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THIRTY-THREE YEARS OF WOMEN IN S&E FACULTY POSITIONS

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The relatively low proportion of women in academic science and engineering[2] (S&E) has been the topic of numerous recent books, reports, and workshops. (See for example, Powell 2007, DOE/NSF/NIH 2006, National Academies 2007.) Data for 2006 show that women continue to constitute a much lower percentage of S&E full professors than their share of S&E doctorates awarded in that year. Even in psychology, a field heavily dominated by women, women were less than half of all full professors, even though they earned well more than half of doctorates in 2006.

This InfoBrief examines the trends from 1973 to 2006 in the employment of women faculty and in the percentages of full professors and of tenured faculty who are women. The trends are examined by field of doctorate, Carnegie classification of employer, marital status, and the presence of children in the home. Because the S&E doctorate holders employed in academic institutions in 2006 were awarded their doctorates over a span of about three decades, these trends are examined against the background of changing percentages of S&E doctorates earned by women over time, starting with the 1958 degree year.[3]

Trends in S&E Doctoral Degrees

The proportion of S&E doctoral degrees earned by women has risen considerably in the past several decades, reaching 40% in 2006 compared with 8% in 1958 (table 1). During this period, women made gains in all major S&E fields, but considerable differences by field remain. Women earned half or more of doctorates in psychology (71%) and the life sciences (52%) in 2006 but considerably less than half of doctorates in mathematics (30%), physical sciences (29%), computer sciences (21%), and engineering (20%). Although low for the latter fields, these shares are considerably higher than the corresponding values in 1958 (6%, 4%, and less than 1%, respectively, for mathematics, physical sciences, and engineering).[4]

Employment in Colleges and Universities

The number of women with S&E doctorates employed in colleges and universities rose continuously between 1973 and 2006, while that of men rose more slowly, especially in the 1990s. Reflecting these trends, women constituted 33% of all academic S&E doctoral employment and 30% of full-time faculty[5] in 2006, up from 9% and 7%, respectively, in 1973 (NSB 2008).

Academic jobs constituted declining shares of employment for both men and women with S&E doctorates through the 1970s and 1980s, thereafter fluctuating in narrow ranges. From 1993 to 2006, about half of female and 41%–45% of male doctoral scientists and engineers were employed in the academic sector, compared with 67% and 54%, respectively, in 1973. The shift away from academia over the period was accompanied by rising shares of doctorate holders employed in the business sector—for women from 7% to 19% and for men from 25% to 33% by 2006 (table 2).

Employment sector differences between men and women primarily reflect differences in field of doctorate, as women continue to be less likely than men to earn doctorates in engineering or physical sciences

TABLE 1. Women as a percentage of science, engineering, and health doctoral degrees awarded, by field of doctorate: 1958–2006

