

TABLE 34-A

Companies with domestic R&D paid for and performed by the company, by industry, company size, and state (A-M): 2019

(Millions of U.S. dollars)

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	26,270	428,968	1,191	41	4,570	397	158,850	5,208	6,171	1,436	277	5,611	3,924	86	2,608	13,383	6,895	2,285	1,857	939	534	373	4,248	25,955	18,918	7,547	276	4,150	176	
Manufacturing industries	31-33	14,410	248,109	764	16	3,699	306	77,700	2,971	5,452	1,239	54	3,045	2,125	27	2,466	10,753	6,561	1,934	1,297	692	201	246	3,192	20,040	17,517	5,976	221	3,290	99	
Food	311	860	3,937	9	2 e	4	40	170	35	25	322-436	i *	e 25	38	1 e	104	807	i 34	497	i 20	26	5	2	50	35	136	354	4	42	3	
Beverage and tobacco products	312	350	971	* i	* e	3	* e	59	9	1	* e	* e	14	87	* e	* e	96	1 e	* e	3	36	* e	* e	1 e	4	3	1 e	* e	1 e	* e	
Textile, apparel, and leather products	313-16	210	873	4	* e	1 e	3	322	9	1 e	* e	0	16	i 101	*	* e	10	2	i *	e 2	2	i *	e 1	1 e	36	16	7	1 e	1 e	* e	
Wood products	321	80	180	1	* e	*	1	29	* e	* e	* e	0	3	9	* e	* e	* i	1	28	* e	* e	1	*	* e	* e	1	i 14	1	* e	* e	
Paper	322	90	1,064	13	0	1	34	11	*	4	*	0	19	36	* e	* e	18	2	i 1	4	12	6	14	1	11	10	4	* e	1 e	* e	
Printing and related support activities	323	200	420	i 1	e *	e 3	e 1	e 27	i 19	4	* e	* e	e 7	e 6	* e	* e	e 16	e 5	e 3	e 3	i 6	e 1	e 1	e 3	i 15	9	37	i *	e 17	i 10	
Petroleum and coal products	324	70	1,203	* e	* e	* e	3	13	3	* e	* e	0	6	2	0	* e	34	27	0	5	0-31	1 e	* e	9	* e	* e	* e	2	3	0	
Chemicals	325	2,260	87,288	83	i 9	246	40	20,912	227	4,490	662	27	760	274	8	25	5,043	3,887	112	178	235	69	13	1,843	12,912	963	384	15	2,229	8	
Basic chemicals	3251	240	2,198	4	0	18	6	87	2	72	91	0	4	80	* e	* e	63	16	52	5	15	26	* e	70	97	20	2	6	18	* e	
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	170	1,092	10	0	* e	*	19	* e	1 e	0-149	0	2 e	18	* e	* e	18	5	4	2	19	0-35	3	* e	11	125-292	8	* e	1	0	
Pesticide, fertilizer, and other agricultural chemicals	3253	150	1,501	1	9	44	10	55	5	* e	0-149	0	6	19	3	2	33	10	5	5	*	2 e	* e	4	0-146	20	2	2	29	1	
Pharmaceuticals and medicines	3254	1,000	78,652	61	i *	e 177	20	20,507	209	4,200	424	27	733	136	4	14	4,734	3,836	38	99	27	8	10	1,768	12,590	633	176	4 e	2,142	7	
Soap, cleaning compound, and toilet preparation	3256	260	2,596	1 e	0	2	2	170	2 e	100	* e	0	12	13	* e	9	124	4 e	5	i 63	i *	e *	e *	e 1	71	1 e	135	* e	12	* e	
Paint, coating, adhesive, and other chemicals	3255, 3259	460	1,249	5	0	5	* e	75	9	117	* e	0	3	8	i 0	* e	71	i 16	8	4	174	0-35	e *	e *	e 0-146	0-161	61	3	26	1	i
Plastics and rubber products	326	770	2,770	14	* e	375	7	155	60	61	16	0	59	51	* e	2	134	75	13	9	41	34	1 e	116	88	197	87	9	18	* e	
Nonmetallic mineral products	327	160	1,473	i 4	* e	* e	* e	122	45	* e	* e	* e	3	3	i *	* e	35	22	* e	4	2	* e	* e	4	6	8	12	40	3	* e	
Primary metals	331	200	649	8	0	11	13	21	8	3	4	* e	1 e	7	0	1	20	55	23	1 e	5	1 e	* e	12	6	85	23	16	3	* e	

