

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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	
All institutions	-	14,291,856	15,662,918	17,468,446	1,913,964	1,885,216	1,246,882	1,900,543	3,838,675	707,239	2,324,946	1,039,160	2,611,821	
Johns Hopkins U. <sup>a</sup>	1	1,237,980	1,324,646	1,493,689	196,236	90,639	26,307	20,189	624,367	117,095	268,430	46,404	104,022	
Georgia Institute of Technology	2	839,071	935,632	1,061,402	293,933	52,485	39,321	26,804	478,588	62,576	69,148	20,933	17,614	
Texas A&M U., College Station and Health Science Center	3	385,656	402,999	464,769	52,758	39,121	17,780	113,367	36,668	15,720	47,335	11,991	130,029	
Pennsylvania State U., University Park and Hershey Medical Center	4	378,667	385,594	453,476	26,041	20,050	17,388	18,300	151,174	12,076	150,058	58,389	0	
Massachusetts Institute of Technology	5	382,569	397,946	404,440	36,381	108,026	58,369	14,034	42,244	1,521	52,284	29,447	62,134	
U. Texas, Austin	6	279,730	319,719	360,947	18,046	10,980	47,864	45,300	90,376	38	82,731	26,976	38,636	
Purdue U., West Lafayette	7	285,469	312,394	360,289	51,009	23,171	28,284	35,051	65,385	9,143	63,398	17,434	67,414	
Wichita State U.	8	157,430	226,111	336,096	327,203	178	0	0	1,840	663	914	0	5,298	
U. Michigan, Ann Arbor	9	279,682	299,254	324,306	17,064	28,393	18,366	22,870	83,421	5,428	56,952	15,532	76,280	
Utah State U.	10	247,332	259,482	308,386	271,805	2,021	0	13,791	16,790	0	2,927	0	1,052	
SUNY, Polytechnic Institute	11	462,562	411,929	282,110	0	0	0	72	8	0	27	0	282,003	
U. Illinois, Urbana-Champaign	12	216,233	228,786	272,650	17,051	19,103	25,698	35,959	53,289	0	34,031	25,514	62,005	
Arizona State U.	13	145,574	192,681	265,026	37	18,195	7,691	46,179	59,934	21,606	10,765	5,974	94,645	
Virginia Polytechnic Institute and State U.	14	246,965	260,158	261,707	23,321	33,666	6,407	36,974	61,525	35,838	25,011	11,824	27,141	
Ohio State U.	15	163,509	219,388	242,745	1,365	6,447	12,511	14,397	35,576	21,017	98,566	22,674	30,192	
U. California, Berkeley	16	199,711	206,541	209,311	0	160	8,524	32,095	122,840	44	312	0	45,336	
U. Dayton	17	180,158	195,856	198,049	21,210	520	4,477	90	7,328	56,775	26,803	75,257	5,589	
North Carolina State U.	18	172,900	171,162	196,594	3,565	18,177	44,413	20,197	35,280	11,223	15,037	25,577	23,125	
U. Maryland <sup>b</sup>	19	154,163	164,304	183,899	15,082	25,680	13,236	44,082	10,832	477	24,536	12,001	37,973	
U. Washington, Seattle	20	157,622	172,004	180,277	10,606	35,227	8,833	17,592	42,715	2,452	20,960	7,154	34,738	
U. California, San Diego	21	177,564	212,583	176,720	0	26,273	0	9,627	80,563	0	23,530	28,094	8,633	
U. Colorado Boulder	22	177,604	191,531	175,118	90,146	13,254	11,811	18,504	15,903	0	16,876	2,156	6,468	
U. Wisconsin-Madison	23	131,709	148,673	171,445	0	16,300	18,535	16,818	24,312	6,560	23,196	13,459	52,265	
U. Delaware	24	90,327	123,997	161,894	0	11,485	91,873	18,223	17,655	0	14,089	0	8,569	
Stanford U.	25	136,251	142,213	158,868	17,318	36,591	18,629	13,823	25,789	7,259	26,550	11,489	1,420	
Carnegie Mellon U.	26	112,597	138,117	155,436	1,641	21,985	11,084	9,056	34,323	7,881	41,348	10,841	17,277	
U. Florida	27	122,704	134,339	150,126	4,865	30,527	7,371	35,567	37,538	2,636	18,297	10,375	2,950	
Cornell U.	28	118,621	125,320	149,807	3,760	24,099	20,122	11,875	31,490	5,070	20,194	23,686	9,511	
U. Minnesota, Twin Cities	29	121,637	131,042	145,670	10,609	41,585	22,038	16,899	19,941	919	26,896	6,783	0	
Iowa State U.	30	123,428	132,475	140,782	8,468	16,261	10,826	26,330	10,967	0	7,433	9,806	50,691	

