

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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	-	8,713,379	9,759,899	10,931,327	1,425,681	1,198,449	713,248	929,044	2,794,497	481,861	1,551,973	693,211	1,143,363
Johns Hopkins U. ^a	1	1,183,154	1,264,048	1,436,413	191,135	79,622	24,936	18,623	606,439	114,052	258,794	41,505	101,307
Georgia Institute of Technology	2	666,235	739,429	847,360	268,458	29,689	27,362	15,951	403,240	43,100	40,386	13,807	5,367
Pennsylvania State U., University Park and Hershey Medical Center	3	284,244	300,829	348,549	20,993	14,815	9,142	9,154	133,655	8,878	108,688	43,224	0
Utah State U.	4	228,986	239,736	280,768	263,160	1,319	0	3,761	10,292	0	1,732	0	504
U. Texas, Austin	5	194,110	216,881	249,098	15,736	7,260	19,206	10,362	78,185	0	76,963	19,119	22,267
Massachusetts Institute of Technology	6	193,246	215,477	226,746	24,187	71,768	27,211	4,824	27,327	0	21,545	13,601	36,283
U. Michigan, Ann Arbor	7	180,607	189,405	206,437	12,728	21,270	9,406	9,291	50,758	3,526	36,654	9,918	52,886
Purdue U., West Lafayette	8	137,052	163,895	188,696	31,700	9,113	14,239	9,759	40,265	4,177	32,131	11,089	36,223
U. Dayton	9	171,865	189,150	188,040	20,836	180	3,885	59	6,339	55,660	26,351	69,226	5,504
U. Illinois, Urbana-Champaign	10	139,887	144,390	176,925	11,674	13,148	17,075	23,847	34,075	0	25,086	18,125	33,895
Texas A&M U., College Station and Health Science Center	11	123,286	138,068	170,864	41,394	25,716	4,730	24,767	17,267	9,309	15,097	8,144	24,440
U. Colorado Boulder	12	132,769	148,185	140,779	73,910	10,892	9,708	15,791	12,066	0	11,067	2,077	5,268
U. Washington, Seattle	13	119,758	127,827	139,691	6,387	28,531	6,941	11,763	31,497	1,751	14,997	4,269	33,555
Wichita State U.	14	64,692	88,257	136,780	134,542	84	0	0	1,256	431	380	0	87
Virginia Polytechnic Institute and State U.	15	108,080	114,336	128,941	13,103	17,105	3,914	16,742	35,043	17,067	12,892	7,248	5,827
U. California, San Diego	16	100,212	129,923	114,380	0	17,408	0	7,801	47,061	0	18,872	23,238	0
Ohio State U.	17	88,435	103,560	113,636	891	3,843	8,318	7,143	21,646	8,432	38,054	13,284	12,025
U. Maryland ^b	18	95,898	104,247	112,818	11,272	18,198	11,171	18,011	9,639	462	15,773	6,472	21,820
North Carolina State U.	19	91,430	88,636	100,328	2,533	9,050	13,338	8,146	21,256	3,760	11,465	14,845	15,935
Stanford U.	20	89,861	89,919	100,033	12,959	22,047	9,117	7,401	16,355	6,089	18,304	6,355	1,406
Arizona State U.	21	73,746	85,208	98,381	0	9,566	5,272	19,205	32,200	7,881	7,935	3,345	12,977
Northeastern U.	22	69,550	72,409	96,495	0	6,707	5,171	11,076	42,122	8,567	19,420	0	3,432
Carnegie Mellon U.	23	63,083	84,680	95,826	1,505	16,937	5,286	3,667	20,344	5,488	29,598	5,645	7,356
U. Wisconsin-Madison	24	75,104	85,549	93,870	0	5,381	11,182	6,924	14,571	3,563	15,561	7,150	29,538
U. Utah	25	29,330	99,830	93,722	0	4,284	4,440	39,128	32,979	0	8,945	3,299	647
U. Minnesota, Twin Cities	26	78,808	84,060	92,997	8,664	28,149	13,638	8,209	12,255	204	16,455	5,423	0
U. California, Berkeley	27	78,026	93,638	92,895	0	0	4,221	6,035	70,333	0	0	0	12,306
U. Delaware	28	68,504	88,552	90,547	0	7,666	58,044	9,405	8,597	0	6,835	0	0
Duke U.	29	74,308	80,356	85,594	0	38,306	0	5,516	30,117	0	9,683	1,972	0
Cornell U.	30	72,771	73,646	84,312	1,720	15,548	14,776	8,692	12,336	2,469	13,470	12,736	2,565

