

Table D-13. U.S. scientists and engineers, by highest degree attained, broad occupation, and citizenship status: 1997

Highest degree and occupation	S&Es, total	U.S. citizen			Non-U.S. citizen		
		Total ¹	Native	Naturalized	Total ²	Permanent resident	Temporary resident
All degree levels³							
All occupations, total⁴	12,512,000	12,091,700	11,116,400	975,300	420,300	340,000	80,300
S&E occupations, total	3,899,000	3,684,800	3,295,800	389,100	214,100	153,800	60,400
Scientists, total	2,261,500	2,119,600	1,924,400	195,200	141,900	102,700	39,200
Computer/math sci, total	1,129,700	1,056,000	944,500	111,500	73,700	51,200	22,500
Computer/information scientists	1,003,400	941,300	840,300	101,000	62,100	43,400	18,700
Mathematical scientists	42,400	39,800	36,800	3,000	2,500	1,800	700
Postsecondary teachers-computer math sci	84,000	74,900	67,400	7,500	9,100	6,000	3,100
Life/related scientists, total	387,300	359,800	327,400	32,400	27,500	21,500	6,000
Agricultural/food scientists	50,500	47,500	44,800	2,700	2,900	2,200	700
Biological scientists	221,000	200,500	177,700	22,800	20,500	15,600	4,900
Environmental life scientists	23,400	23,400	23,200	200	S	S	S
Postsecondary teachers-life/related sciences	92,400	88,300	81,800	6,600	4,000	3,600	500
Physical/related scientists, total	343,500	320,000	288,700	31,300	23,500	18,400	5,100
Chemistry, except biochemistry	147,100	136,400	118,700	17,800	10,700	9,100	1,600
Earth scientists/geologists/oceanographers	82,100	78,800	75,400	3,400	3,300	2,400	900
Physicists/astronomers	38,400	34,900	31,200	3,700	3,500	2,500	1,000
Other physical/related scientists	18,700	18,000	17,300	700	700	400	300
Postsecondary teachers-physical/related sci	57,200	51,900	46,200	5,700	5,300	4,100	1,200
Social/related scientists, total	401,000	383,800	363,900	20,000	17,100	11,600	5,600
Economists	50,800	46,100	42,800	3,300	4,700	2,300	2,400
Political/related scientists	11,000	10,700	10,100	700	300	100	200
Psychologists	205,800	201,400	192,400	9,000	4,400	4,100	400
Sociologists/anthropologists	19,500	18,900	18,700	200	600	200	500
Other social/related scientists	13,500	13,300	12,800	500	100	100	100
Postsecondary teachers-social/related sci	100,300	93,400	87,100	6,200	6,900	4,900	2,000
Engineers, total	1,637,500	1,565,200	1,371,300	193,900	72,300	51,100	21,200
Aerospace/related engineers	99,400	97,700	85,500	12,300	1,600	1,100	500
Chemical engineers	93,900	88,600	78,400	10,200	5,300	3,600	1,700
Civil/architectural engineers	245,600	235,600	200,600	35,000	10,000	7,400	2,700
Electrical/related engineers	430,500	406,900	347,800	59,100	23,600	16,600	7,000
Industrial engineers	93,800	90,300	83,300	7,000	3,500	2,500	1,000
Mechanical engineers	319,500	308,000	272,000	36,000	11,500	8,100	3,400
Other engineers	313,600	302,900	274,600	28,300	10,600	8,000	2,600
Postsecondary teachers-engineers ..	41,300	35,100	29,100	6,000	6,200	3,800	2,400
Non-S&E occupations, total	8,613,100	8,406,900	7,820,600	586,300	206,200	186,200	19,900
Managers/administrators	2,321,300	2,268,400	2,113,800	154,600	52,900	48,300	4,600
Health/related	920,300	898,800	807,700	91,000	21,500	20,000	1,500
Teachers, except S&E postsecondary	985,500	965,100	921,200	44,000	20,300	17,900	2,400
Sales/marketing	1,085,700	1,058,000	980,500	77,500	27,700	25,700	2,000
Other non-S&E occupations	3,300,300	3,216,600	2,997,400	219,200	83,700	74,400	9,300

See explanatory information, if any, and SOURCE at end of table.