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
New York U.	31	99,307	119,160	132,311	0	123	3,530	1,272	18,588	0	2,192	0	106,606
Rice U.	32	100,872	110,648	129,719	10	53,640	12,796	13,484	31,905	1	6,666	8,076	3,141
U. California, Davis	33	102,370	114,118	124,470	0	31,521	102	52,033	16,563	0	15,415	0	8,836
SUNY, U. Buffalo	34	100,194	109,870	123,383	11,091	18,601	17,346	11,452	4,789	9,439	31,671	5,009	13,985
Northeastern U.	35	92,723	92,855	119,529	0	9,620	6,195	14,016	46,466	10,440	27,037	0	5,755
U. Tennessee, Knoxville	36	128,579	115,464	116,222	28,899	1,720	7,406	12,896	19,337	5,183	0	10,699	30,082
U. California, Los Angeles	37	93,906	98,403	113,969	0	8,500	8,876	11,538	33,792	0	18,645	7,454	25,164
U. Notre Dame	38	90,572	103,773	113,853	49,774	0	20,386	17,933	24,428	0	0	24	1,308
U. Utah	39	48,225	111,749	113,129	0	5,103	6,491	43,039	38,983	0	13,090	4,744	1,679
U. Pennsylvania	40	88,937	106,282	112,740	0	34,022	11,657	15	25,931	0	19,885	0	21,230
U. Virginia, Charlottesville	41	62,271	65,604	112,702	0	27,189	8,245	1,500	13,485	377	11,231	13,897	36,778
Boston U.	42	79,757	91,643	111,856	2,425	47,983	8	0	20,187	8,685	14,764	1,371	16,433
U. California, Santa Barbara	43	86,303	97,329	111,017	0	19,371	8,094	2,346	55,175	0	7,850	17,588	593
Duke U.	44	94,483	102,748	109,885	0	49,428	0	10,221	36,043	0	12,099	1,972	122
Auburn U., Auburn	45	78,720	93,219	108,344	5,318	6,766	8,194	19,353	9,922	12,639	19,611	1,579	24,962
U. North Dakota	46	86,578	84,614	105,141	0	0	2,391	63,086	4,742	0	2,990	1,095	30,837
U. Arizona	47	72,158	84,682	103,771	3,375	11,669	6,213	5,774	48,129	6,558	4,071	10,373	7,609
Clemson U.	48	90,038	98,733	103,188	0	14,120	4,482	14,650	13,148	5,156	32,064	12,960	6,608
Columbia U. in the City of New York	49	75,457	87,884	100,161	2,176	29,963	12,909	3,113	8,862	1,516	3,398	0	38,224
Harvard U.	50	92,782	96,920	99,830	18,072	47,731	1,410	7,420	5,245	0	538	17,947	1,467
Northwestern U.	51	80,735	88,008	93,785	0	20,128	12,688	7,457	8,452	3,127	8,038	18,076	15,819
Woods Hole Oceanographic Institution	52	101,989	88,997	93,312	9,402	0	0	11,228	47,578	0	25,104	0	0
New Jersey Institute of Technology	53	82,240	83,738	90,849	0	9,313	10,493	43,312	5,438	0	4,236	36	18,021
Princeton U.	54	67,231	78,831	87,035	5,518	9,028	7,873	8,067	33,261	4,672	6,763	0	11,853
Michigan State U.	55	79,360	81,143	86,949	0	20,130	11,789	12,213	19,086	0	11,332	0	12,399
U. California, Irvine	56	65,454	75,898	84,902	0	16,739	7,564	11,092	15,240	0	19,186	12,257	2,824
U. Massachusetts, Amherst	57	60,065	67,776	82,841	0	6,661	25,274	22,301	17,521	0	9,260	0	1,824
U. Southern California	58	78,179	63,694	82,633	5,907	12,259	9,113	4,712	41,441	3,154	0	0	6,047
Vanderbilt U. and Vanderbilt U. Medical Center	59	86,541	78,534	82,313	0	22,112	11,463	14,894	21,386	0	10,189	0	2,269
U. Pittsburgh, Pittsburgh	60	56,681	65,936	82,238	0	26,133	11,107	6,891	11,750	3,126	19,172	0	4,059
Mississippi State U.	61	67,472	73,980	78,080	16,991	1,359	6,346	3,340	10,045	6,398	7,474	1,355	24,772
U. Nebraska, Lincoln and Medical Center <sup>c</sup>	62	na	na	76,802	0	14,931	3,547	21,043	21,855	302	4,775	5,320	5,029

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
New Mexico Institute of Mining and Technology	63	13,002	53,897	76,286	519	2,809	494	0	338	0	2,236	768	69,122
California Institute of Technology	64	51,630	51,975	73,871	7,631	6,287	6,982	8,777	6,180	0	3,291	26,713	8,010
U. Connecticut	65	54,185	68,902	72,672	0	8,183	8,655	20,006	9,486	0	9,826	15,821	695
U. Maine	66	46,986	68,261	72,340	18	214	9,425	2,150	3,397	1,522	1,916	52,147	1,551
Oregon State U.	67	52,731	58,552	71,532	0	2,758	3,477	16,996	19,058	6,277	7,066	959	14,941
U. Central Florida	68	57,620	59,060	68,340	15,473	115	0	9,617	9,468	2,939	15,156	3,254	12,318
U. Houston	69	56,555	64,026	67,684	1,387	13,035	14,593	9,358	12,308	621	7,815	1,669	6,898
Florida State U.	70	52,153	58,212	67,635	3,205	1,015	3,805	7,567	18,969	6,107	23,584	2,047	1,336
Montana State U., Bozeman	71	51,785	54,188	67,024	0	8,077	1,985	6,256	5,800	86	9,559	0	35,261
Rensselaer Polytechnic Institute	72	67,810	63,146	66,158	0	10,734	11,281	2,688	14,000	394	17,833	6,286	2,942
U. Texas, Arlington	73	58,154	61,467	64,548	6,018	5,150	0	15,294	6,992	13,192	6,018	0	11,884
Louisiana State U., Baton Rouge	74	39,104	53,974	63,779	0	0	10,943	16,332	7,152	3,682	6,670	5,127	13,873
U. Kentucky	75	52,361	61,287	62,529	0	2,820	2,943	13,599	3,093	1,805	6,512	3,136	28,621
U. South Florida	76	50,547	50,859	62,025	663	8,426	2,820	22,563	15,247	2,027	5,021	0	5,258
Rutgers, State U. New Jersey, New Brunswick	77	51,289	57,490	61,910	0	4,636	6,408	3,586	6,505	986	6,697	3,294	29,798
Colorado School of Mines	78	54,062	60,371	61,175	1,994	2,332	3,795	8,848	849	2,701	5,568	15,259	19,829
George Mason U.	79	49,826	57,196	61,036	0	7,510	0	5,318	23,457	21,568	2,135	769	279
Case Western Reserve U.	80	39,079	41,783	59,900	0	22,609	6,554	1,379	4,190	0	8,055	10,069	7,044
U. Oklahoma, Norman and Health Science Center	81	39,785	44,727	58,746	9,461	5,412	6,805	8,683	19,470	2,116	0	0	6,799
U. Iowa	82	47,722	49,233	57,579	0	2,706	1,359	26,022	2,085	617	1,607	0	23,183
U. California, Santa Cruz	83	49,576	55,542	57,256	0	1,148	0	0	7,606	0	0	0	48,502
Florida International U.	84	41,740	48,549	56,199	0	5,887	0	17,998	15,955	869	10,213	525	4,752
U. Texas, Dallas	85	50,646	51,310	55,368	0	13,817	0	0	14,774	1,049	10,802	7,853	7,073
U. Alabama, Huntsville	86	55,510	53,958	55,164	32,825	294	1,969	3,124	6,790	4,833	3,772	670	887
U. Cincinnati	87	42,434	46,955	54,548	8,080	5,463	5,381	9,401	9,003	0	12,304	0	4,916
Michigan Technological U.	88	46,733	48,400	54,177	0	3,692	5,117	5,331	7,297	0	23,542	3,576	5,622
Texas Tech U.	89	41,962	46,952	53,564	0	0	14,469	9,353	11,402	3,189	8,879	0	6,272
Colorado State U., Fort Collins	90	41,575	47,833	52,539	0	650	3,983	17,022	11,300	1,292	14,127	0	4,165
U. Massachusetts, Lowell	91	36,339	44,358	51,877	0	4,712	15,907	3,016	7,516	0	11,665	0	9,061
Missouri U. of Science and Technology	92	43,470	43,119	51,351	1,851	112	1,656	8,073	7,964	2,507	5,443	22,501	1,244
U. New Mexico	93	41,317	45,191	51,318	8,544	649	4,246	12,731	12,775	911	1,819	319	9,324
U. Alabama, Tuscaloosa	94	43,941	49,885	51,029	4,665	0	6,647	15,198	10,299	0	7,056	6,473	691