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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. Florida	31	72,191	79,991	84,288	3,526	15,303	4,603	15,551	24,044	1,447	13,263	6,077	474
Woods Hole Oceanographic Institution	32	93,266	82,286	84,259	8,099	0	0	9,801	44,009	0	22,350	0	0
SUNY, U. Buffalo	33	66,790	67,985	83,743	10,056	5,437	10,550	4,031	3,007	6,807	27,789	3,117	12,949
Columbia U. in the City of New York	34	64,962	73,487	80,040	2,139	26,469	11,168	2,674	3,901	875	2,824	0	29,990
U. California, Santa Barbara	35	44,958	67,267	77,243	0	18,300	6,710	0	36,456	0	6,860	8,472	445
Iowa State U.	36	62,113	66,024	73,907	5,199	12,220	5,824	11,961	3,401	0	3,160	6,531	25,611
U. Tennessee, Knoxville	37	66,556	70,892	70,876	19,121	852	4,302	5,624	12,229	3,044	0	5,421	20,283
U. Southern California	38	51,948	54,438	68,833	4,796	11,880	5,786	3,817	34,034	2,473	0	0	6,047
New Mexico Institute of Mining and Technology	39	10,164	45,940	68,220	519	2,809	0	0	338	0	2,041	762	61,751
Clemson U.	40	46,693	62,349	65,399	0	8,763	2,947	7,465	8,663	3,144	22,464	8,221	3,732
U. Virginia, Charlottesville	41	37,143	42,481	65,008	0	18,132	6,083	0	9,858	0	7,870	8,736	14,329
U. California, Los Angeles	42	53,761	65,455	62,859	0	6,185	5,362	5,398	24,104	0	13,345	4,391	4,074
Boston U.	43	48,537	54,675	62,597	2,402	25,862	0	0	10,860	5,565	8,502	0	9,406
Rice U.	44	46,799	53,851	61,759	10	20,319	7,031	6,660	19,838	0	3,168	4,124	609
U. California, Davis	45	43,175	56,254	59,180	0	23,755	101	9,102	11,720	0	8,439	0	6,063
U. Notre Dame	46	42,501	50,651	57,913	22,435	0	7,097	11,553	16,319	0	0	0	509
Northwestern U.	47	55,739	56,993	57,708	0	14,520	7,677	5,126	6,005	1,977	5,481	12,508	4,414
U. Pennsylvania	48	49,526	54,427	56,036	0	20,452	5,641	0	17,699	0	12,180	0	64
Oregon State U.	49	38,914	44,377	55,520	0	850	3,224	12,695	16,253	4,382	5,926	750	11,440
Mississippi State U.	50	44,188	48,255	54,768	13,915	682	4,890	1,388	5,405	3,425	3,959	389	20,715
Montana State U., Bozeman	51	39,190	42,936	54,709	0	4,736	1,000	4,426	3,974	0	6,128	0	34,445
U. Pittsburgh, Pittsburgh	52	37,749	43,571	54,013	0	19,158	7,278	3,290	7,850	2,005	14,432	0	0
Vanderbilt U. and Vanderbilt U. Medical Center	53	43,570	52,364	53,911	0	14,069	6,844	10,180	15,545	0	5,776	0	1,497
New Jersey Institute of Technology	54	50,822	48,863	53,008	0	5,446	5,658	35,071	1,522	0	749	0	4,562
Princeton U.	55	44,201	52,615	52,300	2,201	5,283	4,775	4,148	20,889	3,120	3,761	0	8,123
Auburn U., Auburn	56	40,288	47,059	50,218	2,338	630	4,424	10,053	4,381	8,892	10,986	478	8,036
George Mason U.	57	44,086	50,246	49,947	0	5,825	0	3,930	19,656	18,165	1,508	647	216
U. Arizona	58	34,360	42,072	49,493	2,132	4,784	4,117	385	23,315	3,832	2,558	4,265	4,105
U. Maine	59	27,452	44,010	46,933	0	0	5,300	832	1,751	129	656	38,224	41
U. Connecticut	60	37,988	42,418	46,010	0	6,522	5,869	12,419	6,611	0	7,089	7,489	11
U. California, Irvine	61	29,315	40,869	45,509	0	11,906	4,849	4,099	6,755	0	10,144	7,756	0
Case Western Reserve U.	62	30,483	31,686	43,497	0	18,182	5,991	896	2,719	0	7,079	8,105	525