Table D-13. U.S. scientists and engineers, by highest degree attained, broad occupation, and citizenship status: 1997

Highest degree and occupation	S&Es, total	U.S. citizen			Non-U.S. citizen		
		Total ¹	Native	Naturalized	Total ²	Permanent resident	Temporary resident
Bachelor's							
All occupations, total⁴	7,456,800	7,284,500	6,753,800	530,700	172,300	150,400	21,900
S&E occupations, total	2,252,100	2,194,800	2,004,900	189,900	57,300	44,400	12,800
Scientists, total	1,135,500	1,100,400	1,017,400	83,100	35,100	26,400	8,700
Computer/math sci, total	731,900	709,500	648,500	61,000	22,400	17,300	5,100
Computer/information scientists	698,700	677,500	618,100	59,400	21,100	16,500	4,600
Mathematical scientists	16,400	16,000	15,200	800	400	400	S
Postsecondary teachers- computer math sci	16,800	15,900	15,100	800	900	400	500
Life/related scientists, total	158,100	152,400	144,000	8,400	5,700	3,900	1,800
Agricultural/food scientists	25,800	25,200	24,400	800	600	600	100
Biological scientists	94,300	89,600	83,200	6,400	4,700	3,000	1,700
Environmental life scientists	16,900	16,900	16,700	200	S	S	S
Postsecondary teachers- life/related sciences	21,100	20,800	19,700	1,100	300	300	S
Physical/related scientists, total ...	163,300	159,000	148,400	10,600	4,300	3,300	1,000
Chemistry, except biochemistry	88,100	85,600	78,100	7,400	2,500	2,000	600
Earth scientists/ geologists/oceanographers	42,100	41,600	40,100	1,500	500	400	100
Physicists/astronomers	10,200	10,200	9,800	400	S	S	S
Other physical/related scientists	9,000	8,900	8,800	100	100	100	S
Postsecondary teachers- physical/related sci	13,900	12,800	11,600	1,200	1,100	800	300
Social/related scientists, total	82,200	79,600	76,500	3,100	2,700	1,900	800
Economists	18,500	17,400	17,000	400	1,100	700	500
Political/related scientists	6,100	6,100	5,700	400	S	S	S
Psychologists	32,500	31,600	29,900	1,700	900	900	S
Sociologists/anthropologists	9,600	9,500	9,500	S	100	S	100
Other social/related scientists	5,500	5,500	5,100	400	S	S	S
Postsecondary teachers- social/related sci	10,100	9,500	9,400	100	500	300	200
Engineers, total	1,116,600	1,094,400	987,500	106,900	22,200	18,100	4,100
Aerospace/related engineers	61,200	60,500	53,600	6,900	700	600	100
Chemical engineers	61,000	59,300	55,100	4,200	1,700	1,400	300
Civil/architectural engineers	181,400	177,800	157,500	20,200	3,700	3,400	300
Electrical/related engineers	290,500	283,200	249,300	33,900	7,300	6,100	1,300
Industrial engineers	70,100	68,600	64,000	4,600	1,600	1,400	100
Mechanical engineers	238,500	234,900	213,500	21,400	3,700	2,900	800
Other engineers	206,300	203,800	188,700	15,100	2,500	2,100	400
Postsecondary teachers-engineers ..	7,400	6,400	5,800	600	1,000	300	800
Non-S&E occupations, total	5,204,700	5,089,700	4,748,900	340,800	115,000	106,000	9,100
Managers/administrators	1,319,600	1,292,300	1,214,400	77,900	27,300	25,800	1,400
Health/related	350,900	342,600	304,100	38,400	8,400	7,700	700
Teachers, except S&E postsecondary ..	482,800	473,300	455,100	18,200	9,400	8,400	1,100
Sales/marketing	848,600	830,800	778,100	52,700	17,800	16,900	1,000
Other non-S&E occupations	2,202,800	2,150,700	1,997,100	153,600	52,100	47,100	5,000

See explanatory information, if any, and SOURCE at end of table.

