

TABLE 15-2

U.S. residing employed doctoral scientists and engineers, by fine field of doctorate and primary work activity: 2019

(Number and SE)

Field of study	All employed		Research and development										Computer applications		Management, sales, or administration ^a		Professional services		Teaching		Other ^b	
			Any R&D		Applied research		Basic research		Design		Development											
	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE
All fields	857,200	1,975	351,000	1,975	168,650	1,775	92,700	1,700	24,050	975	65,600	1,400	44,450	950	165,400	2,025	97,050	1,625	161,000	1,700	38,300	975
Science	640,300	1,900	243,250	1,700	118,400	1,450	81,950	1,550	9,900	525	33,000	975	28,450	650	120,800	1,575	85,450	1,475	132,600	1,600	29,800	900
Biological, agricultural, and environmental life sciences	220,700	1,100	102,300	1,300	49,400	1,050	38,700	900	1,700	225	12,500	550	4,350	300	44,900	1,050	24,400	875	33,000	750	11,800	500
Agricultural and food sciences	17,400	350	8,150	325	5,300	275	1,150	125	200	75	1,500	150	350	75	4,350	275	950	125	2,550	175	1,050	150
Agricultural sciences	950	50	350	50	250	50	50	25	D	D	50	25	50	25	250	50	50	25	200	50	50	25
Animal sciences	4,550	175	1,850	150	1,050	125	350	75	S	S	350	100	S	S	1,200	150	400	100	800	125	300	75
Food sciences and technology	3,750	175	1,950	150	1,050	125	350	100	50	25	550	100	D	D	1,050	150	200	75	350	100	200	50
Plant sciences	5,900	250	3,050	200	2,200	200	300	75	50	50	450	100	150	50	1,350	175	200	75	800	125	400	100
Soil sciences	2,200	125	950	100	750	75	150	50	50	25	50	25	100	50	500	125	100	50	400	75	150	50
Biochemistry and biophysics	29,450	425	14,850	525	5,750	350	6,700	400	250	125	2,100	250	650	150	6,300	400	2,700	300	3,650	350	1,250	200
Biochemistry	24,350	400	12,000	500	4,650	350	5,300	375	250	125	1,800	250	450	125	5,500	375	2,200	275	3,150	300	1,050	175
Biophysics	5,100	175	2,850	175	1,100	150	1,400	150	D	D	300	75	200	75	850	125	500	100	500	100	150	50
Cell, cellular biology, and molecular biology	31,200	450	13,400	575	4,700	350	6,850	500	S	S	1,700	225	400	125	6,550	450	4,800	400	4,150	350	1,900	225
Microbiological sciences and immunology	23,800	400	11,200	475	4,950	375	4,300	300	150	75	1,800	250	150	75	4,600	350	3,400	300	2,900	250	1,600	225
Immunology	8,950	200	4,500	300	2,100	250	1,550	175	D	D	800	175	D	D	1,350	175	1,500	200	900	175	600	150
Microbiological sciences	14,900	325	6,700	350	2,900	275	2,700	250	S	S	1,000	200	100	50	3,250	300	1,850	250	2,000	200	1,000	175
Natural resources and conservation	8,800	225	3,500	175	2,550	150	500	100	150	50	300	50	250	75	2,400	200	350	100	1,600	125	700	100
Fish, fisheries, wildlife and wildlands science and management	2,200	150	1,000	100	850	100	S	S	D	D	50	25	50	25	700	100	50	25	300	50	100	50
Forestry	2,600	150	1,050	75	700	75	150	50	50	25	150	50	100	50	650	125	150	75	450	75	250	100
Natural resource conservation, research, management, and policy	4,000	150	1,500	150	1,000	125	300	100	100	50	100	50	100	50	1,050	150	150	75	850	100	300	75
Zoology	7,200	225	2,800	200	1,600	150	800	125	50	25	300	125	150	75	1,600	150	400	100	1,800	175	500	100
Other biological sciences	102,800	675	48,400	750	24,500	625	18,400	650	750	125	4,700	300	2,350	200	19,100	625	11,800	600	16,350	550	4,800	300
Biomathematics, bioinformatics, and computational biology	5,150	100	3,300	150	2,250	150	600	100	100	50	350	100	650	100	600	75	250	75	350	75	50	25
Botany and plant biology	6,150	225	2,650	175	1,400	150	1,000	150	50	50	200	50	150	50	1,150	150	300	100	1,450	150	400	100
Epidemiology, ecology, and population biology	15,950	275	7,800	350	5,650	325	1,950	200	50	25	200	75	300	75	3,150	250	500	125	3,700	300	500	100
Genetics	8,750	250	4,800	250	2,000	200	2,200	200	100	50	500	100	300	100	1,550	150	700	125	1,050	150	400	100
Neurobiology and neuroscience	16,800	275	7,950	350	2,900	275	4,350	325	150	50	600	125	400	100	2,750	275	2,800	275	2,100	225	750	125
Nutrition sciences	4,150	125	1,750	125	1,150	125	350	75	50	50	200	75	D	D	900	100	350	75	950	125	200	50
Pharmacology and toxicology	12,700	300	6,300	275	3,450	275	1,800	200	S	S	1,000	175	50	50	2,600	275	1,900	225	1,150	175	700	125
Physiology, pathology, and related sciences	15,400	300	6,000	275	2,450	225	2,400	250	50	50	1,050	175	150	75	3,150	250	2,800	250	2,650	275	750	125

