

Research and Development Tax Credit Information

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National Science Foundation Data
Business R&D Data by State

TABLE 1. Domestic business R&D paid for by the company and performed by the company, GDP, and business R&D-GDP ratio, by state: 2013

(Millions of U.S. dollars)

State	R&D performed and paid for by the company	GDP	Business R&D-GDP ratio (%)	State	R&D performed and paid for by the company	GDP	Business R&D-GDP ratio (%)
All states	264,913	16,549,228	1.6	Montana	73	42,722	0.2
Alabama	802	193,374	0.4	Nebraska	577	107,088	0.5
Alaska	33	57,132	0.1	Nevada	460	128,037	0.4
Arizona	4,036	274,328	1.5	New Hampshire	811	67,485	1.2
Arkansas	252	116,403	0.2	New Jersey	11,955	533,966	2.2
California	76,851	2,215,726	3.5	New Mexico	291	89,110	0.3
Colorado	3,869	286,812	1.3	New York	9,456	1,325,405	0.7
Connecticut	5,789	242,878	2.4	North Carolina	5,690	458,282	1.2
Delaware	1,705 i	60,260	2.8	North Dakota	215	51,866	0.4
District of Columbia	297	111,891	0.3	Ohio	5,582	557,028	1.0
Florida	3,900	799,616	0.5	Oklahoma	450	176,101	0.3
Georgia	3,350	452,897	0.7	Oregon	5,405	204,109	2.6
Hawaii	158 i	74,156	0.2	Pennsylvania	10,001	636,833	1.6
Idaho	908	60,641	1.5	Rhode Island	501	52,555	1.0
Illinois	11,961	715,239	1.7	South Carolina	861	181,345	0.5
Indiana	5,482	307,614	1.8	South Dakota	149	44,653	0.3
Iowa	1,498	164,409	0.9	Tennessee	1,188	286,877	0.4
Kansas	1,321	140,428	0.9	Texas	13,406	1,554,870	0.9
Kentucky	917	181,811	0.5	Utah	2,384	133,909	1.8
Louisiana	275	245,000	0.1	Vermont	363 i	28,635	1.3
Maine	314	53,244	0.6	Virginia	2,465	451,946	0.5
Maryland	2,665	336,365	0.8	Washington	13,996	402,535	3.5
Massachusetts	14,000	437,424	3.2	West Virginia	273	70,078	0.4
Michigan	14,409	431,680	3.3	Wisconsin	3,618	280,669	1.3
Minnesota	6,057	306,593	2.0	Wyoming	21 e	41,570	0.1
Mississippi	183 i	102,822	0.2	Undistributed ^a	10,120	na	na
Missouri	3,570	272,810	1.3				

e = estimated; ≥ 50% of value is modeled—see technical notes of *Business R&D and Innovation: 2013* (<http://www.nsf.gov/statistics/industry/>). i = imputed; ≥ 50% of the estimate is a combination of imputation and reweighting to account for nonresponse. na = not applicable.

GDP = gross domestic product for state.

^a Includes data reported on Form BRDI-1 that were not allocated to a specific state, as well as data reported on Form BRD-1(S) by multi-establishment companies. For single-establishment companies, data reported on Form BRD-1(S) were allocated to the state in the address used to mail the survey form. NOTES: Detail may not add to total because of rounding. Statistics are representative of companies located in the United States that performed or funded R&D.

SOURCES: National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2013; GDP data are from the U.S. Bureau of Economic Analysis.

Source: <https://www.nsf.gov/statistics/2016/nsf16317/>

Five States Account for Half of U.S. Business R&D in 2013; New Data for Metropolitan Areas Available

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by Brandon Shackelford and Raymond Wolfe^[1]

Five states—California, Massachusetts, Michigan, Texas, and Washington—accounted for half of the research and development paid for and performed by companies in the United States in 2013, according to estimates from the 2013 Business R&D and Innovation Survey (BRDIS) from the National Science Foundation’s National Center for Science and Engineering Statistics. Companies performed \$265 billion of R&D paid for by their own company expenses in the United States in 2013, of which \$255 billion could be attributed to one of the 50 states or the District of Columbia.^[2] Not included in these figures but discussed at the end of this InfoBrief is R&D performed by companies but paid for by others, such as the federal government and other customers or business partners.

Concentration of Self-Funded Business R&D within States

California alone accounted for 30% (\$77 billion) of all self-funded business R&D performance in the United States in 2013 (table 1). In 2008, California accounted for 25% of such R&D performance (Shackelford 2012). Between 2008 and 2013, the growth of California’s self-funded business R&D performance outpaced that of the rest of the United States, increasing by 42%, compared to a 7% increase for all other states combined.

