

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
All institutions	-	4,884,219	5,046,870	5,229,222	5,551,281	735,031	1,965,627	259,327	2,324,419	266,877
Johns Hopkins U. <sup>a</sup>	1	181,885 i	189,415 i	243,916 i	323,619 i	80,768 i	24,180 i	4,682 i	183,818 i	30,171 i
California Institute of Technology	2	185,449	192,478	188,604	188,041	45,835	42,498	15,109	84,599	0
Michigan State U.	3	164,644	191,923	169,148	151,159	7	10,320	0	140,832	0
U. Arizona	4	125,247	126,361	127,847	139,315	113,523	13,060	3,707	8,970	55
Massachusetts Institute of Technology	5	137,188	127,856	124,145	136,601	31,811	31,179	6,273	43,880	23,458
U. California, Berkeley	6	158,628	143,095	130,883	130,895	64,935	30,743	1	29,261	5,955
Cornell U.	7	105,986	112,256	122,144	122,968	15,005	26,542	4,493	50,551	26,377
U. Rochester	8	82,756	89,368	93,061	111,388	0	5,111	0	106,277	0
U. Colorado Boulder	9	72,578	74,376	84,938	107,416	24,957	9,650	0	66,848	5,961
U. Maryland <sup>b</sup>	10	na	na	na	102,720	33,567	9,888	16	47,394	11,855
Pennsylvania State U., University Park and Hershey Medical Center	11	72,314	87,175	93,913	99,485	20,021	18,532	34,258	26,674	0
Stanford U.	12	100,544	92,056	88,010	95,084	4,428	25,306	13,238	49,051	3,061
Harvard U.	13	82,643	84,679	84,054	94,515	14,467	34,683	0	43,696	1,669
Princeton U.	14	66,914	70,706	82,329	88,235	23,786	22,317	3,287	38,060	785
U. California, San Diego	15	68,169	67,380	67,509	85,322	0	32,067	0	52,798	457
Northwestern U.	16	67,071	71,743	82,409	82,072	5,274	40,651	13,853	17,918	4,376
U. Texas, Austin	17	83,505	76,290	77,735	81,357	13,759	15,321	28,305	23,553	419
U. Wisconsin-Madison	18	75,530	71,282	73,381	75,231	5,765	26,369	0	27,643	15,454
U. Illinois, Urbana-Champaign	19	71,513	65,579	69,612	69,531	10,015	35,411	0	24,104	1
U. California, San Francisco	20	56,525	63,015	63,010	65,942	0	65,572	0	370	0
U. California, Santa Barbara	21	34,037	58,251	49,160	65,929	6,291	17,290	24,396	16,998	954
Yale U.	22	59,337	61,511	63,981	62,247	6,776	23,452	0	32,019	0
Florida State U.	23	60,372	63,307	67,753	61,706	356	20,708	619	39,877	146
U. Michigan, Ann Arbor	24	54,868	60,437	59,815	61,017	6,288	29,977	0	24,752	0
U. Pennsylvania	25	39,426	46,244	55,476	60,150	1,375	20,121	14,848	23,806	0
U. California, Los Angeles	26	61,909	57,004	55,568	60,067	0	23,711	0	34,460	1,896
U. Washington, Seattle	27	54,819	56,292	54,074	58,166	11,123	22,113	1,992	19,123	3,815
Texas A&M U., College Station and Health Science Center	28	56,123	54,015	54,890	55,920	6,947	24,066	2,519	21,835	553
U. Utah	29	22,257	25,908	24,919 i	54,131 i	9,855 i	40,326 i	0 i	0 i	3,950 i
U. Chicago	30	49,128	55,752	51,285	52,656	9,882	23,963	6,185	12,617	9
Ohio State U.	31	36,459	37,522	39,895	46,223	4,812	18,579	374	22,458	0
U. Minnesota, Twin Cities	32	40,569	38,747	39,527	45,573	1,631	21,094	0	22,848	0

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Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
U. Notre Dame	33	41,411	41,291	42,506	45,062	0	28,342	0	16,720	0
U. Houston	34	29,938	30,672	32,572	43,378	36	34,730	64	7,839	709
SUNY, Stony Brook U.	35	37,300	33,115	39,938	41,679	1,930	12,052	0	27,697	0
U. California, Irvine	36	35,534	39,032	37,914	40,872	0	22,169	0	18,441	262
Iowa State U.	37	24,170	27,491	42,277	40,040	0	12,549	10,905	16,586	0
Georgia Institute of Technology	38	40,248	37,000	37,983	38,229	0	25,802	0	12,427	0
Purdue U., West Lafayette	39	33,624	34,740	37,542	38,081	0	22,763	0	15,318	0
U. North Carolina, Chapel Hill	40	35,524	33,807	35,118	37,055	444	24,143	0	8,412	4,056
Columbia U. in the City of New York	41	37,518	46,452	32,070	35,369	7,288	11,749	5,230	11,102	0
Rice U.	42	33,165	32,195	29,448	34,759	1,456	16,975	94	16,234	0
Washington State U.	43	40,781	35,985	34,955	33,403	321	10,871	1,146	16,949	4,116
U. California, Santa Cruz	44	30,051	27,698	29,547	32,576	14,779	10,719	0	7,057	21
U. Massachusetts, Amherst	45	23,246	22,383	24,443	31,623	4,768	19,452	0	7,403	0
Indiana U., Bloomington	46	31,444	31,873	26,019	31,099	1,358	19,039	0	10,702	0
Boston U.	47	25,220	27,450	29,879	30,805	2,335	13,712	0	14,758	0
U. Central Florida	48	27,163	31,009	27,810	30,415	0	4,148	0	26,198	69
U. Pittsburgh, Pittsburgh	49	29,135	32,546	30,869	30,196	3,202	17,222	0	9,772	0
Rutgers, State U. New Jersey, New Brunswick	50	44,532	35,580	26,313	29,660	2,378	7,258	3,301	11,380	5,343
Vanderbilt U. and Vanderbilt U. Medical Center	51	28,783	31,035	29,053	28,951	0	12,997	0	15,954	0
U. Delaware	52	23,187	23,387	23,634	27,410	1,070	9,124	11,717	5,499	0
U. Hawaii, Manoa	53	27,388	24,974	23,775	27,285	17,461	1,876	0	4,040	3,908
Virginia Polytechnic Institute and State U.	54	15,547	18,453	21,049	26,835	176	16,338	1,188	7,909	1,224
U. Virginia, Charlottesville	55	31,756	34,663	25,154	26,742	3,301	11,511	0	11,930	0
U. California, Davis	56	32,156	27,092	23,212	26,589	0	13,683	0	10,672	2,234
U. Florida	57	28,226	28,062	25,940	26,341	1,792	12,084	0	11,707	758
U. Nebraska, Lincoln	58	26,829	24,191	28,112	26,100	0	9,916	276	15,908	0
New York U.	59	17,360	20,631	23,915	26,098	0	14,483	0	11,615	0
Arizona State U.	60	19,340	26,376	24,779	26,050	0	14,026	0	11,934	90
U. Tennessee, Knoxville	61	17,602	22,091	24,307	25,677	0	7,780	0	17,897	0
New Mexico State U.	62	18,225	30,701	25,776	25,535	6,817	5,931	0	1,762	11,025
Florida International U.	63	8,447	13,119	18,688	24,968	0	17,688	0	5,911	1,369
Washington U., Saint Louis	64	18,899	21,811	22,345	24,852	0	14,244	5,132	5,476	0
U. Iowa	65	22,073	21,629	25,142	24,300	1,178	4,659	0	18,463	0
Louisiana State U., Baton Rouge	66	21,641	19,472	24,133	23,944	0	8,558	0	14,926	460

