

TABLE 29-A

Companies with domestic R&D paid for and performed by the company, by industry, company size, and state (A–M): 2022

(Millions of U.S. dollars and number of companies)

Industry and company size	NAICS code	Companies, U.S. total ^a (number)	United States	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	
All industries	21–23, 31–33, 42–81	28,450	608,058	2,259	189	i 8,250	545	220,081	8,135	9,037	2,874	881	8,746	7,684	447	2,883	16,785	9,943	3,257	2,219	925	530	597	5,843	43,311	23,381	8,141	442	4,914	376	
Manufacturing industries	31–33	14,310	326,998	1,088	145	i 6,463	351	102,627	3,774	8,048	2,449	166	i 3,650	2,444	275	i 2,419	11,838	9,284	2,161	1,611	663	343	425	3,925	32,673	21,502	6,183	354	3,844	185	i
Food	311	950	D	20	e 17	e 18	e 78	509	78	27	271	i *	e 69	e 66	e 173	i 71	978	i 283	i 572	i 187	28	21	e 4	e 46	62	e 148	479	54	165	4	e
Beverage and tobacco products	312	160	660	21	i D	* e	* e	60	7	1	e *	e 2	i 6	158	* e	* e	1	e 1	e *	e *	e 6	* e	3	i 1	e 30	i 2	e 6	* e	4	* e	
Textile, apparel, and leather products	313–16	260	D	3	D	1	2	94	23	4	* e	* e	25	85	* e	* e	3	* e	* e	2	1	i *	e *	e *	13	15	8	* e	2	i *	
Wood products	321	100	254	5	D	2	1	29	5	*	*	0	6	14	* e	6	1	4	i 11	1	1	e 1	e *	e 1	2	4	52	6	1	e *	e
Paper	322	100	1,004	26	0	1	16	20	* e	1	* e	0	29	85	0	*	23	5	2	8	29	4	14	2	4	10	8	*	1	0	
Printing and related support activities	323	140	164	* e	* e	* i	1	i 9	14	* e	* e	* e	*	2	* e	1	4	i *	1	i 3	5	* e	* e	* e	1	i 3	i 41	i *	e 12	* e	
Petroleum and coal products	324	80	856	* e	D	* e	* e	28	12	* e	* e	0	5	* e	0	* e	20	10	1	7	4	9	* e	* e	* e	* e	* e	6	4	44	
Chemicals	325	2,240	113,518	244	i D	74	i 56	i 25,825	243	6,080	1,993	123	i 508	335	59	101	i 4,975	6,056	182	172	i 194	87	17	2,335	i 23,452	787	274	29	2,716	11	i
Basic chemicals	3251	310	D	8	0	2	8	272	9	58	192	0	3	i 79	* e	1	e 93	16	49	47	11	51	* e	72	66	22	4	5	29	* e	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	200	1,413	2	e 0	* e	0	65	*	1	i D	0	3	37	0	* e	81	i 8	3	* e	14	32	3	1	i 7	261	10	* e	1	*	
Pesticide, fertilizer, and other agricultural chemicals	3253	70	D	*	* e	2	1	67	D	8	D	0	9	4	* e	4	8	1	13	2	*	*	* e	* e	4	30	D	2	15	1	
Pharmaceuticals and medicines	3254	1,080	104,720	227	i D	69	i 47	i 25,159	219	5,826	1,639	123	i 477	189	58	89	i 4,622	6,008	105	51	20	i 3	14	2,258	i 23,287	428	i 71	21	2,618	9	i
Soap, cleaning compound, and toilet preparations	3256	270	D	1	e 0	1	e *	e 202	1	e 102	* e	0	13	14	* e	7	111	4	7	i 69	i *	e *	e 2	67	9	112	* e	10	* r		
Paint, coating, adhesive, and other chemicals	3255, 3259	340	1,195	7	* e	*	* e	58	D	84	*	*	3	13	0	*	60	19	5	3	i 149	*	*	2	i 21	38	D	* e	44	1	i
Plastics and rubber products	326	790	3,251	17	* e	482	6	202	53	35	7	0	119	58	* e	9	110	96	12	6	44	i 54	1	e 125	280	186	76	6	15	2	r
Nonmetallic mineral products	327	250	1,435	1	e *	e 4	* e	83	36	2	i *	e *	e 5	e 4	i 1	* e	40	1	e 1	e *	e 1	e *	e 4	8	34	14	18	25	5	* e	
Primary metals	331	230	1,099	5	*	17	1	e 16	8	1	i 0	0	8	30	0	1	r 24	47	7	1	e 15	r 1	e 1	i 2	59	33	34	26	4	* e	
Fabricated metal products	332	1,780	3,304	19	e D	45	i 11	323	39	89	i 2	e *	e 70	51	* e	7	133	134	21	67	13	e 13	e 2	e 46	85	141	104	26	79	3	e
Machinery	333	1,990	18,246	63	* e	137	92	4,484	65	169	2	e 1	268	272	2	51	i 1,742	408	799	183	108	61	9	246	726	i 563	598	22	i 160	81	i