Business R&D is geographically concentrated in the United States more so than is either gross domestic product (GDP) or population. The five states with the highest levels of business R&D performance accounted for \$133 billion (52%) of the \$255 billion total. The top five states in terms of both GDP and population accounted for 40% of GDP and 37% of the population in 2013.^[3] The higher concentration of business R&D among top states is reflected in a high ratio of business R&D to GDP (table 1). The ratio of business R&D to GDP for a region is an indicator of R&D intensity that can be used to compare regions in a way that controls for differences in the size of regions’ economies.

Overall, the ratio of business R&D to GDP was 1.6% in 2013 (table 1). **California, Massachusetts, Michigan, and Washington each had an R&D intensity that was at least twice as high as the United States as a whole, indicating that twice as much business R&D was performed in these states relative to the size of their economy.** California’s R&D grew at a faster pace between 2008 and 2013 than its economy as a whole, resulting in its R&D intensity increasing from 2.8% in 2008 to 3.5% in 2013. Two of the top 10 states for business R&D in 2013 had R&D intensities substantially below that of the nation as a whole: Texas and New York. The below-average R&D intensities reflect a higher concentration of industries that are less R&D intensive: oil and gas extraction in Texas, and financial services in New York.^[4]

A single industry dominates the business R&D in 4 of the top 10 states (table 2).^[5] **Automobile manufacturers accounted for 74% of Michigan’s total, software publishers for 62% of Washington’s total, and the pharmaceutical industry for 53% and 48% of New Jersey’s and Pennsylvania’s totals, respectively. The semiconductor and other electronic components industry (the largest industry in terms of R&D in California) accounted for only 20% of California’s business R&D, but all information and communication technology (ICT) industries combined accounted for 67% of the state’s business R&D.**^[6] **Mining, extraction, and support activities was the single largest industry in terms of R&D in Texas, but the ICT industries as a group accounted for 53% of the state’s R&D.** <https://www.nsf.gov/statistics/2016/nsf16317/>

State	paid for by the	GDP	R&D-GDP	Rank
All states	264,913	16,549,228	1.6	
California	76,851	2,215,726	3.5	1
Washington	13,996	402,535	3.5	1
Michigan	14,409	431,680	3.3	3
Massachusetts	14,000	437,424	3.2	4
Delaware	1,705 i	60,260	2.8	5
Oregon	5,405	204,109	2.6	6
Connecticut	5,789	242,878	2.4	7
New Jersey	11,955	533,966	2.2	8
Minnesota	6,057	306,593	2.0	9
Indiana	5,482	307,614	1.8	10
Utah	2,384	133,909	1.8	10
Illinois	11,961	715,239	1.7	12
Pennsylvania	10,001	636,833	1.6	13
Arizona	4,036	274,328	1.5	15
Idaho	908	60,641	1.5	15
Colorado	3,869	286,812	1.3	17
Missouri	3,570	272,810	1.3	17
Vermont	363 i	28,635	1.3	17
Wisconsin	3,618	280,669	1.3	17
New Hampshire	811	67,485	1.2	21
North Carolina	5,690	458,282	1.2	21
Ohio	5,582	557,028	1.0	23
Rhode Island	501	52,555	1.0	23
Iowa	1,498	164,409	0.9	25
Kansas	1,321	140,428	0.9	25
Texas	13,406	1,554,870	0.9	25
Maryland	2,665	336,365	0.8	28
Georgia	3,350	452,897	0.7	29
New York	9,456	1,325,405	0.7	29
Maine	314	53,244	0.6	31
Florida	3,900	799,616	0.5	32
Kentucky	917	181,811	0.5	32
Nebraska	577	107,088	0.5	32
South Carolina	861	181,345	0.5	32
Virginia	2,465	451,946	0.5	32
Alabama	802	193,374	0.4	37
Nevada	460	128,037	0.4	37
North Dakota	215	51,866	0.4	37
Tennessee	1,188	286,877	0.4	37
West Virginia	273	70,078	0.4	37
District of Columbia	297	111,891	0.3	42
New Mexico	291	89,110	0.3	42
Oklahoma	450	176,101	0.3	42
South Dakota	149	44,653	0.3	42
Arkansas	252	116,403	0.2	46
Hawaii	158 i	74,156	0.2	46
Mississippi	183 i	102,822	0.2	46
Montana	73	42,722	0.2	46
Alaska	33	57,132	0.1	50
Louisiana	275	245,000	0.1	50
Wyoming	21 e	41,570	0.1	50
Undistributed ^a	10,120	na	na	