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Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Emory U.	67	23,528	21,099	22,517	23,150	0	20,261	0	2,882	7
North Carolina State U.	68	18,127	19,270	21,204	22,753	0	10,796	0	11,957	0
Duke U.	69	19,074	17,992	19,322	21,176	0	10,711	0	10,465	0
U. Southern California	70	20,210	16,075	17,751	20,109	14	14,258	1,427	4,410	0
Wayne State U.	71	15,652	14,693	17,898	20,013	0	12,192	0	4,317	3,504
Carnegie Mellon U.	72	14,883	18,921	20,096	19,508	0	8,868	85	9,879	676
Northeastern U.	73	17,121	16,426	17,483	19,445	0	7,067	66	11,698	614
Brown U.	74	25,132	18,050	20,720	19,259	0	5,250	0	7,636	6,373
U. Texas M. D. Anderson Cancer Center	75	15,303	12,763	15,858	19,017	0	0	0	19,017	0
Dartmouth C. and Dartmouth Hitchcock Medical Center	76	11,423	19,855	18,977	18,757	0	8,125	0	10,632	0
Rochester Institute of Technology	77	11,992	12,393	12,578	18,059	0	651	0	3,369	14,039
U. Massachusetts, Lowell	78	13,841	13,425	14,184	17,976	0	4,105	0	13,871	0
Georgia State U.	79	15,268	17,949	17,221	17,836	4,379	8,366	0	4,948	143
Catholic U. of America	80	18,956	18,592	19,319	17,660	0	551	0	11,192	5,917
U. Maryland, Baltimore County	81	13,934	14,000	13,821	17,039	12,299	1,714	284	2,742	0
U. Connecticut	82	14,796	15,352	16,816	16,829	0	4,713	5,786	6,330	0
Temple U.	83	14,548	17,047	15,235	16,205	0	7,522	0	5,717	2,966
U. California, Riverside	84	17,972	17,562	16,505	16,166	0	9,249	0	6,917	0
Syracuse U.	85	10,791	14,282	13,242	15,894	0	4,454	0	11,440	0
U. Southern Mississippi	86	11,550	11,528	13,416	15,682	0	13,266	199	307	1,910
U. Texas, Arlington	87	12,629	13,273	16,067	15,576	0	5,232	0	9,386	958
U. Texas, Dallas	88	13,644	14,048	12,433	15,515	3,513	4,093	1,542	2,216	4,151
U. Oklahoma, Norman and Health Science Center	89	11,711	12,061	14,899	15,362	0	11,836	0	3,526	0
New Jersey Institute of Technology	90	9,006	12,988	13,042	15,338	7,687	3,128	433	4,090	0
Rensselaer Polytechnic Institute	91	11,910	16,534	14,662	15,038	0	6,393	0	4,936	3,709
Montana State U., Bozeman	92	15,519	12,248	10,912	15,021	0	7,838	0	7,183	0
SUNY, Binghamton U.	93	14,161	16,304	20,446	14,920	0	10,839	0	3,930	151
U. Oregon	94	11,456	13,591	13,908	14,773	0	5,867	1,383	7,523	0
U. Mississippi	95	12,648	13,606	10,951	14,617	0	6,256	0	8,361	0
Colorado State U., Fort Collins	96	12,926	10,825	13,908	14,464	0	10,311	1,022	2,837	294
U. Illinois, Chicago	97	13,920	13,332	12,602	14,456	0	8,664	0	5,792	0
Kansas State U.	98	9,808	9,960	13,475	14,413	0	5,535	0	8,878	0
Texas Tech U.	99	13,978	14,532	15,455	14,408	0	7,368	399	6,641	0
West Virginia U.	100	9,475	12,133	15,392	14,339	0	5,632	0	8,707	0