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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
Florida State U.	63	34,492	37,798	43,395	1,270	842	728	2,735	14,704	4,347	17,307	1,085	377
U. Alabama, Huntsville	64	44,780	43,390	42,694	29,325	150	439	2,587	4,097	3,789	1,583	340	384
U. New Mexico	65	33,001	37,091	42,513	7,556	571	3,012	10,069	10,591	394	1,514	298	8,508
Harvard U.	66	50,918	47,017	42,222	0	24,834	1,410	1,511	2,796	0	538	11,133	0
U. California, Santa Cruz	67	33,002	43,539	42,217	0	0	0	0	5,640	0	0	0	36,577
California Institute of Technology	68	24,011	25,812	41,780	4,021	4,474	4,551	8,099	2,390	0	0	17,733	512
U. Massachusetts, Amherst	69	32,063	35,204	41,770	0	2,879	15,016	10,632	8,415	0	4,558	0	270
U. Central Florida	70	36,318	37,217	41,638	11,972	0	0	3,566	5,469	1,421	11,039	1,812	6,359
U. Chicago	71	25,909	35,751	40,732	0	0	0	0	0	0	0	0	40,732
Rutgers, State U. New Jersey, New Brunswick	72	35,691	35,877	40,402	0	2,925	4,597	1,975	5,519	387	4,913	2,319	17,767
Colorado School of Mines	73	37,909	42,745	39,767	1,868	1,912	2,461	6,193	612	2,655	3,953	10,194	9,919
Colorado State U., Fort Collins	74	30,424	36,428	39,358	0	590	3,369	12,549	9,879	1,194	9,707	0	2,070
U. Nebraska, Lincoln and Medical Center ^c	75	na	na	37,913	0	5,344	1,847	9,079	15,836	0	1,979	2,085	1,743
U. Kentucky	76	33,001	38,078	37,882	0	2,317	2,041	7,747	2,131	1,642	5,135	1,515	15,354
Florida International U.	77	23,801	31,994	37,670	0	3,439	0	13,028	10,273	0	8,762	50	2,118
Michigan State U.	78	31,314	34,356	37,598	0	4,013	5,334	6,772	10,479	0	5,192	0	5,808
Stevens Institute of Technology	79	26,766	34,630	36,535	0	2,033	1,060	5,903	3,339	20,429	2,599	0	1,172
U.S. Air Force Academy	80	28,914	32,709	35,804	4,481	231	203	0	160	0	74	30,509	146
U. South Florida	81	26,183	27,554	34,863	663	6,422	1,413	13,168	7,823	938	2,653	0	1,783
Rensselaer Polytechnic Institute	82	31,832	29,720	34,192	0	7,340	4,824	993	5,803	381	11,966	2,563	322
U. Alabama, Tuscaloosa	83	25,859	30,544	32,570	3,291	0	3,946	8,770	7,380	0	4,641	3,896	646
SUNY, Polytechnic Institute	84	24,019	30,702	32,487	0	0	0	54	0	0	27	0	32,406
U. Houston	85	26,599	28,251	31,432	1,387	9,037	6,198	3,503	6,387	282	3,750	507	381
Drexel U.	86	20,821	27,063	31,364	0	6,432	3,618	3,201	3,413	0	7,362	6,158	1,180
U. Oklahoma, Norman and Health Science Center	87	15,235	20,850	30,388	4,117	2,749	2,787	4,774	12,822	543	0	0	2,596
U. Illinois, Chicago	88	21,610	24,287	29,282	0	9,893	2,202	2,810	4,948	0	9,429	0	0
Air Force Institute of Technology	89	17,065	21,622	29,188	2,986	0	0	1,264	6,809	16,509	0	1,315	305
U. Texas, El Paso	90	15,602	26,326	28,605	0	755	0	2,491	5,512	1,305	16,751	822	969
SUNY, Stony Brook U.	91	17,613	25,968	28,320	0	6,258	0	1,258	11,357	0	1,423	7,736	288
Dartmouth C. and Dartmouth Hitchcock Medical Center	92	24,126	25,052	28,224	48	11,414	3,899	1,093	5,553	4	6,213	0	0
New Mexico State U.	93	19,957	29,723	28,215	5,597	0	1,493	3,933	11,416	78	1,835	0	3,863
Washington U., Saint Louis	94	22,291	24,042	28,140	0	10,780	6,102	69	5,734	0	0	5,005	450

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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
Missouri U. of Science and Technology	95	21,797	24,061	27,984	1,147	0	1,515	4,895	3,437	897	3,824	12,043	226
U. Arkansas, Fayetteville	96	17,980	22,533	27,734	25	4,826	2,386	5,963	9,646	1,944	1,539	0	1,405
U. North Dakota	97	35,155	33,233	27,690	0	0	894	18,526	1,383	0	1,734	203	4,950
U. Iowa	98	23,116	24,367	27,689	0	606	108	12,023	1,064	394	488	0	13,006
U. South Carolina, Columbia	99	16,470	21,003	27,685	0	0	3,821	3,323	9,192	0	9,876	0	1,473
Michigan Technological U.	100	26,289	27,496	27,248	0	1,817	2,909	1,976	5,277	0	14,254	846	169
Texas Tech U.	101	15,359	18,858	27,046	0	0	10,627	3,273	7,068	1,375	4,573	0	130
Mercer U.	102	31,923	29,959	26,989	10,209	0	0	0	852	0	7,495	8,433	0
U. Texas, Arlington	103	23,581	28,177	26,470	2,621	2,201	0	3,262	3,497	9,395	2,621	0	2,873
U. Massachusetts, Lowell	104	18,884	26,414	25,882	0	2,804	7,567	1,582	3,913	0	7,428	0	2,588
U. Texas, Dallas	105	24,793	24,404	25,609	0	9,038	0	0	4,869	572	7,272	2,328	1,530
Yale U.	106	23,578	23,926	24,446	0	8,435	5,148	0	5,718	0	5,145	0	0
U. North Carolina, Chapel Hill	107	19,983	22,510	24,138	0	9,109	0	13,594	0	1,435	0	0	0
New York U.	108	18,633	20,507	24,015	0	0	2,309	910	11,548	0	1,754	0	7,494
U. California, Riverside	109	18,541	21,080	23,236	0	2,226	6,597	2,425	8,083	0	3,129	92	684
West Virginia U.	110	18,042	21,919	23,114	1,663	0	4,486	2,410	4,202	2,193	3,226	4,659	275
Washington State U.	111	23,129	20,359	22,414	0	1,672	3,627	4,504	3,796	135	2,695	1,954	4,031
Oklahoma State U., Stillwater	112	15,319	16,574	21,997	5,541	0	3,027	3,304	2,556	657	2,055	909	3,948
Naval Postgraduate School	113	20,798	13,920	21,980	5,770	1,268	0	354	4,999	445	4,904	298	3,942
Lehigh U.	114	16,976	19,098	21,706	0	2,581	2,963	3,018	962	1,464	5,748	4,970	0
Tufts U.	115	19,362	19,796	20,965	335	10,012	2,170	2,542	3,165	0	2,347	0	394
Worcester Polytechnic Institute	116	16,095	18,401	20,579	1,180	1,022	1,975	289	1,461	0	13,224	0	1,428
Brown U.	117	15,963	18,304	20,340	0	6,258	2,585	0	2,395	0	3,216	2,966	2,920
U. Hawaii, Manoa	118	16,553	17,241	20,303	0	591	0	2,468	10,635	0	2,219	0	4,390
U. Rochester	119	14,213	17,031	18,978	0	6,238	744	0	6,262	0	5,734	0	0
Indiana U., Bloomington	120	5,752	7,149	18,033	0	8,347	0	0	9,686	0	0	0	0
U. Cincinnati	121	12,970	14,790	17,940	4,346	1,307	1,538	3,901	3,595	0	2,698	0	555
CUNY, City C.	122	18,078	19,125	17,700	0	4,995	2,482	953	6,678	0	2,279	0	313
Emory U.	123	8,356	10,545	17,322	0	17,322	0	0	0	0	0	0	0
U. Missouri, Columbia	124	15,905	17,346	16,700	0	1,282	548	3,392	5,927	168	3,711	42	1,630
U. Kansas	125	12,206	13,244	15,825	1,798	0	4,468	5,681	2,226	0	1,652	0	0
Louisiana State U., Baton Rouge	126	11,014	12,249	15,748	0	0	2,479	4,728	1,132	141	3,185	150	3,933

