

Table E-2. Employed U.S. scientists and engineers, by highest degree attained, occupation, and employment sector: 1997

Highest degree and occupation	Employed S&Es, total	Business/industry				Educational institution			Government		
		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
All degree levels¹											
All occupations, total²	10,585,600	7,264,900	5,910,800	728,100	625,900	1,953,500	940,600	1,012,900	1,367,300	575,100	792,100
S&E occupations, total	3,369,400	2,343,600	2,126,400	110,100	107,000	586,700	475,700	111,000	439,100	250,600	188,600
Scientists, total	1,995,100	1,236,900	1,066,000	81,000	89,800	512,700	409,100	103,600	245,500	139,600	105,900
Computer/math sci, total	1,039,500	828,900	771,800	25,100	32,000	121,200	88,200	33,000	89,400	53,300	36,100
Computer/information scientists	933,200	811,400	757,400	24,600	29,400	45,400	35,600	9,800	76,400	44,100	32,300
Mathematical scientists	34,700	16,700	13,900	500	2,300	5,000	4,700	300	13,000	9,200	3,800
Postsecondary teachers-computer math sci	71,500	800	500	S	200	70,700	47,900	22,800	S	S	S
Life/related scientists, total ..	321,800	102,700	81,400	8,000	13,300	154,500	139,100	15,400	64,600	37,900	26,700
Agricultural/food scientists	43,000	24,600	21,100	3,000	500	9,500	9,400	100	9,000	5,200	3,800
Biological scientists	181,900	70,800	57,200	2,900	10,800	69,800	68,600	1,200	41,300	22,500	18,800
Environmental life scientists ..	20,200	5,800	2,600	2,000	1,200	400	400	S	14,000	10,100	3,800
Postsecondary teachers-life/related sciences	76,600	1,500	500	200	800	74,800	60,600	14,200	300	100	300
Physical/related scientists, total	284,900	156,100	144,800	6,200	5,100	80,000	71,100	8,900	48,700	30,500	18,200
Chemistry, except biochemistry	119,800	94,300	90,300	1,800	2,200	10,500	10,400	100	15,000	6,400	8,700
Earth scientists/geologists/oceanographers	68,600	42,200	37,600	3,800	800	9,100	8,700	400	17,400	12,400	5,000
Physicists/astronomers	31,500	12,800	10,700	400	1,700	11,100	11,000	100	7,600	6,800	800
Other physical/related scientists	16,700	6,700	6,100	200	400	1,400	1,100	300	8,600	4,900	3,700
Postsecondary teachers-physical/related sci	48,200	100	100	S	S	48,000	40,000	8,000	100	100	S

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

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Highest degree and occupation	Employed S&Es, total	Business/industry				Educational institution			Government		
		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
All degree levels¹ — continued											
Social/related scientists, total	349,000	149,200	68,000	41,700	39,400	157,000	110,600	46,400	42,800	17,900	24,900
Economists	45,100	28,400	23,100	2,900	2,400	4,300	4,200	S	12,400	8,900	3,500
Political/related scientists	9,100	3,800	1,700	600	1,600	1,500	1,500	S	3,800	2,100	1,700
Psychologists	181,700	105,400	36,900	37,400	31,100	55,800	21,200	34,600	20,500	4,300	16,300
Sociologists/anthropologists ..	15,800	5,600	3,700	700	1,200	6,600	6,100	400	3,700	1,500	2,200
Other social/related scientists	11,900	5,600	2,500	200	3,000	4,300	3,900	400	1,900	700	1,200
Postsecondary teachers-social/related sci	85,300	300	100	S	200	84,500	73,700	10,800	500	500	S
Engineers, total	1,374,400	1,106,700	1,060,400	29,100	17,200	74,000	66,700	7,400	193,600	110,900	82,700
Aerospace/related engineers ..	72,500	55,600	53,700	800	1,100	3,100	3,000	100	13,800	13,800	100
Chemical engineers	76,300	71,200	69,300	1,600	300	2,700	2,700	S	2,400	1,700	700
Civil/architectural engineers	206,800	132,100	123,500	7,300	1,300	4,200	3,100	1,100	70,500	15,800	54,700
Electrical/related engineers	364,800	308,400	295,200	6,800	6,500	13,300	12,500	900	43,000	36,500	6,600
Industrial engineers	79,700	73,900	71,000	900	2,000	1,600	1,400	200	4,200	3,400	700
Mechanical engineers	271,100	246,500	239,300	5,500	1,600	6,200	6,200	100	18,400	15,400	3,000
Other engineers	269,200	218,800	208,400	6,100	4,300	9,300	8,900	400	41,100	24,300	16,900
Postsecondary teachers-engineers	33,900	100	100	S	S	33,600	28,900	4,700	200	200	S
Non-S&E occupations, total	7,216,200	4,921,300	3,784,400	618,000	518,900	1,366,800	464,800	901,900	928,100	324,600	603,600
Managers/administrators	2,019,900	1,527,000	1,318,800	70,000	138,300	190,000	90,300	99,700	303,000	122,700	180,200
Health/related	802,400	576,900	355,900	98,400	122,700	158,800	148,200	10,600	66,700	24,800	41,900
Teachers, except S&E postsecondary	779,100	38,900	20,200	8,900	9,800	728,100	95,700	632,400	12,200	2,000	10,200
Sales/marketing	920,300	903,000	768,700	115,900	18,400	6,400	3,800	2,600	10,900	2,700	8,200
Other non-S&E occupations	2,694,500	1,875,600	1,320,900	324,900	229,800	283,600	127,000	156,600	535,300	172,200	363,100

