

TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2016

(Millions of current dollars)

State	All R&D	R&D rank	Performer:	Federal	FFRDCs			Business				Higher education ^a						Other nonprofit institutions	State, internal ^b	GDP	GDP rank	R&D intensity ^c		
			Source of funds:	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														
U.S. total ^g	515,305	na		31,715	19,424	19,059	365	374,685	306,611	44,302	23,772	67,813	34,677	3,953	4,042	18,462	4,548	2,131	6,641	651	18,707,200	na	2.75	na
States total ^g	495,173	na		29,813	19,220	18,856	364	367,516	312,064	31,527	20,789	71,683	38,682	4,022	4,205	17,947	4,614	2,213	6,310	631	18,509,999	na	2.68	na
Alabama	5,052	25		2,360	0	0	0	1,694	868	145	681	950	558	59	61	231	30	11	37	11	204,201	27	2.47	18
Alaska	303	49		89	0	0	0	34	27	3	4	167	104	9	5	47	2	1	5	8	50,542	47	0.60	47
Arizona	8,040	17		341	25	22	3	6,472	4,743	900	829	1,162	499	59	32	396	58	118	34	6	304,357	21	2.64	15
Arkansas	701	42		28	0	0	0	366	340	22	4	298	105	63	12	90	3	26	8	1	121,275	35	0.58	49
California	135,129	1		2,246	5,393	5,282	111	117,569	105,769	6,300	5,500	8,889	4,749	358	570	1,774	859	578	937	95	2,619,639	1	5.16	4
Colorado	6,874	22		509	540	493	47	4,355	3,542	265	549	1,379	1,003	50	75	124	101	25	84	8	323,762	19	2.12	24
Connecticut	9,295	15		87	0	0	0	7,987	6,101	342	1,544	1,176	660	14	73	334	84	11	24	21	257,038	23	3.62	7
Delaware	2,285	33		7	0	0	0	2,069	1,463	598	7	198	128	11	6	43	7	2	10	2	70,927	42	3.22	10
District of Columbia	3,516	29		2,320	7	7	0	328	230	21	76	556	301	5	15	162	56	18	304	1	125,871	34	2.79	14
Florida	9,781	13		789	0	0	0	6,273	4,441	623	1,209	2,527	1,123	209	112	896	125	61	148	44	930,375	4	1.05	36
Georgia	7,659	18		211	0	0	0	5,245	4,273	877	95	2,180	1,262	57	118	620	105	18	20	2	532,657	9	1.44	32
Hawaii	553	43		60	0	0	0	164	114	38	11	318	202	15	6	80	12	3	9	2	84,904	39	0.65	45
Idaho	2,304	32		28	522	504	17	1,590	1,398	185	7	155	80	34	4	31	2	3	2	7	68,616	43	3.36	8
Illinois	17,495	9		245	1,057	1,026	31	13,733	11,822	1,163	748	2,401	1,406	47	142	617	158	32	58	1	796,906	5	2.20	22
Indiana	7,442	19		81	0	0	0	5,949	4,988	853	108	1,410	570	92	80	522	120	26	1	1	345,207	16	2.16	23
Iowa	3,787	28		59	47	46	1	2,862	2,225	D	D	814	369	52	48	312	29	3	1	4	186,200	29	2.03	26
Kansas	2,790	30		19	0	0	0	2,204	1,469	703	32	559	222	79	53	177	24	3	5	3	154,806	32	1.80	29
Kentucky	1,650	35		20	0	0	0	1,070	752	53	265	556	240	59	20	177	25	35	3	2	195,527	28	0.84	41
Louisiana	1,025	39		53	0	0	0	274	228	28	17	683	271	98	31	229	40	14	2	13	237,598	24	0.43	51
Maine	483	45		13	0	0	0	290	261	8	21	100	48	19	3	27	3	1	76	3	59,475	44	0.81	42
Maryland	21,730	7		11,013	830	830	0	5,676	3,335	464	1,877	3,800	2,963	62	104	472	182	17	411	*	380,805	15	5.71	3
Massachusetts	28,941	2		397	1,626	1,619	7	21,560	18,084	2,843	633	3,797	2,165	53	280	806	343	150	1,549	13	505,689	11	5.72	2
Michigan	21,803	6		448	0	0	0	18,847	17,454	1,188	205	2,468	1,287	51	102	886	98	45	38	1	486,874	13	4.48	6
Minnesota	8,370	16		44	0	0	0	7,084	6,601	265	219	961	486	72	34	309	17	43	279	2	338,746	17	2.47	19
Mississippi	920	40		243	0	0	0	222	198	12	12	455	207	96	24	120	6	2	*	*	109,034	37	0.84	40
Missouri	7,204	21		96	0	0	0	5,958	3,466	D	D	1,119	625	8	97	296	80	15	23	8	297,074	22	2.43	20
Montana	394	47		51	0	0	0	140	121	14	5	195	112	16	4	53	4	6	6	3	46,478	49	0.85	39
Nebraska	1,129	38		35	0	0	0	604	491	43	71	481	190	65	30	162	18	17	8	*	118,945	36	0.95	38
Nevada	789	41		23	0	0	0	574	412	141	21	191	98	24	3	58	2	6	1	*	148,216	33	0.53	50

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(Millions of current dollars)