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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
Fabricated metal products	332	1,690	2,632	34 i * e	48	14 i	262	33	93	1 e	* e	17 e	26 i	* e	5	171	101	15 i	56	27	9 e	1 e	11	40	112	75	8	66	2 i	
Machinery	333	2,080	13,930	31	0	122	34	3,368	51	82	4	0	189	159	1	32 i	1,599	323	877	132	85	36	16 i	182 i	556	534	569	17 i	124	52 i
Agricultural implement	33311	180	1,913	3	0	16	4 e	88	3	* e	0	0	1 e	42	0	1 e	393	5	841	62	1 e	13	* e	* e	0	9	116	1 e	1 e	* e
Semiconductor machinery	333242	60	3,854	0	0	68	0	2,622	* i	* e	0	0	10	0	0	22 i	0	2	0	0	0	0	0	1 i	248 i	0	0-439	0	0	0-53 i
Engine, turbine, and power transmission equipment	3336	100	1,096	* e	0	*	* e	14	1 e	*	0	0	47	11	0	* e	25	24	* e	* e	* e	11	12 i	8	19	49 i	16	* e	13	* e
Other machinery	other 333	1,760	7,067	29	0	38	30	645	46	81	4	0	131	106	1	9	1,181	292	35	69	84	13 e	4 e	173 i	289	475	0-439	16 i	110	0-53 e
Computer and electronic products	334	2,160	75,570	151	1	2,517	51 i	41,446	1,784	240	100	27	1,116	624	13	2,271	1,132	156	292 i	548	35 i	20	48	261	3,566	301	903	13	61	12
Communications equipment	3342	290	11,495	92	1	76	8	5,086	205	32	14-47	0-27	445	389	12	46	651	61	7	48 i	11	6	4	167	422	96	115	6	31	3
Semiconductor and other electronic components	3344	550	31,975 i	32	0	1,681	8 i	16,342 i	706 i	22	1	1	100	17	*	2,119	73	35	51 i	0-102 e	9 i	* e	28	34	1,465 i	78	131	3	6	3
Navigational, measuring, electromedical, and control instruments	3345	1,120	10,912	15	* e	732	34 i	3,372	376	182	53	1 i	201	152	1	7 i	299	47	226 i	400	12 i	7	16	54	977	108	298	4	17 i	5
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	220	3,117	* e	0	41 i	18 i	1,465	56 i	66 i	3	0	53	31 i	0	*	97 i	9 i	6 i	* e	7 i	* e	1 e	14 i	413	20 i	36	0	* e	* e
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	190	3,400	13	0	646	0	385	64	9	* e	0	92 i	39	* i	* e	140	9	195 i	394	0	2	11	9	245	7	142	2	5	1
Other measuring and controlling device	other 3345	720	4,395	1 e	* e	45 i	16	1,522	256	107	51	1 i	57	82	1	7 i	62	29	26 i	6	5	5 e	4	31	319	81	120	2 e	12 i	4
Other computer and electronic products	other 334	220	21,188	13	0	29	1	16,647	497	3	0-33	0-27	369	67 i	*	98 i	109	13	7	0-102	3	7	*	5	702	20	360	1 e	6 i	1
Electrical equipment, appliances, and components	335	880	4,886	15	* i	35	16	1,098	26	100	0-36 e	* i	42	107	0-6 i	2 e	306	39	27	12	12	5	2 i	25	490	485	79	16	49	3