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U. South Florida, Tampa	101	10,427	11,895	12,725	14,060	0	8,838	0	4,440	782
U. Alaska, Fairbanks	102	12,644	14,459	13,107	13,534	13,390	75	0	0	69
U. Georgia	103	13,066	11,280	19,257	13,275	2,180	10,042	0	1,053	0
Auburn U., Auburn	104	6,415	9,622	11,626	13,220	0	6,440	15	6,710	55
U. Alabama, Huntsville	105	9,888	10,415	14,459	12,963	9,766	1,466	0	1,724	7
SUNY, U. Buffalo	106	13,533	13,498	13,301	11,644	0	7,311	97	4,236	0
Clemson U.	107	9,288	9,963	12,320	11,401	0	5,030	0	5,861	510
Tufts U.	108	9,492	7,207	68,855	11,377	2,028	5,517	2,835	234	763
Mississippi State U.	109	8,942	8,992	10,131	11,312	2	6,348	252	4,710	0
U. Wisconsin-Milwaukee	110	12,875	13,372	14,409	11,076	0	2,749	0	8,327	0
Case Western Reserve U.	111	11,300	11,782	5,756	10,756	112	3,471	4,256	2,476	441
U. Texas, San Antonio	112	6,935	12,884	11,561	10,617	0	6,843	0	3,774	0
California Polytechnic State U., San Luis Obispo	113	1,647	2,057	1,884	10,500	0	385	0	2,783	7,332
U. Nevada, Reno	114	6,324	6,594	11,017	10,153	494	4,373	138	3,942	1,206
CUNY, City C.	115	10,344	12,506	10,496	9,935	0	6,308	0	3,207	420
Brandeis U.	116	8,790	10,684	10,266	9,838	0	2,287	0	7,551	0
U. Akron	117	11,686	11,144	10,305	9,643	0	9,571	0	72	0
U. Cincinnati	118	8,398	8,699	9,056	9,641	0	5,968	0	3,673	0
Boston C.	119	7,978	8,233	8,313	9,572	0	7,188	0	2,384	0
U. Arkansas, Fayetteville	120	8,479	8,332	9,667	9,454	0	6,084	0	3,370	0
Jackson State U.	121	7,699	7,259	8,859	9,159	0	7,573	0	1,586	0
U. Nevada, Las Vegas	122	9,343	8,772	9,520	9,099	209	4,910	79	3,765	136
Naval Postgraduate School	123	8,486	6,377	6,105	8,797	275	104	578	6,126	1,714
Colorado School of Mines	124	12,741	9,396	8,980	8,796	0	2,839	206	4,841	910
U. Kansas	125	11,159	12,224	8,845	8,686	396	5,932	68	2,269	21
Air Force Institute of Technology	126	4,807	4,668	5,871	8,478	0	0	0	8,478	0
Oklahoma State U., Stillwater	127	6,788	8,398	8,503	8,458	0	4,804	0	3,654	0
U. Kentucky	128	8,254	7,525	7,069	8,173	0	5,236	0	2,937	0
U. California, Office of the President	129	14,400	14,584	13,253	7,973	7,973	0	0	0	0
SUNY, U. Albany	130	2,970	6,946	7,858	7,811	0	5,655	0	2,156	0
U. Montana, Missoula	131	5,260	5,060	6,570	7,749	0	3,363	0	244	4,142
Kent State U.	132	7,992	7,455	6,597	7,744	45	2,087	2,814	2,205	593
George Washington U.	133	6,301	6,494	7,191	7,634	0	3,526	0	4,108	0
U. Maine	134	3,389	3,978	5,451	7,628	0	2,171	0	5,457	0

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U. Texas, El Paso	135	8,117	7,737	7,841	7,587	0	6,519	0	1,068	0
U. North Texas, Denton	136	4,270	6,424	5,358	7,586	0	4,069	0	3,517	0
Rockefeller U.	137	8,842	8,466	8,539	7,577	0	4,970	0	2,607	0
Old Dominion U.	138	6,854	7,626	6,562	7,547	0	2,838	0	4,709	0
U. Toledo	139	6,974	7,360	8,752	7,438	493	2,703	0	4,115	127
U. California, Merced	140	4,718	6,530	6,260	7,307	0	3,653	1,464	2,190	0
Georgetown U.	141	5,659	6,827	6,488	7,281	0	2,958	402	3,921	0
U. New Mexico	142	8,400	8,789	8,970	7,148	1,047	2,112	0	3,989	0
U. South Carolina, Columbia	143	14,476	12,942	7,025	7,007	0	1,394	479	2,203	2,931
U. Missouri, Columbia	144	7,156	7,091	7,461	6,932	0	4,252	0	2,680	0
North Dakota State U.	145	10,684	8,121	6,900	6,903	0	3,713	2,426	764	0
Baylor U.	146	7,318	6,908	6,994	6,891	35	3,877	0	2,866	113
Utah State U.	147	3,965	4,873	5,962	6,756	0	3,158	0	2,318	1,280
William & Mary	148	6,249	5,565	5,219	6,554	0	766	0	5,788	0
Tulane U.	149	6,205	6,900	5,732	6,448	0	3,121	0	3,327	0
California State U., Los Angeles	150	1,575	4,409	5,202	6,351	i	5,439	i	912	i
San Diego State U.	151	7,315	5,488	5,873	6,333	708	4,203	0	1,422	0
George Mason U.	152	4,506	4,100	4,783	6,295	3,764	621	1,239	445	226
Oregon State U.	153	5,280	4,131	4,801	6,247	4	3,811	1,044	1,204	184
Northern Illinois U.	154	3,629	4,661	6,446	6,106	0	1,283	0	4,823	0
U. Alabama, Birmingham	155	4,898	5,667	7,211	5,961	0	2,177	1,365	2,419	0
Xavier U. Louisiana	156	7,021	8,007	6,921	5,879	0	5,878	0	0	1
Brigham Young U., Provo	157	5,172	4,894	4,905	5,854	0	3,158	0	2,696	0
U. Alabama, Tuscaloosa	158	6,841	6,275	7,501	5,815	63	3,315	0	2,437	0
Northern Arizona U.	159	1,303	2,755	3,763	5,643	3,532	1,387	53	538	133
U. Miami	160	8,009	7,502	5,861	5,567	0	1,102	0	4,465	0
Howard U.	161	2,220	3,808	4,058	5,277	0	4,558	0	719	0
American U.	162	1,809	2,504	3,545	5,167	0	1,864	0	3,303	0
U. Puerto Rico, Rio Piedras	163	8,085	6,260	3,739	5,127	0	2,488	0	2,639	0
U. South Dakota	164	3,175	2,464	2,957	5,059	0	2,741	0	2,089	229
Worcester Polytechnic Institute	165	2,754	2,959	3,096	4,991	0	1,722	0	3,269	0
CUNY, Hunter C.	166	4,379	3,628	4,500	4,739	87	3,027	0	1,625	0
Oakland U.	167	2,487	2,192	2,026	4,650	0	2,281	0	2,343	26
Ohio U.	168	5,839	5,893	5,358	4,501	0	492	0	3,859	150

