5,633	11,910	5,781
U. California, Davis	40	37,203	43,175	56,254	0	24,545	205	6,237	11,849	0	7,169	0	6,249
Boston U.	41	53,265	48,537	54,675	1,837	23,600	0	0	10,524	4,659	7,252	0	6,803
U. Southern California	42	55,089	51,948	54,438	3,861	7,044	4,875	3,400	28,797	2,537	0	0	3,924
U. Pennsylvania	43	44,542	49,526	54,427	0	18,092	5,593	0	15,464	0	15,229	0	49
Rice U.	44	42,085	46,799	53,851	0	16,490	4,417	6,595	19,865	0	2,980	3,466	38
Princeton U.	45	40,829	44,201	52,615	1,621	2,285	5,274	3,271	25,259	2,990	3,786	648	7,481
Vanderbilt U. and Vanderbilt U. Medical Center	46	52,373	43,570	52,364	0	14,751	6,104	9,299	13,374	0	6,963	0	1,873
U. Notre Dame	47	41,771	42,501	50,651	16,112	0	6,694	10,420	17,175	0	0	0	250
George Mason U.	48	45,977	44,086	50,246	0	4,573	0	4,324	19,952	19,287	819	788	503
New Jersey Institute of Technology	49	53,702	50,822	48,863	0	4,575	4,477	14,162	2,195	0	504	0	22,950
Mississippi State U.	50	45,520	44,188	48,255	14,275	669	4,045	1,045	3,564	3,386	3,450	296	17,525
Auburn U., Auburn	51	28,796	40,288	47,059	2,609	582	3,919	8,937	4,035	8,026	10,008	286	8,657
Harvard U.	52	52,801	50,918	47,017	0	26,699	1,491	604	2,923	0	292	15,008	0
New Mexico Institute of Mining and Technology	53	11,869	10,164	45,940	340	0	1,581	0	316	0	1,697	1,260	40,746
Oregon State U.	54	35,946	38,914	44,377	0	689	2,058	11,509	12,250	4,232	5,042	326	8,271
U. Maine	55	18,038	27,452	44,010	0	0	5,209	624	345	32	567	37,079	154
U. Pittsburgh, Pittsburgh	56	36,623	37,749	43,571	0	14,308	7,475	3,246	6,530	1,522	10,489	0	1
U. California, Santa Cruz	57	22,817	33,002	43,539	0	0	0	0	6,141	0	0	0	37,398
U. Alabama, Huntsville	58	42,499	44,780	43,390	29,143	14	401	3,084	4,039	3,317	1,889	519	984
Montana State U., Bozeman	59	28,753	39,190	42,936	0	3,856	1,289	5,009	5,211	0	5,239	0	22,332
Colorado School of Mines	60	33,432	37,909	42,745	1,170	1,657	2,937	10,665	270	2,457	2,352	9,756	11,481
U. Virginia, Charlottesville	61	41,454	37,143	42,481	0	10,622	4,725	0	9,165	0	8,388	9,045	536