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Transportation equipment	336	970	31,505	354	3	147	43	4,115	i 390	220	3	* i	516	i 420	0-6	13	716	1,311	19	307	134	7	10	468	i 231	14,209	460	65	i 628	3	
Motor vehicles, bodies, trailers, and parts	3361-63	530	20,883	158	* e	28	21	2,340	i 0-27	10	3	0	14	0-346	* e	4	580	1,143	11 e	9	133	1 e	0-5 e	0-131	59	13,953	180	42	i 30	3	
Aerospace products and parts	3364	290	8,900	138	3	104	21	1,692	364	195	* e	* i	433	i 75	0-6	9	97	157	7	293	1 e	0-7	6	338	i 168	71	0-70	13	587	* e	
Aircraft, aircraft engine, and aircraft parts	336411-13	180	8,341	98	2	68	21	1,587	212	181	* e	* i	307	i 75	0-6	9	96	157	7	293	* e	0-7	1	338	i 168	70	0-70	7	584	* e	
Guided missile, space vehicle, and related parts	336414-15, 336419	110	i 559	40	1	36	*	106	151	13	0	*	125	i 1	0	0	1	*	0	*	1 e	0	5	*	*	*	*	6	i 2	0	
Military armored vehicle, tank, and tank component	336992	30	25	2 e	0	0-8	i 0	0-8	i 0	0	0	0	4 e	0	0	0	0	0	0	0	0	0	0	0-8	0	7 e	0	0	1 e	0	
Other transportation	other 336	140	1,697	57	* e	5-17	* e	73-84	0-27	15	* e	0	66	0-346	0-6 e	* e	40	11	* e	5	* e	0-7	0-5	0-131	i 4	178	209-281	9	11	* e	
Furniture and related products	337	190	407	3	0	3	* e	28	30	* e	* e	* e	* e	20	* e	* e	7	24	6	* e	3	* e	* e	* e	9	82	19	12	1	* e	
Miscellaneous	339	1,280	18,352	38	* e	183	9	5,542	241	129	17-83	*	251	155	1 e	9	607	497	23	14	8-39	7	i 135	i 204	2,036	366	i 2,946	2 e	45	6	
Medical equipment and supplies	3391	770	15,812	34	* e	145	3 e	5,035	200	76	18	*	220	145	1 e	2 e	525	482	3 e	4 e	9	3	i 134	i 198	1,936	264	i 2,886	1 e	32	1 e	
Other miscellaneous manufacturing	3399	520	2,540	4 e	* e	38	6	507	42	53	i 0-65	i 0	31	10	*	7	81	15	19	9	0-31	4 e	1 e	7	100	102	60	1 e	12	5	
Nonmanufacturing industries	21-23, 42-81	11,880	180,858	426	25	871	91	81,150	2,237	719	197	223	2,565	1,799	59	143	2,630	334	351	560	247	334	i 127	1,056	5,915	1,402	1,571	54	860	76	
Mining, quarrying, oil and gas extraction, and support activities	21	150	2,535	3 e	3 e	5	0-10 e	172	i 35	7	* e	0	1 e	11	* e	2 e	5 e	3 e	1 e	3 e	6 e	27 e	* e	* e	37	2 e	2 e	4	i 0-25 e	0-10 e	
Utilities	22	40	237	0-42	0	0	0-10	27	0	0	0-11	0-13	0	25	1	0	13	0-50	0	*	0-50	7	0	9	5	0	0	0-8	2	* i	
Wholesale trade	42	1,500	1,104	9 e	0-15 e	16	6 e	154 e	17 e	9 e	0-11 e	0-13 e	36 e	34 e	2 e	6	44 e	23	18	21	i 33	i 11	e 3	e 20	24 e	30 e	46	i 4 e	26	2 e	
Electronic shopping and electronic auctions	454111-12	60	3,088-15,775	i 0-42	i *	e 0-123	i *	2,980	i 0-175	i 4	i 0-11	i 0-13	i 25	i 0-109	i *	i 1	i 24	i 0-53	i *	i 1	i 0-50	i *	e *	3	i 0-660	i 0-461	i 0-95	i *	e 2	i 0-10	i
Transportation and warehousing	48-49	130	9,504	i 2 e	0-15 e	3 e	9	6,346	i 25	2 e	0-11 e	0-13	46	10	19	1 e	140	6 e	2 e	10	2 e	3 e	1 e	2 e	73	14	122	0-8 e	14	* e	

