

TABLE 15-1

U.S. residing employed doctoral scientists and engineers, by fine field of doctorate and primary or secondary work activity: 2023

(Number and SE)

Field of study	All employed		Research and development								Computer applications		Design		Management, sales, or administration ^a		Professional services		Teaching		Other ^b	
			Any R&D		Basic research		Applied research		Experimental 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	908,700	2,300	546,250	2,475	180,050	1,925	329,150	2,575	153,200	1,875	103,750	1,500	76,700	1,600	388,200	2,375	117,050	1,775	235,900	2,325	82,600	1,475
Science	667,950	2,050	389,550	2,175	152,450	1,725	230,100	2,025	86,550	1,300	65,850	1,225	38,750	1,050	289,050	2,100	99,850	1,575	192,500	1,925	63,000	1,300
Biological, agricultural, and environmental life sciences	235,050	1,175	150,150	1,425	62,250	1,100	90,250	1,275	32,750	900	14,200	550	10,350	525	116,800	1,500	29,700	1,025	52,200	1,075	21,450	700
Agricultural and food sciences	17,050	400	11,200	375	2,550	225	8,300	375	3,250	250	750	125	700	100	8,300	300	950	125	4,250	300	1,750	200
Agricultural sciences	900	75	600	50	100	50	450	50	150	50	50	25	50	25	450	50	50	25	250	50	100	25
Animal sciences	4,650	200	2,850	175	600	100	2,100	175	750	125	200	75	150	75	2,300	150	450	100	1,400	175	500	100
Food sciences and technology	3,600	200	2,400	200	500	100	1,700	200	850	125	S	S	250	75	1,900	175	150	50	800	175	300	75
Plant sciences	5,850	250	4,100	250	850	150	3,100	250	1,300	175	250	75	200	50	2,700	225	200	75	1,250	175	600	125
Soil sciences	2,050	100	1,300	100	450	75	950	100	200	50	150	50	50	25	950	125	100	50	550	75	300	50
Biochemistry and biophysics	29,700	475	19,300	600	8,750	475	9,950	400	5,150	450	1,700	200	1,650	250	15,300	650	3,250	375	5,900	400	2,400	275
Biochemistry	24,150	475	15,350	575	6,900	400	7,800	400	4,200	425	1,050	200	1,300	250	12,750	600	2,700	350	4,950	375	2,000	250
Biophysics	5,600	175	3,950	225	1,850	175	2,150	225	900	150	650	125	400	100	2,550	200	550	125	950	150	400	100
Cell, cellular biology, and molecular biology	32,400	525	19,750	625	9,950	575	10,050	625	4,500	425	1,400	200	1,350	275	16,850	600	5,650	450	6,450	450	2,800	325
Microbiological sciences and immunology	25,400	425	16,250	475	7,000	425	9,800	400	4,150	325	500	125	900	175	13,350	475	3,550	300	5,150	325	2,350	250
Immunology	9,800	225	6,750	275	2,900	250	4,350	250	1,400	175	100	50	200	75	5,200	300	1,750	200	1,500	175	750	125
Microbiological sciences	15,600	350	9,500	375	4,100	350	5,450	325	2,750	275	400	100	700	150	8,150	400	1,800	225	3,650	300	1,600	200