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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. Alabama, Birmingham	127	43,477	22,205	15,320	4,955	6,736	103	491	504	0	2,531	0	0
Kansas State U.	128	13,810	15,266	15,212	672	0	1,412	2,947	3,172	708	3,173	0	3,128
U. Louisville	129	11,844	14,712	15,122	5	3,443	1,535	751	4,099	894	2,147	24	2,224
George Washington U.	130	15,052	13,339	14,653	1,354	2,429	0	1,748	4,782	1,772	1,331	71	1,166
U. Nevada, Reno	131	11,419	11,896	14,595	48	1,744	2,224	3,737	239	6	2,672	2,129	1,796
Brigham Young U., Provo	132	15,694	15,386	14,299	0	0	2,178	1,825	4,930	486	4,880	0	0
Boise State U.	133	9,596	11,149	14,082	30	6,329	902	393	1,841	148	978	2,788	673
North Carolina A&T State U.	134	9,071	10,157	14,059	0	1,035	0	1,889	4,033	1,375	2,906	0	2,821
U. New Hampshire	135	8,984	9,665	13,998	0	0	2,089	5,722	1,107	0	2,503	0	2,577
U. Alaska, Fairbanks	136	11,355	12,504	13,928	797	0	0	3,444	8,186	0	26	462	1,013
North Dakota State U.	137	4,341	10,191	13,852	710	0	111	8,311	1,106	154	1,578	243	1,639
U. North Texas, Denton	138	7,232	10,227	13,452	0	1,745	0	0	2,094	0	2,566	7,047	0
Florida Atlantic U.	139	11,045	9,749	12,770	156	0	36	1,157	35	0	0	0	11,386
U. Missouri, Kansas City	140	7,506	9,153	12,734	298	0	29	556	10,851	111	664	0	225
Embry-Riddle Aeronautical U.	141	9,272	14,083	12,190	11,773	0	0	68	0	0	325	0	24
Oregon Health and Science U.	142	10,841	10,647	12,097	0	12,097	0	0	0	0	0	0	0
Old Dominion U.	143	9,683	11,184	11,962	687	0	0	1,043	4,519	4,626	1,087	0	0
U. Georgia	144	8,139	10,503	11,735	0	35	2,764	6,866	2,070	0	0	0	0
Missouri State U.	145	6,872	8,396	11,680	0	0	0	0	0	0	0	11,680	0
SUNY, Binghamton U.	146	7,463	8,326	11,658	0	1,883	0	0	2,080	5,033	2,662	0	0
U. Rhode Island	147	7,962	9,997	11,545	0	621	715	1,384	2,138	0	2,632	17	4,038
Rochester Institute of Technology	148	10,659	10,560	11,359	0	1,813	1,054	59	2,959	526	1,184	0	3,764
U. Texas, San Antonio	149	7,346	10,333	11,142	0	1,452	0	1,153	1,529	960	1,599	0	4,449
South Dakota School of Mines and Technology	150	9,834	12,779	11,074	0	860	3,534	891	315	28	641	3,419	1,386
Illinois Institute of Technology	151	11,070	10,795	11,065	984	4,069	901	916	2,837	62	420	0	876
U. Louisiana, Lafayette	152	6,909	9,736	10,734	0	0	2,352	2,543	1,207	0	1,543	3,089	0
U. Wyoming	153	7,391	17,026	9,991	81	803	5,555	1,677	272	0	662	321	620
U. North Carolina, Charlotte	154	9,381	8,783	9,789	0	0	0	1,532	1,472	0	1,896	0	4,889
Rowan U.	155	8,035	9,274	9,769	0	2,524	3,865	2,289	490	0	177	0	424
Cleveland State U.	156	7,748	9,597	9,606	0	6,977	674	121	581	0	1,207	0	46
U. Vermont	157	5,537	5,794	9,208	1,797	0	0	2,928	546	0	1,554	0	2,383
Florida A&M U.	158	4,852	5,427	8,959	0	0	2,834	865	1,615	1,176	1,282	0	1,187