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Table E-2. Employed U.S. scientists and engineers, by highest degree attained, occupation, and employment sector: 1997

Highest degree and occupation	Employed S&Es, total	Business/industry				Educational institution			Government		
		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
Bachelor's											
All occupations, total²	6,193,700	4,582,200	3,903,100	360,500	318,600	780,800	317,600	463,200	830,700	337,900	492,900
S&E occupations, total	1,916,800	1,497,700	1,402,900	47,300	47,500	155,800	130,700	25,100	263,300	141,000	122,300
Scientists, total	1,000,200	740,100	672,100	29,500	38,500	131,200	110,200	21,100	128,900	69,200	59,700
Computer/math sci, total	675,300	571,700	531,500	18,600	21,600	41,700	31,100	10,600	61,900	35,500	26,400
Computer/information scientists	649,900	566,700	526,800	18,600	21,400	27,500	22,100	5,400	55,700	30,400	25,300
Mathematical scientists	11,900	4,500	4,500	S	S	1,200	1,200	S	6,200	5,000	1,200
Postsecondary teachers-computer math sci	13,500	400	300	S	200	13,100	7,900	5,200	S	S	S
Life/related scientists, total ..	125,200	49,300	40,400	4,700	4,200	41,200	36,600	4,600	34,700	18,500	16,200
Agricultural/food scientists	22,200	14,500	12,500	1,800	200	3,100	3,100	S	4,600	2,600	2,000
Biological scientists	73,300	30,200	26,200	1,000	3,000	23,700	23,400	300	19,400	8,200	11,200
Environmental life scientists ..	14,600	4,000	1,100	1,800	1,100	S	S	S	10,600	7,700	2,900
Postsecondary teachers-life/related sciences	15,000	500	500	S	S	14,300	10,000	4,300	200	S	200
Physical/related scientists, total	131,700	87,300	81,800	3,600	1,900	21,900	20,600	1,300	22,400	11,100	11,300
Chemistry, except biochemistry	70,600	56,500	54,700	800	1,100	5,300	5,300	S	8,800	2,900	5,900
Earth scientists/geologists/oceanographers	34,900	24,100	21,100	2,800	200	2,700	2,700	S	8,000	5,500	2,500
Physicists/astronomers	7,400	3,000	2,700	S	300	3,100	3,100	S	1,300	900	400
Other physical/related scientists	8,100	3,600	3,300	S	300	200	200	S	4,300	1,800	2,500
Postsecondary teachers-physical/related sci	10,700	100	100	S	S	10,600	9,300	1,300	S	S	S

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Table E-2. Employed U.S. scientists and engineers, by highest degree attained, occupation, and employment sector: 1997