Natural resources and conservation	9,150	275	5,600	225	1,100	100	4,550	225	850	100	800	125	600	100	4,550	250	650	125	2,400	175	1,000	125
Fish, fisheries, wildlife, and wildlands science and management	1,950	100	1,350	100	250	50	1,250	100	100	50	150	50	50	25	1,150	100	100	25	350	50	200	50
Forestry	2,600	150	1,600	125	300	50	1,250	125	350	75	300	75	150	50	1,150	100	250	100	700	100	350	75
Natural resource conservation, research, management, and policy	4,600	200	2,600	175	550	100	2,050	175	350	75	350	100	450	100	2,300	175	300	75	1,300	150	500	75
Zoology	6,400	225	4,050	250	1,700	200	2,450	200	700	125	300	100	300	100	2,850	175	400	75	2,300	175	900	125
Other biological sciences	114,900	750	74,000	925	31,200	800	45,200	850	14,100	600	8,750	425	4,850	325	55,600	950	15,350	725	25,800	800	10,200	525
Biomathematics, bioinformatics, and computational biology	7,150	150	5,850	175	1,350	125	4,600	175	1,300	150	2,100	150	550	100	2,400	175	350	75	850	125	250	75
Botany and plant biology	6,300	225	4,050	250	1,950	200	2,450	225	600	100	200	75	250	100	2,900	225	450	125	1,800	175	800	125
Epidemiology, ecology, and population biology	18,600	325	12,250	375	4,550	300	8,700	400	1,150	150	1,900	225	600	125	9,350	400	800	150	5,700	350	1,650	225
Genetics	9,550	225	6,300	225	3,250	225	3,200	225	1,050	175	1,050	150	400	100	4,850	275	1,100	150	1,850	225	600	125
Neurobiology and neuroscience	20,300	350	12,900	475	7,000	400	6,550	350	1,650	225	1,650	250	1,200	175	10,800	400	3,650	325	3,950	300	1,550	200
Nutrition sciences	4,200	150	2,700	125	600	100	1,950	150	850	100	50	25	S	S	2,150	150	600	125	1,200	125	300	75
Pharmacology and toxicology	13,350	250	8,500	350	3,000	300	5,300	300	2,500	275	350	100	400	100	6,600	400	2,550	275	2,150	250	1,250	200
Physiology, pathology, and related sciences	15,600	325	9,300	375	3,900	325	5,700	325	2,250	250	450	150	450	100	7,000	325	3,350	300	3,550	275	1,600	250
Biological and biomedical sciences, general	14,950	325	9,100	375	4,350	300	5,000	325	2,100	250	700	150	750	175	7,050	350	1,800	225	3,500	325	1,600	225
Biological and biomedical sciences, other	4,900	200	2,950	200	1,300	150	1,750	175	550	100	300	75	200	75	2,450	200	650	125	1,250	150	550	125
Computer and information sciences	36,350	550	22,150	650	5,250	375	14,150	600	6,950	450	14,400	600	3,850	350	12,100	525	750	175	8,850	525	2,400	275
Computer science	31,050	525	18,950	650	4,600	375	11,900	600	6,200	425	12,950	575	3,150	350	10,400	525	550	175	7,100	500	2,000	275