Year	All science, engineering, and health fields	Computer sciences	Engineering	Life sciences	Mathematics	Physical sciences	Psychology	Social sciences
1958	7.9	NA	0.5	10.0	5.9	3.5	18.0	9.7
1959	7.3	NA	0.3	9.0	4.5	3.2	18.1	9.2
1960	7.1	NA	0.4	8.8	5.2	3.2	17.5	9.4
1961	7.3	NA	0.4	9.3	5.1	3.3	20.1	8.6
1962	7.2	NA	0.3	9.7	5.7	3.8	18.5	8.5
1963	7.3	NA	0.7	9.9	5.8	4.0	17.6	9.9
1964	7.6	NA	0.6	10.3	5.6	4.1	20.3	9.6
1965	7.2	NA	0.3	10.4	7.3	4.4	19.8	8.2
1966	8.0	NA	0.3	11.9	6.1	4.3	21.5	10.5
1967	8.4	NA	0.3	13.3	5.8	4.6	20.5	11.1
1968	9.1	NA	0.4	13.8	4.8	5.1	22.7	11.8
1969	9.4	NA	0.3	14.2	5.2	5.2	23.6	11.5
1970	9.3	NA	0.5	13.3	6.3	5.5	23.5	11.3
1971	10.5	NA	0.5	15.0	7.8	5.4	24.7	13.1
1972	11.3	NA	0.6	15.6	7.5	6.4	26.7	13.5
1973	13.3	NA	1.4	18.3	9.7	6.4	29.2	15.7
1974	14.5	NA	1.1	18.8	9.5	7.1	30.8	18.2
1975	15.9	NA	1.7	20.2	9.5	7.9	31.7	19.9
1976	17.1	NA	1.9	20.7	11.3	8.6	32.8	21.2
1977	18.4	NA	2.8	21.3	13.1	8.8	36.4	21.4
1978	20.1	9.1	2.2	23.6	14.3	9.4	36.9	24.3
1979	21.5	12.9	2.5	24.7	15.5	10.5	40.8	25.6
1980	22.9	9.6	3.6	26.4	12.8	12.2	42.3	26.9
1981	23.8	11.2	3.9	27.9	15.4	11.2	43.9	26.5
1982	24.7	9.1	4.7	29.1	13.3	13.6	45.5	27.6
1983	26.2	12.6	4.5	31.5	16.1	13.5	47.7	30.4
1984	26.7	12.5	5.2	31.4	16.5	14.5	50.1	30.9
1985	27.1	10.6	6.3	32.7	15.4	16.3	49.4	32.0
1986	27.9	12.0	6.7	34.6	16.6	16.4	51.2	33.6
1987	28.0	14.4	6.5	35.6	16.9	16.6	53.5	32.0
1988	28.5	10.9	6.8	37.2	16.2	17.2	54.7	34.8
1989	29.7	17.6	8.3	38.7	18.0	19.1	56.1	34.1
1990	29.2	15.6	8.5	37.9	17.7	18.8	58.3	33.3
1991	30.3	14.6	9.0	39.2	19.2	19.2	61.4	36.9
1992	30.2	13.8	9.3	39.7	19.4	20.8	59.1	36.0
1993	31.6	15.7	9.2	42.0	23.0	20.9	61.1	37.7
1994	31.9	15.2	10.9	42.2	21.1	20.8	62.2	37.0
1995	32.8	18.7	11.6	42.4	22.3	22.5	63.6	37.8
1996	33.3	15.1	12.3	43.8	20.6	21.8	66.7	36.5
1997	34.5	16.5	12.3	44.9	23.4	22.7	66.4	38.7
1998	36.0	17.2	13.1	45.8	25.2	24.4	66.9	41.5
1999	36.5	18.3	14.8	44.8	25.6	23.6	66.8	41.7
2000	38.0	16.4	15.7	47.2	24.7	25.1	66.6	42.9
2001	38.0	18.7	16.9	47.2	27.3	25.5	66.7	42.9
2002	39.2	20.6	17.6	47.8	28.9	27.3	66.6	44.5
2003	39.4	20.3	17.3	48.5	26.6	27.8	68.1	44.8
2004	39.4	21.0	17.7	49.8	28.3	27.4	67.5	44.2
2005	39.5	19.6	18.4	51.1	27.1	27.9	68.1	44.7
2006	40.2	21.3	20.2	51.8	29.6	29.0	71.3	45.7
1958–2006	28.1	19.3	9.6	36.9	17.3	16.0	52.9	31.7

NA = not available.

NOTES: Total includes unknown sex not shown separately. A code on the survey form for computer sciences was first added in 1978.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, 1958–2006.

(tables 3 and 4), fields in which relatively high percentages of individuals are employed in the business sector. Within specific fields, academic and industry employment shares of men and women are more similar, but consistently higher percentages of women than men are in academic jobs. Exceptions are physical and social sciences, with only minor and statistically not significant sex differences in academic employment.

TABLE 2. Full-time employed science, engineering, and health doctorate holders, by sex and employment sector: 1973–2006
(Percent)

