

TABLE 56

Worldwide R&D employment and level of education of researchers, by occupation, industry, and company size: 2016

(Thousands)

Industry and company size	NAICS code	Total	Researchers ^a		R&D technicians and equivalent staff	Other R&D supporting staff
			Total	With PhD		
All industries	21-23, 31-33, 42-81	2,195	1,551	149	431	213
Manufacturing industries	31-33	1,318	956	99	222	139
Food	311	38	23	2	9	6
Beverages and tobacco products	312	9	6	1	2	1
Textiles, apparel, and leather products	313-16	9	5	1	4	1
Wood products	321	3	1	*	1	*
Paper	322	8	6	*	1	*
Printing and related support activities	323	4	2	*	1	*
Petroleum and coal products	324	2	1	*	1	*
Chemicals	325	236	156	38	41	39
Basic chemicals	3251	19	11	4	6	2
Resins, synthetic rubber, and artificial synthetic fibers and filaments	3252	8	5	1	2	*
Pesticides, fertilizers, and other agricultural chemicals	3253	7	3	1	3	1
Pharmaceuticals and medicines	3254	161	107	28	22	32
Soaps, cleaning compounds, and toilet preparations	3256	21	17	3	2	2
Paints, coatings, adhesives, and other chemicals	3255, 3259	20	13	2	5	2
Plastics and rubber products	326	37	18	4	12	7
Nonmetallic mineral products	327	9	5	1	3	1
Primary metals	331	8	3	*	2	2
Fabricated metal products	332	33	15	*	9	9
Machinery	333	113	83	5	22	8
Agricultural implements	33311	15	11	*	3	1
Semiconductor machinery	333242	14	12	2	1	1
Engines, turbines, and power transmission equipment	3336	12	10	*	1	*
Other machinery	other 333	73	50	3	16	7
Computer and electronic products	334	424	349	29	45	30
Communications equipment	3342	77	62	2	10	5
Semiconductors and other electronic components	3344	156	137	14	12	7
Navigational, measuring, electromedical, and control instruments	3345	100	77	7	15	8
Electromedical, electrotherapeutic, and irradiation apparatuses	334510, 334517	19	13	2	4	2
Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments	334511	33	26	1	5	2
Other measuring and controlling devices	other 3345	47	38	3	6	4
Other computer and electronic products	other 334	90	72	5	9	10
Electrical equipment, appliances, and components	335	51	41	3	8	2
Transportation equipment	336	236	176	9	40	20
Automobiles, bodies, trailers, and parts	3361-63	135	106	4	20	9
Aerospace products and parts	3364	85	60	4	17	7
Aircraft, aircraft engines, and aircraft parts	336411-13	73	53	4	15	5
Guided missiles, space vehicles, and related parts	336414-15, 336419	11	7	*	2	2
Military armored vehicles, tanks, and tank components	336992	*	*	*	*	*
Other transportation	other 336	17	10	*	3	3
Furniture and related products	337	5	3	*	2	1
Miscellaneous manufacturing	339	92	63	5	18	12
Medical equipment and supplies	3391	65	45	5	14	6
Other miscellaneous manufacturing	3399	27	17	1	4	6

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			Total	With PhD		
Nonmanufacturing industries	21-23, 42-81	878	595	51	209	74
Mining, extraction, and support activities	21	14	8	1	4	2
Utilities	22	3	1	*	*	1
Wholesale trade	42	12	5 i	* i	4 i	2 i
Electronic shopping and electronic auctions	454111-12	6 i	3 i	* i	1 i	1 i
Transportation and warehousing	48-49	3 i	2	*	* i	1 i
Information	51	414	317	19	67	30
Publishing	511	241	201	7	18	22
Newspaper, periodical, book, and directory publishers	5111	1	1 i	*	* i	* i
Software publishers	5112	240	201	7	18	22
Telecommunications	517	25	16	* i	8 i	1
Data processing, hosting, and related services	518	87	53	2	28	6
Other information	other 51	61	47	9	14	1
Finance and insurance	52	47	19	*	26	2
Real estate and rental and leasing	53	3	2	*	*	* i
Lessors of nonfinancial intangible assets (except copyrighted works)	533	*	*	*	*	*
Other real estate and rental and leasing	other 53	2	2	*	*	* i
Professional, scientific, and technical services	54	355	225	28 i	100	30
Architectural, engineering, and related services	5413	52	39	7 i	9 i	3 i
Computer systems design and related services	5415	140	111	10 i	18	11
Scientific research and development services	5417	133	55	10	65	13
Biotechnology research and development	541711	35	23	3	11	1
Physical, engineering, and life sciences (except biotechnology) research and development	541712	92	31	7	52	10
Social sciences and humanities research and development	541720	6	1	*	2 i	2 i
Other professional, scientific, and technical services	other 54	30	19 i	2 i	8 i	3 i
Health care services	621-23	4	2	1 i	1	1 i
Other nonmanufacturing	23, 44-45 (excluding 454111-12), 55-56, 624, 71-72, 81	18	11 i	* i	4 i	3 i
All companies (number of domestic employees)	-	2,195	1,551	149	431	213
Micro companies ^b						
5-9	-	17	12 i	2 i	4 i	1 i
Small companies						
10-19	-	40	28 i	3 i	8 i	4 i
20-49	-	82	55 i	8	18 i	9 i
Medium companies						
50-99	-	76	47 i	6 i	19 i	10 i
100-249	-	116	76	8	29	12 i
Large companies						
250-499	-	94	64	6	21	9
500-999	-	98	68	6	22	9
1,000-4,999	-	440	312	26 i	87	42
5,000-9,999	-	237	175	19 i	40 i	22 i
10,000-24,999	-	373	240	30	94	40
25,000 or more	-	621	476	36	89	55

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

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NAICS = 2012 North American Industry Classification System.

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

^b Business R&D and Innovation Survey does not include companies with fewer than five 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 R&D.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, and U.S. Census Bureau, Business R&D and Innovation Survey, 2016.