

TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2019

(Millions of current dollars)

State	All R&D	R&D rank	Performer: Source of funds:	FFRDCs				Business					Higher education ^a					NPOs		State, internal ^b		GDP rank	R&D intensity ^c	
				Federal	Total	Federal	Nonfederal ^d	Total	Own	Paid by others		Total	Federal	Other government	Business	Higher education	NPO	Other	Federal ^f	Total	GDP		Percent	Rank
										Nonfederal ^e	Federal													
U.S. total ^g	666,875	na		39,870	22,932	22,538	394	498,175	433,077	42,445	22,653	78,176	39,556	4,364	4,808	21,559	5,341	2,549	8,900	675	21,372,600	na	3.12	na
States total ^h	642,004	na		35,658	22,738	22,339	399	491,925	428,049	41,962	21,908	83,350	44,354	4,491	5,048	21,077	5,683	2,696	7,676	658	21,242,531	na	3.02	na
Alabama	5,148	27		1,551	0	0	0	2,423	1,191	77	1,155	1,123	634	61	71	308	35	14	43	7	231,172	27	2.23	23
Alaska	354	50		120	0	0	0	49	41	5	4	169	109	5	5	44	2	4	7	9	54,547	47	0.65	49
Arizona	8,076	21		143	38	29	10	6,403	4,570	726	1,106	1,434	631	70	41	468	97	128	56	1	369,988	20	2.18	24
Arkansas	860	42		28	0	0	0	461	397	36	28	365	132	69	15	131	9	9	7	0.07	130,840	36	0.66	48
California	193,095	1		2,745	6,688	6,567	120	171,961	158,850	8,397	4,713	10,490	5,339	428	704	2,254	1,096	669	1,138	73	3,052,645	1	6.33	4
Colorado	9,842	15		1,390	654	594	61	6,070	5,208	264	598	1,622	1,165	55	86	163	94	59	93	12	392,218	16	2.51	17
Connecticut	8,885	18		22	0	0	0	7,421	6,171	357	892	1,387	749	17	87	416	105	15	30	25	288,109	23	3.08	13
Delaware	2,397	34		4	0	0	0	2,156	1,436	715	5	229	145	13	6	56	5	5	5	3	77,042	43	3.11	12
District of Columbia	5,968	25		4,532	9	9	0	412	277	23	111	665	326	5	23	188	88	34	348	2	144,406	34	4.13	7
Florida	11,296	14		1,142	0	0	0	7,259	5,611	778	870	2,686	1,237	237	105	912	130	65	159	51	1,116,435	4	1.01	40
Georgia	7,823	23		283	0	0	0	4,844	3,924	822	97	2,668	1,492	167	145	726	122	16	24	4	637,799	9	1.23	34
Hawaii	647	45		170	0	0	0	159	86	54	19	301	187	20	2	78	13	2	16	*	91,781	39	0.70	46
Idaho	3,391	31		39	478	464	15	2,697	2,608	83	6	168	84	41	3	35	2	3	3	7	82,420	41	4.11	8
Illinois	18,254	10		204	1,145	1,121	24	14,112	13,383	655	74	2,710	1,606	39	179	696	152	38	82	1	890,486	5	2.05	27
Indiana	9,765	16		151	0	0	0	7,952	6,895	927	130	1,661	699	47	101	635	123	55	1	*	381,020	18	2.56	16
Iowa	4,075	28		69	34	33	*	3,087	2,285	161	641	880	406	50	46	344	31	4	1	3	194,323	31	2.10	26
Kansas	3,518	30		63	0	0	0	2,748	1,857	880	11	704	282	76	112	199	33	3	2	1	176,739	33	1.99	30
Kentucky	2,103	35		7	0	0	0	1,481	939	325	216	611	295	50	19	182	22	43	2	2	216,102	28	0.97	43
Louisiana	1,554	37		59	0	0	0	703	534	48	121	778	302	99	70	233	50	24	2	11	254,562	24	0.61	51
Maine	685	44		4	0	0	0	417	373	30	14	151	64	23	4	52	5	3	110	3	68,453	44	1.00	41
Maryland	22,692	8		10,840	1,026	1,026	0	5,852	4,248	563	1,042	4,629	3,599	80	139	555	246	9	344	1	421,610	15	5.38	5
Massachusetts	39,315	3		396	1,891	1,871	20	30,843	25,955	3,718	1,170	4,306	2,385	42	326	972	427	155	1,870	9	593,257	12	6.63	3
Michigan	24,502	6		198	0	0	0	21,283	18,918	2,127	237	2,891	1,435	66	135	1,091	120	44	129	*	531,435	14	4.61	6
Minnesota	9,436	17		44	0	0	0	8,026	7,547	378	101	1,061	507	87	52	344	43	26	303	2	383,040	17	2.46	18
Mississippi	1,120	41		258	0	0	0	324	276	30	19	536	253	98	13	156	13	3	1	2	114,734	37	0.98	42
Missouri	7,856	22		142	0	0	0	6,344	4,150	157	2,036	1,325	753	11	113	330	104	15	37	8	332,273	22	2.36	21
Montana	543	47		57	0	0	0	205	176	17	11	273	151	25	3	82	7	6	5	3	51,789	49	1.05	39
Nebraska	1,421	39		34	0	0	0	795	735	49	11	572	250	76	30	167	22	27	19	*	131,352	35	1.08	38
Nevada	1,342	40		13	0	0	0	1,045	829	183	34	282	108	15	4	142	6	7	1	*	181,743	32	0.74	45