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Biological and biomedical sciences, general	12,750	300	5,600	325	2,450	225	2,700	275	D	D	400	75	250	125	2,450	250	1,650	225	2,000	225	750	150
Biological and biomedical sciences, other	4,950	200	2,250	200	850	125	1,050	150	S	S	300	100	S	S	800	125	600	125	950	150	300	100
Computer and information sciences	31,100	400	11,250	450	5,550	375	2,250	275	1,050	200	2,400	275	8,350	400	5,250	325	350	100	5,350	325	650	150
Computer science	26,750	400	9,600	450	4,550	350	2,000	275	850	175	2,200	275	7,800	400	4,300	300	200	75	4,300	300	500	150
Information science, studies	2,600	75	950	100	550	75	150	50	150	50	100	50	150	50	650	75	100	25	700	75	100	50
Computer and information sciences, other	1,800	50	700	50	400	50	100	25	50	25	100	50	400	50	300	50	*	*	350	50	50	25
Mathematics and statistics	36,650	450	13,400	450	6,150	400	5,000	350	1,150	175	1,150	150	4,150	275	4,100	275	600	125	13,500	450	900	150
Applied mathematics	8,500	200	3,250	225	1,700	200	1,000	175	250	100	300	75	1,200	150	800	125	200	75	2,850	225	200	75
Mathematics	16,500	375	5,100	275	1,350	200	2,950	225	350	100	450	100	1,900	175	1,750	225	200	75	7,250	350	300	75
Statistics	7,450	225	3,700	275	2,350	275	600	150	350	125	350	100	600	125	1,050	150	100	50	1,800	200	250	100
Mathematics and statistics, other	4,200	125	1,400	125	750	100	400	75	200	50	50	50	450	75	500	75	100	50	1,650	125	100	50
Physical sciences, geosciences, atmospheric sciences, and ocean sciences	133,750	950	60,500	950	24,800	675	18,250	600	4,100	350	13,350	675	9,050	525	27,200	800	5,850	375	24,750	750	6,500	400
Astronomy and astrophysics	5,850	175	2,300	150	600	100	1,350	150	200	75	150	50	600	100	1,150	125	200	75	1,300	150	300	75
Chemistry, except biochemistry	65,300	700	28,800	750	12,900	525	6,450	325	1,200	200	8,250	525	2,100	275	15,050	675	3,450	325	12,550	575	3,350	300
Inorganic chemistry	8,750	225	3,100	225	1,300	150	700	125	100	50	1,000	150	150	50	2,150	225	500	125	2,450	250	400	100
Organic chemistry	17,600	375	8,300	400	3,950	300	1,650	200	300	100	2,400	300	D	D	3,600	300	1,000	175	3,800	300	800	125
Chemistry, other, except biochemistry	39,000	575	17,350	575	7,650	400	4,100	300	800	175	4,850	375	1,850	275	9,350	500	1,950	225	6,300	375	2,150	225
Geosciences, atmospheric sciences, and ocean sciences	22,050	300	10,150	275	4,900	250	4,000	225	350	75	900	100	1,350	150	4,100	175	750	125	4,450	225	1,250	150
Atmospheric sciences and meteorology	3,900	75	2,100	100	1,050	75	750	75	100	50	150	50	450	75	650	75	50	25	450	50	200	50
Geological and earth sciences, geosciences	13,550	275	5,950	250	2,900	200	2,250	175	200	50	600	100	650	125	2,400	150	550	100	3,200	200	850	125
Ocean sciences and marine sciences	2,150	75	900	75	450	50	350	50	*	*	100	25	100	50	500	50	50	25	400	50	150	50
Oceanography, chemical and physical	2,450	125	1,150	100	500	75	600	100	D	D	50	25	150	75	500	75	100	50	400	75	100	25
Physics	40,550	575	19,250	625	6,400	400	6,450	450	2,350	250	4,050	450	5,000	425	6,850	450	1,400	200	6,400	425	1,600	225
Psychology	115,350	825	23,100	625	14,150	525	6,000	375	800	150	2,100	225	800	150	19,550	700	48,800	925	18,500	600	4,600	375
Clinical psychology	41,100	525	4,650	350	3,700	300	700	150	D	D	200	100	D	D	5,450	425	26,950	700	2,950	300	1,000	225
Counseling and applied psychology	14,850	275	900	150	700	125	100	50	S	S	S	S	D	D	2,000	250	9,050	375	2,250	200	650	150
Educational and school psychology	14,100	275	2,450	250	1,600	200	350	100	100	50	400	100	D	D	3,200	275	4,500	300	3,050	275	850	150
Industrial and organizational psychology	4,850	150	1,250	125	800	100	150	50	100	50	200	50	D	D	2,050	150	650	125	700	100	150	50
Research and experimental psychology	27,800	400	10,400	375	5,500	275	3,650	250	350	100	900	150	450	100	4,800	275	3,550	225	7,350	300	1,250	175
Psychology, general	7,900	250	2,150	275	1,100	200	750	175	D	D	150	100	D	D	1,100	175	2,900	250	1,200	175	400	150
Psychology, other	4,750	175	1,200	150	800	125	300	100	50	50	50	50	D	D	1,000	100	1,200	150	1,000	125	300	75

