

TABLE 17

**Higher education R&D expenditures, by type of cost, highest degree granted and institutional control: FYs 2010–23**

(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	2023
All institutions														
All R&D	61,286,610	65,274,393	65,729,007	66,977,566	67,161,428	68,519,962	71,737,194	75,149,390	79,025,976	83,490,430	86,306,106	89,700,890	97,669,577	108,681,008
Direct costs	46,159,649	49,311,567	49,897,854	51,053,891	51,526,881	52,581,984	55,249,921	57,936,618	60,777,825	64,348,093	66,531,452	69,164,148	75,314,959	84,208,503
Salaries, wages, and fringe benefits	25,929,799	27,860,610	28,339,070	28,776,405	29,091,347	29,873,368	31,434,483	33,231,923	34,676,268	36,568,801	38,729,838	40,340,825	43,107,638	47,089,302
Software	105,970	116,422	103,456	107,685	96,523	117,008	113,557	109,653	121,863	136,544	158,589	173,000	192,893	222,099
Noncapitalized software	88,456	98,438	93,250	95,652	84,281	93,205	95,169	98,627	110,799	120,989	144,328	158,516	178,170	200,525
Capitalized software	17,514	17,984	10,206	12,033	12,242	23,803	18,388	11,026	11,064	15,555	14,261	14,484	14,723	21,574
Capitalized equipment	2,148,421	2,256,025	2,040,534	2,254,429	2,036,405	2,119,812	2,169,348	2,193,753	2,148,471	2,439,584	2,588,728	2,662,102	2,696,624	3,259,897
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	5,915,794	6,332,293	6,757,122	7,100,926	7,626,789	8,605,444	9,514,892
Other direct costs	13,018,530	13,641,660	13,883,373	14,226,285	14,599,676	14,837,993	15,835,800	16,485,495	17,498,930	18,446,042	17,953,371	18,361,432	20,712,360	24,122,313
Indirect costs	15,126,961	15,962,826	15,831,153	15,923,675	15,634,547	15,937,978	16,487,273	17,212,772	18,248,151	19,142,337	19,774,654	20,536,742	22,354,618	24,472,505
Recovered	10,465,893	11,352,339	11,221,624	11,220,177	10,874,009	11,101,271	11,453,249	12,022,688	12,746,261	13,608,664	14,036,742	14,660,910	16,186,007	17,701,860
Unrecovered	4,661,068	4,610,487	4,609,529	4,703,498	4,760,538	4,836,707	5,034,024	5,190,084	5,501,890	5,533,673	5,737,912	5,875,832	6,168,611	6,770,645
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	85,613,262	89,020,989	96,892,572	107,813,315
Direct costs	45,266,156	48,282,499	49,022,847	50,363,045	50,877,741	52,010,844	54,331,508	57,313,332	60,194,555	63,754,118	65,935,372	68,579,823	74,654,660	83,467,547
Salaries, wages, and fringe benefits	25,494,721	27,357,645	27,906,910	28,436,384	28,757,780	29,582,616	31,084,360	32,913,287	34,363,836	36,256,876	38,416,748	40,016,043	42,761,923	46,710,009
Software	98,119	110,285	95,627	102,523	91,347	111,642	108,665	107,222	119,962	134,754	156,208	169,135	188,696	218,009
Noncapitalized software	80,940	92,808	86,115	90,658	79,643	88,077	90,568	96,578	109,040	119,354	142,277	155,015	174,034	196,632
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	21,377
Capitalized equipment	2,086,956	2,192,296	1,995,345	2,219,549	2,011,004	2,095,590	2,039,169	2,166,520	2,124,588	2,418,126	2,565,540	2,634,091	2,664,916	3,222,971
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	5,884,468	6,302,791	6,728,976	7,073,375	7,598,720	8,570,862	9,473,272
Other direct costs	12,684,948	13,251,095	13,555,338	13,956,656	14,354,162	14,611,813	15,440,159	16,241,835	17,283,378	18,215,386	17,723,501	18,161,834	20,468,263	23,843,286
Indirect costs	15,000,535	15,781,634	15,677,354	15,819,100	15,532,451	15,849,442	16,355,468	17,128,137	18,160,620	19,049,062	19,677,890	20,441,166	22,237,912	24,345,768
Recovered	10,382,463	11,236,113	11,125,166	11,147,825	10,808,998	11,041,336	11,384,466	11,966,759	12,686,453	13,547,840	13,974,021	14,597,389	16,107,931	17,622,931
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	6,129,981	6,722,837
Nondoctorate														
All R&D	1,019,919	1,210,260	1,028,806	795,421	751,236	659,676	1,050,218	707,921	670,801	687,250	692,844	679,901	777,005	867,693
Direct costs	893,493	1,029,068	875,007	690,846	649,140	571,140	918,413	623,286	583,270	593,975	596,080	584,325	660,299	740,956
Salaries, wages, and fringe benefits	435,078	502,965	432,160	340,021	333,567	290,752	350,123	318,636	312,432	311,925	313,090	324,782	345,715	379,293
Software	7,851	6,137	7,829	5,162	5,176	5,366	4,892	2,431	1,901	1,790	2,381	3,865	4,197	4,090
Noncapitalized software	7,516	5,630	7,135	4,994	4,638	5,128	4,601	2,049	1,759	1,635	2,051	3,501	4,136	3,893
Capitalized software	335	507	694	168	538	238	291	382	142	155	330	364	61	197
Capitalized equipment	61,465	63,729	45,189	34,880	25,401	24,222	130,179	27,233	23,883	21,458	23,188	28,011	31,708	36,926
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	34,582	41,620
Other direct costs	333,582	390,565	328,035	269,629	245,514	226,180	395,641	243,660	215,552	230,656	229,870	199,598	244,097	279,027