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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
Virginia Commonwealth U.	159	9,924	9,441	8,436	0	2,766	1,466	0	1,413	0	2,791	0	0
Syracuse U.	160	8,013	7,290	8,149	0	2,331	0	543	2,640	0	2,635	0	0
Marquette U.	161	3,866	5,605	7,361	0	2,063	0	1,313	1,374	0	2,611	0	0
U. California, Merced	162	4,627	5,007	7,349	0	2,132	138	247	0	0	1,485	655	2,692
U.S. Military Academy	163	7,334	6,086	7,214	0	0	151	209	1,704	1,362	2,307	0	1,481
California State U., Sacramento	164	2,687	3,718	7,114	0	0	0	6,943	168	0	3	0	0
Wayne State U.	165	5,695	6,722	7,106	0	1,279	1,299	1,338	1,377	1,037	235	0	541
U. Toledo	166	7,574	8,517	7,048	26	290	1,251	910	1,617	0	2,954	0	0
U. Texas Rio Grande Valley	167	2,885	4,536	6,988	29	102	0	28	490	1,343	2,245	317	2,434
U. Nevada, Las Vegas	168	4,037	5,031	6,771	0	0	0	2,492	1,462	0	2,749	0	68
Howard U.	169	7,420	8,156	6,744	0	0	474	1,406	3,318	0	1,204	0	342
San Diego State U.	170	4,553	5,143	6,656	826	47	0	1,782	1,018	0	2,983	0	0
U. Puerto Rico, Mayaguez	171	8,136	7,325	6,545	0	0	1,532	1,201	2,786	239	395	0	392
Clarkson U.	172	4,577	5,180	6,413	0	55	290	1,738	2,418	0	1,605	56	251
U. Idaho	173	6,705	7,063	6,244	1,423	493	295	896	424	24	1,126	185	1,378
Indiana U.-Purdue U., Indianapolis	174	4,040	4,375	6,049	0	1,421	0	0	1,510	0	2,588	0	530
Morgan State U.	175	5,001	5,514	5,962	0	0	0	2,631	1,661	41	0	0	1,629
U. Memphis	176	2,275	4,518	5,852	242	845	0	1,488	2,238	41	602	0	396
U.S. Naval Academy	177	6,604	6,197	5,788	679	0	0	0	594	0	1,428	0	3,087
U. South Alabama	178	3,209	4,296	5,784	0	0	1,503	1,851	1,281	0	224	0	925
Medical C. Wisconsin	179	5,221	5,046	5,735	0	5,735	0	0	0	0	0	0	0
U. Southern Mississippi	180	1,970	2,661	5,330	0	0	0	0	0	0	0	0	5,330
Montana Technological U.	181	4,639	3,779	5,051	0	0	0	267	252	0	171	4,230	131
U. Oregon	182	0	3,729	5,004	0	5,004	0	0	0	0	0	0	0
U. Miami	183	2,816	4,423	4,988	187	0	419	2,634	627	0	252	0	869
Ohio U.	184	5,340	5,209	4,985	2,221	0	446	1,461	10	0	78	45	724
Western Michigan U. and Homer Stryker M.D. School of Medicine	185	4,194	3,994	4,884	699	0	2,469	207	350	0	1,138	21	0
U. Akron	186	3,985	4,632	4,733	0	633	553	897	493	0	2,157	0	0
California Polytechnic State U., San Luis Obispo	187	2,636	5,436	4,584	3,246	100	0	841	56	15	233	0	93
Temple U.	188	4,734	4,494	4,482	0	1,599	0	1,405	379	0	795	0	304
Portland State U.	189	4,021	3,752	4,290	103	0	0	1,932	1,451	0	503	104	197
U. Mississippi	190	4,487	3,779	4,284	40	431	316	2,312	230	0	811	0	144

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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
Tennessee Technological U.	191	3,392	2,549	4,141	0	0	397	245	921	246	2,311	0	21
Louisiana Tech U.	192	4,117	3,120	4,122	0	998	638	735	72	220	1,459	0	0
U. Maryland, Baltimore County	193	4,657	4,079	4,065	20	1,076	272	441	1,186	41	633	82	314
Tulane U.	194	4,016	3,801	4,041	0	2,472	1,569	0	0	0	0	0	0
Marshall U.	195	1,671	2,375	3,993	0	9	0	3,507	0	0	426	49	2
U. Colorado Denver	196	3,152	3,398	3,868	0	504	0	1,294	635	0	1,167	0	268
South Dakota State U.	197	3,854	4,783	3,850	0	0	0	1,072	223	0	945	0	1,610
Prairie View A&M U.	198	2,885	3,849	3,799	125	0	711	422	1,000	0	1,171	41	329
Wright State U.	199	6,695	5,696	3,694	0	278	0	0	3,021	0	395	0	0
Texas A&M U.-Kingsville	200	2,923	2,819	3,690	379	0	0	76	537	0	681	383	1,634
Texas State U.	201	1,537	2,429	3,577	472	0	0	613	869	0	163	0	1,460
Northern Arizona U.	202	4,910	2,709	3,505	0	533	0	259	1,556	0	950	0	207
U. Wisconsin-Milwaukee	203	3,193	2,907	3,322	0	4	0	652	1,154	3	964	544	1
U. of the District of Columbia	204	3,134	5,725	3,314	7	114	0	476	185	597	1,935	0	0
Florida Institute of Technology	205	2,903	2,818	3,306	697	55	102	172	397	0	445	0	1,438
U. Massachusetts, Dartmouth	206	2,434	2,245	3,203	0	131	0	1,075	1,132	0	865	0	0
Villanova U.	207	2,122	1,949	3,147	0	0	316	1,038	887	0	906	0	0
U. Tennessee, Chattanooga	208	2,574	2,622	3,049	0	0	265	289	435	0	531	0	1,529
Baylor U.	209	1,598	2,307	2,815	53	69	0	23	1,538	0	1,130	0	2
Tennessee State U.	210	1,755	1,265	2,781	0	0	0	0	0	0	0	0	2,781
Jackson State U.	211	1,817	1,905	2,669	0	0	0	1,454	1,128	0	0	0	87
Idaho State U.	212	2,022	2,430	2,640	0	0	0	197	44	0	73	0	2,326
Southern Methodist U.	213	3,590	2,769	2,612	0	0	0	546	1,398	0	657	0	11
U. Michigan, Dearborn	214	1,907	2,030	2,599	0	0	0	0	1,805	313	481	0	0
U. Puerto Rico, Rio Piedras	215	1,152	3,900	2,580	0	2,580	0	0	0	0	0	0	0
Alabama A&M U.	216	1,500	1,861	2,462	1	0	0	415	1,015	165	607	259	0
U. Tulsa	216	2,410	1,557	2,462	0	0	619	0	257	0	1,488	0	98
Catholic U. of America	218	2,680	2,099	2,405	0	1,147	0	244	743	0	271	0	0
Tuskegee U.	219	4,213	2,099	2,326	148	0	0	0	139	0	308	1,731	0
Southern U. and A&M C., Baton Rouge	220	2,185	1,851	2,272	0	0	0	0	192	0	2,058	0	22
Youngstown State U.	221	1,261	2,525	2,208	0	0	0	1,728	0	0	257	0	223
Northern Illinois U.	222	1,856	2,039	2,193	0	0	0	0	160	1,654	303	0	76