Highest degree and occupation	Employed S&Es, total	Business/industry				Educational institution			Government		
		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
Bachelor's — continued											
Social/related scientists, total	68,000	31,800	18,400	2,700	10,700	26,400	21,700	4,600	9,900	4,100	5,800
Economists	15,900	9,700	7,500	1,500	700	1,700	1,700	S	4,500	2,700	1,800
Political/related scientists	5,100	1,900	800	S	1,000	900	900	S	2,300	700	1,700
Psychologists	26,200	15,200	6,900	1,100	7,200	9,800	7,400	2,400	1,200	300	900
Sociologists/anthropologists ..	7,000	3,000	2,200	100	700	2,800	2,600	200	1,200	300	900
Other social/related scientists	4,500	2,000	1,100	S	1,000	1,900	1,700	100	600	200	500
Postsecondary teachers-social/related sci	9,300	S	S	S	S	9,300	7,400	1,900	S	S	S
Engineers, total	916,600	757,700	730,800	17,800	9,100	24,600	20,600	4,000	134,400	71,800	62,600
Aerospace/related engineers ..	40,900	32,300	31,700	300	300	1,400	1,400	S	7,200	7,200	S
Chemical engineers	49,300	46,200	45,500	700	S	1,600	1,600	S	1,600	900	700
Civil/architectural engineers	150,500	92,200	86,800	4,600	900	2,800	1,800	1,000	55,500	11,600	43,900
Electrical/related engineers	239,600	204,800	197,700	3,900	3,200	5,500	4,800	800	29,300	24,500	4,800
Industrial engineers	58,700	54,300	52,500	700	1,000	1,000	800	200	3,400	2,700	700
Mechanical engineers	200,300	183,900	178,800	4,200	900	3,200	3,200	S	13,100	10,700	2,500
Other engineers	171,800	143,900	137,800	3,400	2,700	3,800	3,500	400	24,100	14,000	10,000
Postsecondary teachers-engineers	5,400	S	S	S	S	5,300	3,600	1,700	200	200	S
Non-S&E occupations, total	4,276,900	3,084,500	2,500,100	313,200	271,100	625,000	186,900	438,100	567,500	196,900	370,600
Managers/administrators	1,141,100	928,600	827,300	38,100	63,200	55,200	33,400	21,800	157,300	64,500	92,800
Health/related	280,400	192,700	118,300	10,200	64,200	56,700	52,400	4,300	31,100	7,100	23,900
Teachers, except S&E postsecondary	380,700	27,100	14,500	7,400	5,200	347,900	13,900	334,100	5,700	1,400	4,300
Sales/marketing	718,800	703,700	603,800	86,200	13,700	5,600	3,300	2,300	9,500	2,300	7,200
Other non-S&E occupations	1,755,900	1,232,400	936,300	171,300	124,800	159,500	83,900	75,700	364,000	121,600	242,400

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		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
Master's											
All occupations, total²	2,819,800	1,736,000	1,370,600	150,200	215,200	711,400	219,300	492,100	372,500	157,000	215,500
S&E occupations, total	967,900	657,200	580,800	39,100	37,300	182,500	113,300	69,200	128,200	74,600	53,600
Scientists, total	592,000	357,100	296,400	29,400	31,400	158,800	92,700	66,100	76,100	41,500	34,600
Computer/math sci, total	301,600	228,400	214,300	5,600	8,500	49,500	29,500	20,000	23,700	15,200	8,500
Computer/information scientists	254,200	219,700	207,300	5,200	7,100	15,700	11,800	3,900	18,800	12,400	6,400
Mathematical scientists	15,900	8,700	6,900	300	1,400	2,300	2,000	300	4,900	2,800	2,100
Postsecondary teachers-computer math sci	31,500	100	100	S	S	31,400	15,700	15,800	S	S	S
Life/related scientists, total ..	70,300	22,500	18,000	1,500	3,000	31,100	23,500	7,600	16,600	8,400	8,200
Agricultural/food scientists	10,900	5,700	4,900	700	S	2,900	2,900	100	2,200	800	1,500
Biological scientists	37,600	14,600	11,800	500	2,300	11,200	11,200	S	11,700	5,800	5,900
Environmental life scientists ..	4,200	1,400	1,300	100	100	100	100	S	2,600	1,800	800
Postsecondary teachers-life/related sciences	17,600	800	S	200	600	16,800	9,300	7,500	S	S	S
Physical/related scientists, total	69,100	35,600	33,300	1,200	1,100	18,400	13,200	5,200	15,200	9,600	5,600
Chemistry, except biochemistry	20,200	14,700	14,100	300	300	1,700	1,700	S	3,800	1,500	2,300
Earth scientists/geologists/oceanographers	23,100	14,600	13,800	700	100	2,600	2,500	100	5,900	3,900	2,000
Physicists/astronomers	9,000	4,000	3,300	100	600	3,300	3,300	100	1,600	1,600	S
Other physical/related scientists	7,100	2,200	2,000	100	100	1,100	800	300	3,800	2,600	1,200
Postsecondary teachers-physical/related sci	9,700	S	S	S	S	9,700	4,900	4,700	100	100	S