TABLE 17

**Higher education R&D expenditures, by type of cost, highest degree granted and institutional control: FYs 2010–23**

(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	2023
Indirect costs	126,426	181,192	153,799	104,575	102,096	88,536	131,805	84,635	87,531	93,275	96,764	95,576	116,706	126,737
Recovered	83,430	116,226	96,458	72,352	65,011	59,935	68,783	55,929	59,808	60,824	62,721	63,521	78,076	78,929
Unrecovered	42,996	64,966	57,341	32,223	37,085	28,601	63,022	28,706	27,723	32,451	34,043	32,055	38,630	47,808
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	56,636,880	58,652,526	63,790,149	71,001,044
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	42,882,969	44,473,828	46,002,099	49,975,980	55,854,390
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	25,070,725	26,482,823	27,545,544	29,334,957	31,827,740
Software	82,340	96,499	83,509	85,149	74,459	92,877	89,420	81,618	94,259	103,511	121,049	139,402	149,377	166,452
Noncapitalized software	69,454	80,693	74,897	76,518	65,040	74,445	74,083	73,831	85,049	92,431	111,955	127,363	139,020	151,443
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	10,357	15,009
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	1,924,758	1,938,848	1,976,535	2,339,646
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	4,384,669	4,597,781	5,168,816	5,737,216
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	11,814,103	11,560,529	11,780,524	13,346,295	15,783,336
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	11,772,779	12,163,052	12,650,427	13,814,169	15,146,654
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	7,916,489	8,105,717	8,506,984	9,429,765	10,371,525
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	4,143,443	4,384,404	4,775,129
Private														
All R&D	20,019,984	21,358,433	21,566,412	22,163,441	22,520,818	23,137,552	24,662,611	25,891,728	27,134,994	28,834,682	29,669,226	31,048,364	33,879,428	37,679,964
Direct costs	14,453,670	15,389,005	15,558,530	16,083,468	16,544,310	16,970,555	18,313,103	19,240,343	20,133,999	21,465,124	22,057,624	23,162,049	25,338,979	28,354,113
Salaries, wages, and fringe benefits	7,612,610	8,224,515	8,389,348	8,570,675	8,678,305	9,094,055	9,709,524	10,330,377	10,923,573	11,498,076	12,247,015	12,795,281	13,772,681	15,261,562
Software	23,630	19,923	19,947	22,536	22,064	24,131	24,137	28,035	27,604	33,033	37,540	33,598	43,516	55,647
Noncapitalized software	19,002	17,745	18,353	19,134	19,241	18,760	21,086	24,796	25,750	28,558	32,373	31,153	39,150	49,082
Capitalized software	4,628	2,178	1,594	3,402	2,823	5,371	3,051	3,239	1,854	4,475	5,167	2,445	4,366	6,565
Capitalized equipment	690,727	700,976	564,206	598,789	567,746	610,814	590,858	639,563	626,261	694,875	663,970	723,254	720,089	920,251
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	2,253,417	2,415,257	2,607,201	2,716,257	3,029,008	3,436,628	3,777,676
Other direct costs	4,235,462	4,425,446	4,555,992	4,810,518	5,132,224	5,149,394	5,812,169	5,988,951	6,141,304	6,631,939	6,392,842	6,580,908	7,366,065	8,338,977
Indirect costs	5,566,314	5,969,428	6,007,882	6,079,973	5,976,508	6,166,997	6,349,508	6,651,385	7,000,995	7,369,558	7,611,602	7,886,315	8,540,449	9,325,851
Recovered	4,290,239	4,766,856	4,666,808	4,680,596	4,534,254	4,691,477	4,831,007	5,076,124	5,380,899	5,692,175	5,931,025	6,153,926	6,756,242	7,330,335
Unrecovered	1,276,075	1,202,572	1,341,074	1,399,377	1,442,254	1,475,520	1,518,501	1,575,261	1,620,096	1,677,383	1,680,577	1,732,389	1,784,207	1,995,516

**Source(s):**

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