

TABLE 48

## U.S. residing employed doctoral scientists and engineers, by fine field of doctorate and broad occupation: 2023

(Number and SE)

Field of study	All employed		Science occupations						Engineering occupations						S&E-related occupations						Non-S&E occupations									
			Total		Post-secondary teachers		Other		Total		Post-secondary teachers		Other		Total		Health occupations		S&E managers		Other		Total		Non-S&E managers		Non-S&E teachers		Other	
	Number	SE	Number	SE	Number	SE	Number	SE	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	489,300	2,625	162,400	1,900	326,850	2,325	127,550	1,600	24,750	850	102,800	1,500	135,450	1,825	92,300	1,500	33,200	1,050	10,000	550	156,400	2,025	55,600	1,275	21,800	775	79,000	1,425
Science	667,950	2,050	423,050	2,200	155,600	1,850	267,500	1,925	19,350	700	1,900	225	17,450	675	100,900	1,525	71,100	1,350	22,150	850	7,600	450	124,650	1,800	41,100	1,075	18,650	700	64,900	1,225
Biological, agricultural, and environmental life sciences	235,050	1,175	153,650	1,225	39,900	950	113,750	1,250	3,000	300	450	100	2,500	300	39,200	1,100	25,250	875	11,300	675	2,650	300	39,250	975	13,350	600	2,550	275	23,350	775
Agricultural and food sciences	17,050	400	12,000	375	3,550	300	8,450	325	250	125	50	25	S	S	1,400	200	450	150	800	125	150	75	3,400	250	1,250	175	150	50	2,000	200
Agricultural sciences	900	75	600	50	200	50	400	50	50	25	D	D	50	25	100	25	*	*	50	25	50	25	250	50	50	25	*	*	150	50
Animal sciences	4,650	200	3,100	200	1,250	175	1,900	150	D	D	D	D	D	D	450	150	250	125	150	50	D	D	1,050	125	300	100	S	S	700	125
Food sciences and technology	3,600	200	2,600	200	550	125	2,050	175	50	25	D	D	*	*	300	75	100	50	200	75	D	D	650	125	250	75	D	D	350	75
Plant sciences	5,850	250	4,100	225	1,050	150	3,100	225	D	D	D	D	D	D	500	125	S	S	350	100	S	S	1,200	175	550	150	D	D	650	100
Soil sciences	2,050	100	1,550	100	500	75	1,050	100	S	S	D	D	S	S	100	50	D	D	50	25	*	*	300	75	100	50	D	D	200	50
Biochemistry and biophysics	29,700	475	19,500	625	4,950	450	14,550	575	650	150	D	D	650	150	4,300	450	2,000	300	1,900	325	400	150	5,300	375	2,000	250	250	75	3,050	325
Biochemistry	24,150	475	15,650	575	4,000	400	11,650	525	450	125	D	D	450	125	3,650	425	1,750	300	1,550	275	350	150	4,450	350	1,750	250	250	75	2,450	300
Biophysics	5,600	175	3,850	200	950	150	2,900	200	200	100	D	D	200	100	650	125	250	75	350	100	100	50	900	150	250	75	D	D	600	125
Cell, cellular biology, and molecular biology	32,400	525	19,650	625	5,050	400	14,600	575	400	150	D	D	300	150	5,900	525	3,800	375	1,850	350	300	100	6,450	475	1,650	275	250	100	4,550	425
Microbiological sciences and immunology	25,400	425	16,900	500	3,750	325	13,150	475	D	D	D	D	D	D	5,000	350	3,400	275	1,350	200	250	125	3,450	300	1,050	175	200	100	2,200	225
Immunology	9,800	225	6,250	300	850	175	5,350	300	D	D	D	D	D	D	2,250	225	1,600	200	650	150	D	D	1,300	225	550	150	D	D	650	150