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Industry and company size	NAICS code	Companies, U.S. total ^a (number)	United States	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Hawaii	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana
Agricultural implement	33311	160	D	3	0	1	1	144	1 e	1 i	0	*	1	35	0	2	438	7	740	98	1	14	1	1 i	4	26	124	* e	1 e	*
Semiconductor machinery	333242	50	5,390	0	0	82 i	0	3,497 i	0	*	0	0	12	0	0	31 i	0	* e	0	0	0	0	0	0	414 i	0	14 i	0	0	79 i
Engine, turbine, and power transmission equipment	3336	110	D	1	0	21	1	249	8	11	0	0	47	36	0	*	983	142	3	5	2	20	*	9	13	15	26	4	20	*
Other machinery	other 333	1,680	7,987	59	* e	33	90	594	56	156	2 e	1	209	202	2	18	320	260	57	80	105	27	8	236	295	523	434	17 i	138	2 e
Computer and electronic products	334	2,300	99,234	152 i	D	4,414	35	53,114	2,326	276	154 i	33	1,280	549	36	2,117	1,113	106	122 i	690	36	20	64	339	3,994	391	903	14	86	18
Communications equipment	3342	330	10,870	99 i	D	103	8	5,056	236	36	*	D	319	252	17	13	574	33	14	20	10	8	1 i	224	363	104	110	6	38	1 e
Semiconductor and other electronic components	3344	490	47,380	37	0	4,169	16	22,183	556	108	7	3	172	30	3	1,944	207	27 e	66 i	13 e	19	2 e	38	33 e	1,577	162	167	4	15	7
Navigational, measuring, electromedical, and control instruments	3345	990	10,105	7	* e	62	5	3,290	954	120 i	143 i	1	448 i	106	9	4	86	34	32	593	4 i	6	20	47	856	88	260	1 e	24	6
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	170	3,959	* e	0	7	*	1,995	113	39	74 i	*	369 i	23	*	1	26	4	0	*	1	*	2	*	467	5	45	*	* e	*
Search, detection, navigation, guidance, aeronautical, and nautical system and instruments	334511	110	2,170	1	0	6	*	140	580	1 i	0	1	35	22	* e	*	1	2	11	569	* e	* e	18	6	35	1 i	41	* e	8	*
Other measuring and controlling devices	other 3345	730	3,976	5	* e	49 i	5	1,155	261	80 i	69	0	44	61	8	3	59	28	21 i	24	4 i	5	1 e	41	354	82	173	1 e	16 i	6
Other computer and electronic products	other 334	500	30,879	10	0	80	5	22,585	580	13	3	D	342	162	7	157 i	247	12	9	64	4	5	5	34	1,198	37	366	2 e	9	4
Electrical equipment, appliances, and components	335	510	6,657	20	D	66	5 e	1,788	19	105	3 e	1	41	94	*	20	387	45	38	18 e	30	9 e	1	21	694	489	84	7	78	9 r
Transportation equipment	336	1,040	46,468	396	D	1,039	41	8,933	555	1,132	6	7	880	365 i	2	10 i	947	1,612	363	254	135	58	32	555	830	17,174	656	122	401	4
Motor vehicles, bodies, trailers, and parts	3361–63	550	30,722	68	* e	329	7	6,038	43	10	* e	0	135	71	0	7 i	460	1,438	16	4	127	* e	1	D	176	16,934	164	32 i	17	1