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U. Texas Rio Grande Valley	169	3,156	3,398	2,843	4,499	2,204	1,272	34	285	704
U. North Carolina, Charlotte	170	4,056	3,060	3,935	4,389	0	1,585	0	2,804	0
California State U., Long Beach	171	2,722	3,808	4,445	4,363	210	3,453	677	23	0
Delaware State U.	172	6,929	3,764	3,709	4,306	0	590	0	3,716	0
U. Denver	173	3,030	4,273	4,589	4,083	118	2,818	0	1,147	0
Hampton U.	174	4,901	4,615	4,129	4,044	0	0	0	4,044	0
Michigan Technological U.	175	3,843	3,285	3,486	3,722	0	1,507	0	2,215	0
Idaho State U.	176	4,680	3,900	4,490	3,709	0	583	0	3,126	0
Illinois Institute of Technology	177	4,035	4,075	3,843	3,609	0	293	351	2,772	193
U. North Dakota	178	6,945	6,041	3,119	3,607	0	2,720	0	887	0
Southern Methodist U.	179	3,613	3,570	3,339	3,591	0	1,691	0	1,900	0
U. New Hampshire	180	3,734	2,234	4,554	3,521	0	1,625	179	1,717	0
U. North Carolina, Greensboro	180	2,998	3,748	3,494	3,521	0	2,612	0	125	784
Florida A&M U.	182	2,638	3,501	6,083	3,488	0	25	0	3,463	0
Virginia Commonwealth U.	183	3,049	2,873	3,607	3,469	0	2,383	0	1,086	0
Lehigh U.	184	4,607	4,731	5,081	3,396	0	2,201	0	1,195	0
U. Massachusetts, Boston	185	1,726	1,763	2,273	3,363	0	1,983	0	1,380	0
Boise State U.	186	927	1,117	3,737	3,358	432	1,182	1,488	256	0
U. Vermont	187	1,079	2,066	2,297	3,235	0	2,438	4	793	0
California State U., Northridge	188	3,315	3,302	2,672	3,225	361	366	0	2,397	101
U. Rhode Island	189	4,891	3,764	3,713	3,194	0	2,020	0	95	1,079
San Francisco State U.	190	2,745	3,779	3,734	3,088	197	1,418	91	1,300	82
Wake Forest U.	191	3,048	2,162	1,755	3,071	0	1,370	21	1,680	0
U. Louisville	192	1,678	1,654	1,805	3,058	138	1,824	512	291	293
CUNY, Advanced Science Research Center	193	ne	1,130	747	2,983	0	478	865	1,640	0
South Dakota State U.	194	3,602	3,922	2,964	2,951	0	2,898	0	53	0
U.S. Air Force Academy	195	5,231	3,433	1,521	2,933	0	330	0	2,603	0
Portland State U.	196	3,946	4,101	3,450	2,911	0	2,667	49	195	0
Central Michigan U.	197	1,904	1,993	2,426	2,908	124	257	0	2,527	0
Wesleyan U.	198	2,685	2,904	2,998	2,876	550	960	0	1,366	0
Florida Atlantic U.	199	1,324	3,640	2,653	2,794	0	2,184	0	560	50
U.S. Naval Academy	199	1,906	2,714	2,173	2,794	2	1,324	0	1,468	0
Drexel U.	201	2,223	2,663	3,806	2,793	0	1,130	0	1,663	0
North Carolina Central U.	202	3,406	4,019	3,575	2,774	0	120	0	1,881	773

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Missouri U. of Science and Technology	203	3,605	3,008	3,614	2,762	0	2,119	0	643	0
Villanova U.	204	1,377	1,983	2,248	2,743	742	1,565	0	436	0
Texas State U.	205	3,088	3,671	3,248	2,741	0	1,296	0	1,421	24
U. Missouri, Saint Louis	206	1,855	2,034	2,333	2,636	207	2,412	0	17	0
Duquesne U.	207	2,642	2,410	2,631	2,581	0	2,446	0	135	0
Marquette U.	208	1,990	1,933	2,789	2,517	0	2,202	0	315	0
Clarkson U.	209	1,306	1,091	1,055	2,498	0	2,300	0	198	0
Indiana U.-Purdue U., Indianapolis	210	1,524	1,889	2,132	2,396	0	1,832	0	418	146
Saint Louis U.	211	760	1,092	1,685	2,384	0	2,179	0	205	0
Amherst C.	212	1,360	1,526	1,500	2,374	0	1,062	0	1,312	0
Bowling Green State U.	213	3,292	2,455	3,112	2,362	0	1,769	0	593	0
Embry-Riddle Aeronautical U.	214	764	849	1,954	2,332	0	0	0	724	1,608
Mercer U.	215	10	20	1,694	2,189	0	2,106	0	83	0
East Carolina U.	216	353	613	1,464	2,177	0	1,586	0	591	0
U. Memphis	217	1,880	1,414	1,883	2,157	0	1,579	0	578	0
U. New Orleans	218	2,606	2,090	1,939	2,144	0	1,387	0	757	0
Kennesaw State U.	219	363	1,895	944	2,079	0	1,595	0	484	0
Florida Institute of Technology	220	2,913	2,398	2,253	2,078	980	448	0	650	0
Stevens Institute of Technology	221	1,226	1,461	1,520	2,045	0	0	0	2,045	0
San Jose State U.	222	1,340	1,498	1,649	2,041	39	1,541	0	461	0
Haverford C.	223	759	585	1,195	2,039	99	315	1,534	91	0
U. Idaho	224	3,238	3,007	1,871	2,030	630	1,068	5	326	1
U. Missouri, Kansas City	225	1,925	2,193	2,168	2,010	306	338	0	1,366	0
Rutgers, State U. New Jersey, Newark	226	1,750	2,099	2,162	1,978	0	1,869	0	109	0
New Mexico Institute of Mining and Technology	227	3,415	1,288	1,464	1,970	0	450	0	1,520	0
North Carolina Agricultural and Technical State U.	228	709	1,083	1,808	1,889	0	626	0	1,263	0
Western Kentucky U.	229	2,218	2,793	2,019	1,845	5	1,287	0	553	0
Hope C.	230	1,748	2,500	1,859	1,843	0	520	0	614	709
Louisiana Tech U.	230	1,995	2,023	2,058	1,843	0	732	0	1,034	77
U. Wyoming	232	3,587	2,866	4,632	1,825	0	933	0	892	0
Chapman U.	233	1,036	2,306	1,280	1,816	0	584	0	55	1,177
Wright State U.	234	2,559	2,480	2,720	1,757	0	384	0	1,373	0
U. Massachusetts, Dartmouth	235	1,358	1,217	1,208	1,755	0	1,314	0	441	0
Morehouse C.	236	2,150	2,136	2,740	1,704	0	116	0	213	1,375