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
U. Connecticut	62	30,450	37,988	42,418	0	4,715	4,795	13,601	5,879	0	5,903	7,344	181
U. Arizona	63	34,459	34,360	42,072	1,821	4,004	4,094	494	20,447	2,861	2,619	2,495	3,237
U. California, Irvine	64	27,421	29,315	40,869	0	11,242	4,428	3,746	6,599	0	8,254	6,563	37
U. Kentucky	65	26,818	33,001	38,078	0	2,429	2,268	6,988	1,521	934	4,922	3,053	15,963
Florida State U.	66	38,126	34,492	37,798	690	2,026	890	2,400	13,663	2,182	14,128	1,534	285
U. Central Florida	67	34,825	36,318	37,217	12,141	0	0	3,402	4,923	2,049	7,118	2,355	5,229
U. New Mexico	68	34,153	33,001	37,091	7,771	603	3,224	6,986	9,944	493	1,259	480	6,331
Colorado State U., Fort Collins	69	30,860	30,424	36,428	0	1,109	3,585	11,475	7,934	1,011	10,078	0	1,236
Rutgers, State U. New Jersey, New Brunswick	70	40,629	35,691	35,877	0	2,914	3,770	481	5,888	33	5,212	1,972	15,607
U. Chicago	71	20,168	25,909	35,751	0	0	0	0	0	0	0	0	35,751
U. Massachusetts, Amherst	72	28,635	32,063	35,204	0	2,447	13,477	6,201	5,857	0	4,997	0	2,225
U. Utah	73	34,915	29,330	35,141	0	8,540	3,340	8,967	7,635	0	1,968	472	4,219
Stevens Institute of Technology	74	23,906	26,766	34,630	0	1,564	911	5,840	2,811	18,399	3,234	0	1,871
Michigan State U.	75	31,431	31,314	34,356	0	4,261	4,571	5,866	9,170	0	5,608	0	4,880
U. North Dakota	76	20,330	35,155	33,233	0	0	747	23,663	721	0	807	132	7,163
U.S. Air Force Academy	77	29,812	28,914	32,709	1,572	0	0	479	272	890	28,240	306	950
Florida International U.	78	21,747	23,801	31,994	0	3,660	0	11,484	8,541	27	7,204	197	881
Case Western Reserve U.	79	27,954	30,483	31,686	0	13,861	8,373	747	2,192	0	6,372	0	141
SUNY, Polytechnic Institute	80	26,696	24,019	30,702	0	0	0	0	0	0	34	0	30,668
U. Alabama, Tuscaloosa	81	19,679	25,859	30,544	3,448	0	4,155	5,631	8,551	0	4,850	3,909	0
Mercer U.	82	29,625	31,923	29,959	13,040	0	0	0	858	0	6,941	9,120	0
New Mexico State U.	83	15,583	19,957	29,723	6,003	0	1,013	4,783	11,422	90	1,897	0	4,515
Rensselaer Polytechnic Institute	84	28,960	31,832	29,720	0	4,863	3,548	992	6,082	400	11,647	2,090	98
U. Houston	85	24,929	26,599	28,251	0	8,152	6,453	3,684	4,818	210	3,147	0	1,787
U. Texas, Arlington	86	22,163	23,581	28,177	3,191	2,509	0	3,169	3,749	9,684	3,191	0	2,684
U. South Florida ^d	87	18,073	26,183	27,554	161	4,798	1,143	10,357	5,349	968	2,659	0	2,119
Michigan Technological U.	88	23,332	26,289	27,496	0	1,548	2,232	1,405	5,855	0	15,704	639	113
Drexel U.	89	19,772	20,821	27,063	0	5,940	4,224	2,197	2,670	0	6,152	4,587	1,293
U. Massachusetts, Lowell	90	14,870	18,884	26,414	0	4,648	7,324	1,385	4,366	0	8,592	0	99
U. Texas, El Paso	91	11,812	15,602	26,326	0	1,026	0	2,638	3,050	1,404	17,333	94	781
SUNY, Stony Brook U.	92	15,329	17,613	25,968	0	5,757	0	921	9,232	0	1,408	8,150	500
California Institute of Technology	93	26,324	24,011	25,812	4,594	460	5,304	7,180	2,989	0	183	96	5,006