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
Stevens Institute of Technology	95	33,983	43,702	50,295	0	2,408	1,335	6,971	6,055	20,987	4,764	0	7,775
West Virginia U.	96	39,855	43,972	50,052	2,721	0	8,506	6,496	8,838	3,914	6,791	8,109	4,677
U. North Carolina, Chapel Hill	97	30,935	39,242	49,721	1,998	17,947	0	27,603	0	2,173	0	0	0
U. Arkansas, Fayetteville	98	37,818	40,691	49,645	29	8,388	4,781	10,100	13,619	3,911	4,066	0	4,751
U. Chicago	99	30,018	41,866	47,857	0	0	0	0	0	0	0	0	47,857
Washington State U.	100	48,031	45,571	47,254	245	4,926	5,505	7,327	9,671	172	6,476	3,278	9,654
U. South Carolina, Columbia	101	36,222	35,508	47,155	0	0	7,701	4,648	10,154	0	13,347	0	11,305
U. Illinois, Chicago	102	35,675	39,656	46,820	0	17,086	3,859	4,101	7,528	0	13,758	264	224
SUNY, Binghamton U.	103	39,529	33,595	45,755	0	4,097	0	0	6,918	23,305	9,899	0	1,536
U. Texas, El Paso	104	26,599	40,798	45,627	184	1,031	200	5,675	7,608	2,466	22,981	3,125	2,357
Oklahoma State U., Stillwater	105	35,094	36,217	44,510	11,638	0	6,694	5,994	5,498	2,105	2,732	1,273	8,576
Drexel U.	106	32,665	38,649	44,002	0	9,799	4,654	4,847	3,911	0	9,301	9,123	2,367
Dartmouth C. and Dartmouth Hitchcock Medical Center	107	33,559	36,219	41,232	48	15,399	4,400	1,493	8,349	25	7,025	0	4,493
U. Nevada, Reno	108	27,769	32,454	41,198	2,603	2,703	7,448	8,651	597	10	10,168	3,723	5,295
New Mexico State U.	109	29,884	40,367	40,884	7,811	6	1,939	6,422	13,129	96	2,369	132	8,980
SUNY, Stony Brook U.	110	28,344	38,670	40,873	0	9,773	0	2,899	13,887	0	1,817	10,362	2,135
Yale U.	111	35,778	36,714	40,153	0	11,512	8,232	0	8,920	0	8,711	0	2,778
Worcester Polytechnic Institute	112	27,108	31,514	37,920	1,864	3,006	4,180	787	4,292	0	20,941	684	2,166
Air Force Institute of Technology	113	26,780	27,794	37,232	6,773	0	0	2,003	7,186	17,943	0	2,748	579
U. California, Riverside	114	34,888	32,758	36,650	0	2,688	7,856	10,529	9,505	0	4,679	130	1,263
U.S. Air Force Academy	115	29,132	33,169	36,441	4,963	231	203	0	242	73	74	30,509	146
U. Louisiana, Lafayette	116	30,295	32,259	35,532	0	0	8,262	6,293	4,010	0	10,991	5,205	771
Tufts U.	117	24,017	32,535	34,614	337	16,668	2,838	4,289	4,047	0	2,802	0	3,633
Washington U., Saint Louis	118	26,574	28,151	33,691	0	13,042	7,269	70	7,186	0	0	5,644	480
Mercer U.	119	40,439	38,452	33,284	10,968	0	0	4	2,213	0	9,864	9,545	690
Lehigh U.	120	25,835	28,948	32,406	0	3,695	3,968	5,778	2,162	2,402	6,790	7,598	13
Old Dominion U.	121	25,811	28,288	32,001	1,264	0	0	1,438	10,247	16,795	2,257	0	0
U. Alaska, Fairbanks	122	17,314	17,869	31,211	7,457	0	0	5,923	13,061	0	46	462	4,262
Kansas State U.	123	27,743	29,980	30,352	1,378	0	2,904	5,749	4,655	1,367	5,879	0	8,420
Virginia Commonwealth U.	124	32,233	30,518	29,609	0	5,780	4,776	0	5,874	0	6,613	0	6,566
U. New Hampshire	125	22,509	25,040	29,519	0	0	2,741	7,964	9,641	0	4,688	0	4,485
George Washington U.	126	22,749	23,736	29,442	2,293	4,917	0	3,750	7,335	3,954	3,297	156	3,740