Sex and year	All sectors (n)	Education	Business/ industry	Government	Other
Men					
1973	190,100	53.8	25.3	9.0	12.0
1975	218,500	52.0	26.6	8.6	12.9
1977	240,100	50.4	26.8	9.1	13.7
1979	260,800	48.7	28.1	9.8	13.5
1981	282,900	48.0	30.3	8.5	13.2
1983	297,900	47.1	31.8	9.2	11.9
1985	320,500	46.6	32.9	8.5	12.0
1987	333,700	45.7	27.5	8.0	18.8
1989	350,800	44.6	28.5	8.2	18.7
1991	354,800	40.6	29.8	8.0	21.6
1993	333,300	45.0	32.3	10.4	12.4
1995	348,800	44.9	32.1	10.3	12.7
1997	359,700	43.7	34.6	10.7	11.0
1999	383,500	42.1	36.2	9.9	11.9
2001	389,900	41.2	37.2	10.1	11.4
2003	385,900	42.7	32.6	10.3	14.3
2006	384,800	41.9	32.8	9.6	15.7
Women					
1973	12,900	67.1	7.3	8.9	16.7
1975	16,900	65.3	9.2	7.3	18.2
1977	21,000	63.5	10.5	7.9	18.0
1979	26,100	60.1	13.1	8.7	18.2
1981	32,300	57.9	17.1	8.4	16.6
1983	38,500	55.6	19.5	9.0	15.8
1985	47,000	54.4	21.2	7.6	16.9
1987	54,400	52.3	13.8	8.1	25.8
1989	63,100	51.1	15.5	7.4	26.0
1991	70,400	46.7	16.9	7.8	28.6
1993	74,100	49.9	20.0	10.4	19.7
1995	85,500	51.7	18.5	10.1	19.7
1997	93,700	51.2	20.1	10.6	18.1
1999	105,100	49.6	22.0	9.6	18.8
2001	117,300	49.8	22.9	9.4	17.9
2003	126,200	51.9	19.1	10.0	19.0
2006	140,600	51.6	19.1	10.4	15.6

NOTES: Does not include postdocs. Other sector includes K–12 education, self-employed, nonprofits, and other and, through 1995, national labs. From 1997 to 2006, national labs were not separated from any of the sector categories. Changes in the survey instrument, the reference period, restoration of 30% sample loss in 1991, increase in response rates, and introduction of imputation in 1993 and beyond make the data from the 1990s through 2006 not strictly comparable with data from the 1970s and 1980s. Because of changes in the target population in the 1990s, earlier data were restricted to individuals ages 75 or younger with science, engineering, and health doctorates from U.S. institutions.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 1973–2006.

Tenure and Rank

Women's share of full-time tenured or tenure-track S&E faculty increased over the period for which data on tenure status are available, from 10% in 1979 to 28% in 2006. Trends for most major S&E fields were in the same direction (table 5). For example, women were about 1% of full-time tenured or tenure-track faculty in engineering in 1979 and 11% in 2006.

These gains in tenured and tenure-track positions, as well as corresponding gains in full professor positions, reflect a rising inflow of female doctorate recipients in

TABLE 3. Full-time employed science, engineering, and health doctorate holders, by sex, field of doctorate, and employment sector: 2006
(Percent)

Field of doctorate	Men	Women
S&E total (n)	384,800	140,600
Education	41.9	51.6
Business/industry	32.8	19.1
Government	9.6	10.4
Other	15.7	15.6
Computer sciences	10,600	2,000
Education	41.0	57.5
Business/industry	46.7	27.3
Government	3.8	2.9
Other	8.6	8.7
Engineering	86,900	9,100
Education	26.0	31.9
Business/industry	53.8	44.9
Government	7.4	12.1
Other	12.8	7.2
Life sciences	99,200	51,600
Education	50.2	55.2
Business/industry	24.4	19.3
Government	11.6	11.2
Other	13.8	11.0
Mathematics	20,700	4,100
Education	59.6	67.5
Business/industry	24.0	18.5
Government	6.8	4.3
Other	9.5	8.9
Physical sciences	83,700	15,600
Education	33.9	37.3
Business/industry	41.6	42.1
Government	10.0	9.0
Other	14.5	9.4
Psychology	38,300	33,800
Education	38.0	44.8
Business/industry	13.4	9.1
Government	11.1	9.7
Other	37.4	30.4
Social sciences	45,300	24,300
Education	64.6	66.7
Business/industry	11.5	7.4
Government	10.2	11.4
Other	13.7	13.6

NOTES: Does not include postdocs. Other sector includes K–12 education, self-employed, nonprofits, and other.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 2006.

TABLE 4. Science, engineering, and health doctorate holders employed full time in academic institutions, by selected demographic characteristics: 2006
(Percent)