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	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE
Social sciences	102,700	900	32,750	700	18,400	650	11,700	600	1,050	200	1,600	175	1,750	225	19,850	575	5,500	400	37,500	800	5,300	400
Economics	26,900	550	11,400	450	7,500	425	3,150	300	400	125	350	125	900	200	5,000	350	1,900	275	6,600	375	1,050	200
Political science and government	22,450	425	6,700	375	3,100	250	3,150	400	200	100	250	75	200	75	4,700	375	1,050	200	8,500	450	1,300	200
Political science and government	18,350	400	5,350	350	2,000	225	3,050	375	200	100	100	50	100	50	3,550	350	750	175	7,600	425	1,050	200
Public policy analysis	4,100	175	1,350	125	1,050	125	100	50	D	D	150	50	S	S	1,150	125	300	75	900	125	300	75
Sociology, demography, and population studies	15,200	325	4,650	275	2,500	250	1,900	200	100	50	150	50	100	50	3,000	275	550	125	6,150	325	700	125
Other social sciences	38,150	500	10,000	350	5,300	300	3,550	250	350	100	800	125	550	125	7,100	300	1,950	175	16,300	425	2,250	200
Anthropology	11,400	300	3,400	250	1,750	225	1,300	175	D	D	200	75	S	S	1,950	225	450	100	5,000	250	550	125
Area, ethnic, cultural, gender, and group studies	3,900	125	700	100	200	50	300	75	S	S	150	50	D	D	800	100	250	75	1,850	125	250	75
Geography and cartography	4,750	175	1,450	150	1,100	150	300	75	50	25	50	25	200	75	800	125	150	50	2,000	150	200	50
International relations and national security studies	2,350	150	450	75	250	50	200	50	D	D	D	D	D	D	500	75	150	50	1,100	100	200	50
Linguistics	4,950	250	1,000	150	350	100	500	125	D	D	100	50	150	50	850	150	150	75	2,450	200	350	100
Urban studies, affairs	1,600	100	400	50	250	50	50	25	D	D	50	25	50	50	400	50	150	50	550	75	100	25
Social sciences, other	9,250	250	2,600	175	1,400	175	900	100	100	50	200	75	150	50	1,850	150	650	100	3,400	200	600	100
Engineering	176,700	1,175	92,800	1,175	39,750	875	9,250	475	13,800	725	30,000	825	15,650	700	36,750	900	6,500	400	18,050	650	6,950	450
Aerospace, aeronautical, and astronautical engineering	7,050	225	3,900	250	1,850	200	450	125	550	100	1,100	150	650	150	1,450	200	S	S	700	125	200	75
Chemical engineering	20,800	500	10,500	450	4,150	325	1,300	225	1,300	250	3,800	325	850	150	5,750	425	850	175	1,650	225	1,250	225
Civil engineering	19,250	400	8,600	375	4,250	300	800	150	2,800	300	750	150	1,150	200	4,700	350	1,200	175	2,900	325	700	175
Electrical and computer engineering	48,550	650	26,650	600	10,350	450	2,150	250	3,100	300	11,000	500	7,450	500	7,750	400	1,350	225	3,850	300	1,550	275
Computer engineering	7,000	175	2,850	175	1,250	150	600	100	200	50	800	125	2,150	225	1,000	125	100	50	800	125	100	50
Electrical, electronics, and communications engineering	41,550	625	23,800	575	9,100	400	1,600	250	2,900	300	10,200	475	5,250	475	6,750	375	1,200	200	3,050	300	1,500	275
Mechanical engineering	26,550	425	14,700	525	5,850	425	1,150	175	2,900	375	4,800	375	2,250	300	4,550	375	500	125	3,800	400	700	175
Industrial engineers	16,450	350	9,550	450	3,550	325	1,100	200	850	175	4,050	325	500	125	4,100	300	500	125	750	150	1,100	150
Other engineering	38,050	450	18,900	450	9,850	425	2,300	225	2,300	200	4,500	300	2,800	250	8,500	375	1,950	200	4,450	300	1,450	175
Agricultural engineering	1,900	75	900	75	550	75	50	25	100	50	150	75	150	50	400	50	50	25	300	50	100	50
Bioengineering and biomedical engineering	13,200	250	7,350	300	4,200	325	950	150	400	100	1,850	225	550	150	2,800	250	1,050	150	900	150	550	100
Engineering mechanics, physics, and science	4,400	150	2,650	150	1,100	125	500	100	400	100	600	100	300	75	800	100	100	50	400	75	150	50
Industrial and manufacturing engineering	8,800	275	3,600	225	1,750	200	400	100	650	125	800	125	900	150	1,950	175	300	100	1,800	200	300	75
Nuclear engineering	3,100	125	1,650	125	850	100	100	50	150	50	550	100	250	75	650	75	200	75	250	75	100	25
Engineering, other	6,600	200	2,750	225	1,350	175	300	100	600	100	500	100	600	125	1,850	175	200	50	900	125	300	75
Health	40,200	475	14,950	500	10,500	475	1,550	200	350	125	2,550	250	350	75	7,850	425	5,100	300	10,350	525	1,600	225
Communication disorders sciences and services	3,100	125	750	125	550	100	100	50	D	D	150	50	D	D	450	75	650	100	1,100	100	150	50