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
Dartmouth C. and Dartmouth Hitchcock Medical Center	94	21,064	24,126	25,052	0	9,421	3,304	1,461	6,219	0	4,647	0	0
U. Texas, Dallas	95	21,594	24,793	24,404	0	8,829	0	0	3,915	720	7,282	2,299	1,359
U. Iowa	96	20,687	23,116	24,367	0	486	70	9,935	824	444	762	0	11,846
U. Illinois, Chicago	97	17,537	21,610	24,287	0	8,801	1,659	2,797	2,938	0	8,092	0	0
Missouri U. of Science and Technology	98	16,411	21,797	24,061	921	0	1,430	4,251	2,965	716	2,871	10,484	423
Washington U., Saint Louis	99	19,552	22,291	24,042	0	9,584	4,772	163	4,122	0	0	5,040	361
Yale U.	100	24,172	23,578	23,926	0	7,035	3,839	0	7,197	0	5,855	0	0
U. Arkansas, Fayetteville	101	18,074	17,980	22,533	0	4,361	2,154	3,622	9,406	1,845	945	0	200
U. North Carolina, Chapel Hill	102	17,813	19,983	22,510	0	8,693	0	13,105	0	712	0	0	0
U. Nebraska, Lincoln	103	21,149	21,450	22,395	0	5,300	1,339	8,400	3,467	0	1,878	2,011	0
U. Alabama, Birmingham	104	44,243	43,477	22,205	944	5,501	349	287	1,565	0	5,769	7,790	0
West Virginia U.	105	15,930	18,042	21,919	841	0	5,060	2,487	3,039	1,158	7,977	551	806
Air Force Institute of Technology	106	15,238	17,065	21,622	2,824	0	0	836	5,073	12,237	0	652	0
U. California, Riverside	107	17,034	18,541	21,080	0	1,642	5,798	2,381	7,938	0	3,116	77	128
U. South Carolina, Columbia	108	13,921	16,470	21,003	0	0	3,060	2,532	4,891	0	8,804	1,716	0
U. Oklahoma, Norman and Health Science Center	109	15,069	15,235	20,850	2,449	832	1,905	2,772	10,362	269	0	0	2,261
New York U.	110	15,445	18,633	20,507	0	0	2,209	828	8,352	0	1,987	0	7,131
Washington State U.	111	20,360	23,129	20,359	0	1,078	2,781	4,654	2,757	96	3,289	2,456	3,248
Tufts U.	112	20,397	19,362	19,796	183	9,519	1,952	3,085	2,374	0	2,282	0	401
CUNY, City C.	113	15,704	18,078	19,125	0	3,581	2,597	1,752	7,741	0	3,089	0	365
Lehigh U.	114	16,205	16,976	19,098	0	2,417	3,270	2,870	1,209	1,545	5,452	2,335	0
Texas Tech U.	115	14,399	15,359	18,858	0	0	4,194	3,718	6,251	970	3,668	0	57
Worcester Polytechnic Institute	116	13,084	16,095	18,401	403	941	2,106	211	1,467	0	12,109	0	1,164
Brown U.	117	17,138	15,963	18,304	0	6,397	2,632	0	2,537	0	3,074	2,827	837
U. Missouri, Columbia	118	16,905	15,905	17,346	0	977	1,011	5,935	4,966	223	3,025	215	994
U. Hawaii, Manoa	119	17,536	16,553	17,241	43	484	0	2,560	10,762	0	1,486	0	1,906
U. Rochester	120	12,764	14,213	17,031	0	5,260	854	0	5,085	0	5,832	0	0
U. Wyoming	121	4,640	7,391	17,026	162	760	10,137	3,682	369	0	1,276	116	524
Oklahoma State U., Stillwater	122	11,969	15,319	16,574	4,498	0	2,363	2,511	1,650	555	2,005	1,133	1,859
Brigham Young U., Provo	123	11,438	15,694	15,386	0	0	3,031	1,089	5,242	716	5,308	0	0