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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. Hawaii, Manoa	127	23,966	24,574	29,058	0	1,004	0	5,055	11,262	0	3,220	0	8,517
U. Alabama, Birmingham	128	46,844	30,637	28,505	6,089	10,224	103	2,010	1,917	0	6,943	0	1,219
Rochester Institute of Technology	129	20,874	22,869	28,126	0	2,960	1,109	108	7,463	2,935	2,162	0	11,389
Brown U.	130	23,587	29,569	27,640	0	8,838	3,114	0	3,160	0	3,729	3,674	5,125
U. Georgia	131	20,289	22,379	27,420	0	2,048	7,545	12,416	4,262	0	0	0	1,149
Naval Postgraduate School	132	24,254	21,556	27,413	5,888	1,268	0	354	5,448	666	5,614	2,518	5,657
U. North Texas, Denton	133	18,285	23,078	27,249	0	4,086	0	0	3,540	0	3,584	15,464	575
Brigham Young U., Provo	134	20,162	19,599	26,923	0	0	4,755	4,345	8,018	1,352	8,425	0	28
Emory U.	135	11,488	16,415	26,414	0	26,414	0	0	0	0	0	0	0
U. Kansas	136	21,363	22,075	25,610	2,517	0	8,878	9,349	2,231	0	2,128	0	507
U. Texas, San Antonio	137	21,499	24,403	25,584	0	4,037	0	6,896	3,896	1,353	3,918	0	5,484
Indiana U., Bloomington	138	13,012	12,030	25,104	0	11,665	0	0	13,439	0	0	0	0
North Dakota State U.	139	13,963	20,187	25,034	710	0	111	10,524	1,985	1,397	3,003	243	7,061
Syracuse U.	140	24,698	21,602	24,796	11	5,098	82	2,877	8,560	0	7,052	0	1,116
U. Louisville	141	20,965	23,630	24,702	8	6,647	1,921	1,868	5,693	1,617	2,919	24	4,005
U. Missouri, Columbia	142	56,685	78,494	24,365	0	2,417	902	4,784	8,281	410	4,550	467	2,554
U. North Carolina, Charlotte	143	15,643	15,096	23,417	0	0	0	3,156	5,045	1,282	4,406	0	9,528
U. Wyoming	144	24,675	28,379	23,084	97	803	10,741	3,624	1,402	0	1,381	395	4,641
U. Rochester	145	16,780	22,179	22,767	0	6,882	1,409	0	6,847	0	6,732	0	897
CUNY, City C.	146	34,710	36,189	21,627	0	5,613	2,608	3,277	7,435	0	2,381	0	313
U. California, Merced	147	13,854	11,997	21,052	0	2,450	138	325	0	0	4,288	1,968	11,883
North Carolina A&T State U.	148	11,616	18,186	20,925	0	1,083	28	2,297	5,181	1,590	3,067	0	7,679
Rowan U.	149	11,570	15,432	19,322	0	3,424	4,462	7,822	1,070	0	687	0	1,857
U. Vermont	150	11,914	11,621	18,270	2,512	0	0	5,611	1,946	0	2,765	0	5,436
Florida Atlantic U.	151	17,064	16,449	17,629	156	0	224	2,663	35	0	0	0	14,551
Boise State U.	152	14,918	14,758	17,088	30	6,741	967	750	2,375	257	1,235	3,686	1,047
U. Missouri, Kansas City	153	9,174	12,219	16,959	312	34	29	1,312	14,189	111	734	0	238
Ohio U.	154	16,645	17,216	16,193	3,555	0	4,322	2,827	624	7	574	281	4,003
San Diego State U.	155	10,715	14,193	16,138	1,698	47	0	4,589	3,992	0	5,518	0	294
South Dakota School of Mines and Technology	156	13,658	17,162	15,552	0	1,497	5,091	1,126	355	49	806	4,347	2,281
Louisiana Tech U.	157	11,257	11,673	15,078	0	3,052	2,790	3,028	884	479	4,845	0	0
Cleveland State U.	158	12,371	14,519	15,061	0	8,152	1,448	467	2,019	0	2,749	0	226

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
Oregon Health and Science U.	159	13,526	13,373	14,960	0	14,960	0	0	0	0	0	0	0
U. Rhode Island	160	10,766	11,931	14,637	0	674	1,907	1,624	2,417	0	3,772	17	4,226
U. Memphis	161	9,464	11,825	14,577	242	3,061	0	5,839	2,264	41	1,924	0	1,206
Clarkson U.	162	10,113	12,446	14,568	31	55	2,051	4,044	4,291	0	3,584	74	438
Western Michigan U. and Homer Stryker M.D. School of Medicine	163	8,058	9,515	14,491	787	905	7,067	951	703	244	2,437	207	1,190
U. Nevada, Las Vegas	164	10,667	12,665	13,866	0	64	0	4,674	2,605	0	4,754	0	1,769
Embry-Riddle Aeronautical U.	165	11,279	16,049	13,774	12,932	0	0	255	0	0	538	0	49
Wayne State U.	166	11,675	13,632	13,718	0	1,922	2,254	3,174	2,862	1,309	738	0	1,459
Illinois Institute of Technology	167	13,737	12,502	13,311	1,115	4,526	1,051	1,269	3,660	64	618	75	933
U. Idaho	168	12,944	13,720	13,229	1,580	1,281	749	1,418	980	71	1,691	255	5,204
Missouri State U.	169	7,024	8,630	12,633	0	0	0	0	0	0	0	12,633	0
Marquette U.	170	9,027	10,278	12,351	0	3,711	0	2,444	2,098	0	3,251	0	847
U. Massachusetts, Dartmouth	171	8,049	8,480	11,936	0	1,183	0	2,686	4,349	0	3,266	0	452
U. Mississippi	172	6,033	8,095	11,818	46	2,475	2,340	3,286	994	0	1,586	751	340
U. Toledo	173	10,299	11,957	11,520	293	1,019	2,210	1,557	2,292	0	3,983	0	166
Baylor U.	174	7,241	9,061	11,454	2,280	224	0	23	3,510	0	4,882	0	535
California State U., Sacramento	175	5,986	8,253	11,433	0	0	0	11,036	248	0	149	0	0
Villanova U.	176	9,484	9,453	11,370	0	0	1,255	3,820	1,979	0	2,253	0	2,063
Howard U.	177	9,535	10,431	11,221	0	0	1,146	2,264	5,030	0	1,204	0	1,577
Texas State U.	178	9,321	9,722	11,165	472	168	0	853	1,081	0	163	2,148	6,280
U. Texas Rio Grande Valley	179	5,354	7,844	11,028	29	289	5	774	1,235	2,107	3,778	317	2,494
U. Tulsa	180	10,926	9,554	10,991	0	0	1,018	0	867	0	2,774	0	6,332
U. Southern Mississippi	181	5,963	7,380	10,921	0	0	0	30	0	0	0	0	10,891
Morgan State U.	182	8,031	8,375	10,725	183	0	0	3,260	4,242	203	31	0	2,806
U. Maryland, Baltimore County	183	6,668	8,140	10,631	486	2,479	482	977	2,784	240	2,455	82	646
Tennessee Technological U.	184	8,455	7,436	9,802	0	0	505	1,698	2,147	365	4,595	0	492
U. Wisconsin-Milwaukee	185	8,577	8,246	9,725	0	494	0	1,928	2,440	253	2,212	1,270	1,128
Florida A&M U.	186	5,222	5,752	9,530	0	0	2,864	1,100	1,616	1,303	1,317	0	1,330
Texas A&M U.-Corpus Christi	187	6,590	8,737	9,507	7,493	95	0	581	203	1	611	0	523
San Jose State U.	188	3,664	6,968	9,496	14	1,117	859	620	2,160	591	1,397	0	2,738
Indiana U.-Purdue U., Indianapolis	189	6,604	6,626	9,390	0	2,099	0	60	2,422	0	3,806	0	1,003



TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
California Polytechnic State U., San Luis Obispo	190	5,522	8,472	9,181	3,288	1,051	0	1,689	67	15	872	7	2,192
Oakland U.	191	4,437	14,783	9,138	0	0	0	0	2,003	1,261	3,172	0	2,702
U. Akron	192	7,714	7,558	8,851	7	840	1,737	1,456	838	0	3,951	0	22
South Dakota State U.	193	7,161	8,977	8,819	0	0	0	1,379	367	0	1,285	0	5,788
Temple U.	194	8,279	8,898	8,815	0	2,228	0	2,155	1,601	0	1,350	0	1,481
Southern Methodist U.	195	9,972	7,313	8,535	0	0	0	1,248	2,209	0	1,191	0	3,887
U. Michigan, Dearborn	196	6,223	6,703	8,414	0	0	0	0	4,177	1,980	2,052	0	205
U. Miami	197	4,527	5,961	8,034	426	0	769	4,092	759	0	486	0	1,502
Medical C. Wisconsin	198	7,560	7,427	7,828	0	7,828	0	0	0	0	0	0	0
U.S. Military Academy	199	7,772	6,640	7,462	0	0	151	224	1,704	1,545	2,353	0	1,485
U. Puerto Rico, Mayaguez	200	11,397	8,482	7,401	0	0	1,627	1,485	2,982	239	485	9	574
U. Texas Medical Branch	201	1,259	1,643	7,397	0	7,397	0	0	0	0	0	0	0
U. South Alabama	202	5,085	6,231	7,228	0	0	2,002	2,326	1,710	0	224	0	966
Portland State U.	203	6,668	5,582	7,108	134	0	0	3,441	1,758	21	682	125	947
Tulane U.	204	6,662	6,823	6,779	0	3,285	3,494	0	0	0	0	0	0
Lamar U.	205	2,437	3,536	6,659	0	0	1,526	2,829	205	1,457	642	0	0
Southern Illinois U., Edwardsville	206	1,786	8,439	6,427	0	5,486	0	405	0	174	349	0	13
Montana Technological U.	207	5,834	4,473	6,151	0	0	0	410	279	0	371	4,942	149
California State Polytechnic U., Humboldt	208	5,564	6,779	5,920	0	238	0	1,506	481	86	0	0	3,609
Brandeis U.	209	2,221	5,264	5,918	0	5,891	0	27	0	0	0	0	0
Northern Arizona U.	210	6,497	4,194	5,880	0	1,053	92	527	1,733	0	1,532	0	943
U.S. Naval Academy	211	6,719	6,342	5,848	679	0	0	0	594	0	1,428	0	3,147
U. Oregon	212	0	4,656	5,844	0	5,844	0	0	0	0	0	0	0
Idaho State U.	213	4,411	4,752	5,435	0	0	0	352	242	0	154	0	4,687
Marshall U.	214	2,475	3,333	5,227	0	23	0	4,000	0	0	447	63	694
Texas A&M U.-Kingsville	215	4,622	4,044	5,130	412	0	33	303	762	14	1,046	383	2,177
Prairie View A&M U.	216	4,687	5,305	5,101	183	127	717	428	1,728	43	1,400	41	434
Florida Institute of Technology	217	5,891	5,100	5,021	1,007	400	345	539	458	12	624	0	1,636
Wright State U.	218	8,129	6,843	4,819	0	281	0	0	3,102	0	1,365	69	2
Northern Illinois U.	219	4,134	4,132	4,565	0	0	0	0	248	3,544	460	0	313
Miami U.	220	4,356	4,474	4,562	0	639	1,357	0	1,619	128	643	0	176
SUNY, U. Albany	220	3,133	4,266	4,562	0	0	0	0	1,904	0	0	0	2,658