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Aerospace products and parts	3364	250	13,786	255	1	696	29	2,767	482	1,107	6	7	652	100	2	3 e	445	160	342	246	5	50	25	486	643	144	155	88	378	3
Aircraft, aircraft engine, and aircraft parts	336411-13	220	9,303	174	1	D	25	2,004	307	343	5	D	464	84	1	3 e	123	150	4	229	2	50	2	435	211	108	73	41	D	3
Guided missile, space vehicle, and related parts	336414-15, 336419	40	4,483	82	0	D	4	763	175	763	*	D	187	17	*	*	321	10	338	17	3	0	24	52	431	35	82	46	D	0
Military armored vehicle, tank, and tank components	336992	10	26	0	0	1 i	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	D	1 i	0	D	0	0	0	0
Other transportation	other 336	230	1,935	73	D	13	4	121	29	15 i	* e	0	94	194 i	1 e	1 e	43	13	5	3	2 e	8 e	D	D	12	D	337	2 e	6	* e
Furniture and related products	337	210	405	3	* e	2	* e	56	27	* e	* e	0	* e	21	* e	* e	6	23	1 i	* e	3	* e	* i	* e	6 i	131	19	1 i	* e	* e
Miscellaneous	339	1,280	23,032	93	D	162	5 e	7,055	264	127	12	1 i	331	255	1	25	1,333 i	453	28	13	9 e	4 e	270	198	2,401	1,409 i	2,824	10	110	7
Medical equipment and supplies	3391	790	20,112	86	D	122	2 e	6,794	236	107	11	1 i	295	193	1	2 e	1,236 i	444	7	4 e	4 e	2 e	268	195	2,268	1,305 i	2,787	6	103 i	4
Other miscellaneous manufacturing	3399	500	2,921	7	D	40	3	261	28	21	* e	0	36	61	* e	23	97	8	21	9	5	2 e	2	3 e	132	104	37	4	7	3
Nonmanufacturing industries	21-23, 42-81	14,150	281,060	1,170	44 e	1,788	194	117,455	4,361	988	425	715	5,096	5,240	172	464	4,947	659	1,096	607	261	187	172	1,918	10,639	1,880	1,958	88	1,070	191
Mining, quarrying, oil and gas extraction, and support activities	21	140 i	D	* e	2	42 i	D	D	8 i	* e	* e	0	* e	21 i	* e	D	2	17 i	* e	6 i	* e	1	* e	* e	*	* e	1 r	*	* e	5
Utilities	22	50	D	D	0	0	D	D	D	0	*	D	D	D	*	0	D	*	2	1	*	D	4 i	1	0	D	D	D	*	0
Wholesale trade	42	1,560	D	D	1 e	42 i	D	235	21	41 i	2 e	D	55 e	78 i	2 e	7 i	156 i	26	43 i	16	10 e	19 i	2 e	12 e	54 i	78 i	48 i	4 e	20 e	D
Electronic shopping and electronic auctions	454111-12	120	D	1 i	D	D	D	7,239 i	77 i	6 i	1 i	D	28 i	29 i	1	2 i	39	11 i	1	1	D	1	2	3 i	D	D	35 i	* e	4	D
Transportation and warehousing	48-49	60	D	1	D	9	11	4,619 i	36	7	1	D	231	11	29	D	108	2	3	4	1	1	*	310	14	D	4	15	11	D
Information	51	3,450	181,392	925	24 e	883	99	83,117	3,106	589	56	575	2,906	3,271	94	345	2,245	384	876	374	139	66	97	828	6,588	1,044	924	32	303	88
Publishing	511	1,430	49,674	91	7	218	42	13,337	1,165 i	130	25 e	61	837	971	25	269 i	716	123	D	70	29	27	34	268	3,103	591	404	D	98	30
Newspaper, periodical, book, and directory publishers	5111	40	72	*	* e	*	* e	14	1	1	* e	* i	3	1	*	1	2 i	1 i	* e	1	* e	*	*	1	12	1	1	* e	* e	1
Software publishers	5112	1,400	49,602	91	7	217	42	13,323	1,164 i	128	25 e	60	834	970	25	268 i	714	122	D	69	29	27	34	266	3,091	590	403	D	98	29
Telecommunications	517	260	3,614	2	1 e	43	1 e	196	160	D	* e	D	657	54	D	2	44	4	2	103	2	5	D	12	46	5	7	1 e	35	D