Demographic characteristics	Both sexes	Female	Male
All scientists and engineers (n)	233,700	72,500	161,200
Age (years)			
25–29	0.6	0.9	0.4
30–34	6.4	8.5	5.4
35–39	13.3	16.0	12.1
40–44	14.2	16.4	13.1
45–49	14.9	14.9	14.9
50–54	15.5	16.3	15.1
55–59	15.2	14.6	15.5
60–64	11.9	8.5	13.4
65–69	6.3	2.7	7.9
70 or older	1.8	1.1	2.1
Marital status			
Married	78.5	66.6	83.8
Living in a marriage-like relationship	4.2	6.9	3.0
Widowed	0.9	1.5	0.6
Separated	0.9	0.9	0.9
Divorced	6.1	9.6	4.5
Never married	9.4	14.4	7.2
Children in household			
No	52.5	57.9	50.1
Yes	47.5	42.1	49.9
Year of doctorate			
1950 to 1954	0.2	0.0	0.3
1955 to 1959	0.9	0.3	1.2
1960 to 1964	4.2	0.9	5.6
1965 to 1969	8.7	3.9	10.9
1970 to 1974	10.2	6.4	11.9
1975 to 1979	11.3	9.9	12.0
1980 to 1984	13.0	12.6	13.2
1985 to 1989	15.7	19.0	14.2
1990 to 1994	17.7	21.1	16.1
1995 to 1999	16.8	23.9	13.7
2000 or later	1.2	1.9	0.9
Doctorate field			
Computer sciences	2.4	1.6	2.7
Engineering	10.9	4.0	14.0
Life sciences	33.5	39.3	30.9
Mathematics	6.5	3.8	7.7
Physical sciences	14.6	8.0	17.6
Psychology	12.7	20.9	9.0
Social sciences	19.4	22.3	18.2

NOTE: Academic employment is limited to U.S. science, engineering, and health doctorate holders employed at 2- or 4-year colleges or universities and does not include postdocs.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 2006.

recent years, combined with nearly level numbers of men. As a result, women hold a larger share of instructor and assistant professor positions (42%) than of associate (34%) or full professor (19%) positions (NSB 2008). Women's shares of all these full-time positions rose substantially between 1973 and 2006.

Women's share of full-time full professors rose from 5% in 1973 to 19% in 2006 (table 5). Women were also an increasing percentage of full-time full professors in most major S&E fields.[6]

TABLE 5. Women as a percentage of full-time full professors and full-time tenured/tenure-track faculty, by field of doctorate: 1973–2006

Year	S&E	Computer sciences	Engineering	Life sciences	Mathematics	Physical sciences	Psychology	Social sciences
Tenured or tenure-track faculty								
1973	NA	NA	NA	NA	NA	NA	NA	NA
1975	NA	NA	NA	NA	NA	NA	NA	NA
1977	NA	NA	NA	NA	NA	NA	NA	NA
1979	9.5	S	0.7	10.2	6.2	3.8	20.5	13.1
1981	10.2	S	1.3	10.9	7.5	4.4	21.6	13.5
1983	11.4	S	1.7	12.5	7.5	4.6	23.7	14.6
1985	12.7	12.6	2.1	15.0	8.5	5.3	25.7	16.0
1987	13.7	13.1	2.6	16.4	8.8	5.9	26.9	16.9
1989	14.9	13.9	2.8	18.4	9.3	6.7	28.0	18.2
1991	16.2	15.2	3.7	20.9	8.0	6.5	29.5	20.6
1993	17.6	18.4	4.2	22.2	9.9	7.8	32.8	21.4
1995	19.6	17.2	5.5	25.0	9.7	9.1	35.0	23.1
1997	20.7	20.4	5.4	25.9	10.5	10.9	35.6	25.4
1999	21.9	22.2	6.2	26.6	13.2	11.8	37.3	26.2
2001	23.7	19.9	6.9	29.1	12.9	13.4	39.0	28.8
2003	25.6	17.7	9.0	30.9	14.3	14.2	43.7	30.9
2006	28.0	21.2	10.8	32.3	17.4	17.0	46.2	33.9
Full professors								
1973	4.5	NA	S	5.7	4.5	2.5	9.1	5.1
1975	4.8	NA	S	6.1	4.7	2.4	9.0	6.0
1977	4.7	NA	S	5.4	4.4	2.7	10.0	6.1
1979	4.8	NA	S	5.5	4.1	2.5	10.2	6.5
1981	5.4	NA	S	5.4	4.0	2.7	12.3	7.8
1983	6.0	S	S	6.7	4.3	3.1	11.9	8.8
1985	6.7	S	1.0	7.8	4.7	3.1	14.4	9.1
1987	7.3	S	1.2	8.3	5.0	3.4	14.6	10.8
1989	8.2	S	0.8	9.4	5.4	3.7	17.4	11.4
1991	9.0	S	1.2	10.8	4.3	3.1	21.6	11.8
1993	9.9	S	1.4	12.5	6.5	3.6	23.6	11.6
1995	11.4	S	1.8	14.6	7.2	4.4	24.5	13.0
1997	11.7	S	1.2	15.6	5.5	4.6	22.8	15.3
1999	14.0	22.5	2.3	17.7	8.7	5.9	28.3	16.6
2001	15.8	17.7	2.7	20.0	9.0	6.8	28.7	19.9
2003	17.9	13.7	3.7	24.0	8.8	7.9	32.6	21.9
2006	19.4	17.4	5.0	26.2	8.6	8.3	33.4	22.8