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				Federal	Total	Federal	Nonfederal ^d	Total	Own	Paid by others		Total	Federal	Other government	Business	Higher education	NPO	Other	Federal ^f	Total	GDP	GDP rank	Percent	Rank
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New Hampshire	3,063	32		21	0	0	0	2,541	1,036	171	1,333	492	246	6	15	193	26	7	9	*	87,508	40	3.50	11
New Jersey	23,386	7		1,538	91	91	*	20,390	16,648	3,547	195	1,331	651	95	67	295	122	101	33	3	639,437	8	3.66	9
New Mexico	7,614	24		738	5,850	5,797	53	637	391	43	202	366	241	26	4	71	16	7	22	1	101,972	38	7.47	1
New York	28,717	5		161	590	561	29	20,180	17,968	1,453	759	7,076	3,661	435	488	1,656	529	307	433	277	1,777,752	3	1.62	32
North Carolina	17,159	11		317	0	0	0	13,249	9,188	3,920	140	3,388	1,945	162	360	670	204	49	186	18	595,655	11	2.88	14
North Dakota	643	46		30	0	0	0	349	340	7	2	263	85	60	13	98	2	6	1	*	59,005	46	1.09	37
Ohio	15,687	12		2,289	0	0	0	10,642	7,087	2,789	765	2,499	1,478	104	229	475	157	55	256	1	693,199	7	2.26	22
Oklahoma	1,845	36		215	0	0	0	1,067	956	70	41	534	220	60	38	200	11	5	27	2	203,700	29	0.91	44
Oregon	8,871	19		72	0	0	0	7,890	7,606	230	54	864	588	56	45	102	58	15	21	25	246,647	25	3.60	10
Pennsylvania	20,788	9		381	141	141	*	15,245	13,353	1,673	219	4,647	2,570	102	297	1,235	295	148	366	9	799,686	6	2.60	15
Rhode Island	1,473	38		270	0	0	0	715	664	16	36	391	262	17	8	81	16	6	94	3	61,319	45	2.40	19
South Carolina	2,894	33		95	176	173	3	1,784	1,527	171	86	743	355	33	44	266	30	16	67	29	244,662	26	1.18	35
South Dakota	347	51		16	0	0	0	194	170	20	4	118	58	19	3	23	6	11	18	*	53,940	48	0.64	50
Tennessee	5,920	26		1,003	1,470	1,454	16	1,663	1,381	228	55	1,337	755	36	76	393	56	21	445	2	376,917	19	1.57	33
Texas	30,921	4		889	7	6	1	23,906	20,916	2,219	772	5,967	2,347	855	436	1,610	446	272	148	4	1,863,954	2	1.66	31
Utah	3,962	29		172	0	0	0	2,857	2,463	316	78	925	547	31	49	250	36	12	3	5	195,088	30	2.03	28
Vermont	392	49		8	0	0	0	244	218	19	7	139	93	1	3	32	9	1	*	1	34,128	51	1.15	36
Virginia	11,693	13		2,251	1,435	1,407	28	6,061	4,276	461	1,324	1,814	843	108	92	599	106	67	121	11	554,306	13	2.11	25
Washington	41,085	2		357	1,012	994	18	37,330	35,823	1,255	252	1,830	1,169	81	73	257	208	41	536	20	597,874	10	6.87	2
West Virginia	521	48		47	0	0	0	246	219	17	10	213	97	12	6	76	6	16	12	3	79,140	42	0.66	47
Wisconsin	8,269	20		55	0	0	0	6,517	5,679	741	97	1,652	771	116	57	518	139	50	40	5	344,725	21	2.40	20
Wyoming	792	43		25	0	0	0	686	670	11	5	80	52	5	4	18	2	1	*	1	39,601	50	2.00	29
U.S. undistributed ⁱ	2,383	na		1,326	0	0	0	1,034	916	84	34	0	0	0	0	0	0	0	23	0	0	na	na	na
Puerto Rico	666	na		6	0	0	0	539	519	NA	NA	121	80	2	5	30	1	3	*	na	111,702	na	NA	na
Other ^j	398	na		371	0	0	0	0	0	0	0	25	21	2	*	3	*	0	1	na	na	na	na	na

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

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

^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, NPOs, and others). At the national level, funds passed through to such subrecipients accounted for 8.0% of total R&D expenditures reported by higher education institutions in FY 2019.

^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 2019 included state and local governments, business, NPOs, and other sources.

^e R&D paid for by nonfederal sources in 2019 included funding from other companies located inside or outside the United States; U.S. state government agencies; U.S. universities, colleges, and academic researchers; foreign universities, colleges, and academic researchers; and organizations located inside or outside the United States.

^f Data on other sources of support for R&D performed by NPOs are unavailable by state. In 2019, the U.S. total of nonprofit R&D performance is estimated to be \$27.0 billion. In addition to the federal funding listed, businesses provided an estimated \$2.3 billion of support, and NPOs themselves provided an estimated \$15.8 billion.

^g U.S. R&D totals as reported by the NCSSES *National Patterns of R&D Resources* series, 2019–20 edition. (See tables 1–9 in this report.)

^h The states' totals differ from U.S. totals for several reasons: (1) some R&D expenditures cannot be allocated to any of the 50 states or the District of Columbia; (2) only the federally funded portion of nonprofit R&D can be allocated by state; (3) data are not available to allocate the portion of business R&D performed by companies with fewer than 10 employees (\$5.2 billion in 2019) by state; (4) the state-level higher education data have not been adjusted to eliminate the double counting of funds passed through to other performers; and (5) state-level R&D data are not converted from fiscal years to calendar years.

ⁱ Reported R&D expenditures that could not be assigned to any of the 50 states or the District of Columbia.

^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 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, <https://www.bea.gov/data/gdp/gdp-state>, accessed 9 December 2021.