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Creighton U.	237	1,824	1,699	1,381	1,691	0	734	0	957	0
CUNY, C. Staten Island	238	1,332	709	1,547	1,657	0	880	0	777	0
CUNY, Lehman C.	239	1,927	1,952	2,181	1,624	0	1,495	0	129	0
Southern Illinois U., Carbondale	240	2,240	3,304	3,163	1,619	0	901	0	378	340
South Dakota School of Mines and Technology	241	2,371	1,876	1,848	1,602	0	504	0	1,098	0
CUNY, Queens C.	242	1,871	1,160	1,463	1,446	0	893	0	553	0
Wellesley C.	243	1,895	926	1,240	1,426	617	487	0	322	0
U. Colorado Denver and Anschutz Medical Campus	244	741	942	829	1,385	0	1,008	0	126	251
Cleveland State U.	245	1,638	1,750	1,318	1,372	0	733	0	639	0
Trinity U.	246	792	905	1,316	1,369	0	1,175	0	194	0
U. Louisiana, Lafayette	246	2,861	3,232	3,011	1,369	0	162	0	460	747
Texas A&M U.-Corpus Christi	248	377	361	356	1,362	0	645	40	19	658
Williams C.	249	1,963	1,265	1,372	1,312	219	165	0	329	599
CUNY, Brooklyn C.	250	1,882	1,749	1,240	1,307	0	1,229	0	78	0
U. San Diego	251	640	832	975	1,300	0	727	0	573	0
James Madison U.	252	713	654	1,297	1,295	46	1,123	0	126	0
Tennessee Technological U.	253	1,671	1,255	1,491	1,289	0	653	0	635	1
U. Northern Iowa	253	394	644	731	1,289	0	1,271	0	18	0
Loyola U., Chicago	255	1,132	907	1,128	1,286	0	1,250	0	36	0
U. Maryland, Eastern Shore	256	0	69	1,305	1,278	0	0	0	0	1,278
Clark Atlanta U.	257	1,797	1,713	992	1,265	0	804	0	461	0
U. Dayton	258	1,848	1,932	1,579	1,247	0	8	700	539	0
Western Michigan U. and Homer Stryker M.D. School of Medicine	259	1,316	1,274	1,266	1,221	0	650	0	571	0
California State U., San Bernardino	260	1,384	1,233	1,337	1,219	35	23	1,156	5	0
Rowan U.	261	736	894	1,056	1,190	0	614	0	576	0
Western Washington U.	262	815	1,325	1,322	1,183	244	898	0	0	41
California State U., Fullerton	263	944	941	1,156	1,180	575	213	0	392	0
U. Puerto Rico, Mayaguez	264	2,795	2,371	1,739	1,172	0	792	0	380	0
Southern U. and A&M C., Baton Rouge	265	915	1,895	1,556	1,167	0	451	0	716	0
California State U., Fresno	266	1,061	1,069	1,114	1,157	0	703	0	341	113
Prairie View A&M U.	267	1,603	1,644	1,741	1,082	0	299	0	783	0
U. Minnesota, Duluth	268	1,046	914	1,005	1,065	0	828	0	237	0
U. Ana G. Mendez, Gurabo	269	285	295	396	1,061	0	1,007	0	54	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Bryn Mawr C.	270	1,345	1,375	1,285	1,057	0	422	0	635	0
Miami U.	271	1,286	1,955	1,913	1,046	0	847	0	199	0
Mount Holyoke C.	272	1,302	1,547	1,248	1,037	798	210	0	0	29
Grinnell C.	273	571	978	1,127	1,012	22	626	0	364	0
Barnard C.	274	1,138	739	520	1,004	367	606	0	31	0
Ball State U.	275	435	398	700	993	0	963	0	22	8
Arkansas State U., Jonesboro	276	928	1,109	745	988	0	922	0	66	0
Furman U.	277	1,211	1,286	1,146	983	0	981	0	2	0
Pacific U.	278	153	870	878	962	0	189	0	223	550
Wichita State U.	279	629	666	649	947	0	715	0	229	3
Swarthmore C.	280	651	960	1,120	946	148	552	0	246	0
Alabama A&M U.	281	1,906 i	1,582 i	1,257 i	932 i	0 i	447 i	0 i	485 i	0 i
South Carolina State U.	282	897 i	1,552	1,630 i	930	168	0	0	175	587
U. Wisconsin-Eau Claire	282	685	901	716	930	16	463	451	0	0
U. Arkansas, Little Rock	284	1,002	246	905	926	0	896	30	0	0
C. Charleston	285	1,043	1,255	880	923	279	200	341	103	0
Connecticut C.	286	867	641	542	902	0	902	0	0	0
SUNY, Geneseo	286	839	879	932	902	0	59	0	843	0
California State U., San Marcos	288	34	203	1,106	901	0	118	0	225	558
Clark U.	289	681	633	664	889	0	539	0	350	0
Illinois State U.	290	495	587	658	886	0	702	0	184	0
CUNY, York C.	291	ne	ne	ne	883	246	448	0	123	66
Texas A&M U.-Commerce	291	671	550	1,125	883	0	240	0	643	0
Fordham U.	293	194	295	68	868	0	333	0	535	0
U. Puerto Rico, Humacao	294	ne	ne	933	852	0	157	0	695	0
Tougaloo C.	295	0	80	848	849	0	849	0	0	0
Grambling State U.	296	983	1,250	1,063	845	0	493	0	129	223
Chicago State U.	297	0	ne	865	842	0	842	0	0	0
California State U., Dominguez Hills	298	701	734	837	821	0	781	0	40	0
Norfolk State U.	299	1,383	792	800	819	0	508	0	311	0
Towson U.	300	513	364	898	787	100	218	0	446	23
Colgate U.	301	751	526	682	769	66	570	0	133	0
Christopher Newport U.	302	358	413	386	758	0	102	0	656	0
Carleton C.	303	424	425	640	723	53	382	0	219	69

