

TABLE 58

Worldwide total employment, R&D employment, and level of education of researchers, by activity, industry, and company size: 2019

(Thousands)

Industry and company size	NAICS code	Total employment	Total R&D employment	Researchers ^a		R&D technicians and equivalent staff	Other R&D supporting staff
				Total	With PhD		
All industries	21-23, 31-33, 42-81	32,296	2,676	1,815	165	614	246
Manufacturing industries	31-33	17,529	1,409	1,003	104	265	141
Food	311	1,558	35	21	2 i	9	5
Beverage and tobacco products	312	849	8	5	2	2	1
Textile, apparel, and leather products	313-16	401	8	4	1	3	1
Wood products	321	115	3	1	*	1	*
Paper	322	307	7	5	*	2	*
Printing and related support activities	323	305 i	5 i	3 i	* i	1 i	1
Petroleum and coal products	324	155	9	2	*	6	1
Chemicals	325	2,439	255	173	41	44	38
Basic chemicals	3251	361	17	9	3	7	1
Resin, synthetic rubber, and artificial synthetic fibers and filaments	3252	156	10	7	2	3	1
Pesticide, fertilizer, and other agricultural chemicals	3253	101	10	5	2	2	2
Pharmaceuticals and medicines	3254	1,068	184	126	31	27	32
Soap, cleaning compound, and toilet preparation	3256	459	17	14	2	2	1
Paint, coating, adhesive, and other chemicals	3255, 3259	293	17	12	2	4	1
Plastics and rubber products	326	694	31	14	1 i	13	4
Nonmetallic mineral products	327	206	7 i	5 i	1 i	2 i	1
Primary metals	331	298	9	3	* i	2	3
Fabricated metal products	332	558	36	16	*	15	6
Machinery	333	1,599	138	98	5	29	11
Agricultural implement	33311	180	22	15	*	5	2
Semiconductor machinery	333242	96	20	17	3	3	1
Engine, turbine, and power transmission equipment	3336	191	12	10	*	2	1
Other machinery	other 333	1,131	84	56	2 i	20	8
Computer and electronic products	334	2,525	446	364	30 i	52 i	30
Communications equipment	3342	266	72	57	2	8	6
Semiconductor and other electronic components	3344	890	181	158	15 i	16	6
Navigational, measuring, electromedical, and control instruments	3345	869	110	83 i	8	19 i	8 i
Electromedical, electrotherapeutic, and irradiation apparatus	334510, 334517	181	24 i	17 i	2 i	6 i	2 i
Search, detection, navigation, guidance, aeronautical, and nautical system and instrument	334511	307	40 i	32 i	2	5 i	3 i
Other measuring and controlling device	other 3345	381	46	34	4	8 i	4 i
Other computer and electronic products	other 334	500	84	66	5 i	9 i	10
Electrical equipment, appliances, and components	335	776	48	36 i	4 i	9	3
Transportation equipment	336	3,115	254	186	10	44	24
Motor vehicles, bodies, trailers, and parts	3361-63	2,120	169	128	6	25	15
Aerospace products and parts	3364	742	70	49	3 i	14	6
Aircraft, aircraft engine, and aircraft parts	336411-13	717	62	44	3 i	13	5

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				Total	With PhD		
Guided missile, space vehicle, and related parts	336414-15, 336419	25	7	5	*	2	1
Military armored vehicle, tank, and tank component	336992	3	1	*	*	1	0
Other transportation	other 336	250	15	8	*	4	3
Furniture and related products	337	164	4	2	*	2	1
Miscellaneous	339	1,466	104	66	6	29	10
Medical equipment and supplies	3391	1,079	82	54	5	22	6
Other miscellaneous manufacturing	3399	388	22	12	*	7	4
Nonmanufacturing industries	21-23, 42-81	14,766	1,267	813	61	349	105
Mining, quarrying, oil and gas extraction, and support activities	21	392	22	10	1	9	4
Utilities	22	359	0-35	1	*	0-33	*
Wholesale trade	42	303	16	7	1	6	3
Electronic shopping and electronic auctions	454111-12	1,008	42-114	22-91	5	0-54	3-13
Transportation and warehousing	48-49	1,357	19	13	1	3	2
Information	51	3,043	533	388	26	109	36
Publishing	511	599	181	139	9	30	12
Newspaper, periodical, book, and directory publishers	5111	4	1	*	*	*	*
Software publishers	5112	596	180	139	9	30	12
Telecommunications	517	682	20	9	1	10	*
Data processing, hosting, and related services	518	1,239	201	134	4	48	20
Other information	other 51	522	130	106	12	21	4
Finance and insurance	52	2,159	71	35	1	26	9
Real estate and rental and leasing	53	30	4	3	*	*	*
Lessors of nonfinancial intangible assets (except copyrighted works)	533	1	*	*	*	*	*
Other real estate and rental and leasing	other 53	28	4	3	*	*	*
Professional, scientific, and technical services	54	2,595	441	256	24	144	40
Architectural, engineering, and related services	5413	464	59	41	3	14	5
Computer systems design and related services	5415	1,068	154	122	7	24	8
Scientific research and development services	5417	418	178	69	11	87	22
Research and development in biotechnology	541711	172	59	26	4	32	1
Research and development in the physical, engineering, and life sciences (except biotechnology)	541712	232	110	40	7	54	15
Research and development in the social sciences and humanities	541720	13	9	2	*	1	6
Other professional, scientific, and technical services	other 54	646	50	25	3	20	5
Health care services	621-23	510	12	9	2	2	1
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	3,010	38-88	3-67	*	0-54	0-9
All companies (number of domestic employees)	-	32,296	2,676	1,815	165	614	246
Small companies							

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				Total	With PhD		
10–19 ^b	–	83	37	26	4	8	3
20–49	–	325	92	55	8	29	8
Medium companies							
50–99	–	423	95	53	7	33	9
100–249	–	975	150	91	9	42	17
Large companies							
250–499	–	991	130	82	8	35	13
500–999	–	1,202	134	79	7	43	12
1,000–4,999	–	4,575	454	325	26	89	40
5,000–9,999	–	2,971	280	186	19	55	39
10,000–24,999	–	6,282	465	294	28	134	37
25,000 or more	–	14,468	840	625	50	147	68

* = amount < 500 employees; i = > 50% of the estimate is a combination of imputation and reweighting to account for nonresponse.

NAICS = 2012 North American Industry Classification System.

^a Researchers include R&D scientists and engineers and their managers.

^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. 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.