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

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Kansas State U.	124	12,530	13,810	15,266	878	0	2,488	1,738	2,667	734	3,638	0	3,123
U. Cincinnati	125	11,447	12,970	14,790	3,289	397	1,214	3,480	4,000	0	2,145	0	265
U. Louisville	126	9,077	11,844	14,712	0	4,201	1,943	621	3,515	694	1,932	9	1,797
Embry-Riddle Aeronautical U.	127	7,943	9,272	14,083	13,127	0	0	99	0	0	364	0	493
Naval Postgraduate School	128	20,145	20,798	13,920	4,706	0	24	391	3,263	421	2,092	128	2,895
George Washington U.	129	15,091	15,052	13,339	1,305	3,447	0	1,179	5,029	766	743	55	815
U. Kansas	130	13,829	12,206	13,244	1,386	0	3,342	3,436	3,307	0	1,773	0	0
South Dakota School of Mines and Technology	131	8,887	9,834	12,779	0	185	4,691	1,448	439	23	342	4,311	1,340
U. Alaska, Fairbanks	132	11,998	11,355	12,504	154	0	0	2,941	7,011	0	346	232	1,820
Louisiana State U., Baton Rouge	133	10,268	11,014	12,249	0	0	1,394	3,422	1,456	333	2,120	87	3,437
U. Nevada, Reno	134	9,664	11,419	11,896	157	758	1,768	3,639	50	4	2,417	1,284	1,819
Old Dominion U.	135	11,802	9,683	11,184	834	0	0	765	4,409	3,931	1,245	0	0
Boise State U.	136	8,245	9,596	11,149	38	5,298	794	236	1,546	59	350	1,777	1,051
Illinois Institute of Technology	137	9,230	11,070	10,795	1,016	5,210	159	579	2,510	73	822	0	426
Oregon Health and Science U.	138	9,549	10,841	10,647	0	10,647	0	0	0	0	0	0	0
Rochester Institute of Technology	139	7,965	10,659	10,560	0	1,353	1,031	0	2,721	519	1,472	0	3,464
Emory U.	140	8,676	8,356	10,545	0	10,545	0	0	0	0	0	0	0
U. Georgia	141	7,208	8,139	10,503	0	131	2,810	5,130	2,432	0	0	0	0
U. Texas, San Antonio	142	5,961	7,346	10,333	0	1,990	0	877	1,885	601	1,387	0	3,593
U. North Texas, Denton	143	3,805	7,232	10,227	0	1,302	0	0	1,174	0	206	7,540	5
North Dakota State U.	144	3,085	4,341	10,191	211	0	578	5,956	977	114	874	163	1,318
North Carolina A&T State U.	145	8,664	9,071	10,157	0	0	429	1,798	4,149	989	613	0	2,179
U. Rhode Island	146	6,939	7,962	9,997	0	563	1,298	1,001	2,319	0	1,801	8	3,007
Florida Atlantic U.	147	6,955	11,045	9,749	85	0	0	1,303	23	0	0	0	8,338
U. Louisiana, Lafayette	148	3,557	6,909	9,736	0	0	2,137	2,310	1,097	0	1,386	2,806	0
U. New Hampshire	149	11,466	8,984	9,665	0	0	1,389	3,962	1,083	0	2,873	358	0
Cleveland State U.	150	11,055	7,748	9,597	0	7,919	570	142	253	0	713	0	0
Virginia Commonwealth U.	151	11,779	9,924	9,441	0	3,380	1,798	0	1,324	0	2,939	0	0
Rowan U.	152	7,616	8,035	9,274	0	2,286	3,452	2,609	511	0	177	0	239
U. Missouri, Kansas City	153	6,902	7,506	9,153	32	0	0	544	8,230	0	334	0	13
U. North Carolina, Charlotte	154	8,853	9,381	8,783	0	0	0	1,688	1,395	0	1,655	0	4,045
U. Nebraska, central administration	155	8,340	7,510	8,584	0	398	591	0	5,076	0	137	1,370	1,012