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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. Alaska, Anchorage	255	869	1,074	885	30	0	0	280	329	0	163	83	0
Southern Illinois U., Carbondale	256	606	587	865	0	0	0	7	304	0	497	57	0
Hampton U.	257	827	1,215	837	0	0	9	0	828	0	0	0	0
Benedict C.	258	ne	ne	815	0	0	0	465	219	131	0	0	0
U. Detroit Mercy	259	64	510	804	0	0	0	0	593	0	211	0	0
Miami U.	260	532	843	798	0	0	345	0	302	0	151	0	0
U. of the Virgin Islands	261	809	790	790	790	0	0	0	0	0	0	0	0
CUNY, New York City C. of Technology	262	93	33	782	0	0	0	0	62	0	547	0	173
Kennesaw State U.	263	289	351	776	0	0	0	71	0	0	506	0	199
U. Colorado Colorado Springs	264	488	1,134	762	20	0	0	0	274	0	468	0	0
New York Institute of Technology	265	666	1,082	742	26	0	0	0	463	0	253	0	0
California State U., Fresno	266	474	971	728	0	0	0	435	229	0	64	0	0
Western Illinois U.	267	780	1,983	717	0	0	0	0	0	0	0	717	0
U. Colorado Anschutz Medical Campus	268	1,189	730	707	0	707	0	0	0	0	0	0	0
U. Massachusetts, Boston	269	498	635	705	0	53	0	0	652	0	0	0	0
Bucknell U.	270	543	660	656	0	45	213	117	208	0	66	0	7
U. South Dakota	271	731	859	653	0	653	0	0	0	0	0	0	0
Pace U.	272	626	529	649	0	0	0	102	0	0	547	0	0
U. West Florida	273	265	14	647	0	2	0	0	0	0	0	0	645
Franklin W. Olin C. of Engineering	274	636	805	641	48	0	0	11	257	0	167	0	158
U. New Orleans	275	204	341	640	0	0	0	93	143	0	132	0	272
California State U., Fullerton	276	530	639	622	0	0	0	105	132	0	97	0	288
San Francisco State U.	277	990	1,174	613	0	78	0	435	12	0	11	0	77
Kent State U.	278	830	553	574	65	149	16	0	303	0	28	9	4
Fort Lewis C.	279	563	592	569	41	30	58	0	0	0	0	0	440
South Carolina State U.	280	464	506	549	0	0	0	157	0	200	0	0	192
Lawrence Technological U.	281	141	382	545	0	95	0	325	0	0	107	0	18
Christopher Newport U.	282	656	437	541	541	0	0	0	0	0	0	0	0
Florida Polytechnic U.	283	312	493	530	0	0	0	0	95	0	63	364	8
C. Charleston	284	72	158	524	0	0	205	3	0	68	100	148	0
U. Texas Medical Branch	285	425	555	507	0	507	0	0	0	0	0	0	0
Savannah State U.	286	588	609	502	0	285	71	0	0	0	0	0	146