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Data processing, hosting, and related services	518	1,490	49,270	D	D	334	45	25,850	974	116	25	190	980	1,286	26	45	812	180	131	D	90	27	47	387	2,122	295	417	24	111	44	
Other information	other 51	280	78,834	D	D	288	11	43,734	807	D	6	D	432	960	D	29	673	76	D	D	19	7	D	161	1,317	152	96	D	59	D	
Finance and insurance	52	530	17,173	D	D	101	D	5,527	143	119	319	D	713	340	D	D	1,152	35	39	37	D	D	35	114	233	103	236	D	61	D	
Real estate and rental and leasing	53	70	2,398	D	* e	D	*	1,506	D	* e	* e	* i	D	D	* i	1 i	D	* e	9	* i	D	D	* e	5 i	D	D	D	D	D	* e	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	20	5	0	0	0	0	* i	D	0	0	0	0	0	0	0	0	0	D	0	D	0	0	2 i	0	0	0	0	0	0	
Other real estate and rental and leasing	other 53	50	2,393	D	* e	D	*	1,506	D	* e	* e	* i	D	D	* i	1 i	D	* e	D	* i	D	D	* e	4 i	D	D	D	D	D	* e	
Professional, scientific, and technical services	54	6,420	38,633	174	14 e	500	46	12,846	865	210	41	106	785	1,394	34	85 i	1,019	145	77	132	47	63	25	599	2,954	428	627	12 e	568	90	
Architectural, engineering, and related services	5413	1,240	2,912	20	2 e	54	16	503	114	70	4	15	112	63	13	26	89	41	18	25	7 i	21	9	70	90	92	49	3	95	14	
Computer systems design and related services	5415	3,150	18,878	106	8 e	231	26	5,951	439 i	57	31	33 e	338	461	13	46 i	376	69	33	95	32	22 e	10	272 e	1,179	207	477	6 e	440	11	
Scientific research and development services	5417	1,070	9,297	43	3 e	191	2	3,749	128	42	3 i	4	186	31	4	2	95	14	8	8	2	11	2	169	1,349	86	45	1	18	63	
Research and development in nanotechnology	541713	60	179	1	* e	* e	* e	31	*	*	* e	* e	*	*	* e	* e	2	* e	* e	* e	* e	* e	* e	* e	*	31	5	5	* e	* e	* e
Research and development in biotechnology (except nanobiotechnology)	541714	280	2,916	* e	* e	137 i	* e	883	2 i	7	*	2	29	17	* e	* e	30	4	7	1	*	7	1	98	471	5	18 i	* e	3	*	
Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)	541715	730	6,176	42	3 e	54	2	2,835	126	35	3 i	2	157	14	4	2	63	10	1	7	2	4	1 e	71 r	846	76	21	1	15	63	

