TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2022

(Millions of current dollars)

State	R&D Rank[d]	All performers	Federal	FFRDCs			Business				Higher education[a]							NPOs	State, internal[b]	GDP	GDP rank	R&D intensity[c,d]	
		All funding sources	Federal	Total	Federal	Nonfederal[e]	Total	Own	Paid by others		Total	Federal	Other government	Business	Higher education	NPO	Other	Total	Total			Percent	Rank
									Nonfederal[f]	Federal													
U.S. total[g]	na	891,834	44,699	26,834	26,424	410	697,256	612,456	52,479	32,321	94,275	49,059	4,945	5,590	26,121	5,852	2,709	28,052	719	26,006,893	na	3.43	na
States total[h]	na	884,787	41,196	26,524	25,962	562	690,782	607,353	51,811	31,618	97,537	53,861	4,903	5,697	24,470	5,973	2,633	28,052	697	25,859,145	na	3.42	na
Alabama	25	8,415	1,967	0	0	0	4,907	2,259	101	2,548	1,431	779	69	87	437	41	18	98	12	284,949	27	2.95	16
Alaska	49	541	75	0	0	0	211	189	8	13	227	172	3	5	43	2	2	16	12	66,272	49	0.82	46
Arizona	19	12,357	135	82	79	2	10,261	8,250	778	1,233	1,691	730	137	51	552	92	128	187	2	484,052	18	2.55	20
Arkansas	43	1,117	53	0	0	0	604	545	46	13	417	175	70	16	136	12	8	43	*	168,606	34	0.66	48
California	1	260,179	2,530	6,842	6,737	106	235,556	220,081	8,429	7,046	12,108	6,587	464	813	2,482	1,245	517	3,055	88	3,660,416	1	7.11	4
Colorado	15	14,062	426	825	742	84	10,496	8,135	379	1,982	1,899	1,408	72	89	185	93	52	406	9	494,673	15	2.84	19
Connecticut	18	13,232	58	0	0	0	11,443	9,037	213	2,193	1,587	932	7	88	460	91	9	116	28	321,686	23	4.11	10
Delaware	30	4,971	29	0	0	0	4,544	2,874	1,665	5	397	219	12	6	146	6	8	D	2	92,558	43	5.37	6
District of Columbia[i]	24	8,787	5,795	11	11	0	1,007	881	39	87	783	385	7	25	219	105	43	1,187	4	165,768	36	5.30	7
Florida	13	15,926	799	0	0	0	11,509	8,746	935	1,828	3,048	1,490	284	112	1,002	111	49	518	51	1,465,281	4	1.09	42
Georgia	20	12,254	226	0	0	0	8,666	7,684	875	107	3,260	1,969	184	173	783	133	19	99	3	779,684	8	1.57	34
Hawaii	45	881	63	0	0	0	491	447	9	35	301	190	18	3	77	13	1	26	*	103,153	41	0.85	44
Idaho	33	3,837	66	638	630	7	2,932	2,883	43	6	180	97	41	3	33	2	4	14	7	112,290	39	3.42	13
Illinois	11	23,332	267	1,293	1,264	29	18,061	16,785	1,134	142	3,161	1,943	42	198	758	181	39	550	1	1,040,353	5	2.24	24
Indiana	17	13,712	327	0	0	0	11,493	9,943	1,418	132	1,872	878	46	122	628	120	78	19	1	473,493	19	2.90	18
Iowa	29	5,103	91	39	38	*	3,956	3,257	693	6	1,006	508	44	51	365	37	1	8	3	242,753	31	2.10	28
Kansas	31	4,039	149	0	0	0	2,996	2,219	763	14	883	376	90	159	222	20	15	9	2	212,612	33	1.90	30
Kentucky	38	1,844	49	0	0	0	1,053	925	113	15	733	386	50	23	207	22	45	5	4	261,541	28	0.71	47
Louisiana	40	1,687	60	0	0	0	604	530	36	39	942	405	94	105	285	28	24	71	10	298,425	26	0.57	49
Maine	42	1,182	14	0	0	0	656	597	15	45	192	95	22	4	64	4	2	309	12	86,493	44	1.37	35
Maryland	7	29,224	12,684	1,265	1,265	*	8,591	5,843	809	1,938	5,169	4,056	99	158	620	219	18	1,515	1	484,908	17	6.03	5
Massachusetts	2	63,050	644	2,043	2,017	26	49,732	43,311	4,261	2,160	4,837	2,705	50	321	1,112	477	172	5,792	2	695,612	12	9.06	1
Michigan	6	29,475	401	0	0	0	25,790	23,381	2,258	150	3,082	1,611	62	138	1,110	120	42	201	*	627,009	14	4.70	8
Minnesota	21	11,295	73	0	0	0	8,537	8,141	254	142	1,242	663	80	53	364	47	35	1,440	3	454,993	20	2.48	22
Mississippi	39	1,690	590	0	0	0	532	442	46	45	565	298	109	7	137	13	2	1	3	142,762	37	1.18	39
Missouri	27	7,453	137	0	0	0	5,478	4,914	265	299	1,708	992	40	150	399	113	14	125	4	400,265	22	1.86	31
Montana	46	851	94	0	0	0	404	376	15	12	341	198	25	3	106	5	4	9	3	68,702	48	1.24	38
Nebraska	36	2,206	52	0	0	0	1,459	1,395	50	14	627	283	80	30	190	22	22	66	2	167,480	35	1.32	36
Nevada	37	2,201	63	0	0	0	1,811	1,471	316	24	313	131	10	6	149	7	10	15	*	227,321	32	0.97	43
New Hampshire	32	3,902	11	0	0	0	3,293	1,449	403	1,441	551	286	5	12	213	25	9	46	*	106,488	40	3.66	12
New Jersey	8	29,167	708	120	120	1	26,511	20,144	5,692	674	1,517	734	117	69	373	162	62	307	3	758,289	9	3.85	11