NA = not available.

S = suppressed for reliability; fewer than 50 weighted cases.

NOTES: Academic employment is limited to U.S. doctorate holders employed at 2- or 4-year colleges or universities and does not include postdocs. Changes in the survey instrument, the reference period, restoration of 30% sample loss in 1991, increase in response rates, and introduction of imputation in 1993 and beyond make the data from the 1990s through 2006 not strictly comparable with data from the 1970s and 1980s. Because of changes in the target population in the 1990s, earlier data were restricted to individuals ages 75 or younger with science, engineering, and health doctorates from U.S. institutions.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 1973–2006.

Among S&E doctorate holders employed full time in academia, a much higher percentage of women than men earned their doctorates relatively recently. In 2006 about two-thirds of women and 45% of men so employed had received their doctorates after 1984, and 26% of women vs. 15% of men had earned them since 1994 (table 4).

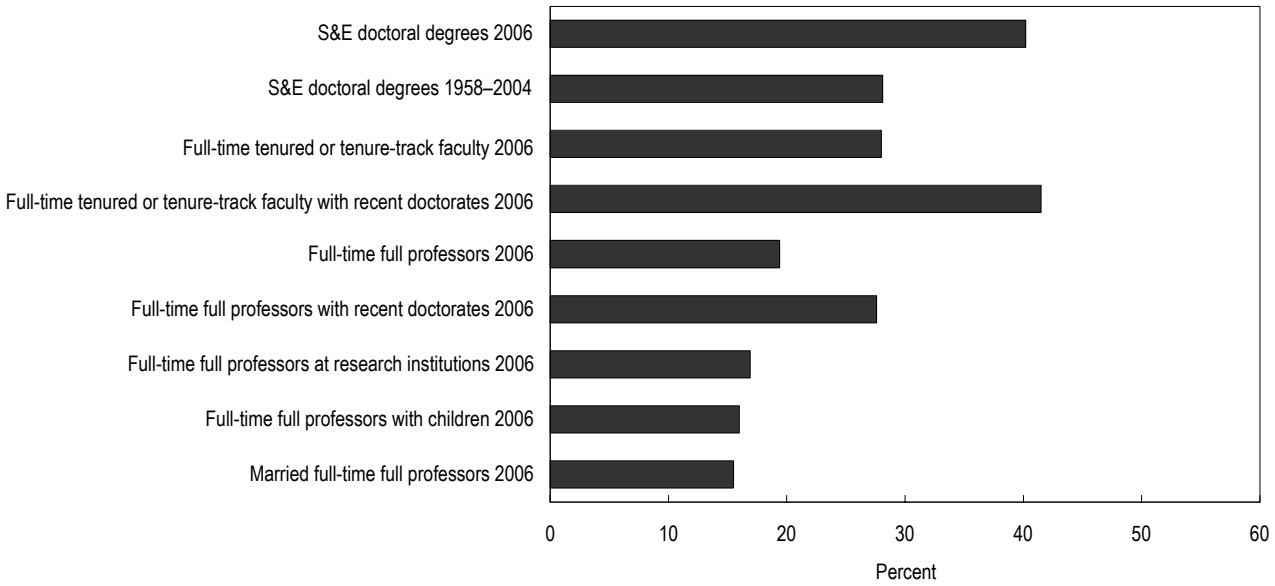
Consequently, women are a larger share of full-time tenured or tenure-track faculty among those with recent S&E doctorates than they are among all S&E faculty. In 2006 women were 42% of full-time tenured or tenure-track faculty with recent (within 7 years) S&E doctorates and 28% of all full-time tenured or tenure-track faculty. Likewise in 2006, women were 28% of full-time full professors with relatively recent S&E doctorates (i.e., those earned from 1991 to 1995) but were 19% of all full-time full professors with S&E doctorates (figure 1).