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			Source of funds:	Federal	Total	Federal	Nonfederal ^d	Total	Own	Nonfederal ^e	Federal	Total	Federal	Other government	Business	Higher education	Nonprofit	Other			Federal ^f	Total	Percent	Rank	
New Hampshire	2,344	31		42	0	0	0	1,919	767	265	886	380	234	5	15	104	15	7	3	*	77,843	40	3.01	12	
New Jersey	17,564	8		581	82	81	1	15,715	12,902	2,547	266	1,158	608	99	43	333	64	11	27	2	576,228	8	3.05	11	
New Mexico	6,306	24		627	4,781	4,720	62	487	323	24	140	375	240	25	7	83	12	8	34	1	93,242	38	6.76	1	
New York	23,212	4		236	579	563	16	15,714	13,454	1,211	1,049	6,090	3,109	277	459	1,511	499	235	356	237	1,500,152	3	1.55	30	
North Carolina	13,415	11		312	0	0	0	10,064	7,226	2,644	194	2,938	1,663	148	356	564	171	37	83	18	518,378	10	2.59	17	
North Dakota	515	44		32	0	0	0	254	237	15	2	227	78	62	11	68	2	5	2	1	53,328	46	0.97	37	
Ohio	11,991	12		712	0	0	0	8,892	6,366	2,029	497	2,193	1,315	89	190	436	127	35	192	2	624,372	7	1.92	27	
Oklahoma	1,371	37		148	0	0	0	692	642	41	9	489	197	69	37	166	10	9	40	*	181,480	30	0.76	44	
Oregon	7,382	20		69	0	0	0	6,523	6,316	120	87	759	496	60	35	102	50	16	20	10	227,032	25	3.25	9	
Pennsylvania	17,420	10		704	146	146	0	12,300	11,161	961	178	3,951	2,282	87	218	1,042	215	107	313	6	723,962	6	2.41	21	
Rhode Island	1,641	36		237	0	0	0	875	822	17	36	463	209	13	8	212	17	4	66	*	57,507	45	2.85	13	
South Carolina	2,276	34		115	126	126	0	1,301	1,146	92	63	687	297	32	45	282	20	10	22	25	210,876	26	1.08	35	
South Dakota	289	51		16	0	0	0	151	135	11	5	107	52	22	2	23	6	1	14	*	48,652	48	0.59	48	
Tennessee	4,545	26		241	1,284	1,251	32	1,610	1,383	189	37	1,092	640	30	52	309	42	18	316	3	332,094	18	1.37	33	
Texas	23,431	3		681	9	8	1	17,353	14,913	1,742	698	5,257	2,053	867	340	1,330	424	243	127	4	1,601,517	2	1.46	31	
Utah	4,157	27		112	0	0	0	3,453	2,876	169	408	573	388	23	42	83	23	16	1	18	157,404	31	2.64	16	
Vermont	376	48		7	0	0	0	248	230	10	7	121	87	1	3	23	6	1	0	*	31,292	51	1.20	34	
Virginia	9,333	14		2,703	1,252	1,227	25	3,773	2,240	330	1,202	1,463	736	80	78	462	61	45	128	14	491,221	12	1.90	28	
Washington	22,902	5		200	915	904	10	19,673	19,001	488	183	1,646	1,099	67	58	236	132	55	454	14	476,934	14	4.80	5	
West Virginia	450	46		55	0	0	0	182	157	6	19	199	86	14	12	67	6	15	11	2	72,569	41	0.62	46	
Wisconsin	6,517	23		61	0	0	0	4,972	4,387	514	71	1,459	717	89	43	445	119	46	20	6	314,247	20	2.07	25	
Wyoming	292	50		5	0	0	0	172	164	5	2	112	64	26	4	15	2	1	*	3	37,925	50	0.77	43	
U.S. undistributed ^h	8,009	na		836	0	0	0	7,173	5,664	D	D	0	0	0	0	0	0	0	0	0	0	na	na	na	na
Puerto Rico ⁱ	127	na		6	0	0	0	NA	NA	NA	NA	121	84	3	5	27	1	1	*	NA	105,035	na	NA	na	
Other ^j	223	na		193	0	0	0	0	0	0	0	29	28	*	*	1	*	0	*	na	na	na	na	na	

* = < \$0.5 million; D = data withheld to avoid disclosing operations of individual companies; na = not applicable; NA = not available.

FFRDC = federally funded research and development center; GDP = gross domestic product.

TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2016

(Millions of current dollars)

^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 2016.

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

^c R&D intensity is the 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 2016 included state and local governments (\$29 million), business (\$192 million), nonprofit organizations (\$40 million), and all other sources (\$110 million).

^e R&D paid for by nonfederal sources in 2016 included funding from other companies located inside (\$14 billion) or outside (\$18 billion) the United States; U.S. state government agencies (\$171 million); U.S. universities, colleges, and academic researchers (\$127 million); and other organizations located inside (\$651 million) or outside (\$100 million) the United States.

^f Other sources of support for nonprofit institutions were unavailable by state. In 2016, total nonprofit performance is estimated at \$21.0 billion. Business provided an estimated \$1.6 billion to the nonprofit sector, and nonprofit institutions provided an estimated \$12.7 billion.

^g States totals differ from U.S. totals for several reasons: (a) some R&D expenditures cannot be allocated to 1 of 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 another, 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 Data on business R&D performance in Puerto Rico are not collected.

^j Includes R&D expenditures reported for outlying areas (Guam, U.S. 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 Science Foundation, National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series). State GDP data are from the U.S. Bureau of Economic Analysis, <http://www.bea.gov/regional/index.htm>, accessed 10 August 2018.