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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. Colorado Denver	222	3,695	3,906	4,511	0	543	0	1,656	647	0	1,239	0	426
U. North Florida	223	2,119	2,472	4,313	0	0	0	801	375	0	3,044	0	93
Georgia Southern U.	224	4,052	3,302	4,200	27	47	21	845	720	740	1,738	57	5
U. Tennessee, Chattanooga	225	3,578	3,823	4,138	0	0	287	461	736	0	671	0	1,983
Alfred U.	226	2,654	3,458	4,076	0	0	0	0	0	0	0	4,076	0
U. Denver	227	3,558	3,632	3,612	0	584	0	224	737	0	1,378	332	357
New School	228	3,793	3,301	3,565	0	0	1,620	220	1	0	1,550	0	174
Kennesaw State U.	229	1,858	1,652	3,445	0	0	0	2,412	86	0	518	0	429
U. of the District of Columbia	230	3,134	5,725	3,342	7	114	0	484	205	597	1,935	0	0
Tuskegee U.	231	5,528	2,955	3,262	148	0	89	0	822	0	408	1,795	0
Catholic U. of America	232	3,926	3,076	3,217	0	1,334	0	546	897	0	440	0	0
Jackson State U.	233	2,236	2,512	3,214	0	0	0	1,786	1,341	0	0	0	87
Saint Louis U.	234	1,999	1,559	3,187	3	412	0	82	94	230	1,471	0	895
Southern Illinois U., Carbondale	235	3,120	2,308	3,183	0	58	0	298	1,253	91	837	107	539
California State U., Long Beach	236	4,574	3,671	3,160	173	538	502	594	467	0	459	0	427
Purdue U., Northwest	237	2,220	2,606	3,078	0	0	0	86	38	2,628	305	0	21
Tennessee State U.	238	1,768	1,278	3,026	0	0	0	0	0	0	0	0	3,026
Alabama A&M U.	239	1,787	1,925	3,018	1	0	0	589	1,180	217	720	311	0
East Carolina U.	240	3,069	2,737	3,013	0	0	0	434	0	0	0	0	2,579
U. Puerto Rico, Rio Piedras	241	1,152	4,135	2,930	0	2,930	0	0	0	0	0	0	0
Milwaukee School of Engineering	242	3,129	3,480	2,790	0	432	0	1,090	2	0	1,266	0	0
Santa Clara U.	243	1,588	1,741	2,617	0	750	0	32	772	0	1,063	0	0
Youngstown State U.	244	1,794	3,058	2,553	0	0	0	1,800	41	0	419	70	223
U. New Orleans	245	1,897	2,134	2,509	0	0	0	307	986	0	586	0	630
Pittsburg State U.	246	2,250	2,309	2,461	48	14	1,641	0	0	0	0	758	0
Southern U. and A&M C., Baton Rouge	247	2,282	1,938	2,338	0	0	0	0	194	0	2,122	0	22
North Carolina Central U.	248	1,773	2,074	2,317	0	2,317	0	0	0	0	0	0	0
Franklin W. Olin C. of Engineering	249	936	2,380	2,312	105	0	0	11	676	0	949	0	571
SUNY, Cobleskill	250	1,211	1,211	2,301	0	0	0	0	0	0	0	0	2,301
Norfolk State U.	251	1,413	1,656	2,218	0	0	0	0	0	0	0	0	2,218
California State U., Northridge	252	1,216	2,621	2,209	233	34	0	78	100	0	1,108	19	637
California State U., Los Angeles	253	1,486	1,423	2,149	0	0	0	1,045	130	0	974	0	0



TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
Morehead State U.	254	756	2,312	2,141	1,938	0	0	41	162	0	0	0	0
Virginia State U.	255	1,273	2,260	2,110	938	0	0	0	63	856	0	0	253
SUNY, C. of Environmental Science and Forestry	256	1,085	1,644	i 2,095	325	677	812	281	0	0	0	0	0
Bucknell U.	257	1,494	1,589	2,064	0	185	457	317	276	0	196	0	633
U. Arkansas, Little Rock	258	809	1,571	2,063	1,917	139	1	0	0	0	0	6	0
Chapman U.	259	348	539	2,041	0	0	0	0	228	0	0	0	1,813
San Francisco State U.	260	2,386	2,423	1,967	0	78	0	932	431	0	435	14	77
Kent State U.	261	3,732	1,847	1,904	230	156	16	0	417	128	38	11	908
Pennsylvania State U., Behrend	262	2,395	1,799	1,892	0	564	8	0	7	599	402	312	0
U. Alaska, Anchorage	263	1,674	1,957	1,878	206	0	0	746	434	0	398	83	11
U. Minnesota, Duluth	263	2,392	1,892	1,878	0	0	176	574	150	663	0	0	315
CUNY, Advanced Science Research Center	265	2,928	2,083	1,871	0	599	190	956	0	0	0	0	126
U. Nebraska, Omaha	266	1,051	1,510	1,782	317	783	49	633	0	0	0	0	0
California State Polytechnic U., Pomona	267	1,516	1,759	1,673	372	0	698	470	5	75	53	0	0
Wake Forest U.	268	1,204	1,427	1,499	0	0	0	0	0	0	0	0	1,499
California State U., Chico	269	1,236	1,192	1,465	0	0	0	750	355	0	251	0	109
California State U., Fresno	270	1,290	1,970	1,450	0	0	0	991	309	0	150	0	0
Benedict C.	271	ne	ne	1,428	0	0	0	968	219	241	0	0	0
Florida Polytechnic U.	272	829	1,310	1,404	0	0	0	0	364	0	197	599	244
California State U., Fullerton	273	661	1,062	1,355	0	0	0	315	322	0	423	0	295
Alcorn State U.	274	181	1,159	i 1,349	0	0	0	988	0	0	104	0	257
U. West Florida	275	709	450	1,322	0	2	0	0	0	0	63	0	1,257
U. North Carolina, Wilmington	276	1,064	537	1,317	32	0	0	200	331	0	0	0	754
U. Massachusetts, Boston	277	1,266	1,218	1,298	0	74	0	22	884	0	0	0	318
Albany State U.	278	14	ne	1,177	7	0	0	1,150	0	0	0	0	20
Minnesota State U., Mankato	279	996	871	1,166	0	0	0	95	291	0	326	0	454
U. South Dakota	280	1,429	1,447	1,153	0	1,153	0	0	0	0	0	0	0
U. of St. Thomas (MN)	281	3,212	862	1,145	0	0	0	12	508	90	182	0	353
U. Colorado Colorado Springs	282	902	1,883	1,144	25	0	0	0	597	0	500	0	22
California State U., San Bernardino	283	1,382	658	1,108	0	24	0	1,084	0	0	0	0	0
Oregon Institute of Technology	284	761	i 902	i 1,104	i 0	i 0	i 0	i 122	i 233	i 76	i 321	i 0	i 352
West Texas A&M U.	285	1,400	1,713	1,075	0	0	537	223	3	0	0	0	312