Women's lower percentage of S&E doctorate recipients in previous years accounts for some of the difference between women's current percentage of full-time tenured or tenure-track faculty or of full-time full professors and women's current percentage of S&E doctorate recipients. The fraction of S&E doctorates earned by women from 1958 to 2004 (28%) is the same as women's fraction of full-time tenured and tenure-track S&E faculty in 2006 but remains higher than women's percentage of S&E full-time full professors in 2006 (figure 1).

Employment in Research Institutions

Among S&E doctorate holders, women were an increasing share of tenured or tenure-track faculty and of full professors in all types of academic institutions, but they remained a lower percentage of tenured or tenure-track faculty and of full professors with S&E doctorates at Carnegie research institutions in 2003 than they were at medical schools or master's-granting institutions[7] (table 6). Women were 16% of full-time full professors with S&E doctorates at research institutions in 2003, up from 2% in 1973, and women were 23% of full-time tenured or tenure-track faculty with S&E doctorates at research institutions in 2003, up from 8% in 1979.

FIGURE 1. Women as a percentage of science, engineering, and health doctoral degrees; full-time full professors; and full-time tenure-track faculty



NOTES: Academic employment is limited to U.S. science, engineering, and health doctorate holders employed at 2- or 4-year colleges or universities and does not include postdocs. For tenured or tenure-track faculty, "recent" doctorates refers to those earned within the previous 7 years. For full-time full professors, "recent" doctorates refers to those earned between 11 and 15 years prior to the survey.

SOURCES: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 2006 and Survey of Earned Doctorates: 1958–2004.

Marital Status and Presence of Children in the Home

Family characteristics, specifically marital status and the presence of children in the home, were found to be related to women's chances for earning tenure and for holding either an associate or full professor rank in a 2004 National Science Foundation (NSF) longitudinal analysis of the academic career paths of men and women (NSF/SRS 2004). Female doctoral S&E faculty are less likely than their male colleagues (67% vs. 84%) to

TABLE 6. Women as a percentage of full-time full professors and full-time tenured/tenure-track faculty with science, engineering, and health doctorates, by 1994 Carnegie classification of employer: 1973–2003

Year	All colleges and universities	Research institutions	Other doctoral institutions	Medical schools and medical centers	Comprehensive (master's) universities and colleges	Baccalaureate/ liberal arts colleges
Tenured or tenure-track faculty						
1973	NA	NA	NA	NA	NA	NA
1975	NA	NA	NA	NA	NA	NA
1977	NA	NA	NA	NA	NA	NA
1979	9.5	7.5	9.9	12.2	12.1	12.5
1981	10.2	8.3	9.9	14.1	12.3	13.8
1983	11.4	9.0	11.2	15.6	13.5	14.7
1985	12.7	10.2	12.6	18.7	15.2	16.3
1987	13.7	11.2	12.9	24.0	16.1	17.4
1989	14.9	13.1	13.8	23.5	16.3	18.4
1991	16.2	14.0	15.7	18.7	18.0	22.2
1993	17.6	15.1	16.7	25.0	19.8	22.0
1995	19.5	17.3	18.3	26.1	21.9	23.7
1997	20.7	18.2	20.9	25.9	22.2	25.0
1999	21.9	19.0	22.0	28.5	23.6	27.7
2001	23.7	21.4	23.5	28.2	26.3	28.2
2003	25.5	22.9	25.7	32.7	27.9	27.1
Full professors						
1973	4.5	2.4	3.4	7.9	7.9	11.6
1975	4.8	2.9	4.4	7.3	7.7	9.8
1977	4.7	3.1	4.3	8.9	7.1	9.4
1979	4.8	3.0	6.1	7.7	7.3	7.8
1981	5.4	3.2	5.9	7.9	7.7	9.5
1983	6.0	3.6	5.8	8.4	8.6	9.5
1985	6.7	4.3	6.7	7.2	10.4	9.4
1987	7.3	5.3	5.8	10.4	10.6	10.6
1989	8.2	6.2	7.3	11.4	11.1	10.8
1991	9.0	6.3	7.1	7.7	12.2	16.0
1993	9.8	7.5	8.5	11.0	12.4	14.5
1995	11.4	9.9	10.1	14.5	13.0	13.7
1997	11.7	9.9	10.0	14.0	13.0	13.8
1999	14.0	11.2	13.6	16.7	17.4	16.9
2001	15.8	13.4	16.6	19.8	18.9	16.2
2003	17.9	15.6	18.8	26.5	20.4	15.8

NA = not available.

