

TABLE 17

Higher education R&D expenditures, by type of cost, highest degree granted, and institutional control: FYs 2010–21

(Dollars in thousands)

Type of cost, highest degree granted, and institutional control	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
All institutions												
All R&D	61,286,610	65,274,393	65,729,007	67,013,138	67,199,090	68,549,882	71,767,849	75,147,113	79,023,156	83,487,471	86,300,399	89,723,447
Direct costs	46,159,649	49,311,567	49,897,854	51,089,463	51,564,639	52,612,273	55,281,411	57,935,294	60,776,056	64,345,771	66,526,173	69,185,932
Salaries, wages, and fringe benefits	25,929,799	27,860,610	28,339,070	28,802,181	29,118,949	29,895,112	31,455,447	33,230,175	34,674,118	36,564,673	38,725,994	40,337,368
Software	105,970	116,422	103,456	107,685	96,517	117,007	113,524	109,627	121,837	136,474	158,535	172,603
Noncapitalized software	88,456	98,438	93,250	95,652	84,275	93,204	95,136	98,602	110,774	120,920	144,277	158,043
Capitalized software	17,514	17,984	10,206	12,033	12,242	23,803	18,388	11,025	11,063	15,554	14,258	14,560
Capitalized equipment	2,148,421	2,256,025	2,040,534	2,254,429	2,036,407	2,119,877	2,169,465	2,193,933	2,148,659	2,439,950	2,588,908	2,662,006
Passed through to subrecipients	4,956,929	5,436,850	5,531,421	5,689,087	5,702,921	5,633,794	5,697,047	5,915,370	6,315,795	6,717,010	7,051,008	7,576,989
Other direct costs	13,018,530	13,641,660	13,883,373	14,236,081	14,609,845	14,846,483	15,845,928	16,486,189	17,515,647	18,487,664	18,001,728	18,436,966
Indirect costs	15,126,961	15,962,826	15,831,153	15,923,675	15,634,451	15,937,609	16,486,438	17,211,819	18,247,100	19,141,700	19,774,226	20,537,515
Recovered	10,465,893	11,352,339	11,221,624	11,220,177	10,873,913	11,100,902	11,452,294	12,021,614	12,745,091	13,607,908	14,036,678	14,660,733
Unrecovered	4,661,068	4,610,487	4,609,529	4,703,498	4,760,538	4,836,707	5,034,144	5,190,205	5,502,009	5,533,792	5,737,548	5,876,782
Doctorate												
All R&D	60,266,691	64,064,133	64,700,201	66,217,717	66,447,854	67,890,206	70,718,154	74,440,281	78,354,069	82,802,531	85,612,050	89,051,221
Direct costs	45,266,156	48,282,499	49,022,847	50,398,617	50,915,499	52,041,133	54,363,455	57,313,036	60,194,358	63,754,151	65,934,205	68,608,387
Salaries, wages, and fringe benefits	25,494,721	27,357,645	27,906,910	28,462,160	28,785,382	29,604,360	31,105,634	32,912,108	34,362,624	36,255,288	38,415,021	40,018,516
Software	98,119	110,285	95,627	102,523	91,341	111,641	108,637	107,203	119,943	134,734	156,190	169,022
Noncapitalized software	80,940	92,808	86,115	90,658	79,637	88,076	90,540	96,559	109,021	119,334	142,259	154,870
Capitalized software	17,179	17,477	9,512	11,865	11,704	23,565	18,097	10,644	10,922	15,400	13,931	14,152
Capitalized equipment	2,086,956	2,192,296	1,995,345	2,219,549	2,011,006	2,095,655	2,039,262	2,166,672	2,124,751	2,418,412	2,565,614	2,633,582
Passed through to subrecipients	4,901,412	5,371,178	5,469,627	5,647,933	5,663,439	5,609,174	5,659,469	5,884,044	6,286,293	6,688,864	7,022,850	7,548,281
Other direct costs	12,684,948	13,251,095	13,555,338	13,966,452	14,364,331	14,620,303	15,450,453	16,243,009	17,300,747	18,256,853	17,774,530	18,238,986
Indirect costs	15,000,535	15,781,634	15,677,354	15,819,100	15,532,355	15,849,073	16,354,699	17,127,245	18,159,711	19,048,380	19,677,845	20,442,834
Recovered	10,382,463	11,236,113	11,125,166	11,147,825	10,808,902	11,040,967	11,383,623	11,965,789	12,685,461	13,547,070	13,973,862	14,597,199
Unrecovered	4,618,072	4,545,521	4,552,188	4,671,275	4,723,453	4,808,106	4,971,076	5,161,456	5,474,250	5,501,310	5,703,983	5,845,635
Nondoctorate												
All R&D	1,019,919	1,210,260	1,028,806	795,421	751,236	659,676	1,049,695	706,832	669,087	684,940	688,349	672,226
Direct costs	893,493	1,029,068	875,007	690,846	649,140	571,140	917,956	622,258	581,698	591,620	591,968	577,545
Salaries, wages, and fringe benefits	435,078	502,965	432,160	340,021	333,567	290,752	349,813	318,067	311,494	309,385	310,973	318,852
Software	7,851	6,137	7,829	5,162	5,176	5,366	4,887	2,424	1,894	1,740	2,345	3,581

TABLE 17

Higher education R&D expenditures, by type of cost, highest degree granted, and institutional control: FYs 2010–21

(Dollars in thousands)