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Research and development in the social sciences and humanities	541720	10	27	0	0	0	0	1 i	0	0	0	*	0	0	0	0	0	0	0	0	0	0	0	0	*	0	0	0	0	0	
Other professional, scientific, and technical services	other 54	980	7,547	5 e	1 e	25	3 e	2,643	183	42	3 e	54	150	840	3	11	458	21	18	4 e	6 e	8 e	4	87	337	42	56	2 e	14 e	2	
Health care services	621–23	270	D	5 e	* e	127 i	7	1,705	36	8	1 e	D	53 i	17	1	2	17	5 e	1 e	6	9 i	3 e	3 i	8	164	14	7	D	4 e	D	
Other nonmanufacturing	23, 44–45 (excluding 454111–12), 55–56, 624, 71–72, 81	1,540	3300	D	D	D	D	D	D	8	4	D	D	D	D	D	D	35	45	30	D	D	4	38	D	D	D	D	D	D	
All companies (number of domestic employees)	–	28,450	608,058	2,259	189 i	8,250	545	220,081	8,135	9,037	2,874	881	8,746	7,684	447	2,883	16,785	9,943	3,257	2,219	925	530	597	5,843	43,311	23,381	8,141	442	4,914	376	
Small companies																															
10–19 ^b	–	5,390	4,009	28 e	D	38 e	9 e	1,038	88	65 i	10 e	29 e	112 e	92 e	4 e	8 e	143 e	44 e	12 e	13 e	11 e	17 e	5 e	111 e	379	90 e	90	6 e	34 e	7	
20–49	–	7,760	12,788	81 e	8 e	142 e	24 e	3,243	239	164 e	27 e	30 e	324 e	218 e	21	37	390 e	153 e	102	69 e	56 e	57 e	15 e	451	1,525	289 e	211	43	106 e	32	
Medium companies																															
50–99	–	4,880	13,274	51 e	6 e	146	32	3,698	183	76 e	21 e	31 e	247	172 e	9	29	394	123 e	62 e	60 e	51 e	42 e	23	317	2,388	380	207	13 e	97 e	12	
100–249	–	5,010	24,844	120	8 e	177	61	8,850	405	238	123	67	443	383	18	99	748	241	77	120	83	59	23	353	3,755	630	351	33	144	17	
Large companies																															
250–499	–	2,090	26,469	246	18 e	375	34	8,620	476	474 i	15	67	638	461	13	40	602	158	118	167	50	44 e	21	338	4,254	581	307	29 e	235	47	
500–999	–	1,370	29,007	49	6 e	577	29	10,421	439	116	16	20	669	432	20	243 i	795	229	137	57	45	31	9	404	3,630	502	505	72	108	16	
1,000–4,999	–	1,400	94,615	426	6	971	168	33,726	2,242	966	1,549	167	1,289	1,199	24	197	2,207	821	362	290	367	138	88	1,890 i	11,019	2,048	1,579	91	531	130	
5,000–9,999	–	270	54,018	68	D	801	27	20,693	851	810	73	30	530	766	42	1,823	1,232	687	59	839	41	35	264	245	2,577	1,424	764	9	304	7	
10,000–24,999	–	210	96,071	245 i	D	349	31 i	37,373	1,362 i	838	520 i	103 i	1,656	1,377	227 i	298 i	1,385	6,234	598 i	274	139	41	25	419	6,223 i	5,497 i	1,146	67	1,573	84 i	
25,000 or more	–	140	252,964	945	6	4,675	130	92,419	1,850	5,292	520	337	2,837	2,584	69	110	8,889	1,253	1,731	329	82	66	123	1,315	7,562	11,939	2,981	78	1,782	25	

* = amount < \$500,000; D = data withheld to avoid disclosing operations of individual companies; e = more than 50% of value is modeled—see "Technical Notes"; i = more than 50% of the estimate is a combination of imputation and reweighting to account for nonresponse; r = relative standard error is more than 50%.

NAICS = 2017 North American Industry Classification System.

^a Beginning in survey year 2018, these statistics include an adjustment to the weight to account for unit nonresponse; beginning in survey year 2019, these company count estimates reflect a change in rounding methodology.

^b The Business Enterprise Research and Development Survey does not include companies with fewer than 10 domestic employees.

Note(s):

Detail may not add to total because of rounding. Industry classification is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D and are not comparable with estimates published for years prior to 2018. For a given estimate in this table, if the conditions are satisfied for the "i," "r," and "e" flags, the e flag is assigned because the imputation rate and relative standard error may be found in the corresponding tables of imputation rates and relative standard errors (available from the Survey Manager upon request).

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2022.