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Information	51	3,000	109,062	226	3 e	385	21 e	57,930	1,360	440	38 e	161	1,433	1,010	13	31 e	844	132	217	136	120	155 i	35	401	3,440	523	605	9 e	137	39	
Publishing	511	1,040	32,447	99	1	144	4	8,296	333	85 - 99	9 e	17	341	173	4-7	20	196	84	33	51	8	5 e	15	163	1,559	291	345	2	40	5	
Newspaper, periodical, book, and directory publishers	5111	40	61	*	* e	2	* e	12	*	0 - 13	* e	3	4	1	0-3	*	2	1	* e	*	* e	* e	*	*	13	1 i	* e	* e	*	* e	
Software publishers	5112	1,000	32,386	98	1	142	4	8,284	333	86	9 e	14	337	172	5	20	194	83	33	51	8	5 e	14	163	1,545	291	345	2	39	5	
Telecommunications	517	210	3,700	4	0-3 e	25	0-4 e	244	67	1	1	0-27 e	555	94	0-3	0-5 e	23	3	1 e	18	65	5	1 e	13	91	4	2 e	0-3 e	2 e	1 e	
Data processing, hosting, and related services	518	1,440	30,154	74	1 e	190	15 e	17,953	583	63 - 197	27 e	71	492	571	7 i	8 e	471	41 e	91	65 e	42	142 i	17	217	1,236	187	243	6 e	88	33	
Other information	other 51	330	42,761	49	0-3 e	26	0-4 e	31,438	377	142 - 291	* e	44 - 75 i	45	172	0-3 e	0-5 e	154	5 e	91	2 e	4	2 e	1	8 e	555	40	15	0-3 e	7	1 e	
Finance and insurance	52	220	8,890	0-42 i	* e	125 i	0-10 i	3,342	35	32	130	0-13	370 i	91	* e	* e	786	0-53	28	0-29	0-50	1 e	52	85	214	73 i	191	* e	0-46	1	
Real estate and rental and leasing	53	50	1,371	* e	* e	*	*	1,011	6	* e	* e	*	2	6	* e	* e	1	* e	2	*	1 i	* i	* e	* e	*	1	1 i	* e	* e	* e	
Lessors of nonfinancial intangible assets (except copyrighted works)	533	20	45	0	0	0	0	40	0	0	0	0	1 i	0	0	0	0	0	0	0	1 i	0	0	0	0	*	i	0	0	0	0
Other real estate and rental and leasing	other 53	30	1,326	* e	* e	*	*	971	6	* e	* e	*	1	6	* e	* e	1	* e	2	*	* e	* i	* e	* e	*	1	1 i	* e	* e	* e	
Professional, scientific, and technical services	54	5,540	29,131	134	6 e	184	39	7,737	562	159	20	51	531	489	17	89	603	108	51	350	31	86	30	469	1,375	272	500	25	625	27	
Architectural, engineering, and related services	5413	1,160	2,288	37	3	20	2 e	268	52	51	2	6	104	55	7	33	78	24	10	17	9	57	25	98	62	61	29	9	17	13	
Computer systems design and related services	5415	2,880	18,395	80	2 e	133	34	3,879	354	74	7 e	26 e	273	337	7	44	277	50	34	303	15 e	17	3 e	193 e	739	110	344	9	591	4 i	
Scientific research and development services	5417	850	3,265	10	0	23	1 e	1,280	104	6	6	1 i	59	16	2	2 i	44	25	3	13	4	6	* e	131	415	27	46 i	6	6	8	
Research and development in biotechnology	541711	210	1,083	* e	0	2	* e	535	4	* i	2	* e	12	4	0	* e	10	11	2	10	3	*	*	16	129 i	*	37 i	*	1	0	