Table D-13. U.S. scientists and engineers, by highest degree attained, broad occupation, and citizenship status: 1997

Highest degree and occupation	S&Es, total	U.S. citizen			Non-U.S. citizen		
		Total ¹	Native	Naturalized	Total ²	Permanent resident	Temporary resident
Master's							
All occupations, total⁴	3,311,300	3,154,600	2,872,900	281,700	156,700	111,100	45,600
S&E occupations, total	1,100,000	1,007,300	881,200	126,200	92,700	56,000	36,700
Scientists, total	671,100	611,700	552,600	59,000	59,400	36,400	23,100
Computer/math sci, total	328,500	289,200	249,900	39,300	39,300	23,900	15,300
Computer/information scientists	272,500	237,400	201,400	36,000	35,100	22,200	12,900
Mathematical scientists	18,100	16,800	15,900	1,000	1,300	800	400
Postsecondary teachers-computer math sci	37,800	34,900	32,500	2,400	2,900	900	2,000
Life/related scientists, total	83,800	78,100	73,000	5,100	5,700	3,700	2,000
Agricultural/food scientists	12,300	11,300	10,600	600	1,100	600	400
Biological scientists	45,400	41,600	37,800	3,900	3,800	2,500	1,200
Environmental life scientists	4,900	4,900	4,900	S	S	S	S
Postsecondary teachers-life/related sciences	21,200	20,300	19,700	600	900	500	300
Physical/related scientists, total	83,300	76,000	69,100	7,000	7,200	4,600	2,600
Chemistry, except biochemistry	24,600	21,700	17,700	3,900	2,900	2,400	500
Earth scientists/geologists/oceanographers	28,000	26,600	25,600	1,000	1,400	900	500
Physicists/astronomers	11,300	9,900	9,200	700	1,400	800	500
Other physical/related scientists	7,800	7,400	6,900	500	400	S	300
Postsecondary teachers-physical/related sci	11,600	10,400	9,600	800	1,200	400	800
Social/related scientists, total	175,600	168,400	160,700	7,700	7,200	4,100	3,100
Economists	23,200	21,400	19,400	2,000	1,800	600	1,200
Political/related scientists	3,700	3,500	3,400	100	200	100	200
Psychologists	108,600	106,000	101,700	4,300	2,600	2,300	300
Sociologists/anthropologists	5,600	5,300	5,300	S	300	100	200
Other social/related scientists	4,100	4,000	4,000	S	S	S	S
Postsecondary teachers-social/related sci	30,400	28,100	26,900	1,300	2,300	1,100	1,200
Engineers, total	428,900	395,600	328,500	67,100	33,300	19,700	13,700
Aerospace/related engineers	32,900	32,400	28,100	4,200	600	200	400
Chemical engineers	24,600	22,500	18,500	4,100	2,100	1,200	800
Civil/architectural engineers	59,100	54,200	40,700	13,500	4,900	3,000	1,900
Electrical/related engineers	120,200	108,400	86,900	21,500	11,800	7,000	4,900
Industrial engineers	21,800	20,300	18,200	2,100	1,500	900	600
Mechanical engineers	70,800	65,300	53,700	11,600	5,500	3,300	2,200
Other engineers	87,100	82,300	73,200	9,100	4,800	3,300	1,500
Postsecondary teachers-engineers ..	12,400	10,300	9,300	1,000	2,200	800	1,400
Non-S&E occupations, total	2,211,300	2,147,300	1,991,700	155,600	64,000	55,100	8,900
Managers/administrators	826,600	805,600	747,200	58,400	21,000	18,100	2,900
Health/related	109,900	106,400	98,200	8,200	3,500	3,300	200
Teachers, except S&E postsecondary	412,700	407,500	389,500	17,900	5,300	4,400	900
Sales/marketing	215,700	207,500	185,200	22,300	8,200	7,200	1,000
Other non-S&E occupations	646,300	620,300	571,600	48,700	26,000	22,100	3,900

