

TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2017

(Millions of current dollars)

State	All R&D	R&D rank	Performer: Source of funds:	Federal	FFRDCs		Business				Higher education ^a						Other nonprofit institutions	State, internal ^b	GDP	GDP rank	R&D intensity ^c				
				Federal	Total	Federal	Nonfederal ^d	Total	Own	Paid by others		Federal	Total	Federal	Other government	Business	Higher education	Nonprofit			Other	Federal ^f	Total	Percent	Rank
										Nonfederal ^e	Federal														
U.S. total ^g	547,886	na		32,231	20,322	19,943	379	400,101	339,036	36,787	24,277	71,251	36,034	4,046	4,276	19,723	4,923	2,250	8,218	641	19,519,400	na	2.81	na	
States total ^g	528,150	na		27,568	20,038	19,668	371	397,925	337,471	36,166 - 36,787	23,656 - 24,277	75,040	40,145	4,233	4,420	18,853	5,116	2,273	6,939	640	19,372,090	na	2.73	na	
Alabama	5,879	25		2,928	0	0	0	1,896	968	107	821	1,005	567	54	67	272	33	12	36	14	211,666	27	2.78	13	
Alaska	1,146	39		45	0	0	0	912	905	4	3	176	112	5	4	52	1	1	6	7	51,687	46	2.22	20	
Arizona	7,826	19		204	26	22	3	6,338	4,476	929	932	1,213	527	58	29	407	68	123	40	4	326,539	20	2.40	16	
Arkansas	812	43		24	0	0	0	466	442	18	6	313	112	69	14	94	8	16	8	1	123,714	35	0.66	47	
California	150,552	1		1,938	5,859	5,751	107	132,473	120,111	6,789	5,573	9,226	4,842	365	611	1,864	959	584	979	78	2,809,922	1	5.36	3	
Colorado	7,159	21		360	529	479	50	4,703	3,828	230	645	1,462	1,022	52	76	152	138	22	96	9	347,196	19	2.06	27	
Connecticut	10,018	14		20	0	0	0	8,694	6,423	437	1,835	1,254	699	10	84	353	98	11	28	21	265,535	23	3.77	8	
Delaware	2,265	33		4	0	0	0	2,048	1,445	593	9	204	133	14	5	45	4	3	6	2	72,167	43	3.14	11	
District of Columbia	4,557	26		3,271	8	8	0	406	279	16	111	602	318	6	17	177	62	22	269	2	134,901	34	3.38	9	
Florida	10,156	13		858	0	0	0	6,463	4,496	667	1,300	2,618	1,161	226	119	910	146	55	172	45	979,465	4	1.04	38	
Georgia	9,056	15		239	0	0	0	6,450	5,085	1,255	110	2,340	1,318	153	130	595	127	17	24	3	562,121	9	1.61	32	
Hawaii	558	45		79	0	0	0	169	105	41	22	301	190	15	2	78	13	4	8	1	89,044	39	0.63	48	
Idaho	2,442	31		41	483	463	20	1,747	1,527	215	5	163	82	37	4	34	2	5	2	7	72,442	42	3.37	10	
Illinois	18,120	9		110	1,044	1,010	35	14,399	12,743	887	768	2,503	1,468	45	158	644	146	42	62	1	825,811	5	2.19	22	
Indiana	7,814	20		67	0	0	0	6,283	5,394	774	115	1,462	612	119	82	508	111	30	1	1	351,072	17	2.23	19	
Iowa	3,900	28		62	54	53	1	2,938	2,195	0 - 744	0 - 744	831	373	50	41	334	29	4	12	4	182,979	30	2.13	25	
Kansas	2,819	30		22	0	0	0	2,212	1,486	719	7	578	246	64	61	174	30	3	5	2	160,083	32	1.76	29	
Kentucky	1,596	35		25	0	0	0	983	758	69	156	582	258	57	23	185	21	38	1	4	200,991	28	0.79	44	
Louisiana	1,058	40		55	0	0	0	297	243	31	22	692	276	92	30	233	43	19	3	11	238,138	24	0.44	51	
Maine	520	46		5	0	0	0	292	257	12	22	123	51	24	5	38	3	2	97	3	61,720	44	0.84	42	
Maryland	20,859	7		10,027	922	922	0	5,595	3,106	458	2,030	4,020	3,084	83	123	513	205	13	294	1.08	398,416	15	5.24	4	
Massachusetts	31,299	2		359	1,678	1,671	7	23,655	18,912	4,102	641	3,928	2,195	50	292	873	379	138	1,670	9	540,949	10	5.79	2	
Michigan	23,855	5		102	0	0	0	21,042	19,101	1,712	229	2,662	1,361	56	117	972	113	43	48	1	505,845	14	4.72	6	
Minnesota	8,470	18		38	0	0	0	7,146	6,633	274	239	969	470	78	37	323	26	35	316	1	352,267	16	2.40	15	
Mississippi	991	41		244	0	0	0	266	221	17	28	479	210	95	15	142	13	4	*	1.19	109,901	37	0.90	40	
Missouri	6,518	24		35	0	0	0	5,299	3,433	0 - 877	989 - 1,867	1,149	655	7	80	298	93	16	27	8	304,051	22	2.14	24	
Montana	414	48		44	0	0	0	133	114	12	6	229	126	21	3	66	6	7	4	4	47,074	49	0.88	41	
Nebraska	1,150	38		34	0	0	0	592	470	53	68	514	203	80	28	160	19	23	10	*	118,546	36	0.97	39	

TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2017

(Millions of current dollars)

State	All R&D	R&D rank	Performer: Source of funds:	Federal	FFRDCs			Business				Higher education ^a						Other nonprofit institutions	State, internal ^b	GDP	GDP rank	R&D intensity ^c		
				Federal	Total	Federal	Nonfederal ^d	Total	Own	Paid by others		Total	Federal	Other government	Business	Higher education	Nonprofit	Other	Federal ^f			Total	Percent	Rank
										Nonfederal ^e	Federal													
Nevada	846	42		15	0	0	0	624	439	165	21	206	103	27	4	63	2	7	1	*	157,021	33	0.54	50
New Hampshire	1,845	34		14	0	0	0	1,361	754	221	386	456	231	6	16	176	17	9	13	*	81,179	40	2.27	18
New Jersey	18,495	8		741	81	81	0	16,405	13,228	2,768	408	1,253	657	115	65	343	62	13	13	2	599,315	8	3.09	12
New Mexico	6,595	23		519	4,863	4,802	61	802	298	205	298	374	244	23	5	77	17	7	36	1	94,238	38	7.00	1
New York	23,631	6		251	557	539	18	15,671	13,430	1,216	1,024	6,360	3,244	267	436	1,616	543	253	547	246	1,598,457	3	1.48	33
North Carolina	13,799	11		318	0	0	0	10,246	7,502	2,569	175	3,082	1,772	141	352	586	188	43	133	20	537,889	11	2.57	14
North Dakota	592	44		29	0	0	0	304	276	25	4	256	78	64	10	95	2	6	1	2	51,612	47	1.15	36
Ohio	13,056	12		765	0	0	0	9,769	6,697	2,495	576	2,299	1,366	98	200	455	147	33	220	3	645,820	7	2.02	28
Oklahoma	1,531	36		152	0	0	0	833	775	34	24	506	196	65	37	189	9	10	34	6.08	187,348	29	0.82	43
Oregon	8,579	17		69	0	0	0	7,691	7,426	207	58	781	519	61	37	93	59	12	19	19	226,057	25	3.80	7
Pennsylvania	15,998	10		333	133	133	0	10,986	9,576	1,237	173	4,180	2,356	99	261	1,106	246	113	357	9	752,340	6	2.13	26
Rhode Island	1,410	37		272	0	0	0	730	657	30	44	331	218	12	6	66	22	6	76	*	59,255	45	2.38	17
South Carolina	2,360	32		84	141	141	0	1,370	1,212	98	60	699	330	28	46	260	24	12	39	26	221,897	26	1.06	37
South Dakota	343	50		14	0	0	0	199	189	9	1	113	54	23	2	24	6	3	16	*	49,609	48	0.69	45
Tennessee	4,521	27		152	1,403	1,373	30	1,407	1,172	195	39	1,184	700	30	60	333	45	16	372	3	347,835	18	1.30	34
Texas	27,113	3		433	6	5	1	21,002	17,752	2,521	729	5,495	2,178	894	371	1,376	422	254	172	4	1,654,494	2	1.64	31
Utah	3,664	29		187	0	0	0	2,846	2,171	136	539	611	414	24	41	95	26	11	1	18	165,703	31	2.21	21
Vermont	381	49		4	0	0	0	253	241	7	4	123	82	0	3	29	7	2	1	*	32,623	51	1.17	35
Virginia	8,897	16		1,613	1,267	1,243	24	4,332	2,659	336	1,338	1,551	750	79	78	513	71	60	122	12	510,425	13	1.74	30
Washington	24,958	4		255	984	971	13	21,462	20,820	472	169	1,741	1,122	83	66	263	169	38	501	15	522,426	12	4.78	5
West Virginia	492	47		54	0	0	0	212	182	7	23	210	87	12	10	78	4	20	14	2	73,099	41	0.67	46
Wisconsin	7,020	22		49	0	0	0	5,436	4,777	554	105	1,504	720	80	47	477	129	52	26	5	321,584	21	2.18	23
Wyoming	219	51		4	0	0	0	87	82	3	2	125	56	15	4	46	2	2	*	3	37,625	50	0.58	49
U.S. undistributed ^h	4,340	na		2,159	0	0	0	2,181	1,561	0 - 621	0 - 621	0	0	0	0	0	0	0	0	0	0	na	na	na
Puerto Rico	558	na		7	0	0	0	437	391	NA	NA	114	74	3	5	30	1	1	*	na	104,250	na	NA	na
Other ⁱ	29	na		8	0	0	0	0	0	0	0	21	19	*	*	2	*	0	0.53	na	na	na	na	na