Microbiological sciences	15,600	350	10,650	375	2,900	275	7,750	350	D	D	D	D	D	D	2,700	275	1,800	225	700	125	S	S	2,200	250	550	125	100	50	1,500	200
Natural resources and conservation	9,150	275	6,400	200	2,000	150	4,400	200	500	75	100	50	400	75	600	100	100	50	450	75	50	50	1,650	150	550	100	150	75	900	100
Fish, fisheries, wildlife, and wildlands science and management	1,950	100	1,550	100	350	50	1,150	100	D	D	D	D	D	D	150	50	D	D	150	50	D	D	250	50	100	25	D	D	150	50
Forestry	2,600	150	1,700	125	550	75	1,150	125	100	25	D	D	100	25	100	50	S	S	50	25	*	*	700	75	250	75	50	25	350	50
Natural resource conservation, research, management, and policy	4,600	200	3,150	175	1,050	125	2,100	150	400	75	50	50	350	75	300	75	S	S	200	75	S	S	700	100	250	75	100	50	350	75
Zoology	6,400	225	5,050	225	2,150	175	2,900	200	D	D	D	D	D	D	450	100	200	75	150	50	100	50	900	125	350	100	50	50	500	100
Other biological sciences	114,900	750	74,150	900	18,500	700	55,650	950	1,150	175	250	75	900	150	21,550	725	15,300	700	4,850	350	1,400	200	18,100	700	6,450	425	1,450	225	10,200	475
Biomathematics, bioinformatics, and computational biology	7,150	150	5,650	175	750	100	4,950	175	100	50	D	D	100	50	750	100	450	100	200	50	150	50	600	125	350	100	S	S	100	50
Botany and plant biology	6,300	225	4,600	250	1,700	200	2,900	225	D	D	D	D	D	D	350	75	50	50	250	75	50	50	1,350	175	300	100	50	50	950	150
Epidemiology, ecology, and population biology	18,600	325	13,600	350	4,650	325	8,950	375	150	75	D	D	150	75	2,700	250	1,750	200	700	150	250	75	2,150	275	900	200	400	150	850	125
Genetics	9,550	225	6,600	250	1,850	200	4,750	250	D	D	D	D	D	D	1,250	150	650	100	450	100	150	50	1,650	200	750	150	150	75	750	150
Neurobiology and neuroscience	20,300	350	13,000	475	2,700	250	10,250	450	250	125	D	D	200	125	4,300	325	3,300	300	700	175	300	100	2,800	275	800	150	100	50	1,900	200
Nutrition sciences	4,200	150	1,750	125	250	75	1,550	125	D	D	D	D	D	D	1,600	150	1,350	150	200	75	D	D	800	125	250	75	50	50	500	100
Pharmacology and toxicology	13,350	250	7,500	375	950	150	6,550	375	100	50	D	D	100	50	3,300	325	2,500	300	650	175	150	75	2,450	275	1,000	200	100	75	1,350	200
Physiology, pathology, and related sciences	15,600	325	8,950	450	2,300	275	6,650	375	D	D	D	D	D	D	3,900	300	3,100	275	600	125	S	S	2,750	275	1,000	175	150	50	1,550	200
Biological and biomedical sciences, general	14,950	325	9,350	375	2,300	250	7,050	375	250	75	D	D	200	50	2,650	275	1,700	250	750	150	150	75	2,700	300	750	200	100	50	1,850	250
Biological and biomedical sciences, other	4,900	200	3,150	225	1,100	150	2,050	175	150	50	*	*	150	50	750	125	400	100	300	75	D	D	900	125	300	100	150	75	400	75
Computer and information sciences	36,350	550	29,600	625	8,100	475	21,500	725	1,150	250	200	75	1,000	225	2,300	300	200	50	1,500	275	550	125	3,350	275	1,550	225	800	125	1,000	150
Computer science	31,050	525	26,000	600	6,850	475	19,150	725	1,000	250	150	75	850	225	1,850	300	D	D	1,350	275	450	125	2,200	250	1,300	200	250	100	650	150