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Information science, studies	2,750	125	1,600	125	450	75	1,100	100	300	75	400	75	400	75	1,000	100	150	50	1,100	125	200	50
Computer and information sciences, other	2,550	75	1,600	100	250	50	1,150	75	450	75	1,050	75	250	50	750	75	50	25	650	75	150	50
Mathematics and statistics	38,500	600	22,900	575	10,650	475	12,150	450	3,750	325	9,400	450	3,550	300	10,500	400	1,000	175	17,150	625	3,300	275
Applied mathematics	9,150	225	5,550	250	2,350	225	3,250	225	950	175	2,900	225	800	150	2,250	225	150	75	3,700	225	700	125
Mathematics	17,100	450	9,200	400	5,850	300	3,250	300	1,150	175	3,500	250	1,350	175	4,700	275	350	100	9,350	425	1,850	200
Statistics	8,100	275	5,700	325	1,500	250	4,250	300	1,150	225	2,100	250	1,100	200	2,350	275	350	125	2,150	225	400	100
Mathematics and statistics, other	4,150	150	2,450	150	950	125	1,350	125	450	100	850	125	350	75	1,150	100	100	50	2,000	150	400	75
Physical sciences, geosciences, atmospheric sciences, and ocean sciences	141,800	1,125	89,450	1,100	33,700	800	48,400	1,000	30,050	875	19,950	725	14,500	625	58,950	975	7,600	525	31,850	875	15,550	650
Astronomy and astrophysics	6,450	175	4,050	175	2,450	175	1,350	150	650	150	2,000	150	700	125	2,650	200	150	50	1,550	150	600	100
Chemistry, except biochemistry	69,150	850	42,350	800	13,650	550	23,800	725	17,750	650	4,900	400	5,400	425	31,850	750	4,550	375	15,250	575	8,800	500
Inorganic chemistry	8,800	250	5,450	275	1,500	175	3,050	200	2,550	225	250	75	550	100	4,200	225	450	100	2,150	200	1,300	150
Organic chemistry	17,950	425	11,500	425	3,650	325	7,150	400	4,800	325	700	200	1,350	250	7,950	425	1,150	175	4,150	325	2,000	225
Chemistry, other, except biochemistry	42,350	625	25,400	625	8,500	425	13,600	625	10,400	500	3,950	350	3,450	325	19,650	550	2,900	325	9,000	475	5,550	425
Geosciences, atmospheric sciences, and ocean sciences	23,150	350	15,550	350	7,450	325	9,150	300	2,350	250	2,900	200	1,550	150	9,650	350	1,000	125	6,250	250	2,600	175
Atmospheric sciences and meteorology	4,450	100	3,250	125	1,500	100	1,950	100	500	75	1,150	75	400	75	1,600	100	100	25	800	75	300	50
Geological and earth sciences, geosciences	13,900	300	9,250	300	4,450	275	5,300	275	1,550	225	1,250	150	900	125	5,700	300	650	100	4,350	225	1,600	150
Ocean sciences and marine sciences	2,550	75	1,500	75	650	75	950	75	150	25	250	50	150	50	1,300	75	100	25	700	75	400	50
Oceanography, chemical and physical	2,250	100	1,500	100	850	100	900	100	150	50	300	50	100	50	1,000	100	100	25	450	75	250	75
Physics	43,050	775	27,500	775	10,100	600	14,100	525	9,300	525	10,150	575	6,850	500	14,850	625	1,900	300	8,800	600	3,550	325
Psychology	112,100	900	42,500	875	12,450	550	28,600	750	7,150	475	2,900	300	3,100	275	49,750	875	51,700	975	32,350	875	9,050	450
Clinical psychology	40,450	575	10,950	550	2,150	325	8,150	500	1,850	275	400	150	450	150	17,050	675	28,100	675	8,700	525	2,200	300
Counseling and applied psychology	14,500	300	2,950	275	600	100	1,950	250	600	125	200	100	200	75	6,700	300	9,650	375	3,750	325	1,050	175
Educational and school psychology	12,400	325	5,050	350	1,150	175	3,400	275	1,250	175	250	100	400	100	5,500	300	4,350	300	4,250	325	1,400	200
Industrial and organizational psychology	5,150	150	2,400	175	500	100	1,450	150	650	125	150	75	400	100	3,150	175	1,150	150	1,250	125	450	100
Research and experimental psychology	27,200	425	15,800	475	6,550	325	9,650	425	2,000	225	1,550	200	1,200	175	11,650	425	3,800	275	10,750	425	2,850	225
Psychology, general	7,750	300	3,200	300	1,100	175	2,350	275	400	125	250	100	250	100	3,550	300	3,050	300	2,150	275	600	150
Psychology, other	4,600	175	2,250	175	500	75	1,650	150	400	100	50	50	150	75	2,150	175	1,600	175	1,450	150	500	100
Social sciences	104,100	875	62,350	950	28,150	800	36,600	850	5,950	375	5,050	350	3,400	250	40,900	800	9,100	425	50,100	925	11,250	475
Economics	27,950	550	18,800	575	6,400	475	13,750	525	1,550	250	2,300	250	1,450	175	10,300	500	3,050	325	11,150	500	1,800	225
Political science and government	21,700	500	13,150	500	6,800	425	7,150	400	950	150	800	150	500	125	8,850	475	1,700	225	10,700	500	2,150	225
Political science and government	17,100	500	10,600	475	6,350	400	5,050	375	650	150	550	125	300	100	6,250	450	1,100	200	9,400	500	1,600	225
Public policy analysis	4,650	150	2,550	150	450	100	2,050	125	300	75	250	75	200	50	2,600	150	600	100	1,300	125	550	75
Sociology, demography, and population studies	15,950	375	9,550	425	4,950	325	4,850	325	850	150	600	125	350	100	6,000	350	1,050	175	8,300	300	2,300	275
Other social sciences	38,500	525	20,900	500	10,050	425	10,850	375	2,600	200	1,400	175	1,050	150	15,750	475	3,300	225	20,000	500	5,050	300