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
U. Toledo	156	5,921	7,574	8,517	0	369	1,161	578	1,700	0	4,575	0	134
Missouri State U.	157	10,096	6,872	8,396	0	0	0	0	0	0	0	8,396	0
SUNY, Binghamton U.	158	6,526	7,463	8,326	0	1,641	0	0	1,771	3,190	1,724	0	0
Howard U.	159	6,241	7,420	8,156	0	0	417	1,184	4,165	0	1,442	0	948
U. Puerto Rico, Mayaguez	160	9,428	8,136	7,325	0	0	1,516	1,405	2,385	74	584	300	1,061
Syracuse U.	161	7,696	8,013	7,290	0	2,328	0	210	2,255	0	2,497	0	0
Indiana U., Bloomington	162	6,314	5,752	7,149	0	0	0	0	7,149	0	0	0	0
U. Idaho	163	8,376	6,705	7,063	1,190	291	588	1,398	716	10	725	232	1,913
Wayne State U.	164	5,947	5,695	6,722	0	1,414	1,543	2,247	421	497	106	0	494
U.S. Naval Academy	165	7,202	6,604	6,197	709	0	0	0	987	0	1,353	0	3,148
U.S. Military Academy	166	5,252	7,334	6,086	0	0	207	165	1,569	841	2,149	0	1,155
U. Vermont	167	4,853	5,537	5,794	1,497	0	0	1,547	816	0	1,934	0	0
U. of the District of Columbia	168	1,388	3,134	5,725	472	0	0	1,231	242	1,130	2,650	0	0
Wright State U.	169	23,496	6,695	5,696	0	1,068	0	0	4,087	0	476	13	52
Marquette U.	170	4,291	3,866	5,605	0	1,828	0	723	2,083	0	971	0	0
Morgan State U.	171	4,847	5,001	5,514	0	0	0	2,544	1,486	70	0	0	1,414
California Polytechnic State U., San Luis Obispo	172	1,338	2,636	5,436	3,768	11	0	864	28	19	266	0	480
Florida A&M U.	173	4,492	4,852	5,427	0	0	1,070	1,143	615	861	820	0	918
Ohio U.	174	4,454	5,340	5,209	2,314	0	476	1,088	45	0	136	254	896
Clarkson U.	175	4,584	4,577	5,180	0	0	435	1,458	2,076	0	1,211	0	0
Medical C. Wisconsin	176	6,389	5,221	5,046	0	5,046	0	0	0	0	0	0	0
San Diego State U.	177	3,851	4,553	5,043	1,077	98	0	1,422	1,054	0	1,392	0	0
U. Nevada, Las Vegas	178	4,946	4,037	5,031	0	0	0	2,111	781	0	2,128	0	11
U. California, Merced	179	5,760	4,627	5,007	0	1,419	82	60	0	0	1,512	699	1,235
South Dakota State U.	180	2,674	3,854	4,783	0	0	0	539	597	0	675	0	2,972
U. Akron	181	5,096	3,985	4,632	0	689	897	665	262	0	2,109	0	10
U. Texas Rio Grande Valley	182	1,761	2,885	4,536	55	249	0	3	205	1,415	1,324	120	1,165
U. Memphis	183	2,513	2,275	4,518	30	958	0	1,524	1,165	16	379	0	446
Temple U.	184	4,758	4,734	4,494	0	1,268	0	1,245	587	0	993	0	401
U. Miami	185	2,128	2,816	4,423	0	364	0	2,701	326	0	502	0	530
Indiana U.-Purdue U., Indianapolis	186	4,354	4,040	4,375	0	1,285	0	0	806	0	2,103	0	181
U. South Alabama	187	2,624	3,209	4,296	0	0	1,301	1,562	706	0	212	0	515