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Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	630	2,155	9	0	21	1 e	736	100	6	5	* e	47	12	2	2 i	33	15	1 e	2	1	5	* e	110	286	27	9	6	6	8	
Research and development in the social sciences and humanities	541720	20	27	0	0	0	0	8	0	0	0	1 i	*	0	0	0	* i	0	0	0	0	0	0	5	*	0	0	0	0	0	
Other professional, scientific, and technical services	other 54	670	5,182	9	* e	9	2	2,310	52	28	4 i	18	95	82	1	10	204	9	4	17	3 e	7 i	2	47	159	73	81	1 e	11	2	
Health care services	621-23	560	1,928	13 e	0-15 e	34	9 e	943	27 i	11 e	0-11 e	0-13 e	56 e	19 e	0-10 e	3 e	34 e	13 e	6 e	14	8 e	11 e	0-9 e	17 e	92	30 e	14 e	5 e	12 e	0-10 e	
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	670	1,322-14,012	0-42 e	0-15	0-123 i	0-10 e	509	0-175 i	54	0-11	0-13 e	65 e	0-109	0-10 e	9	135	0-53	26	0-29	0-50	32	0-9	50	0-660	0-461 i	0-95	3 e	0-46	0-10	
All companies (number of domestic employees)	-	26,270	428,968	1,191	41	4,570	397	158,850	5,208	6,171	1,436	277	5,611	3,924	86	2,608	13,383	6,895	2,285	1,857	939	534	373	4,248	25,955	18,918	7,547	276	4,150	176	
Small companies																															
10-19 ^b	-	4,990	4,432	35 e	3 e	56 e	14 e	932	82 e	43 e	8 e	13 e	275 i	86 e	9 e	13 e	140 e	70 e	34 e	28 e	27 e	30 e	7 e	102 e	394	111 e	103 e	11 e	42 e	6 e	
20-49	-	7,220	10,040	71 e	3 e	96 e	29 e	2,804	163	91 e	46	33 e	240 e	185 e	13	27 e	299 e	138	74	45 e	42 e	36 e	23 i	276	1,073	258 e	212	14 e	82 e	13	
Medium companies																															
50-99	-	4,720	11,492	48 e	4 e	108	17 e	3,279	118	452	15	10 e	256	121	4 e	20	339	130	63	46	117	52 e	14	162	1,810	293	130	23	72	11 i	
100-249	-	4,350	16,520	126	7	131	55	5,208	313	199	24	16	333	237	4 e	64	425	182	74	164	69	74	11 e	328	1,797	417	368	20	155	20	
Large companies																															
250-499	-	2,050	15,356	42	3	206	28	6,330	277	130	3	21	307	215	2 e	21	370	124	99	90	56	46	5 e	246	1,115	430	283	9	111	25	
500-999	-	1,180	21,549	52	0-8 e	191	16	5,744	526	133	21	13 e	385	281	17	50	661	245	112	106	72	19 e	7	648	3,762	1,028 i	289	49	91	10	
1,000-4,999	-	1,230	64,475	486	6	530	71	24,723	1,358	1,038	657	51	1,101	746	5	157	1,256	568	249	540	320	91	92	886	7,095	2,163	1,448	38	361	24	
5,000-9,999	-	230	44,728	66	11	756 i	52	21,921	405	527	41	2	359	293	19	2,037	1,079	492	26	175	77	7	125 i	236	921 i	1,579 i	461	53 i	179	5-63 i	

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(Millions of U.S. dollars)

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
10,000–24,999	–	220	74,385	65	*	406	36 i	25,897 i	937 i	292	511 i	7	531	507	2	138 i	5,158	3,810	681 i	547	116	28	17	845	3,552	1,799	1,053	35	1,519	0-49
25,000 or more	–	130	165,991	200	0-8	2,091	79	62,010	1,029	3,266	111	110	1,822	1,254	9	80	3,656	1,137	873	115	42	151 i	72	519 i	4,435	10,839	3,200	23	1,538	8

* = amount < \$500,000. e = estimated; > 50% of the estimate is modeled—see Technical Notes. i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 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. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates with estimates published for years prior to 2018. For a given estimate in this table, if the conditions are satisfied for both the "i" and "e" flags, the e flag is assigned because the imputation rate may be found in the corresponding table of imputation rates. An estimate range may be displayed in place of a single estimate to avoid disclosing operations of individual companies.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Enterprise Research and Development Survey, 2019.