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Hospital and medical administration services	1,550	100	550	75	400	75	50	25	D	D	50	50	D	D	350	50	200	50	350	75	50	50
Pharmacy, pharmaceutical sciences, and administration	8,050	175	4,750	250	2,700	225	350	100	S	S	1,550	225	50	25	1,400	200	700	125	800	125	400	100
Public health	8,400	225	3,650	225	3,100	225	250	75	50	25	250	75	150	75	1,750	175	1,000	150	1,350	200	500	150
Registered nursing, nursing administration, nursing research	9,000	250	1,650	200	1,300	200	150	75	S	S	150	75	D	D	2,200	250	1,200	175	3,750	300	150	75
Health sciences, other	10,150	225	3,600	225	2,500	200	650	125	S	S	400	100	50	25	1,650	175	1,400	150	3,050	225	350	125

* = suppressed when population estimate < 25. D = suppressed to avoid disclosure of confidential information. S = suppressed for reliability; coefficient of variation exceeds publication standards.

SE = standard error.

^a Administration includes accounting, finance, contracts, and human resources.

^b Includes production, operations, maintenance, and other activities not broken out separately.

Note(s):

Numbers are rounded to the nearest 50. Standard errors are rounded up to the nearest 25. Primary and secondary work activities were self-defined by respondent in response to the question: "On which two activities...did you work the most hours during a typical week on this job?" Residence location is based on reported living location on 1 February 2019.

Source(s):

National Center for Science and Engineering Statistics, Survey of Doctorate Recipients: 2019.