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
Texas A&M U.-Corpus Christi	188	2,800	2,340	4,257	2,463	10	0	142	159	0	558	0	925
U. Maryland, Baltimore County	189	4,651	4,657	4,079	552	1,100	92	453	573	107	328	118	756
Western Michigan U. and Homer Stryker M.D. School of Medicine	190	1,580	4,194	3,994	506	0	2,165	218	464	35	564	0	42
U. Puerto Rico, Rio Piedras	191	270	1,152	3,900	0	3,900	0	0	0	0	0	0	0
Prairie View A&M U.	192	3,184	2,885	3,849	18	0	342	293	1,719	0	939	32	506
Tulane U.	193	4,050	4,016	3,801	0	2,421	1,380	0	0	0	0	0	0
Montana Technological U.	194	3,161	4,639	3,779	0	0	0	248	188	0	290	3,053	0
U. Mississippi	194	12,422	4,487	3,779	314	148	116	1,517	376	0	486	0	822
Portland State U.	196	4,113	4,021	3,752	168	0	0	980	1,636	0	661	100	207
U. Oregon	197	0	0	3,729	0	3,729	0	0	0	0	0	0	0
California State U., Sacramento	198	3,150	2,687	3,718	0	0	0	3,717	0	0	1	0	0
U. Colorado Denver ^e	199	na	3,152	3,398	0	415	0	624	952	0	1,074	0	333
Louisiana Tech U.	200	4,582	4,117	3,120	0	637	663	449	86	13	1,272	0	0
U. Wisconsin-Milwaukee	201	2,940	3,193	2,907	0	0	0	798	406	62	1,378	258	5
Texas A&M U.-Kingsville	202	1,830	2,923	2,819	181	0	0	143	275	0	871	0	1,349
Florida Institute of Technology	203	3,305	2,903	2,818	442	115	0	0	340	0	540	0	1,381
Southern Methodist U.	204	5,103	3,590	2,769	0	0	0	418	1,489	0	862	0	0
Northern Arizona U.	205	3,649	4,910	2,709	0	531	0	154	1,567	0	188	0	269
U. Southern Mississippi	206	1,823	1,970	2,661	0	0	0	123	0	0	0	0	2,538
U. Tennessee, Chattanooga	207	2,277	2,574	2,622	0	0	158	458	769	0	139	0	1,098
Tennessee Technological U.	208	2,756	3,392	2,549	0	0	119	241	832	270	1,059	0	28
Youngstown State U.	209	2,818	1,261	2,525	0	0	0	1,518	0	0	172	0	835
Idaho State U.	210	2,491	2,022	2,430	0	0	0	87	32	0	57	0	2,254
Texas State U.	211	746	1,537	2,429	464	0	0	541	451	0	122	31	820
California State U., Northridge	212	926	1,069	2,377	0	128	0	23	5	0	1,504	24	693
Marshall U.	213	434	1,671	2,375	0	269	0	2,096	0	0	10	0	0
Baylor U.	214	1,271	1,598	2,307	127	1	0	0	1,692	0	465	0	22
U. Massachusetts, Dartmouth	215	2,170	2,434	2,245	0	113	0	837	736	0	559	0	0
California State U., Long Beach	216	2,533	2,942	2,181	7	655	592	416	84	0	401	0	26
East Carolina U.	217	366	1,376	2,178	0	0	0	142	0	0	0	0	2,036
Catholic U. of America	218	2,925	2,680	2,099	0	1,021	0	10	725	0	343	0	0

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022									
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec
Tuskegee U.	218	4,177	4,213	2,099	469	0	96	0	300	0	287	947	0
Northern Illinois U.	220	246	1,856	2,039	0	0	0	0	92	1,453	302	0	192
U. Michigan, Dearborn	221	1,681	1,907	2,030	0	0	0	0	1,427	121	482	0	0
Western Illinois U.	222	71	780	1,983	0	0	0	0	0	0	0	1,983	0
Villanova U.	223	1,375	2,122	1,949	0	0	166	786	688	0	309	0	0
Jackson State U.	224	1,262	1,817	1,905	0	0	0	938	925	0	0	0	42
Alabama A&M U.	225	1,078 i	1,500 i	1,861 i	0 i	0 i	0 i	314 i	767 i	125 i	459 i	196 i	0 i
Southern U. and A&M C., Baton Rouge	226	1,360	2,185	1,851	0	0	0	0	243	0	1,608	0	0
Purdue U., Northwest	227	1,128	1,032	1,846	0	0	0	0	3	1,547	296	0	0
Morehead State U.	228	1,208	756	1,799	1,799	0	0	0	0	0	0	0	0
Norfolk State U.	229	1,312	1,081	1,597	0	0	0	0	0	0	0	0	1,597
Oakland U.	230	233	953	1,572	0	0	0	0	843	0	729	0	0
U. Tulsa	231	1,387	2,410	1,557	0	0	127	0	152	0	1,183	0	95
California State U., Los Angeles	232	806	1,067	1,414	0	0	0	787	159	0	468	0	0
Virginia State U.	233	210	321	1,407	157	0	0	0	0	186	0	0	1,064
North Carolina Central U.	234	1,929	959	1,395	0	1,395	0	0	0	0	0	0	0
U. Arkansas, Little Rock	235	950	708	1,366	1,336	22	8	0	0	0	0	0	0
SUNY, U. Albany	236	1,039	1,393	1,355	0	0	0	0	762	0	0	0	593
CUNY, Advanced Science Research Center	237	1,968	1,845	1,347	0	233	338	776	0	0	0	0	0
San Jose State U.	238	1,575	700	1,323	9	0	241	0	745	13	84	0	231
California State Polytechnic U., Pomona	239	1,141	1,040	1,298	220	0	628	366	0	30	54	0	0
Tennessee State U.	240	2,584	1,755 i	1,265	38	0	0	466	0	0	661	0	100
Hampton U.	241	866	827	1,215	0	0	12	0	1,203	0	0	0	0
U. Denver	242	2,109	1,037	1,180	0	684	0	194	292	0	0	10	0
San Francisco State U.	243	981 i	990	1,174	0	87	0	209	846	0	0	0	32
U. Colorado Colorado Springs	244	877	488	1,134	18	0	0	0	314	0	802	0	0
New York Institute of Technology	245	372	666	1,082	0	0	0	0	715	0	367	0	0
U. Alaska, Anchorage	246	644	869	1,074	32	0	0	533	177	0	184	144	4
Santa Clara U.	247	393	814	1,061	0	199	0	0	108	0	754	0	0
Pennsylvania State U., Behrend	248	337	610	1,039	0	476	0	0	1	291	196	75	0
Alfred U.	249	887	933	991	0	0	0	0	0	0	0	991	0
U. Nebraska, Omaha	250	859	545	988	361	213	0	414	0	0	0	0	0