TABLE 10

U.S. R&D expenditures, by state, performing sector, and source of funds: 2022

(Millions of current dollars)

State	R&D Rank[d]	All performers	Federal	FFRDCs			Business				Higher education[a]							NPOs	State, internal[b]	GDP	GDP rank	R&D intensity[c,d]	
		All funding sources	Federal	Total	Federal	Nonfederal[e]	Total	Own	Paid by others		Total	Federal	Other government	Business	Higher education	NPO	Other	Total	Total			Percent	Rank
									Nonfederal[f]	Federal													
New Mexico	22	10,812	777	7,623	7,410	213	1,844	1,514	36	294	544	378	40	10	87	20	8	23	1	128,139	38	8.44	2
New York	4	44,935	238	656	640	16	32,196	29,915	1,765	517	8,280	4,447	341	588	1,965	588	352	3,290	275	2,052,759	3	2.19	26
North Carolina	12	22,014	382	0	0	0	16,541	11,503	4,866	172	3,871	2,320	199	343	748	212	49	1,202	18	728,499	11	3.02	14
North Dakota	47	844	48	0	0	0	472	454	16	2	323	108	77	15	115	2	6	1	*	73,780	45	1.14	40
Ohio	10	24,229	5,805	0	0	0	13,759	10,501	2,465	793	3,080	1,801	93	213	790	125	59	1,584	1	832,661	7	2.91	17
Oklahoma	35	2,776	132	0	0	0	1,893	1,820	35	38	651	281	51	33	266	15	4	98	2	245,976	30	1.13	41
Oregon	16	13,869	143	0	0	0	12,678	12,426	187	66	1,001	674	61	54	143	54	16	31	17	298,848	25	4.64	9
Pennsylvania	9	27,402	443	129	129	0	20,624	17,151	3,040	433	5,455	3,123	120	370	1,434	290	119	737	13	919,741	6	2.98	15
Rhode Island	41	1,556	327	0	0	0	635	594	21	19	459	321	11	6	82	33	7	130	5	72,869	46	2.14	27
South Carolina	34	3,832	167	183	180	3	2,616	2,319	180	117	806	409	45	43	274	23	12	31	30	301,945	24	1.27	37
South Dakota	50	367	24	0	0	0	213	201	10	2	117	58	20	2	22	3	12	13	*	69,069	47	0.53	50
Tennessee	26	7,951	359	1,804	1,789	14	3,473	2,147	1,252	74	1,715	958	42	98	549	53	15	600	*	488,670	16	1.63	33
Texas	5	40,726	600	4	4	1	31,365	26,151	2,715	2,499	7,440	3,106	972	531	2,101	431	300	1,314	2	2,436,925	2	1.67	32
Utah	28	5,442	334	0	0	0	4,019	3,748	212	59	1,062	681	27	54	257	34	10	20	6	261,081	29	2.08	29
Vermont	44	910	13	0	0	0	676	614	18	44	219	119	1	3	82	7	5	1	1	41,012	51	2.22	25
Virginia	14	15,565	2,218	1,662	1,631	31	8,766	6,451	647	1,668	2,117	970	147	95	722	99	85	786	16	666,682	13	2.33	23
Washington	3	62,521	399	1,295	1,266	28	57,295	55,718	1,224	353	1,972	1,296	77	70	230	250	49	1,536	25	742,910	10	8.42	3
West Virginia[j]	48	817	59	11	10	*	467	444	10	14	248	119	13	5	88	4	18	28	4	98,290	42	0.83	45
Wisconsin	23	9,991	62	0	0	0	7,585	6,470	1,050	64	1,966	944	131	81	600	159	52	372	5	400,621	21	2.49	21
Wyoming	51	252	28	0	0	0	81	78	1	2	140	69	6	4	58	2	1	1	2	49,783	50	0.51	51