TABLE 48

## U.S. residing employed doctoral scientists and engineers, by fine field of doctorate and broad occupation: 2023

(Number and SE)

Field of study	All employed		Science occupations						Engineering occupations						S&E-related occupations						Non-S&E occupations									
			Total		Post-secondary teachers		Other		Total		Post-secondary teachers		Other		Total		Health occupations		S&E managers		Other		Total		Non-S&E managers		Non-S&E teachers		Other	
	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE
Information science, studies	2,750	125	1,600	125	700	100	950	100	50	25	D	D	50	25	250	75	100	50	100	50	S	S	800	100	200	50	400	100	250	75
Computer and information sciences, other	2,550	75	1,950	100	500	75	1,450	100	100	25	*	*	100	25	150	50	50	25	100	25	50	25	300	50	100	25	150	50	100	50
Mathematics and statistics	38,500	600	31,050	625	16,950	675	14,100	525	900	175	150	100	750	150	2,150	250	200	100	750	150	1,200	200	4,400	325	1,400	175	1,150	150	1,850	225
Applied mathematics	9,150	225	7,400	250	4,000	250	3,400	225	450	100	D	D	400	100	550	125	D	D	200	75	300	100	700	125	250	75	100	50	350	100
Mathematics	17,100	450	14,350	450	9,500	450	4,800	325	350	125	D	D	250	100	800	150	D	D	150	75	650	150	1,600	200	550	125	150	75	900	150
Statistics	8,100	275	6,550	300	2,050	225	4,550	325	D	D	D	D	D	D	550	175	S	S	250	125	S	S	900	150	400	125	150	75	350	125
Mathematics and statistics, other	4,150	150	2,750	150	1,400	125	1,350	125	50	25	*	*	50	25	200	50	D	D	100	50	50	50	1,150	125	200	75	700	100	250	50
Physical sciences, geosciences, atmospheric sciences, and ocean sciences	141,800	1,125	97,300	1,325	28,900	925	68,450	1,200	13,800	575	1,050	175	12,750	550	9,350	450	1,650	225	5,250	400	2,450	275	21,300	825	8,000	500	600	125	12,750	600
Astronomy and astrophysics	6,450	175	5,100	175	1,650	150	3,450	150	400	100	D	D	400	100	400	100	D	D	250	100	150	50	550	100	250	75	D	D	250	75
Chemistry, except biochemistry	69,150	850	46,200	950	14,000	650	32,250	825	4,950	425	300	100	4,650	400	5,150	375	1,050	175	3,100	325	1,000	200	12,800	625	4,450	375	250	100	8,100	500
Inorganic chemistry	8,800	250	5,750	250	2,150	200	3,650	225	850	125	D	D	800	125	650	150	D	D	450	125	50	25	1,550	150	650	125	D	D	900	150
Organic chemistry	17,950	425	12,650	475	3,750	325	8,900	425	400	100	D	D	350	100	1,250	225	S	S	700	175	350	150	3,700	300	1,450	250	D	D	2,200	225
Chemistry, other, except biochemistry	42,350	625	27,800	650	8,100	500	19,700	600	3,700	375	200	100	3,500	350	3,300	275	750	150	1,950	225	600	150	7,550	500	2,350	275	200	100	4,950	425
Geosciences, atmospheric sciences, and ocean sciences	23,150	350	18,200	350	5,700	250	12,500	325	1,150	100	200	50	1,000	100	1,100	100	100	50	800	100	250	50	2,700	200	1,150	125	150	50	1,450	150
Atmospheric sciences and meteorology	4,450	100	3,700	125	750	75	3,000	125	150	50	*	*	150	25	150	50	D	D	100	25	50	25	400	75	150	25	50	25	250	50