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Franklin and Marshall C.	304	465	635	994	722	67	533	0	122	0
Northern Kentucky U.	305	598	420	490	701	90	369	0	242	0
U. Central Oklahoma	305	592	456	718	701	0	140	0	561	0
U. West Florida	307	270	488	472	695	0	6	0	0	689
California State Polytechnic U., Pomona	308	225	703	1,701	693	676	17	0	0	0
Georgia Southern U.	309	1,005	882	842	692	19	444	39	190	0
Texas Christian U.	310	914	873	784	690	202	306	0	149	33
Marshall U.	311	1,579	850	499	684	0	679	0	5	0
U. North Carolina, Asheville	312	942	506	313	680	0	13	0	8	659
U. Central Arkansas	313	550	726	622	665	0	476	0	149	40
U. Nebraska, Kearney	314	327	848	230	652	94	493	0	65	0
U. of the Sciences Philadelphia	315	335	495	730	644	0	614	0	30	0
U. North Carolina, general administration	316	0	0	1,452	632	0	632	0	0	0
Reed C.	317	559	123	374	623	0	222	0	401	0
Union C., Schenectady	318	202	290	309	609	0	408	0	201	0
Dillard U.	319	568	1,123	797	606	0	0	0	606	0
U. North Carolina, Wilmington	320	1,241	562	525	597	0	458	87	52	0
Spelman C.	321	170	184	620	595	0	595	0	0	0
Southern Illinois U., Edwardsville	322	582	876	1,720	586	0	502	0	84	0
U. Tulsa	323	1,075	1,291	866	585	0	317	0	268	0
U. New Haven	324	0	0	207	576	0	264	308	4	0
C. Wooster	325	ne	338	642	568	0	389	0	179	0
Salish Kootenai C.	326	561	665	869	553	0	553	0	0	0
Sam Houston State U.	327	338	390	390	550	0	472	0	78	0
Bucknell U.	328	541	595	650	538	106	265	0	167	0
Salisbury U.	329	182	177	128	534	0	521	0	13	0
Bates C.	330	393	695	575	531	40	209	0	282	0
Harvey Mudd C.	331	605	565	929	526	0	217	0	309	0
U. North Florida	332	696	667	568	524	0	345	0	179	0
U. Houston-Clear Lake	333	555	463	676	520	0	44	0	0	476
Pomona C.	334	761	588	652	519	175	304	0	40	0
Clafin U.	335	656	484	600	508	0	501	0	7	0
Saint Joseph's U.	335	373	303	284	508	0	208	0	300	0
West Chester U. Pennsylvania	337	530	739	648	504	93	262	0	149	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Smith C.	338	266	280	433	499	84	242	0	173	0
Eastern Michigan U.	339	503	359	357	491	90	176	185	40	0
Oberlin C.	340	551	800	616	485	0	222	0	263	0
U. South Alabama	341	326	319	278	471	0	471	0	0	0
Calvin U.	342	367	583	542	462	0	325	0	137	0
Whitman C.	343	ne	ne	ne	460	13	392	0	55	0
Middlebury C.	344	418	530	418	459	100	245	0	114	0
St. Edward's U.	345	750	1,624	760	456	20	272	0	164	0
Tennessee State U.	346	964	951	511	452	365	19	0	68	0
U. Richmond	347	992	946	600	450	0	318	0	132	0
U. Arkansas, Pine Bluff	348	493	326	405	448	0	448	0	0	0
Kenyon C.	349	ne	ne	506	444	0	34	0	410	0
Winthrop U.	350	309	213	358	443	0	287	156	0	0
Fairfield U.	351	392	702	95	442	0	297	0	81	64
Augsburg U.	352	611	558	411	436	0	160	0	276	0
Macalester C.	353	373	603	458	435	0	296	0	139	0
U. of the Pacific	354	354	164	248	431	112	257	9	53	0
Southern Connecticut State U.	355	986	643	622	430	223	98	0	92	17
Occidental C.	356	160	229	355	424	0	170	0	23	231
Loyola Marymount U.	357	23	266	266	423	0	369	0	54	0
Santa Clara U.	357	397	438	792	423	0	337	0	86	0
California State U., Bakersfield	359	104	88	6	420	0	94	0	13	313
U. of the Incarnate Word	360	ne	ne	602	418	0	224	0	0	194
Middle Tennessee State U.	361	653	958	388	417	18	386	0	13	0
Black Hills State U.	362	798	695	414	407	0	24	0	363	20
Colby C.	363	463	416	512	397	0	330	0	67	0
SUNY, Oswego	364	ne	505	538	388	0	385	0	3	0
Missouri State U.	365	422	164	180	386	83	7	0	296	0
Albion C.	366	ne	406	273	380	71	123	0	69	117
Lafayette C.	367	134	256	348	379	0	176	0	183	20
SUNY, C. Plattsburgh	368	342	275	393	376	0	7	0	369	0
CUNY, Baruch C.	369	278	232	293	375	0	0	0	375	0
Benedict C.	370	372	314	518	374	0	374	0	0	0
East Tennessee State U.	371	209	193	425	368	119	78	0	171	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Bowdoin C.	372	368	267	338	364	0	79	0	250	35
Willamette U.	373	217	225	353	363	15	271	0	77	0
CUNY, Medgar Evers C.	374	ne	313	359	362	0	355	0	0	7
U. of St. Thomas (MN)	375	363	323	234	360	0	338	0	22	0
Augustana U.	376	ne	543	522	358	0	158	0	200	0
Murray State U.	376	103	83	222	358	0	337	0	21	0
CUNY, Graduate Center	378	6	8	0	353	0	0	0	353	0
Davidson C.	379	122	489	333	352	0	282	0	70	0
CUNY, New York City C. of Technology	380	ne	ne	48	350	0	1	0	347	2
California State U., Sacramento	381	162	283	267	344	0	183	0	161	0
Western Carolina U.	382	174	157	196	342	0	342	0	0	0
Skidmore C.	383	225	201	253	334	0	256	0	78	0
Winston-Salem State U.	384	474	309	255	320	0	193	0	0	127
Tarleton State U.	385	40	98	125	303	0	227	0	0	76
Gettysburg C.	386	ne	92	399	301	0	66	0	54	181
Saginaw Valley State U.	387	39	51	52	300	0	300	0	0	0
U. Wisconsin-La Crosse	388	389	288	406	298	0	249	0	49	0
U. Maryland Center for Environmental Science	389	0	841	702	289	0	234	0	55	0
Bradley U.	390	593	69	150	279	0	279	0	0	0
Grand Valley State U.	391	626	456	634	276	0	243	0	33	0
St. John's U., New York	392	747	950	311	273	0	251	0	22	0
Indiana U. Pennsylvania	393	64	315	208	269	0	143	0	126	0
Saint Michael's C.	393	70	135	273	269	41	168	0	60	0
Lewis and Clark C.	395	548	498	313	268	0	127	0	141	0
William Paterson U.	396	34	58	189	264	0	229	0	35	0
Hobart and William Smith Colleges	397	ne	264	ne	263	0	92	0	122	49
Appalachian State U.	398	272	528	330	262	64	108	0	87	3
SUNY, C. of Environmental Science and Forestry	399	327	336	175	257	11	243	0	0	3
U. Washington, Bothell	400	10	0	35	256	0	0	0	256	0
Bowie State U.	401	21	111	293	246	0	112	0	0	134
West Virginia State U.	402	145	204	353	235	0	165	0	70	0
Austin Peay State U.	403	122	234	309	232	0	14	136	47	35