Type of cost, highest degree granted, and institutional control	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Noncapitalized software	7,516	5,630	7,135	4,994	4,638	5,128	4,596	2,043	1,753	1,586	2,018	3,173
Capitalized software	335	507	694	168	538	238	291	381	141	154	327	408
Capitalized equipment	61,465	63,729	45,189	34,880	25,401	24,222	130,203	27,261	23,908	21,538	23,294	28,424
Passed through to subrecipients	55,517	65,672	61,794	41,154	39,482	24,620	37,578	31,326	29,502	28,146	28,158	28,708
Other direct costs	333,582	390,565	328,035	269,629	245,514	226,180	395,475	243,180	214,900	230,811	227,198	197,980
Indirect costs	126,426	181,192	153,799	104,575	102,096	88,536	131,739	84,574	87,389	93,320	96,381	94,681
Recovered	83,430	116,226	96,458	72,352	65,011	59,935	68,671	55,825	59,630	60,838	62,816	63,534
Unrecovered	42,996	64,966	57,341	32,223	37,085	28,601	63,068	28,749	27,759	32,482	33,565	31,147
Public												
All R&D	41,266,626	43,915,960	44,162,595	44,849,697	44,678,272	45,412,330	47,107,025	49,257,662	51,890,982	54,655,748	56,634,767	58,667,378
Direct costs	31,705,979	33,922,562	34,339,324	35,005,995	35,020,233	35,641,349	36,969,260	38,696,275	40,643,826	42,882,709	44,470,989	46,015,426
Salaries, wages, and fringe benefits	18,317,189	19,636,095	19,949,722	20,231,506	20,440,464	20,800,859	21,747,650	22,901,546	23,752,695	25,069,357	26,481,114	27,538,324
Software	82,340	96,499	83,509	85,149	74,459	92,877	89,420	81,618	94,259	103,470	121,019	139,459
Noncapitalized software	69,454	80,693	74,897	76,518	65,040	74,445	74,083	73,831	85,049	92,390	111,925	127,382
Capitalized software	12,886	15,806	8,612	8,631	9,419	18,432	15,337	7,787	9,210	11,080	9,094	12,077
Capitalized equipment	1,457,694	1,555,049	1,476,328	1,655,640	1,468,659	1,508,998	1,578,490	1,554,190	1,522,210	1,744,767	1,924,628	1,938,716
Passed through to subrecipients	3,065,688	3,418,705	3,502,384	3,608,137	3,558,959	3,541,642	3,520,318	3,662,377	3,917,036	4,149,921	4,385,705	4,599,631
Other direct costs	8,783,068	9,216,214	9,327,381	9,425,563	9,477,692	9,696,973	10,033,382	10,496,544	11,357,626	11,815,194	11,558,523	11,799,296
Indirect costs	9,560,647	9,993,398	9,823,271	9,843,702	9,658,039	9,770,981	10,137,765	10,561,387	11,247,156	11,773,039	12,163,778	12,651,952
Recovered	6,175,654	6,585,483	6,554,816	6,539,581	6,339,755	6,409,794	6,622,242	6,946,564	7,365,362	7,916,749	8,106,945	8,508,035
Unrecovered	3,384,993	3,407,915	3,268,455	3,304,121	3,318,284	3,361,187	3,515,523	3,614,823	3,881,794	3,856,290	4,056,833	4,143,917
Private												
All R&D	20,019,984	21,358,433	21,566,412	22,163,441	22,520,818	23,137,552	24,660,824	25,889,451	27,132,174	28,831,723	29,665,632	31,056,069
Direct costs	14,453,670	15,389,005	15,558,530	16,083,468	16,544,406	16,970,924	18,312,151	19,239,019	20,132,230	21,463,062	22,055,184	23,170,506
Salaries, wages, and fringe benefits	7,612,610	8,224,515	8,389,348	8,570,675	8,678,485	9,094,253	9,707,797	10,328,629	10,921,423	11,495,316	12,244,880	12,799,044
Software	23,630	19,923	19,947	22,536	22,058	24,130	24,104	28,009	27,578	33,004	37,516	33,144
Noncapitalized software	19,002	17,745	18,353	19,134	19,235	18,759	21,053	24,771	25,725	28,530	32,352	30,661
Capitalized software	4,628	2,178	1,594	3,402	2,823	5,371	3,051	3,238	1,853	4,474	5,164	2,483
Capitalized equipment	690,727	700,976	564,206	598,789	567,748	610,879	590,975	639,743	626,449	695,183	664,280	723,290
Passed through to subrecipients	1,891,241	2,018,145	2,029,037	2,080,950	2,143,962	2,092,152	2,176,729	2,252,993	2,398,759	2,567,089	2,665,303	2,977,358
Other direct costs	4,235,462	4,425,446	4,555,992	4,810,518	5,132,153	5,149,510	5,812,546	5,989,645	6,158,021	6,672,470	6,443,205	6,637,670

TABLE 17

Higher education R&D expenditures, by type of cost, highest degree granted, and institutional control: FYs 2010–21

(Dollars in thousands)

Type of cost, highest degree granted, and institutional control	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Indirect costs	5,566,314	5,969,428	6,007,882	6,079,973	5,976,412	6,166,628	6,348,673	6,650,432	6,999,944	7,368,661	7,610,448	7,885,563
Recovered	4,290,239	4,766,856	4,666,808	4,680,596	4,534,158	4,691,108	4,830,052	5,075,050	5,379,729	5,691,159	5,929,733	6,152,698
Unrecovered	1,276,075	1,202,572	1,341,074	1,399,377	1,442,254	1,475,520	1,518,621	1,575,382	1,620,215	1,677,502	1,680,715	1,732,865

Source(s):

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