Geological and earth sciences, geosciences	13,900	300	10,800	300	3,950	225	6,850	275	900	100	150	50	750	100	550	75	50	25	450	75	100	50	1,650	175	750	125	50	25	850	100
Ocean sciences and marine sciences	2,550	75	1,950	75	600	75	1,350	75	50	25	D	D	50	25	200	50	D	D	150	50	50	25	400	50	100	25	50	25	250	50
Oceanography, chemical and physical	2,250	100	1,750	100	400	75	1,350	100	50	25	D	D	50	25	150	50	D	D	150	50	S	S	300	75	100	50	D	D	150	50
Physics	43,050	775	27,800	775	7,550	550	20,200	650	7,350	425	550	150	6,750	425	2,650	275	500	125	1,100	175	1,050	175	5,250	450	2,100	300	150	75	3,000	325
Psychology	112,100	900	44,650	900	20,900	725	23,750	775	150	75	D	D	150	75	43,750	850	41,050	875	2,450	300	200	75	23,550	800	6,700	450	4,000	300	12,850	600
Clinical psychology	40,450	575	12,150	525	4,600	375	7,550	475	D	D	D	D	D	D	24,500	650	23,200	650	1,300	225	D	D	3,800	375	1,200	200	300	150	2,300	300
Counseling and applied psychology	14,500	300	3,450	300	2,100	225	1,300	200	D	D	D	D	D	D	7,500	400	7,200	375	300	100	D	D	3,550	300	850	175	350	100	2,300	275
Educational and school psychology	12,400	325	3,600	250	1,450	200	2,100	225	D	D	D	D	D	D	4,250	250	4,000	250	200	75	D	D	4,600	325	1,050	175	1,750	225	1,800	225
Industrial and organizational psychology	5,150	150	2,100	175	700	100	1,450	150	D	D	D	D	D	D	200	75	150	50	S	S	D	D	2,850	200	750	125	450	100	1,600	175
Research and experimental psychology	27,200	425	17,700	450	9,450	425	8,250	375	100	50	D	D	100	50	3,350	250	2,800	225	400	100	150	50	6,100	375	2,200	250	850	125	3,050	250
Psychology, general	7,750	300	3,600	300	1,550	225	2,050	275	D	D	D	D	D	D	2,750	275	2,550	275	150	75	D	D	1,450	250	200	100	200	125	1,000	200
Psychology, other	4,600	175	2,050	150	1,050	125	1,000	100	D	D	D	D	D	D	1,200	150	1,100	150	S	S	D	D	1,300	150	450	100	100	50	750	125
Social sciences	104,100	875	66,750	1,000	40,850	900	25,950	675	350	100	50	25	300	75	4,200	325	2,750	275	900	175	550	125	32,800	800	10,050	525	9,600	550	13,150	500
Economics	27,950	550	20,300	550	10,100	475	10,200	475	D	D	D	D	D	D	650	150	350	125	S	S	150	75	7,000	450	2,700	300	1,650	300	2,650	300
Political science and government	21,700	500	14,200	525	9,800	500	4,350	350	150	75	D	D	150	75	800	150	450	75	250	75	S	S	6,600	400	2,950	325	1,050	200	2,550	225
Political science and government	17,100	500	11,800	500	8,950	475	2,850	300	D	D	D	D	D	D	350	125	100	50	S	S	D	D	4,800	350	2,250	275	800	175	1,750	200
Public policy analysis	4,650	150	2,350	150	900	125	1,500	125	50	25	D	D	50	25	450	75	350	75	100	50	D	D	1,800	150	700	100	300	75	800	125
Sociology, demography, and population studies	15,950	375	11,600	350	7,700	350	3,900	300	D	D	D	D	D	D	600	125	550	125	50	50	D	D	3,700	275	1,400	175	650	150	1,700	200
Other social sciences	38,500	525	20,700	500	13,200	450	7,500	325	200	50	50	25	100	50	2,150	200	1,400	175	500	125	250	50	15,500	475	3,050	250	6,200	325	6,250	325