Central Washington U.	404	295	280	322	229	0	51	0	178	0
DePaul U.	404	239	241	243	229	0	42	0	187	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
CUNY, John Jay C. of Criminal Justice	406	115	410	329	222	0	158	0	0	64
U. Ana G. Mendez, Cupey	407	3,568	4,033	2,868	220	190	30	0	0	0
U. Colorado Colorado Springs	408	874	807	472	217	0	0	0	203	14
U. Michigan, Dearborn	408	222	230	107	217	0	0	0	0	217
Kettering U.	410	237	721	503	211	0	149	0	62	0
Texas Southern U.	410	294	181	196	211	0	144	0	67	0
U. Wisconsin-Stevens Point	412	186 i	194 i	191 i	202 i	30 i	86 i	0 i	86 i	0 i
Humboldt State U.	413	72	108	127	201	38	48	0	115	0
Wheaton C., Wheaton	413	ne	93	93	201	0	101	0	74	26
Fayetteville State U.	415	616	616	300	200	0	0	0	200	0
Pace U.	416	332	350	349	199	0	152	0	47	0
Hamilton C.	417	306	208	238	198	0	82	0	116	0
Long Island U.	417	83	77	60	198	0	20	0	178	0
Texas A&M U.-Kingsville	419	133	170	83	196	0	148	0	48	0
Canisius C.	420	ne	77	163	191	0	29	0	7	155
Lamar U.	421	213	133	158	188	0	128	0	24	36
California State U., Chico	422	20	4	126	186	0	30	0	156	0
Andrews U.	423	ne	ne	ne	184	183	0	0	1	0
Texas A&M U.-Central Texas	424	ne	ne	0	182	0	0	182	0	0
Azusa Pacific U.	425	454	307	332	179	0	98	0	81	0
C. of Saint Benedict	426	320	209	179	176 i	0 i	137 i	0 i	39 i	0 i
U. Portland	427	ne	ne	ne	173	0	0	0	0	173
Vassar C.	428	316	234	773 i	172	21	38	0	113	0
U. Nebraska, Omaha	429	314	310	223	169	0	2	0	167	0
U. Hawaii, Hilo	430	312	368	479	164	28	17	0	103	16
Tuskegee U.	431	472 i	472 i	383	163	0	131	0	32	0
Trinity C., Hartford	432	102	214	278	159	0	154	0	5	0
Seattle U.	433	209	152	208	157	0	84	0	73	0
Fort Hays State U.	434	ne	ne	ne	155	0	73	0	82	0
Indiana State U.	434	312	148	168	155	0	62	0	93	0
Texas Woman's U.	434	44	93	145	155	0	0	0	155	0
Roger Williams U.	437	775	645	331	154	0	15	0	0	139
Eastern Washington U.	438	148	106	212	152	0	118	0	34	0
Pennsylvania State U., Behrend	439	124	112	98	151	0	76	0	75	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Albany State U.	440	358	78	137	150	0	150	0	0	0
Claremont McKenna C.	441	0	67	40	144	0	144	0	0	0
U. Puerto Rico, Cayey	442	36	231	138	140	0	83	0	57	0
Saint John's U., Collegeville	443	281	172	141	139	0	104	0	35	0
St. Olaf C.	443	256	302	254	139	60	79	0	0	0
Florida Gulf Coast U.	445	284	37	0	138	116	22	0	0	0
Youngstown State U.	446	322	393	92	135	22	101	0	12	0
Montclair State U.	447	123	187	256	134	15	119	0	0	0
Rhode Island C.	448	54	154	130	132	0	0	0	84	48
Drake U.	449	228	191	115	130	0	13	0	117	0
Mercyhurst U.	450	27	35	ne	129	0	55	0	74	0
Minnesota State U., Mankato	451	140	654	121	127	0	51	0	0	76
U. Wisconsin-Green Bay	451	98	76	87	127	0	63	0	64	0
West Texas A&M U.	451	49	49	46	127	6	121	0	0	0
U. Wisconsin-Oshkosh	454	ne	113	119	124	19	50	0	55	0
Doane U.	455	ne	ne	251	121	0	121	0	0	0
Central Connecticut State U.	456	42	67	ne	118	0	101	0	17	0
Purdue U., Northwest	457	na	229	305	115	0	115	0	0	0
U. Nebraska, central administration	458	ne	ne	92	111	0	0	0	109	2
Allegheny C.	459	285	298	387	110	0	110	0	0	0
U. Northern Colorado	459	82	92	236	110	20	71	0	19	0
Southeastern Louisiana U.	461	229	254	304	106	0	81	0	25	0
Fort Valley State U.	462	108	102	88	104	0	104	0	0	0
Colorado C.	463	227	417	267	102	0	83	0	19	0
Purdue U., Fort Wayne	464	119	72	61	101	0	101	0	0	0
U. Wisconsin-Platteville	465	ne	78	ne	99	0	99	0	0	0
Providence C.	466	100	165	175	93	0	93	0	0	0
California Lutheran U.	467	ne	ne	ne	91	0	81	0	10	0
Keene State C.	467	ne	7	ne	91	0	52	0	39	0
Elon U.	469	170	139	146	89	0	40	0	49	0
Pepperdine U.	470	91	67	109	88	0	77	0	11	0
Stephen F. Austin State U.	471	52	66	94	85	0	85	0	0	0
Northeastern Illinois U.	472	ne	75	88	84	0	0	0	84	0
U. San Francisco	473	0	81	89	83	0	55	0	28	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Biola U.	474	71 i	73 i	78 i	82 i	0 i	33 i	0 i	49 i	0 i
Rutgers, State U. New Jersey, Camden	475	117	9	19	80	0	74	0	6	0
Niagara U.	476	44	144	145	78	0	78	0	0	0
U. Houston-Downtown	477	44	89	73	77	0	77	0	0	0
U. Louisiana, Monroe	478	12	2	50	75	0	75	0	0	0
U. Baltimore	479	0	15	62	72	0	0	0	0	72
Dickinson C.	480	66	108	ne	71	43	14	0	14	0
Lincoln U., Jefferson City	480	47	71	17	71	0	64	0	7	0
Milwaukee School of Engineering	482	63	86	49	69	0	0	0	69	0
Florida Polytechnic U.	483	ne	ne	ne	68	0	0	0	68	0
U. North Georgia	483	ne	47	71	68	0	64	0	4	0
Johnson C. Smith U.	485	69	0	228	66	0	66	0	0	0
California State U., Monterey Bay	486	0	0	0	65	0	65	0	0	0
Central State U.	487	27	37	83	63	0	63	0	0	0
Savannah State U.	487	16	157	63	63	0	63	0	0	0
Montana Technological U.	489	276	243	110	62	0	62	0	0	0
U. South Florida, Saint Petersburg	490	0	46	0	61	0	61	0	0	0
New Jersey City U.	491	ne	1,185	2,105	60	0	40	0	10	10
California State U., Channel Islands	492	66	10	33	57	0	57	0	0	0
Western Illinois U.	492	ne	8	12	57	0	38	0	19	0
Liberty U.	494	ne	ne	ne	55	0	55	0	0	0
Manhattan C.	494	ne	ne	ne	55	0	55	0	0	0
Augusta U.	496	0	102	43	48	0	48	0	0	0
Hofstra U.	496	25	62	42	48	38	6	0	4	0
SUNY, C. Brockport	496	88	5	4	48	0	33	0	15	0
U. of Mary Washington	496	ne	ne	143	48	0	32	0	16	0
U. Texas, Tyler	500	37	41	33	44	0	44	0	0	0
Rider U.	501	78	76	46	41	0	34	0	7	0
U. Michigan, Flint	502	ne	135	53	40	0	26	0	14	0
Pennsylvania State U., Harrisburg	503	23	29	55	38	0	0	38	0	0
Langston U.	504	0	41 i	40 i	37	0	0	0	0	37
U. Tennessee, Chattanooga	505	40	61	10	35	0	35	0	0	0
U.S. Military Academy	505	18	448	120	35	0	0	0	35	0
Morgan State U.	507	916	285	116	34	0	0	0	34	0