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022											
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec		
U. Ana G. Mendez, Gurabo	251	365	667	987	0	0	0	0	0	0	0	0	0	0	987
California State U., Fresno	252	526	474	971	0	0	0	376	593	0	2	0	0	0	0
West Texas A&M U.	253	500	673	915	0	0	338	0	0	42	0	0	0	535	0
Milwaukee School of Engineering	254	613	704	904	0	359	0	26	10	0	8	0	0	501	0
U. South Dakota	255	440	731	859	134	725	0	0	0	0	0	0	0	0	0
Miami U.	256	667	532	843	0	0	314	0	432	97	0	0	0	0	0
Franklin W. Olin C. of Engineering	257	255	636	805	126	0	0	20	299	0	139	0	0	221	0
Wake Forest U.	258	208	544	804	0	0	0	0	0	0	0	0	0	804	0
U. of the Virgin Islands	259	834	809	790	790	0	0	0	0	0	0	0	0	0	0
South Carolina State U.	260	687	712	773	0	0	245	0	0	0	0	0	0	528	0
Saint Louis U.	261	1,549	1,183	768	0	166	0	87	22	0	493	0	0	0	0
U. Colorado Anschutz Medical Campus ^e	262	na	1,189	730	0	730	0	0	0	0	0	0	0	0	0
CUNY, system office	263	662	731	718	0	0	0	0	0	0	0	0	0	718	0
U. Hartford	264	605	585	694	694	0	0	0	0	0	0	0	0	0	0
U. Oklahoma, Tulsa	265	1,066	421	662	0	103	0	0	559	0	0	0	0	0	0
Bucknell U.	266	554	543	660	0	15	309	93	182	0	53	0	0	8	0
California State U., Fullerton	267	534	530	639	0	0	0	12	161	0	144	0	0	322	0
California State U., Chico	268	613	768	636	0	0	0	35	236	0	365	0	0	0	0
U. Massachusetts, Boston	269	547	498	635	0	24	0	0	611	0	0	0	0	0	0
Savannah State U.	270	639	588	609	0	228	183	0	0	0	0	0	0	198	0
Pittsburg State U.	271	50	314	600	32	50	0	0	0	0	0	518	0	0	0
Fort Lewis C.	272	477	563	592	35	56	17	0	0	0	0	0	0	484	0
Southern Illinois U., Carbondale	273	180	606	587	0	0	0	95	226	0	235	31	0	0	0
U. Texas Medical Branch	274	276	425	555	0	555	0	0	0	0	0	0	0	0	0
Kent State U.	275	1,278	830	553	54	10	92	0	250	0	104	14	29	0	0
Pace U.	276	464	626	529	0	0	0	0	0	0	529	0	0	0	0
U. San Diego	277	686	692	518	0	0	0	0	0	0	0	0	0	518	0
U. Detroit Mercy	278	75	64	510	0	0	0	0	387	0	123	0	0	0	0
U. Texas of the Permian Basin	279	82	270	509	0	0	7	0	258	0	0	0	0	244	0
California State U., San Marcos	280	2,408	1,680	504	0	0	0	0	0	0	0	0	0	504	0
Florida Polytechnic U.	281	159	312	493	0	0	0	0	245	0	33	215	0	0	0