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Anthropology	11,100	325	6,050	275	3,800	275	2,550	225	550	100	250	100	200	100	4,450	300	800	150	5,950	325	1,550	200
Area, ethnic, cultural, gender, and group studies	4,450	150	1,850	175	950	125	750	125	350	75	50	50	100	25	1,750	150	350	75	2,750	150	900	150
Geography and cartography	4,850	200	3,200	200	1,150	150	2,100	175	400	100	300	75	250	50	1,850	150	250	75	2,200	175	500	100
International relations and national security studies	2,350	150	1,200	100	600	100	550	75	150	50	D	D	100	50	1,000	125	250	50	1,200	100	400	75
Linguistics	5,100	225	2,600	200	1,250	175	1,100	125	600	125	350	75	200	100	1,950	200	350	75	3,150	200	350	100
Urban studies, affairs	1,350	100	700	100	200	75	600	75	50	25	100	50	50	25	650	75	200	50	450	75	150	50
Social sciences, other	9,350	250	5,250	250	2,000	150	3,250	250	500	75	350	75	200	50	4,150	225	1,150	150	4,300	225	1,150	125
Engineering	196,750	1,300	131,100	1,350	22,750	700	79,950	1,375	60,250	1,225	36,800	950	36,050	1,025	78,850	1,400	10,200	575	28,050	900	15,000	750
Aerospace, aeronautical, and astronautical engineering	8,150	200	5,600	225	1,150	150	3,300	225	2,200	200	2,000	200	1,400	150	3,600	225	150	75	1,100	200	350	100
Chemical engineering	23,700	500	15,850	575	2,400	300	9,350	500	8,800	525	2,250	300	4,450	425	11,400	575	900	150	2,400	275	2,100	275
Civil engineering	21,500	475	11,950	475	2,600	275	9,000	450	2,750	300	3,150	350	4,250	350	9,300	475	2,600	300	4,600	400	1,650	250
Electrical and computer engineering	54,000	675	38,100	800	5,500	425	20,700	650	20,050	800	15,550	600	11,300	625	16,900	675	1,400	250	6,550	500	3,550	400
Computer engineering	8,150	200	5,300	250	1,100	150	2,950	200	2,300	225	3,700	250	1,300	150	2,450	225	150	50	1,150	150	300	75
Electrical, electronics, and communications engineering	45,850	650	32,850	750	4,400	375	17,750	600	17,700	750	11,850	575	10,000	600	14,450	625	1,250	250	5,400	450	3,300	400
Mechanical engineering	28,800	625	20,150	700	3,600	425	11,700	700	9,500	600	4,750	375	6,300	475	10,550	550	1,000	175	5,000	400	1,950	300
Metallurgical and materials engineering	18,300	450	12,150	450	2,500	300	6,950	425	6,800	425	1,950	300	2,500	300	8,550	450	900	200	1,450	250	2,400	275
Other engineering	42,300	550	27,300	625	4,950	325	18,900	625	10,150	475	7,200	375	5,800	325	18,550	600	3,200	250	6,950	375	3,000	250
Agricultural engineering	1,650	100	1,050	100	100	50	750	100	350	75	300	75	250	75	650	75	100	50	400	50	200	50
Bioengineering and biomedical engineering	16,350	325	10,900	425	2,250	250	7,350	375	4,450	300	1,800	225	2,000	225	8,200	350	1,750	225	1,700	200	1,200	200
Engineering mechanics, physics, and science	4,300	200	2,850	200	600	100	1,750	175	1,200	175	650	100	600	100	1,900	175	250	50	650	125	200	50
Industrial and manufacturing engineering	9,150	300	5,350	300	950	150	3,900	300	1,650	225	2,250	200	1,200	150	3,600	275	550	100	2,250	225	550	100
Nuclear engineering	3,400	150	2,350	125	350	75	1,750	125	850	100	650	75	550	75	1,400	125	150	50	350	50	250	50
Engineering, other	7,500	225	4,750	275	700	125	3,400	250	1,650	150	1,550	200	1,150	125	2,750	225	400	100	1,600	200	650	125
Health	44,000	600	25,600	625	4,850	350	19,100	575	6,400	400	1,100	200	1,900	225	20,250	550	7,000	375	15,350	500	4,550	350
Communication disorders sciences and services	2,950	150	1,550	125	350	75	1,200	125	300	75	100	50	50	25	1,250	125	700	100	1,250	125	300	75
Hospital and medical administration services	1,300	75	750	75	100	50	650	75	150	50	50	25	50	25	750	75	200	50	400	50	150	50
Pharmacy, pharmaceutical sciences, and administration	8,550	250	6,300	325	1,050	175	3,850	275	3,250	275	250	100	700	150	3,650	250	800	150	1,150	175	1,000	175
Public health	10,400	250	6,750	275	1,050	150	5,850	300	1,000	125	450	75	450	75	5,350	275	1,400	150	2,750	250	1,050	200
Registered nursing, nursing administration, nursing research	9,100	325	4,050	300	650	125	2,950	275	750	150	D	D	350	125	3,900	300	1,800	225	4,650	275	1,050	200
Health sciences, other	11,650	325	6,200	325	1,650	200	4,650	325	950	150	150	75	350	75	5,400	275	2,100	200	5,150	300	1,000	125

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 Other work activities include 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. Detail may exceed total due to multiple responses as respondents may provide both a primary and a secondary work activity. Primary and secondary work activities were self-defined by the 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 2023.

Source(s):

National Center for Science and Engineering Statistics, Survey of Doctorate Recipients, 2023.