

TABLE 17

Higher education R&D expenditures, by type of cost, highest degree granted, and institutional control: FYs 2010–22

(Dollars in thousands)

Type of cost, highest degree granted, and institutional control	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
All institutions													
All R&D	61,286,610	65,274,393	65,729,007	66,977,566	67,161,428	68,519,962	71,736,671	75,148,301	79,024,262	83,488,120	86,302,262	89,694,837	97,680,528
Direct costs	46,159,649	49,311,567	49,897,854	51,053,891	51,526,977	52,582,354	55,249,769	57,935,944	60,776,661	64,346,077	66,527,478	69,158,330	75,399,863
Salaries, wages, and fringe benefits	25,929,799	27,860,610	28,339,070	28,776,405	29,091,522	29,873,561	31,434,222	33,231,352	34,675,304	36,566,229	38,727,777	40,336,580	43,076,988
Software	105,970	116,422	103,456	107,685	96,517	117,007	113,550	109,645	121,855	136,490	158,550	173,026	192,819
Noncapitalized software	88,456	98,438	93,250	95,652	84,275	93,204	95,162	98,620	110,792	120,936	144,292	158,542	178,059
Capitalized software	17,514	17,984	10,206	12,033	12,242	23,803	18,388	11,025	11,063	15,554	14,258	14,484	14,760
Capitalized equipment	2,148,421	2,256,025	2,040,534	2,254,429	2,036,407	2,119,877	2,169,442	2,193,909	2,148,636	2,439,825	2,588,968	2,662,636	2,700,652
Passed through to subrecipients	4,956,929	5,436,850	5,531,421	5,689,087	5,702,930	5,633,803	5,696,733	5,915,059	6,315,464	6,716,582	7,049,955	7,575,028	8,521,194
Other direct costs	13,018,530	13,641,660	13,883,373	14,226,285	14,599,601	14,838,106	15,835,822	16,485,979	17,515,402	18,486,951	18,002,228	18,411,060	20,908,210
Indirect costs	15,126,961	15,962,826	15,831,153	15,923,675	15,634,451	15,937,608	16,486,902	17,212,357	18,247,601	19,142,043	19,774,784	20,536,507	22,280,665
Recovered	10,465,893	11,352,339	11,221,624	11,220,177	10,873,913	11,100,901	11,452,832	12,022,230	12,745,675	13,608,339	14,036,848	14,660,672	16,106,829
Unrecovered	4,661,068	4,610,487	4,609,529	4,703,498	4,760,538	4,836,707	5,034,070	5,190,127	5,501,926	5,533,704	5,737,936	5,875,835	6,173,836
Doctorate													
All R&D	60,266,691	64,064,133	64,700,201	66,182,145	66,410,192	67,860,286	70,686,976	74,441,469	78,355,175	82,803,180	85,612,361	89,019,187	96,904,532
Direct costs	45,266,156	48,282,499	49,022,847	50,363,045	50,877,837	52,011,214	54,331,813	57,313,686	60,194,963	63,754,476	65,934,226	68,578,475	74,740,013
Salaries, wages, and fringe benefits	25,494,721	27,357,645	27,906,910	28,436,384	28,757,955	29,582,809	31,084,409	32,913,285	34,363,810	36,256,830	38,415,945	40,014,704	42,728,472
Software	98,119	110,285	95,627	102,523	91,341	111,641	108,663	107,221	119,961	134,750	156,205	169,166	188,700
Noncapitalized software	80,940	92,808	86,115	90,658	79,637	88,076	90,566	96,577	109,039	119,350	142,274	155,046	174,038
Capitalized software	17,179	17,477	9,512	11,865	11,704	23,565	18,097	10,644	10,922	15,400	13,931	14,120	14,662
Capitalized equipment	2,086,956	2,192,296	1,995,345	2,219,549	2,011,006	2,095,655	2,039,239	2,166,648	2,124,728	2,418,345	2,565,758	2,634,376	2,667,942
Passed through to subrecipients	4,901,412	5,371,178	5,469,627	5,647,933	5,663,448	5,609,183	5,659,155	5,883,733	6,285,962	6,688,436	7,022,404	7,546,959	8,486,741
Other direct costs	12,684,948	13,251,095	13,555,338	13,956,656	14,354,087	14,611,926	15,440,347	16,242,799	17,300,502	18,256,115	17,773,914	18,213,270	20,668,158
Indirect costs	15,000,535	15,781,634	15,677,354	15,819,100	15,532,355	15,849,072	16,355,163	17,127,783	18,160,212	19,048,704	19,678,135	20,440,712	22,164,519
Recovered	10,382,463	11,236,113	11,125,166	11,147,825	10,808,902	11,040,966	11,384,161	11,966,405	12,686,045	13,547,482	13,974,266	14,596,935	16,029,029
Unrecovered	4,618,072	4,545,521	4,552,188	4,671,275	4,723,453	4,808,106	4,971,002	5,161,378	5,474,167	5,501,222	5,703,869	5,843,777	6,135,490
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	689,901	675,650	775,996
Direct costs	893,493	1,029,068	875,007	690,846	649,140	571,140	917,956	622,258	581,698	591,601	593,252	579,855	659,850
Salaries, wages, and fringe benefits	435,078	502,965	432,160	340,021	333,567	290,752	349,813	318,067	311,494	309,399	311,832	321,876	348,516
Software	7,851	6,137	7,829	5,162	5,176	5,366	4,887	2,424	1,894	1,740	2,345	3,860	4,119
Noncapitalized software	7,516	5,630	7,135	4,994	4,638	5,128	4,596	2,043	1,753	1,586	2,018	3,496	4,021
Capitalized software	335	507	694	168	538	238	291	381	141	154	327	364	98
Capitalized equipment	61,465	63,729	45,189	34,880	25,401	24,222	130,203	27,261	23,908	21,480	23,210	28,260	32,710
Passed through to subrecipients	55,517	65,672	61,794	41,154	39,482	24,620	37,578	31,326	29,502	28,146	27,551	28,069	34,453
Other direct costs	333,582	390,565	328,035	269,629	245,514	226,180	395,475	243,180	214,900	230,836	228,314	197,790	240,052