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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. Hartford	286	963	752	1,067	932	3	0	107	18	0	7	0	0
U. Central Oklahoma	287	1 i	928 i	1,032 i	0 i	202 i	0 i	0 i	830 i	0 i	0 i	0 i	0 i
U. Oklahoma, Tulsa	288	1,289	1,368	1,026	0	272	0	0	754	0	0	0	0
U. Detroit Mercy	289	114	560	1,010	0	0	0	18	606	0	386	0	0
California State U., San Marcos	290	1,682	527	937	0	32	0	0	1	0	0	0	904
South Carolina State U.	291	652 i	787 i	924	0	200	0	157	0	200	175	0	192
Western Washington U.	292	587	560	884	0	0	0	0	0	0	0	0	884
Tarleton State U.	293	166	685	857	63	0	0	21	0	0	446	130	197
New York Institute of Technology	294	775	1,181	844	26	0	0	9	556	0	253	0	0
U. Colorado Anschutz Medical Campus	295	1,204	957	842	0	842	0	0	0	0	0	0	0
Hampton U.	296	827	1,215	837	0	0	9	0	828	0	0	0	0
Lawrence Technological U.	297	555	726	816	0	98	0	532	29	0	131	0	26
U. Texas, Tyler	298	537	542	812	0	0	154	58	362	2	188	0	48
CUNY, New York City C. of Technology	299	103	50	806	0	0	0	0	81	0	550	0	175
U. of the Virgin Islands	300	832	790	790	790	0	0	0	0	0	0	0	0
Harvey Mudd C.	301	515	608	774	10 i	73 i	94 i	82 i	162 i	2 i	172 i	9 i	170 i
Western Illinois U.	302	780	1,983	717	0	0	0	0	0	0	0	717	0
California State U., Bakersfield	303	839	440	711	0	0	0	0	272	0	0	0	439
Western New England U.	304	ne	1,464	686	0	52	0	181	155	75	223	0	0
Pace U.	305	706	529	684	0	0	0	137	0	0	547	0	0
U. Tennessee, Health Science Center	306	687	640	683	0	683	0	0	0	0	0	0	0
Utah Valley U.	307	ne	310	668	0	0	0	32	532	0	104	0	0
Arkansas State U., Jonesboro	308	384	508	660	0	216	0	270	3	0	171	0	0
Hofstra U.	309	528	521	642	1	249	84	27	253	11	5	0	12
Fort Lewis C.	310	605	623	628	51	30	58	0	0	0	0	0	489
Western Kentucky U.	311	604	510	615	0	0	109	51	89	0	332	0	34
Robert Morris U.	312	ne	555 i	612	0	467	39	0	25	81	0	0	0
U. San Diego	313	980	820	608	0	0	0	0	0	0	0	0	608
Boston C.	314	50	438	592	0	0	0	0	0	0	0	0	592
Liberty U.	315	208	ne	588	0	0	0	326	0	0	243	0	19
C. Charleston	316	72	158	583	29	0	205	33	0	68	100	148	0
Lafayette C.	317	201	384	581	0	18	266	266	4	0	12	0	15

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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	
James Madison U.	318	174	808	576	0	62	0	0	0	0	3	0	0	511
Smith C.	319	688	599	567	0	195	66	260	41	0	0	2	0	3
Christopher Newport U.	320	656	437	541	541	0	0	0	0	0	0	0	0	0
Eastern Michigan U.	321	427	407	534	0	72	42	215	87	37	23	0	0	58
U. Washington, Bothell	322	304	387	530	0	0	0	155	0	0	375	0	0	0
Union C., Schenectady	323	722	446	519	0	152	0	29	147	0	188	1	0	2
Savannah State U.	324	588	609	502	0	285	71	0	0	0	0	0	0	146
Hope C.	325	277	430	493	0	0	0	0	0	0	493	0	0	0
Citadel Military C. South Carolina	326	250	363	491	0	0	0	428	2	0	49	8	0	4
U. Wisconsin-Green Bay	327	327	465	484	0	0	0	144	208	0	132	0	0	0
Manhattan C.	328	1,122	899	447	0	0	43	371	0	0	33	0	0	0
United Tribes Technical C.	329	ne	ne	444	349	0	0	0	15	80	0	0	0	0
Pennsylvania State U., Altoona	330	ne	ne	425	0	0	0	276	0	0	149	0	0	0
Delaware State U.	331	308	207	419	0	0	0	0	9	0	410	0	0	0
U. Texas of the Permian Basin	332	792	797	416	0	0	52	0	227	0	12	0	0	125
CUNY, system office	333	1,137	2,447	413	0	0	0	0	0	0	0	0	0	413
Montclair State U.	334	104	1,129	402	0	7	94	301	0	0	0	0	0	0
Western Carolina U.	335	305	363	395	0	63	0	330	0	0	0	0	0	2
Central Michigan U.	336	412	499	377	185	0	0	187	0	5	0	0	0	0
Swarthmore C.	337	174	215	338	0	0	0	6	226	0	98	0	0	8
U. Washington, Tacoma	338	319	250	328	0	24	0	0	169	0	38	0	0	97
U. Southern Maine	339	159	228	301	173	7	0	0	0	37	0	84	0	0
U. of the Incarnate Word	340	186	339	289	0	14	0	0	0	0	275	0	0	0
CUNY, C. Staten Island	341	274	0	288	0	2	0	0	0	0	0	0	0	286
Seattle U.	342	62	137	282	0	0	0	18	187	0	77	0	0	0
C. New Jersey	343	283	265	278	0	113	0	17	85	0	11	0	0	52
Coastal Carolina U.	344	68	175	275	0	194	0	0	0	0	0	0	0	81
Pennsylvania State U., Harrisburg	345	386	160	272	0	36	0	17	10	0	196	13	0	0
Appalachian State U.	346	0	237	266	0	0	0	0	0	0	0	0	0	266
Northwest Indian C.	347	196	227	243	243	0	0	0	0	0	0	0	0	0
Grand Valley State U.	348	118	117	239	0	0	0	0	0	0	0	0	0	239
Fairfield U.	349	109	ne	225	35	81	0	0	84	0	22	0	0	3

TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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-Platteville	350	171	i 204	i 223	i 0	i 0	i 0	i 21	i 43	i 14	i 78	i 0	i 67
Florida Gulf Coast U.	351	145	222	221	0	9	0	70	0	63	0	0	79
U. Central Arkansas	351	0	0	221	0	0	0	0	0	221	0	0	0
CUNY, Graduate Center	353	6	0	206	0	206	0	0	0	0	0	0	0
Roger Williams U.	354	32	221	202	0	0	0	66	46	0	70	0	20
Middle Tennessee State U.	355	592	889	196	0	0	0	153	0	14	0	0	29
Purdue U., Fort Wayne	356	465	169	192	0	0	0	153	0	0	36	0	3
Bowling Green State U.	357	57	80	189	0	21	0	0	0	0	0	0	168
Duquesne U.	358	102	66	187	0	187	0	0	0	0	0	0	0
U. Houston-Clear Lake	359	0	21	184	0	0	0	0	0	0	175	0	9
Texas A&M International U.	360	241	127	175	0	2	0	0	0	0	0	0	173
Central Connecticut State U.	361	100	185	172	10	0	7	84	13	10	37	0	11
U. Wisconsin-Oshkosh	362	158	294	157	0	0	0	157	0	0	0	0	0
California State U., East Bay	363	306	133	155	0	155	0	0	0	0	0	0	0
Central State U.	363	211	314	155	0	0	0	155	0	0	0	0	0
Lipscomb U.	365	203	ne	153	12	0	0	65	0	0	0	0	76
Loyola U., Chicago	366	0	95	151	0	0	0	0	0	0	0	0	151
SUNY, Oswego	367	43	0	150	0	0	0	0	139	0	0	0	11
Dine C.	368	ne	0	147	0	147	0	0	0	0	0	0	0
Virginia Military Institute	368	ne	119	147	62	0	0	24	31	0	30	0	0
Fayetteville State U.	370	288	127	141	i 0	i 0	i 0	i 0	i 0	i 0	i 0	i 0	i 141
Southeastern Louisiana U.	371	16	24	140	0	0	0	0	0	140	0	0	0
Trinity U.	372	47	69	137	0	0	137	0	0	0	0	0	0
U. South Carolina, Beaufort	373	ne	ne	135	0	0	0	0	0	135	0	0	0
Xavier U. Louisiana	373	57	0	135	0	0	0	0	0	0	0	0	135
Calvin U.	375	107	i 129	i 134	i 0	i 0	i 0	i 42	i 0	i 0	i 71	i 0	i 21
U.S. Coast Guard Academy	376	ne	ne	133	32	0	0	9	54	0	9	0	29
Keck Graduate Institute	377	0	i 0	129	0	129	0	0	0	0	0	0	0
U. of the Pacific	378	228	135	128	0	128	0	0	0	0	0	0	0
U. South Carolina, Aiken	379	1,322	231	126	0	0	0	0	0	0	0	0	126
Norwich U.	380	ne	ne	124	0	0	0	109	0	0	12	0	3
U. New Haven	381	319	329	120	0	2	39	2	2	0	29	4	42



TABLE 56

## Higher education R&amp;D expenditures in engineering subfields, ranked by all FY 2023 engineering R&amp;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
Ball State U.	414	0	0	32	0	0	0	32	0	0	0	0	0
New C. Florida	414	ne	ne	32	0	0	0	0	0	0	0	0	32
Elon U.	416	29	18	30	0	0	0	0	0	0	0	0	30
California State U., Dominguez Hills	417	0	0	27	0	0	0	0	0	0	0	0	27
California State U., Monterey Bay	418	0	0	23	0	23	0	0	0	0	0	0	0
Azusa Pacific U.	419	5	10	21	0	0	0	0	0	0	0	0	21
Merrimack C.	420	ne	ne	16	0	0	0	16	0	0	0	0	0
Abilene Christian U.	421	45	29	15	15	0	0	0	0	0	0	0	0
Alabama State U.	422	366	483	14	0	0	0	0	0	0	0	0	14
St. Mary's C. Maryland	423	ne	ne	13	0	0	0	0	13	0	0	0	0
Austin Peay State U.	424	0	0	9	0	0	0	0	8	0	0	0	1
Northwestern State U. Louisiana	424	0	8	9 i	0 i	0 i	0 i	0 i	0 i	0 i	0 i	0 i	9 i
Colorado State U., Pueblo	426	64	0	8	0	0	0	0	0	0	0	0	8
U. San Francisco	427	3	3	4	0	0	0	0	4	0	0	0	0
U. Scranton	427	ne	ne	4	0	0	0	0	4	0	0	0	0
Salisbury U.	429	3	3	3	0	0	0	0	0	0	3	0	0
Tougaloo C.	430	0 i	0 i	2 i	0 i	0 i	0 i	1 i	1 i	0 i	0 i	0 i	0 i
U. North Carolina, Asheville	430	0	0	2	0	0	0	0	0	0	2	0	0
Carleton C.	432	0	0	1 i	0 i	0 i	0 i	0 i	0 i	0 i	0 i	0 i	1 i
Kean U.	432	0	32	1	0	0	0	1	0	0	0	0	0
All other surveyed institutions	-	69,804	71,197	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.

<sup>a</sup> Johns Hopkins University includes the Applied Physics Laboratory (APL), with \$1,353,057 thousand imputed for total R&D expenditures in engineering in FY 2023. Total expenditures by field for Johns Hopkins University are flagged as imputed because APL was unable to distribute a portion of institutionally funded R&D by field.

<sup>b</sup> 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.

<sup>c</sup> 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.