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(Number and SE)

Field of study	All employed		Science occupations						Engineering occupations						S&E-related occupations						Non-S&E occupations									
			Total		Post-secondary teachers		Other		Total		Post-secondary teachers		Other		Total		Health occupations		S&E managers		Other		Total		Non-S&E managers		Non-S&E teachers		Other	
	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE	Number	SE
Anthropology	11,100	325	7,300	325	5,150	300	2,100	200	D	D	D	D	D	D	750	125	500	125	150	75	100	50	3,050	275	700	125	800	150	1,550	200
Area, ethnic, cultural, gender, and group studies	4,450	150	1,000	100	650	100	350	75	D	D	D	D	D	D	150	50	100	50	D	D	50	25	3,300	150	300	50	1,950	150	1,050	125
Geography and cartography	4,850	200	3,700	200	2,150	175	1,550	150	50	50	D	D	D	D	150	75	100	50	S	S	D	D	900	125	300	75	100	50	500	100
International relations and national security studies	2,350	150	1,550	125	1,150	100	400	75	D	D	D	D	D	D	S	S	D	D	D	D	D	D	750	100	300	75	50	25	400	75
Linguistics	5,100	225	1,900	175	1,100	150	850	100	D	D	D	D	D	D	200	100	100	50	D	D	D	D	2,950	200	300	75	1,900	200	700	125
Urban studies, affairs	1,350	100	650	100	300	50	300	75	50	25	D	D	*	*	150	50	50	25	D	D	D	D	550	75	200	50	100	50	200	50
Social sciences, other	9,350	250	4,600	225	2,700	200	1,900	150	D	D	D	D	D	D	700	100	500	100	100	50	100	50	4,000	225	900	150	1,250	150	1,800	175
Engineering	196,750	1,300	51,600	1,100	4,250	375	47,350	1,025	107,750	1,400	22,800	825	84,950	1,325	14,150	625	2,500	325	9,550	475	2,150	300	23,250	850	11,050	525	1,400	200	10,800	675
Aerospace, aeronautical, and astronautical engineering	8,150	200	1,450	150	S	S	1,350	150	5,550	225	1,150	200	4,450	275	550	125	D	D	500	125	S	S	550	100	300	75	D	D	200	75
Chemical engineering	23,700	500	5,750	400	150	75	5,600	400	11,800	525	1,950	250	9,900	475	2,050	275	250	125	1,500	275	350	125	4,100	375	1,950	300	D	D	2,050	325
Civil engineering	21,500	475	3,900	325	450	125	3,450	300	14,500	550	4,200	400	10,300	500	1,400	200	50	50	1,000	175	350	125	1,700	250	950	200	S	S	700	150
Electrical and computer engineering	54,000	675	16,400	625	1,500	225	14,900	575	29,500	825	5,250	450	24,250	800	3,100	300	300	125	2,250	225	600	125	5,000	425	2,550	300	200	75	2,250	275
Computer engineering	8,150	200	5,150	250	700	100	4,450	250	2,000	200	500	125	1,500	175	350	75	D	D	300	75	50	25	600	100	300	100	50	25	250	75
Electrical, electronics, and communications engineering	45,850	650	11,250	575	800	175	10,450	525	27,500	800	4,700	425	22,750	775	2,750	300	250	125	1,950	225	550	125	4,400	400	2,250	300	150	75	2,000	275
Mechanical engineering	28,800	625	5,700	450	550	175	5,150	425	19,400	700	4,650	400	14,750	650	1,350	225	S	S	950	200	200	75	2,300	300	1,200	200	D	D	1,050	225
Metallurgical and materials engineering	18,300	450	4,200	400	250	100	3,950	400	9,950	475	900	200	9,050	450	1,450	250	D	D	1,200	250	250	125	2,700	275	900	150	D	D	1,700	225
Other engineering	42,300	550	14,150	525	1,200	175	12,950	525	17,050	525	4,700	350	12,300	450	4,200	350	1,650	225	2,150	250	450	100	6,900	400	3,150	300	900	175	2,850	300
Agricultural engineering	1,650	100	450	75	100	50	350	75	800	100	250	50	550	75	100	50	D	D	50	50	D	D	300	75	150	50	D	D	150	50
Bioengineering and biomedical engineering	16,350	325	6,150	375	200	50	5,950	375	5,500	350	1,350	200	4,150	300	2,350	275	1,300	200	950	175	50	50	2,450	250	1,300	200	D	D	1,100	175
Engineering mechanics, physics, and science	4,300	200	1,050	100	100	50	950	100	2,350	175	600	125	1,750	175	350	125	50	25	250	125	50	25	550	100	300	100	D	D	250	50
Industrial and manufacturing engineering	9,150	300	3,600	275	400	125	3,200	250	2,750	250	1,300	200	1,450	150	700	150	D	D	450	125	150	75	2,100	250	700	150	500	100	850	175
Nuclear engineering	3,400	150	900	100	50	25	800	100	1,900	150	250	75	1,650	125	250	50	100	50	150	50	S	S	350	75	200	75	D	D	150	50
Engineering, other	7,500	225	2,100	225	350	100	1,700	225	3,750	250	950	150	2,800	225	500	125	S	S	300	75	100	50	1,150	150	500	100	250	125	350	75
Health	44,000	600	14,650	475	2,600	275	12,050	450	450	100	50	50	400	100	20,400	550	18,700	550	1,450	175	200	100	8,500	475	3,400	275	1,800	200	3,300	300
Communication disorders sciences and services	2,950	150	650	100	250	75	400	100	D	D	D	D	D	D	1,750	125	1,700	125	D	D	D	D	550	100	200	50	150	50	250	75
Hospital and medical administration services	1,300	75	350	50	50	25	300	50	D	D	D	D	D	D	550	75	500	50	50	25	D	D	350	50	200	50	50	25	150	50
Pharmacy, pharmaceutical sciences, and administration	8,550	250	5,600	300	550	125	5,050	325	200	100	D	D	200	100	1,300	175	950	150	250	100	D	D	1,450	200	900	175	D	D	550	125
Public health	10,400	250	3,750	250	550	100	3,200	225	150	50	D	D	100	50	4,550	250	4,000	275	550	125	D	D	2,000	225	800	125	250	75	950	200
Registered nursing, nursing administration, nursing research	9,100	325	950	175	250	100	700	175	D	D	D	D	D	D	6,650	325	6,400	350	200	75	D	D	1,500	225	700	150	500	150	350	100
Health sciences, other	11,650	325	3,250	250	950	175	2,300	200	100	50	D	D	100	50	5,650	325	5,200	325	350	75	100	75	2,600	225	650	150	850	125	1,100	175

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

S&amp;E = science and engineering; SE = standard error.

**Note(s):**  
Numbers are rounded to the nearest 50. Standard errors are rounded up to the nearest 25. Detail may not add to total because of rounding. 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.