TABLE 17

Higher education R&D expenditures, by type of cost, highest degree granted, and institutional control: FYs 2010–22

(Dollars in thousands)

Type of cost, highest degree granted, and institutional control	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Indirect costs	126,426	181,192	153,799	104,575	102,096	88,536	131,739	84,574	87,389	93,339	96,649	95,795	116,146
Recovered	83,430	116,226	96,458	72,352	65,011	59,935	68,671	55,825	59,630	60,857	62,582	63,737	77,800
Unrecovered	42,996	64,966	57,341	32,223	37,085	28,601	63,068	28,749	27,759	32,482	34,067	32,058	38,346
Public													
All R&D	41,266,626	43,915,960	44,162,595	44,814,125	44,640,610	45,382,410	47,074,583	49,257,662	51,890,982	54,655,748	56,635,979	58,649,721	63,712,945
Direct costs	31,705,979	33,922,562	34,339,324	34,970,423	34,982,571	35,611,429	36,936,818	38,696,275	40,643,826	42,882,690	44,471,946	45,998,532	49,992,597
Salaries, wages, and fringe benefits	18,317,189	19,636,095	19,949,722	20,205,730	20,413,042	20,779,313	21,724,959	22,901,546	23,752,695	25,069,371	26,482,248	27,543,343	29,241,340
Software	82,340	96,499	83,509	85,149	74,459	92,877	89,420	81,618	94,259	103,470	121,019	139,455	149,318
Noncapitalized software	69,454	80,693	74,897	76,518	65,040	74,445	74,083	73,831	85,049	92,390	111,925	127,416	138,924
Capitalized software	12,886	15,806	8,612	8,631	9,419	18,432	15,337	7,787	9,210	11,080	9,094	12,039	10,394
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	1,744,709	1,924,757	1,939,067	1,980,284
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	4,385,098	4,598,205	5,143,769
Other direct costs	8,783,068	9,216,214	9,327,381	9,415,767	9,467,452	9,688,599	10,023,631	10,496,544	11,357,626	11,815,219	11,558,824	11,778,462	13,477,886
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	11,773,058	12,164,033	12,651,189	13,720,348
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	7,916,768	8,106,698	8,507,761	9,337,481
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	4,057,335	4,143,428	4,382,867
Private													
All R&D	20,019,984	21,358,433	21,566,412	22,163,441	22,520,818	23,137,552	24,662,088	25,890,639	27,133,280	28,832,372	29,666,283	31,045,116	33,967,583
Direct costs	14,453,670	15,389,005	15,558,530	16,083,468	16,544,406	16,970,925	18,312,951	19,239,669	20,132,835	21,463,387	22,055,532	23,159,798	25,407,266
Salaries, wages, and fringe benefits	7,612,610	8,224,515	8,389,348	8,570,675	8,678,480	9,094,248	9,709,263	10,329,806	10,922,609	11,496,858	12,245,529	12,793,237	13,835,648
Software	23,630	19,923	19,947	22,536	22,058	24,130	24,130	28,027	27,596	33,020	37,531	33,571	43,501
Noncapitalized software	19,002	17,745	18,353	19,134	19,235	18,759	21,079	24,789	25,743	28,546	32,367	31,126	39,135
Capitalized software	4,628	2,178	1,594	3,402	2,823	5,371	3,051	3,238	1,853	4,474	5,164	2,445	4,366
Capitalized equipment	690,727	700,976	564,206	598,789	567,748	610,879	590,952	639,719	626,426	695,116	664,211	723,569	720,368
Passed through to subrecipients	1,891,241	2,018,145	2,029,037	2,080,950	2,143,971	2,092,161	2,176,415	2,252,682	2,398,428	2,566,661	2,664,857	2,976,823	3,377,425
Other direct costs	4,235,462	4,425,446	4,555,992	4,810,518	5,132,149	5,149,507	5,812,191	5,989,435	6,157,776	6,671,732	6,443,404	6,632,598	7,430,324
Indirect costs	5,566,314	5,969,428	6,007,882	6,079,973	5,976,412	6,166,627	6,349,137	6,650,970	7,000,445	7,368,985	7,610,751	7,885,318	8,560,317
Recovered	4,290,239	4,766,856	4,666,808	4,680,596	4,534,158	4,691,107	4,830,590	5,075,666	5,380,313	5,691,571	5,930,150	6,152,911	6,769,348
Unrecovered	1,276,075	1,202,572	1,341,074	1,399,377	1,442,254	1,475,520	1,518,547	1,575,304	1,620,132	1,677,414	1,680,601	1,732,407	1,790,969

Source(s):

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