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Highest degree and occupation	Employed S&Es, total	Business/industry				Educational institution			Government		
		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
Master's — continued											
Social/related scientists, total	151,100	70,700	30,800	21,100	18,800	59,800	26,500	33,300	20,600	8,300	12,300
Economists	21,100	13,700	11,500	1,000	1,300	1,300	1,300	S	6,100	4,700	1,400
Political/related scientists	3,200	1,600	800	500	300	300	300	S	1,200	1,100	100
Psychologists	95,000	51,700	16,800	19,100	15,800	32,800	5,700	27,100	10,500	1,100	9,300
Sociologists/anthropologists ..	5,200	1,300	1,000	400	S	2,200	2,000	100	1,700	700	1,000
Other social/related scientists	3,700	2,000	700	100	1,300	1,000	900	S	700	200	500
Postsecondary teachers-social/related sci	22,900	200	100	S	100	22,300	16,200	6,100	500	500	S
Engineers, total	375,900	300,100	284,400	9,700	5,900	23,700	20,600	3,100	52,100	33,000	19,000
Aerospace/related engineers ..	27,300	20,300	19,400	400	600	1,200	1,100	100	5,800	5,700	100
Chemical engineers	19,900	18,800	17,900	700	100	600	600	S	600	500	S
Civil/architectural engineers	51,700	36,700	33,700	2,600	400	1,000	900	100	14,100	3,800	10,200
Electrical/related engineers	107,400	89,300	84,200	2,700	2,500	6,400	6,400	100	11,600	10,000	1,700
Industrial engineers	19,300	18,100	17,100	200	800	600	600	S	700	700	S
Mechanical engineers	61,600	55,200	53,600	1,100	500	2,000	1,900	100	4,400	3,900	500
Other engineers	79,500	61,800	58,600	2,100	1,100	2,700	2,700	S	15,000	8,500	6,500
Postsecondary teachers-engineers	9,300	S	S	S	S	9,300	6,500	2,800	S	S	S
Non-S&E occupations, total	1,851,900	1,078,700	789,700	111,100	177,900	528,900	106,000	422,900	244,300	82,400	161,900
Managers/administrators	724,800	506,500	420,900	24,900	60,700	93,700	30,100	63,600	124,600	48,600	76,000
Health/related	92,500	63,300	36,000	5,500	21,800	17,200	13,300	3,900	12,000	4,000	8,000
Teachers, except S&E postsecondary	323,300	10,800	4,900	1,300	4,500	307,500	27,000	280,500	5,000	500	4,500
Sales/marketing	183,100	181,100	151,700	24,800	4,600	700	400	300	1,400	400	1,000
Other non-S&E occupations	528,200	317,100	176,200	54,600	86,300	109,900	35,200	74,700	101,200	28,900	72,400