U.S. undistributed[k]	na	4,537	3,772	0	0	0	765	703	53	9	0	0	0	0	0	0	0	0	0	0	na	na	na
Puerto Rico	na	414	28	0	0	0	271	248	NA	NA	103	74	2	5	21	1	*	0	11	113,188	na	NA	na
Other[l]	na	56	15	0	0	0	0	0	0	0	41	36	3	*	1	*	0	0	na	13,311	na	na	na

* amount < $0.5 million; D = suppressed for data quality or to avoid disclosing confidential information; na = not applicable; NA = not available.

FFRDC = federally funded research and development 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 9% of total R&D expenditures reported by higher education institutions in FY 2022.

[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 the ratio of total R&D performed in a state to its state GDP.

[d] Ranks are based on the point estimates for state R&D and do not consider sampling error, suppression, or the undistributed R&D.

[e] Nonfederal sources of R&D expenditures reported by FFRDCs in FY 2022 included state and local governments, businesses, NPOs, and other sources.

[f] R&D paid for by nonfederal sources 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.

[g] U.S. R&D totals as reported by the NCSES *National Patterns of R&D Resources* series, 2022–23 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 1 of the 50 states or the District of Columbia; (2) data are not available to allocate the portion of business R&D performed by companies with fewer than 10 employees ($5.7 billion in 2022) by state; (3) the state-level higher education data have not been adjusted to eliminate the double counting of funds passed through to other performers; (4) state-level R&D data are not converted from fiscal years to calendar years, and (5) some state-level data are suppressed for data quality or to avoid disclosing confidential information.

[i] Federal total excludes $25.8 billion in federally funded R&D performed by others.

[j] FFRDC performance in West Virginia represents Green Bank Observatory. While Green Bank Observatory was split from the National Radio Astronomy Observatory on 1 October 2016, with each retaining FFRDC status, Green Bank Observatory was separately measured for the first time in FY 2021.

[k] R&D expenditures that could not be assigned to any of the 50 states or the District of Columbia.

[l] GDP and 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):
State GDP data from Bureau of Economic Analysis, GDP BY State, https://www.bea.gov/data/gdp/gdp-state, accessed 15 October 2024; R&D data from National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).