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023																		
				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									
Robert Morris U.	287	ne	448	i	492	0	413	0	0	15	64	0	0	0								
Arkansas State U., Jonesboro	288	248	367		481	0	180	0	151	1	0	149	0	0								
SUNY, Cobleskill	289	ne	379		469	0	0	0	0	0	0	0	0	469								
West Texas A&M U.	290	673	915		458	0	0	176	0	0	0	0	0	282								
Utah Valley U.	291	ne	180		435	0	0	0	0	331	0	104	0	0								
U. Central Oklahoma	292	1	392	i	434	i	93	i	0	i	341	i	0	i	0	i						
Smith C.	293	571	426		421	0	145	0	249	27	0	0	0	0								
Western Washington U.	293	230	227		421	0	0	0	0	0	0	0	0	421								
Citadel Military C. South Carolina	295	136	222		416	0	0	0	408	0	0	0	8	0								
Hope C.	296	232	374		412	0	0	0	0	0	0	412	0	0								
United Tribes Technical C.	297	ne	ne		410	349	0	0	0	0	61	0	0	0								
Lafayette C.	298	84	222		403	0	0	210	193	0	0	0	0	0								
Harvey Mudd C.	299	256	237		394	6	31	i	81	i	45	i	93	i	2	i	99	i	9	i	28	i
Milwaukee School of Engineering	300	704	904		392	0	364	0	0	2	0	26	0	0								
California State U., Bakersfield	301	751	302		388	0	0	0	0	92	0	0	0	296								
Oregon Institute of Technology	301	71	96	i	388	i	0	i	0	i	16	i	44	i	16	i	247	i	0	i	65	i
Hofstra U.	303	478	352		376	0	123	0	0	253	0	0	0	0								
U. of St. Thomas (MN)	304	565	285		367	0	0	0	2	149	90	105	0	21								
Montclair State U.	305	5	49		360	0	0	94	266	0	0	0	0	0								
Western New England U.	306	ne	395		344	0	41	0	113	1	56	133	0	0								
U. San Diego	307	692	518		343	0	0	0	0	0	0	0	0	343								
U. Washington, Bothell	307	304	387		343	0	0	0	0	0	0	343	0	0								
U. Oklahoma, Tulsa	309	421	662		339	0	168	0	0	171	0	0	0	0								
U. Minnesota, Duluth	310	341	322		331	0	0	0	68	18	245	0	0	0								
U. Texas, Tyler	311	115	212		304	0	0	75	0	229	0	0	0	0								
Pennsylvania State U., Altoona	312	ne	ne		297	0	0	0	271	0	0	26	0	0								
CUNY, C. Staten Island	313	235	0		286	0	0	0	0	0	0	0	0	286								
Southern Illinois U., Edwardsville	314	208	204		273	0	175	0	98	0	0	0	0	0								
Union C., Schenectady	315	595	359		272	0	21	0	25	103	0	122	1	0								
U. North Carolina, Wilmington	316	297	182		265	0	0	0	110	0	0	0	0	155								
Northwest Indian C.	317	196	227	i	243	i	243	i	0	i	0	i	0	i	0	i	0	i	0	i	0	i
U. of the Incarnate Word	318	139	331		235	0	14	0	0	0	0	221	0	0								

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank			2023										
		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. Wisconsin-Green Bay	319	167	i 199	i 232	i 0	i 0	i 0	i 48	i 115	i 0	i 69	i 0	i 0	
U. Washington, Tacoma	320	314	250	231	0	24	0	0	169	0	38	0	0	
Chapman U.	321	8	82	228	0	0	0	0	228	0	0	0	0	
U. Texas of the Permian Basin	322	270	509	226	0	0	0	0	226	0	0	0	0	
U. Central Arkansas	323	0	0	221	0	0	0	0	0	221	0	0	0	
James Madison U.	324	54	161	209	0	58	0	0	0	3	0	0	148	
U. North Florida	325	316	258	208	0	0	0	0	206	0	0	0	2	
CUNY, Graduate Center	326	0	0	206	0	206	0	0	0	0	0	0	0	
Minnesota State U., Mankato	327	170	0	196	0	0	0	82	15	0	99	0	0	
Coastal Carolina U.	328	68	159	194	0	194	0	0	0	0	0	0	0	
C. New Jersey	329	133	133	193	0	86	0	0	67	0	0	0	40	
Central Michigan U.	330	95	48	187	0	0	0	187	0	0	0	0	0	
Delaware State U.	331	198	137	176	0	0	0	0	9	0	167	0	0	
Central State U.	332	211	314	155	0	0	0	155	0	0	0	0	0	
U. Wisconsin-Oshkosh	333	73	252	142	0	0	0	142	0	0	0	0	0	
Fayetteville State U.	334	288	127	141	i 0	i 0	i 0	i 0	i 0	i 0	i 0	i 0	i 141	
Middle Tennessee State U.	334	100	288	141	0	0	0	112	0	0	0	0	29	
Xavier U. Louisiana	336	57	0	135	0	0	0	0	0	0	0	0	135	
U. South Carolina, Beaufort	337	ne	ne	134	0	0	0	0	0	134	0	0	0	
Keck Graduate Institute	338	0	i 0	127	0	127	0	0	0	0	0	0	0	
Pennsylvania State U., Harrisburg	339	219	74	126	0	35	0	10	10	0	58	13	0	
U. South Carolina, Aiken	339	1,322	128	126	0	0	0	0	0	0	0	0	126	
SUNY, Oswego	341	9	0	123	0	0	0	0	123	0	0	0	0	
Roger Williams U.	342	17	44	117	0	0	0	15	32	0	70	0	0	
Bowling Green State U.	343	35	42	114	0	0	0	0	0	0	0	0	114	
Clark Atlanta U.	343	11	41	114	0	0	0	0	0	0	0	0	114	
Norwich U.	345	ne	ne	112	0	0	0	106	0	0	6	0	0	
Western Kentucky U.	346	82	135	109	0	0	94	0	0	0	0	0	15	
Central Connecticut State U.	347	71	143	108	0	0	0	77	10	0	21	0	0	
DePaul U.	348	0	76	106	0	0	0	0	0	0	0	0	106	
Texas A&M International U.	348	65	66	106	0	0	0	0	0	0	0	0	106	
U. Wisconsin-Platteville	348	80	i 99	i 106	i 0	i 0	i 0	i 4	i 12	i 4	i 67	i 0	i 19	