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Highest degree and occupation	S&Es, total	U.S. citizen			Non-U.S. citizen		
		Total ¹	Native	Naturalized	Total ²	Permanent resident	Temporary resident
Doctorate							
All occupations, total⁴	789,700	709,300	602,500	106,800	80,400	68,200	12,200
S&E occupations, total	511,900	449,100	380,900	68,200	62,700	52,100	10,600
Scientists, total	422,700	376,700	328,000	48,700	46,000	38,800	7,200
Computer/math sci, total	64,800	52,900	42,300	10,600	11,900	9,900	2,000
Computer/information scientists	27,900	22,100	17,100	5,100	5,800	4,600	1,200
Mathematical scientists	7,800	6,900	5,700	1,200	900	600	300
Postsecondary teachers-computer math sci	29,100	23,900	19,600	4,300	5,300	4,700	600
Life/related scientists, total	128,400	113,400	97,600	15,900	14,900	12,800	2,100
Agricultural/food scientists	12,200	11,000	9,700	1,200	1,200	1,000	200
Biological scientists	73,400	62,400	51,400	11,000	11,000	9,200	1,800
Environmental life scientists	1,500	1,400	1,400	100	S	S	S
Postsecondary teachers-life/related sciences	41,300	38,700	35,000	3,600	2,700	2,600	100
Physical/related scientists, total ...	96,100	84,100	70,300	13,800	12,000	10,600	1,400
Chemistry, except biochemistry	34,400	29,200	22,800	6,400	5,200	4,700	600
Earth scientists/							
geologists/oceanographers	11,900	10,500	9,500	900	1,400	1,100	300
Physicists/astronomers	16,900	14,800	12,200	2,600	2,100	1,600	500
Other physical/related scientists	1,700	1,500	1,300	100	300	200	S
Postsecondary teachers-physical/related sci	31,200	28,200	24,500	3,700	3,000	2,900	100
Social/related scientists, total	133,300	126,200	117,700	8,500	7,100	5,500	1,600
Economists	8,700	7,100	6,100	900	1,700	900	700
Political/related scientists	1,200	1,200	1,000	200	100	S	100
Psychologists	58,000	57,000	54,700	2,300	1,000	900	100
Sociologists/anthropologists	4,300	4,100	3,900	200	200	100	100
Other social/related scientists	3,000	2,900	2,800	100	100	100	S
Postsecondary teachers-social/related sci	58,100	54,000	49,300	4,700	4,100	3,500	600
Engineers, total	89,200	72,500	52,900	19,500	16,800	13,300	3,400
Aerospace/related engineers	5,100	4,700	3,600	1,200	400	300	100
Chemical engineers	8,300	6,800	4,900	1,900	1,500	1,000	500
Civil/architectural engineers	4,500	3,000	1,800	1,200	1,500	1,000	500
Electrical/related engineers	18,800	14,300	10,700	3,700	4,400	3,600	900
Industrial engineers	1,400	1,000	700	300	400	200	200
Mechanical engineers	9,900	7,600	4,700	2,900	2,300	1,900	400
Other engineers	19,900	16,600	12,600	4,000	3,300	2,700	600
Postsecondary teachers-engineers ..	21,300	18,300	13,900	4,400	3,000	2,700	300

See explanatory information, if any, and SOURCE at end of table.

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Highest degree and occupation	S&Es, total	U.S. citizen			Non-U.S. citizen		
		Total ¹	Native	Naturalized	Total ²	Permanent resident	Temporary resident
Doctorate — continued							
Non-S&E occupations, total	277,800	260,200	221,600	38,600	17,600	16,100	1,600
Managers/administrators	115,300	111,000	95,500	15,400	4,300	3,900	400
Health/related	26,400	24,100	14,400	9,700	2,300	2,100	200
Teachers, except S&E postsecondary	68,100	62,500	55,300	7,200	5,500	5,100	500
Sales/marketing	9,600	8,300	7,100	1,200	1,300	1,200	100
Other non-S&E occupations	58,500	54,300	49,200	5,100	4,200	3,800	400

¹ Includes U.S. citizens who did not specify mode of gaining citizenship

² Includes non-citizens who did not specify visa status

³ Includes professional degrees

⁴ Total excludes 18,700 individuals who reported never having worked. For unemployed individuals, occupation is for their previous reported job.

NOTES: The term "Scientists and Engineers" (S&Es) includes all persons who have ever received a bachelor's degree or higher in a science or engineering (S&E) field, plus persons holding a non-S&E bachelor's or higher degree who were employed in a S&E occupation during either the 1993, 1995 or 1997 SESTAT surveys. Figures are rounded to nearest hundred. Details may not add to total because of rounding.

KEY: S = Suppressed for reasons of confidentiality and/or data reliability

SOURCE: National Science Foundation/Science Resources Studies Division, 1997 SESTAT (Scientists and Engineers Statistical Data System)