TABLE 47

## Higher education R&amp;D expenditures in the physical sciences, ranked by all FY 2019 physical sciences: FYs 2016–19 and by subfield for FY 2019

(Dollars in thousands)

Institution	Rank	2016	2017	2018	2019					
					All physical sciences	Astronomy and astrophysics	Chemistry	Materials science	Physics	Physical sciences nec
Pittsburg State U.	508	33	33	21	30	0	28	0	2	0
Gallaudet U.	509	472	136	227	26	0	15	11	0	0
California State U., Stanislaus	510	0	17	17	25	0	20	0	5	0
Northern Michigan U.	511	53	14	26	24	0	24	0	0	0
U. Minnesota, Morris	511	25	55	ne	24	0	14	0	10	0
U. New England	513	27	20	27	23	0	23	0	0	0
U. South Florida, Sarasota-Manatee	514	0	0	0	20	0	20	0	0	0
SUNY, Buffalo State	515	45	43	23	19	0	0	0	19	0
Monmouth U.	516	0	ne	ne	18	0	18	0	0	0
U. Alaska, Anchorage	517	106	22	17	16	1	15	0	0	0
Stockton U.	518	9	ne	1	15	8	7	0	0	0
U. of the Virgin Islands	518	0	0	0	15	15	0	0	0	0
U. Southern Maine	518	155	19	36	15	0	11	4	0	0
Alfred U.	521	43	9	11	13	0	0	0	0	13
U. Detroit Mercy	521	55	1	11	13	0	13	0	0	0
St. Cloud State U.	523	94	33	23	12	0	1	0	11	0
U. Illinois, Springfield	523	74	0	0	12	0	12	0	0	0
Eastern Connecticut State U.	525	4	0	58	10	0	10	0	0	0
Lawrence Technological U.	526	28	16	56	9	0	9	0	0	0
Colorado State U., Pueblo	527	ne	ne	ne	6	0	6	0	0	0
Dakota State U.	528	114	92	13	5	0	0	0	5	0
Texas A&M International U.	529	219	70	12	4	0	1	0	3	0
U. Wisconsin-Superior	530	ne	ne	42	2	0	2	0	0	0
Fort Lewis C.	531	ne	ne	ne	1	0	1	0	0	0
La Sierra U.	531	130	13	38	1	0	0	0	1	0
All other surveyed institutions	-	108,131	113,008	107,713	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 \$287,839 thousand imputed for total R&D expenditures in physical sciences in FY 2019. 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.

**Note(s):**

Institutions reporting zero expenditures in ranked total for FY 2019 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.