	2010	2011	2012	2013	2014
State	All R&D: Paid for by Business and Federal and Other				
United States	278,977	294,093	302,250	322,528	340,728
Alabama	1,449	1,879	1,284	1,563	1,961
Alaska	74	84	39	46	57
Arizona	4,054	4,931	4,962	5,208	5,499
Arkansas	276	344	305	288	317
California	64,914	75,035	81,689	89,373	98,488
Colorado	3,899	4,310	4,105	4,522	4,551
Connecticut	6,498	7,504	7,343	8,010	9,093
Delaware	2,144	2,097	2,415	2,310	2,520
District of Columbia	235	415	260	488	338
Florida	5,127	5,988	5,211	5,795	5,783
Georgia	3,644	3,839	3,875	4,023	4,635
Hawaii	257	252	188	214	196
Idaho	1,120	1,171	1,079	1,238	1,448
Illinois	12,221	12,038	13,001	13,096	12,371
Indiana	4,985	6,158	6,044	6,479	5,901
Iowa	1,950	2,314	1,763	2,052	2,098
Kansas	1,492	1,509	2,072	1,942	1,934
Kentucky	889	1,278	1,074	1,279	1,158
Louisiana	428	459	363	354	386
Maine	251	295	275	365	373
Maryland	4,384	5,101	4,028	4,770	5,124
Massachusetts	14,020	15,722	17,491	17,395	21,105
Michigan	12,144	13,660	14,912	15,925	17,077
Minnesota	6,246	6,174	6,216	6,614	6,975
Mississippi	243	235	273	211	269
Missouri	8,106	D	6,982	7,174	6,720
Montana	145	136	105	92	205
Nebraska	527	636	578	627	590
Nevada	709	638	634	525	631
New Hampshire	1,818	2,069	1,857	2,045	2,041
New Jersey	15,925	13,930	15,810	14,022	13,743
New Mexico	546	472	445	519	499
New York	10,954	12,072	11,732	12,032	13,818
North Carolina	5,749	6,193	6,254	8,083	8,091
North Dakota	236	261	222	229	271
Ohio	6,857	6,993	7,755	8,118	8,945
Oklahoma	478	604	463	505	607
Oregon	4,396	4,631	5,156	5,635	6,434
Pennsylvania	9,246	9,718	9,318	10,761	10,816
Rhode Island	531	542	450	571	542
South Carolina	1,316	1,399	1,615	1,016	1,089
South Dakota	120	136	112	164	135
Tennessee	1,244	1,434	1,437	1,423	1,586
Texas	14,384	15,309	15,163	15,550	16,373
Utah	2,066	2,438	2,134	2,945	2,809
Vermont	313	374	466	406	302
Virginia	4,655	5,562	4,756	4,445	4,994
Washington	13,545	14,558	14,494	14,860	15,699
West Virginia	240	247	305	306	279
Wisconsin	3,927	4,053	4,135	4,227	4,287
Wyoming	39	46	30	28	59
Undistributed funds ^a	17,960	D	9,580	12,664	9,506