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023										
				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. Houston-Clear Lake	351	0	13	100	0	0	0	0	0	0	0	91	0	9
U. Southern Maine	352	32	72	97	91	0	0	0	0	0	0	0	6	0
Lipscomb U.	353	203	ne	94	12	0	0	6	0	0	0	0	0	76
Dine C.	354	ne	0	93	0	93	0	0	0	0	0	0	0	0
Dillard U.	355	0	7	85	59	0	0	0	0	0	0	0	0	26
Seattle U.	355	10	48	85	0	0	0	16	69	0	0	0	0	0
Eastern Michigan U.	357	81	76	83	0	0	0	83	0	0	0	0	0	0
Manhattan C.	357	68	58	83	0	0	23	60	0	0	0	0	0	0
New School	359	422	294	81	0	0	0	44	0	0	0	0	0	37
Trinity U.	359	0	7	81	0	0	81	0	0	0	0	0	0	0
Sam Houston State U.	361	0	167	80	0	0	0	0	0	0	0	0	0	80
U. Houston-Downtown	362	189	71	79	0	0	38	0	0	0	0	0	0	41
Bentley U.	363	ne	0	72	0	0	0	0	0	0	0	0	0	72
Eastern Washington U.	364	0	0	71	0	0	0	0	0	0	0	0	0	71
Eastern Kentucky U.	365	56	ne	69	0	0	0	0	0	0	69	0	0	0
Texas Southern U.	365	27	7	69	0	0	0	0	0	0	0	0	0	69
Western Carolina U.	367	237	134	65	0	63	0	0	0	0	0	0	0	2
Calvin U.	368	34	33	64	0	0	0	0	0	0	0	64	0	0
Claflin U.	369	65	63	63	0	9	0	0	0	0	0	0	54	0
U. Maryland, Eastern Shore	369	125	59	63	63	0	0	0	0	0	0	0	0	0
Virginia Military Institute	371	ne	51	62	62	0	0	0	0	0	0	0	0	0
U. Wisconsin-Stevens Point	372	132	0	61	0	0	61	0	0	0	0	0	0	0
Texas Christian U.	373	8	84	59	0	0	0	0	0	0	0	0	0	59
Duquesne U.	374	0	21	52	0	52	0	0	0	0	0	0	0	0
Marymount U.	375	0	0	50	0	50	0	0	0	0	0	0	0	0
Wellesley C.	375	345	395	50	50	0	0	0	0	0	0	0	0	0
Southeastern Louisiana U.	377	8	6	49	0	0	0	0	0	0	49	0	0	0
Troy U.	378	0	56	47	0	0	0	0	0	0	0	0	0	47
Sonoma State U.	379	0	0	43	20	0	0	0	0	23	0	0	0	0
Andrews U.	380	50	ne	42	0	42	0	0	0	0	0	0	0	0
Central Washington U.	381	45	25	39	0	0	0	0	0	0	39	0	0	0
Fairfield U.	382	2	ne	34	25	6	0	0	0	2	0	0	0	1

TABLE 57

Federally financed higher education R&D expenditures in engineering subfields, ranked by all FY 2023 engineering R&D: FYs 2021–23 and by subfield for FY 2023

(Dollars in thousands)

Institution	Rank	2021	2022	2023									
				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
Indiana State U.	382	0	70	34	0	0	0	34	0	0	0	0	0
Thomas Jefferson U.	384	55	77	33	0	0	0	0	0	0	0	0	33
U. Wisconsin-River Falls	385	18	ne	27	0	0	0	0	0	0	0	0	27
Florida Gulf Coast U.	386	0	84	26	0	0	0	0	0	0	0	0	26
Lake Superior State U.	387	ne	0	25	0	0	0	0	0	0	0	0	25
U. New Haven	388	81	64	23	0	2	4	2	0	0	12	3	0
U. Alaska, Southeast	389	0	0	21	0	0	0	0	21	0	0	0	0
U. of the Pacific	389	228	135	21	0	21	0	0	0	0	0	0	0
Purdue U., Fort Wayne	391	125	92	17	0	0	0	15	0	0	2	0	0
Abilene Christian U.	392	45	29	15	15	0	0	0	0	0	0	0	0
Liberty U.	392	75	ne	15	0	0	0	0	0	0	15	0	0
Alabama State U.	394	73	267	14	0	0	0	0	0	0	0	0	14
St. Mary's C. Maryland	395	ne	ne	13	0	0	0	0	13	0	0	0	0
Merrimack C.	396	ne	ne	11	0	0	0	11	0	0	0	0	0
Austin Peay State U.	397	0	0	8	0	0	0	0	8	0	0	0	0
Azusa Pacific U.	398	0	0	7	0	0	0	0	0	0	0	0	7
California State Polytechnic U., Humboldt	399	208	197	6	0	0	0	6	0	0	0	0	0
Trinity C., Hartford	400	1	13	2	0	0	0	0	0	0	0	0	2
U. North Carolina, Asheville	400	0	0	2	0	0	0	0	0	0	2	0	0
Carleton C.	402	0	0	1 i	0 i	0 i	0 i	0 i	0 i	0 i	0 i	0 i	1 i
Swarthmore C.	402	50	51	1	0	0	0	1	0	0	0	0	0
All other surveyed institutions	-	32,774	33,766	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. ne = not eligible; institution did not meet the criteria for inclusion.

nec = not elsewhere classified.

^a Johns Hopkins University includes the Applied Physics Laboratory, with \$1,317,890 thousand in federally financed R&D expenditures in engineering in FY 2023.^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 Nebraska, Lincoln and Medical Center includes expenditures from the University of Nebraska, Lincoln; University of Nebraska, Medical Center; and University of Nebraska, Central Administration campuses. Due to a realignment within the University of Nebraska system that occurred on 22 June 2023, the three campuses fall under the leadership of one president. Prior to FY 2023, these three campuses reported to the survey as separate institutions.

Note(s):

Institutions reporting zero expenditures in ranked total for FY 2023 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.