* = < \$0.5 million; na = not applicable; NA = not available.

FFRDC = federally funded R&D center; GDP = gross domestic product.

^a State-level higher education R&D data have not been adjusted to eliminate the double counting of funds passed through from an academic institution to subrecipients (other academic institutions, businesses, nonprofit organizations, and others). At the national level, funds passed through to such subrecipients accounted for 7.9% of total R&D expenditures reported by higher education institutions in FY 2017.

^b Internal performers include state agency and department employees, and services performed by others in support of an internal R&D project.

^c R&D intensity is ratio of total R&D performed in a state to its state GDP.

^d Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2017 included state and local governments (\$29 million), business (\$192 million), nonprofit organizations (\$47 million), and all other sources (\$103 million).

^e R&D paid for by nonfederal sources in 2017 included funding from other companies located inside (\$17 billion) or outside (\$18 billion) the United States; U.S. state government agencies (\$121 million); U.S. universities, colleges, and academic researchers (\$70 million); foreign universities, colleges, and academic researchers (\$24 million); and other organizations located inside (\$521 million) or outside (\$147 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2017, total nonprofit performance is estimated at \$23.3 billion. Business provided an estimated \$1.7 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$13.4 billion.

^g States totals differ from U.S. totals for several reasons: a) some R&D expenditures cannot be allocated to 1 of the 50 states or the District of Columbia; b) nonfederal sources of other nonprofit R&D expenditures could not be allocated by state; c) state-level higher education data have not been adjusted to eliminate double counting of funds passed through from one academic institution to a subrecipient; and d) state-level R&D data are not converted from fiscal years to calendar years.

^h Reported data that could not be assigned to 1 of the 50 states or the District of Columbia.

ⁱ Includes R&D expenditures reported for outlying areas (Guam, Virgin Islands, American Samoa) and offices abroad, but excluding Puerto Rico.

Note(s)

Business R&D data refer to calendar years; the data for the other R&D performers refer to fiscal years but are used here as approximations to calendar year data.

Source(s)

National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series). State GDP data are from the Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm>, accessed 14 August 2019.