	2010	2011	2012	2013	2014
State	R&D Paid for by the Company				
United States	221,706	238,768	247,280	264,913	282,570
Alabama	628	835	779	802	1,299
Alaska	D	52	23	33	37
Arizona	2,841	3,776	3,864	4,036	4,307
Arkansas	245	307	275	252	277
California	53,327	64,104	69,493	76,851	85,750
Colorado	3,270	3,642	3,462	3,869	3,829
Connecticut	5,482	6,272	5,527	5,789	6,819
Delaware	D	1,453	1,866	1,705	1,839
District of Columbia	84	162	153	297	183
Florida	3,045	3,855	3,353	3,900	3,877
Georgia	2,931	3,303	3,295	3,350	3,843
Hawaii	173	183	130	158	138
Idaho	810	871	833	908	1,223
Illinois	11,500	10,764	11,769	11,961	11,196
Indiana	4,219	5,484	5,223	5,482	5,015
Iowa	1,516	1,736	1,186	1,498	1,513
Kansas	1,039	1,037	1,446	1,321	1,325
Kentucky	820	1,017	772	917	768
Louisiana	340	382	282	275	299
Maine	228	264	236	314	308
Maryland	2,538	2,867	1,929	2,665	3,445
Massachusetts	11,139	12,712	14,157	14,000	17,101
Michigan	10,750	12,156	13,460	14,409	15,421
Minnesota	5,677	5,592	5,616	6,057	6,403
Mississippi	170	189	219	183	198
Missouri	D	2,818	3,282	3,570	4,037
Montana	123	118	81	73	188
Nebraska	491	601	539	577	543
Nevada	646	554	552	460	576
New Hampshire	841	943	796	811	869
New Jersey	13,916	11,977	13,854	11,955	11,027
New Mexico	231	250	242	291	270
New York	8,126	9,141	8,831	9,456	10,794
North Carolina	4,688	5,157	5,143	5,690	6,125
North Dakota	211	236	202	215	247
Ohio	5,134	5,403	5,402	5,582	6,137
Oklahoma	422	507	406	450	543
Oregon	4,188	4,415	4,873	5,405	6,160
Pennsylvania	8,412	9,018	8,683	10,001	9,635
Rhode Island	448	451	408	501	479
South Carolina	944	949	1,206	861	936
South Dakota	99	112	94	149	121
Tennessee	1,113	1,279	1,118	1,188	1,365
Texas	11,850	12,920	12,859	13,406	13,674
Utah	1,419	1,874	1,546	2,384	2,275
Vermont	278	329	425	363	259
Virginia	2,340	3,138	2,356	2,465	2,877
Washington	13,022	13,659	13,678	13,996	15,195
West Virginia	191	213	257	273	252
Wisconsin	3,399	3,548	3,654	3,618	3,677
Wyoming	32	33	23	21	44
Undistributed funds ^a	12,534	6,111	7,423	10,120	7,852

VT 2011-13 i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

VT R&D Credit	No Credit	30%	30%	30%	27%	VT R&D Credit	No Credit	30%	30%	30%	27%
Change in Total R&D Spending		19%	25%	-13%	-26%	% change		18%	29%	-15%	-29%

R&D Tax Credit Earners	Sales Category	FT Employees	Total Employees	Sales/Revenue	Headquarters
Advanced Illumination, Inc.	Manufacturing	42	42	5-10M	Rochester
Applied Bolting Technology Products		22			Bellows Falls
Autodesk, Inc.		9,000			San Rafael, CA
Autumn Harp, Inc.	Manufacturing	199	199	5-10M	Essex Junction
Battenkill Technologies, Inc.		4	4	1-5M	
Burlington Laboratories, Inc.		150	180		
Concept II, Inc.	indoor rower	60	60		
Critical Process Systems Group, Inc.					Colchester
DS Ventures, LLC					
Fidelity National Information		56,000			
General Dynamics OTS, Inc.	Aerospace and Defens	192	192		
Green Mountain Antibodies, Inc.	Medical Lab	10	12		
GS Blodgett Affiliates					
GW Plastics, Inc.	Manufacturing	400	1001-5000	100-500M	Bethel
Hazelett Strip-Casting Corporation	High Tech Machinery	160	160	10-50M	
IBM Corp			386,558	79.9 B	Armonk, NY
Leader Evaporator Co., Inc.	Maple Sugaring Equip	100	100	5-10M	
LEDdynamics, Inc.	Manufacturing	36	36		
Lionheart Technologies, Inc.					Winooski
LLC Green Mountain Apps, LLC					
Medical Device Partners, Inc.					
MorrisSwitzer Environments for Health	Architecture & Planning		51-200		Boston
Mywebgrocer, Inc.		180	201-500		Winooski
NRG Systems, Inc.	Wind	90	51-200	10-50M	Hinesburg
Pad Print Machinery of Vermont, Inc.			50-99	10-24.9M	Dorset
Roche Holdings, Inc. & Subsidiaries			88,509		Basel, Switzerland
Senix Corporation	Sensors	9	18,568	1-5M	Hinesburg
Split Rock Fund, LLC					
Superior Technical Ceramics Corp.	Ceramics	100	51-200	10-50M	St Albans
Synticos, LLC					
Tibbits Equipment Services, Inc.	Equipment Rental	4	4		Barre
Twincraft Holding Company, Inc.	Skin Care	175	201-500	10-50M	
United Technologies Corporation		197,200		56.1 B	Hartford, CT
Vermont Maple Sugar CO, Inc.			10-100		Morrisville
Visible Electrophysiology, LLC	Computer Software		42,745		Burlington
W Blake Management Company, Inc.			501 - 1000		Mississippi
Whitney Blake Company	Cables	96	201-500	10-50M	Bellows Falls