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2022 engineering R&D: FYs 2020–22 and by subfield for FY 2022

(Dollars in thousands)

Institution	Rank	2020	2021	2022										
				All engineering	Aerospace, aeronautical, and astronautical engineering	Bioengineering and biomedical engineering	Chemical engineering	Civil engineering	Electrical, electronic, and communications engineering	Industrial and manufacturing engineering	Mechanical engineering	Metallurgical and materials engineering	Engineering nec	
Hawaii Pacific U.	377	13	13	14	0	0	0	0	0	0	14	0	0	0
U. West Florida	377	196	265	14	0	0	0	0	0	0	0	0	0	14
Trinity C., Hartford	379	13	1	13	0	0	0	0	0	0	0	0	0	13
U. Houston-Clear Lake	379	0	0	13	0	0	0	0	0	0	0	0	0	13
Dillard U.	381	0	0	7	7	0	0	0	0	0	0	0	0	0
Northeastern Illinois U.	381	0	0	7	0	0	0	0	0	0	0	0	0	7
Texas Southern U.	381	76	27	7	0	0	0	0	0	0	0	0	0	7
Trinity U.	381	0	0	7	0	0	7	0	0	0	0	0	0	0
Southeastern Louisiana U.	385	3	8	6	0	0	0	0	0	0	6	0	0	0
U. Guam	385	0	0	6	0	0	0	0	0	6	0	0	0	0
Northeast Ohio Medical U.	387	0	0	2	0	2	0	0	0	0	0	0	0	0
California State U., Channel Islands	388	0	79	1	0	0	0	0	0	0	0	1	0	0
All other surveyed institutions	-	7,885	1,498	0	0	0	0	0	0	0	0	0	0	0

i = imputed. na = not applicable; institution did not exist or did not exist as a separate entity. nec = not eligible; institution did not meet the criteria for inclusion.

nec = not elsewhere classified.

^a Johns Hopkins University includes the Applied Physics Laboratory, with \$1,154,078 thousand in federally financed R&D expenditures in engineering in FY 2022.

^b The University of Maryland includes expenditures from the University of Maryland, Baltimore and University of Maryland, College Park campuses. In FY 2019, the two campuses began reporting as one research unit to reflect their new strategic partnership. This relationship was codified through the University of Maryland Strategic Partnership Act passed by the Maryland General Assembly in 2016. Prior to FY 2019, both campuses reported to the survey as separate institutions.

^c The University of Tennessee, Knoxville includes expenditures from the University of Tennessee Institute of Agriculture. Due to a reorganization within the University of Tennessee system, the Institute of Agriculture now falls under the leadership of the University of Tennessee, Knoxville chancellor. Prior to FY 2020, the University of Tennessee, Knoxville, Institute of Agriculture reported to the survey separately.

^d The University of South Florida includes expenditures from the University of South Florida, Tampa; University of South Florida, Saint Petersburg; and University of South Florida, Sarasota-Manatee campuses. Due to the consolidation of the three campuses that occurred on 1 July 2020, University of South Florida, Saint Petersburg and University of South Florida, Sarasota-Manatee began reporting with the University of South Florida, Tampa as the University of South Florida. Prior to FY 2021, all three campuses reported to the survey as separate institutions.

^e The University of Colorado Denver and University of Colorado Anschutz Medical Center report to the survey separately. Prior to FY 2021, expenditures were reported together under University of Colorado Denver and Anschutz Medical Campus.

Note(s):

Institutions reporting zero expenditures in ranked total for FY 2022 are not listed in this table. Tied institutions are ranked alphabetically. Ranked institutions are geographically separate campuses headed by a campus-level president or chancellor. Some campuses are part of large, multi-campus universities; some are part of state university systems. For a complete list of campuses that belong to a larger university or system and their aggregate R&D expenditures, see table 6.

Source(s):

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