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Doctorate											
All occupations, total²	696,000	289,100	212,500	38,300	38,300	341,800	302,000	39,800	65,100	42,500	22,600
S&E occupations, total	454,700	174,500	134,600	21,200	18,700	235,600	220,900	14,700	44,600	32,800	11,800
Scientists, total	375,300	127,200	91,200	19,600	16,400	209,900	195,400	14,500	38,100	27,300	10,800
Computer/math sci, total	59,000	25,600	22,700	1,000	1,800	29,600	27,400	2,200	3,800	2,600	1,200
Computer/information scientists	25,700	21,700	20,000	800	900	2,100	1,700	300	1,900	1,300	600
Mathematical scientists	6,900	3,500	2,500	200	900	1,500	1,500	S	1,900	1,300	600
Postsecondary teachers-computer math sci	26,300	300	200	S	100	26,000	24,200	1,800	S	S	S
Life/related scientists, total ..	111,800	27,200	20,800	1,300	5,000	72,500	69,500	3,000	12,200	9,900	2,200
Agricultural/food scientists	9,800	4,300	3,600	400	300	3,400	3,400	S	2,000	1,700	300
Biological scientists	64,100	22,400	16,900	800	4,700	32,300	31,400	900	9,400	7,600	1,700
Environmental life scientists ..	1,200	300	200	100	100	300	300	S	600	500	100
Postsecondary teachers-life/related sciences	36,700	100	S	S	100	36,500	34,400	2,100	200	100	100
Physical/related scientists, total	83,700	33,100	29,700	1,300	2,100	39,700	37,300	2,400	10,800	9,500	1,300
Chemistry, except biochemistry	28,900	23,000	21,500	700	800	3,500	3,400	100	2,400	2,000	400
Earth scientists/geologists/oceanographers	10,500	3,500	2,700	300	500	3,700	3,400	300	3,300	2,900	500
Physicists/astronomers	15,100	5,800	4,700	300	800	4,700	4,700	S	4,600	4,200	400
Other physical/related scientists	1,400	800	800	S	S	100	100	S	500	400	S
Postsecondary teachers-physical/related sci	27,800	S	S	S	S	27,700	25,700	2,000	S	S	S

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Doctorate — continued											
Social/related scientists, total	120,800	41,400	18,000	16,000	7,400	68,000	61,200	6,800	11,400	5,300	6,100
Economists	7,800	4,700	3,800	400	500	1,200	1,200	S	1,900	1,500	300
Political/related scientists	900	300	100	S	200	300	300	S	300	300	S
Psychologists	54,300	34,400	13,200	15,200	6,000	12,000	7,900	4,100	7,900	2,600	5,200
Sociologists/anthropologists ..	3,600	1,200	600	200	400	1,600	1,400	100	800	500	200
Other social/related scientists	2,700	600	300	100	300	1,500	1,200	300	600	400	200
Postsecondary teachers-social/related sci	51,600	100	S	S	100	51,500	49,200	2,300	S	S	S
Engineers, total	79,400	47,200	43,400	1,600	2,200	25,700	25,500	300	6,500	5,500	1,000
Aerospace/related engineers ..	4,300	3,000	2,700	100	200	500	500	S	800	800	S
Chemical engineers	7,100	6,300	6,000	100	200	500	500	S	200	200	S
Civil/architectural engineers	4,000	2,700	2,500	200	100	500	500	S	800	300	500
Electrical/related engineers	16,800	13,800	12,700	200	800	1,400	1,400	S	1,600	1,600	100
Industrial engineers	1,400	1,300	1,100	S	100	100	100	S	100	100	S
Mechanical engineers	9,000	7,200	6,700	200	200	1,000	1,000	S	800	700	S
Other engineers	17,700	12,900	11,700	600	600	2,700	2,700	S	2,100	1,700	400
Postsecondary teachers-engineers	19,200	100	100	S	S	19,100	18,800	200	S	S	S

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Table E-2. Employed U.S. scientists and engineers, by highest degree attained, occupation, and employment sector: 1997

Highest degree and occupation	Employed S&Es, total	Business/industry				Educational institution			Government		
		Total	Profit	Self-employed	Non-profit	Total	4 yr. College/university	Other	Total	Federal	State/local
Doctorate — continued											
Non-S&E occupations, total	241,300	114,700	77,900	17,100	19,700	106,200	81,100	25,100	20,500	9,700	10,800
Managers/administrators	102,400	55,200	43,200	3,000	9,000	34,000	22,700	11,200	13,300	6,500	6,800
Health/related	21,800	12,700	7,800	2,600	2,300	7,500	7,100	400	1,600	1,100	600
Teachers, except S&E postsecondary	57,900	800	500	100	100	56,500	46,400	10,100	700	200	500
Sales/marketing	8,300	8,200	6,700	1,400	100	100	100	S	S	S	S
Other non-S&E occupations	51,000	37,900	19,700	10,000	8,200	8,200	4,900	3,300	4,900	2,000	2,900

- 1 Includes professional degrees
- 2 Total excludes 18,700 individuals who reported never having worked.

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)