NOTES: Does not include postdocs. Changes in the survey instrument, the reference period, restoration of 30% sample loss in 1991, increase in response rates, and introduction of imputation in 1993 and beyond make the data from the 1990s through 2006 not strictly comparable with data from the 1970s and 1980s. Because of changes in the target population in the 1990s, earlier data were restricted to individuals ages 75 or younger with science, engineering, and health doctorates from U.S. institutions. Institutions designated by 1994 Carnegie classification code. For information on these institutional categories, see Carnegie Foundation for the Advancement of Teaching, A Classification of Institutions of Higher Education, Princeton University Press (1994) and chapter 2 sidebar, "Carnegie Classification of Academic Institutions," in National Science Board, *Science and Engineering Indicators 2006,* volume 1, NSB 06-01, National Science Foundation (2006). Employment at associates colleges, other specialized institutions, and institutions without Carnegie code included in total but not shown separately. Freestanding schools of engineering and technology included under master's colleges and universities.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 1973–2003.

be married. They are also less likely to have children living with them (42% vs. 50%) (table 4).

Trends in women as a percentage of tenured or tenure-track faculty and full-time full professors by marital status and the presence of children in the home mirror the trends discussed earlier among all S&E faculty (tables 7 and 8). Women with S&E doctorates represent an increasing share of tenured or tenure-track faculty and full-time full professors, irrespective of marital status or the presence of children in the home. However, women were higher percentages of unmarried tenured or tenure-track faculty and full-time full professors than they were of those who were married, and they were a higher percentage of those without children than of those who had children in the home. Furthermore, numerical increases in the percentages of full-time full professors over time for unmarried women and women without children were greater than those for married women and women with children.

TABLE 7. Women as a percentage of full-time tenured or tenure-track faculty, by marital status, presence of children in the home, and field of doctorate: 1993–2006

Marital status, presence of children in the home, and field of doctorate	1993	1995	1997	1999	2001	2003	2006
Married							
All science, engineering, and health fields	13.8	15.3	16.6	17.8	19.3	20.9	23.1
Computer sciences	18.3	16.9	19.0	20.2	18.2	14.1	17.1
Engineering	3.6	4.9	4.5	5.5	5.9	7.8	9.2
Life sciences	17.6	19.7	20.9	21.9	24.7	26.2	27.5
Mathematics	8.1	8.2	9.4	10.4	10.0	11.8	14.1
Physical sciences	6.2	7.1	8.5	9.9	11.2	11.7	14.0
Psychology	26.0	26.2	28.3	30.5	31.1	35.7	39.5
Social sciences	17.0	18.7	20.9	21.5	23.3	25.4	28.1
Not married							
All science, engineering, and health fields	33.8	38.1	39.0	39.1	41.5	42.5	47.5
Computer sciences	18.7	17.4	29.7	28.7	26.6	33.1	39.4
Engineering	7.6	9.2	10.8	10.7	12.4	16.8	21.9
Life sciences	45.5	50.8	49.7	48.7	50.2	48.8	52.5
Mathematics	18.7	16.9	15.2	25.2	27.2	23.8	30.1
Physical sciences	14.6	17.7	22.9	20.3	22.5	24.5	32.1
Psychology	53.1	61.0	60.1	57.8	59.7	64.4	66.5
Social sciences	37.1	39.0	40.5	42.3	46.5	47.0	51.9
With children in the home							
All science, engineering, and health fields	14.3	16.1	17.6	18.7	20.2	22.2	24.4
Computer sciences	22.0	18.1	19.0	18.0	16.3	13.0	16.4
Engineering	3.5	4.9	5.1	6.0	7.3	9.6	10.3
Life sciences	18.5	21.0	22.7	22.3	24.3	25.3	27.3
Mathematics	6.7	7.4	8.3	12.6	9.8	9.8	15.2
Physical sciences	6.1	8.5	9.2	10.8	11.8	12.3	15.7
Psychology	26.5	26.1	30.0	32.0	33.2	40.7	42.6
Social sciences	17.7	18.9	21.0	22.5	26.0	29.4	31.1
No children in the home							
All science, engineering, and health fields	21.3	23.0	23.7	25.0	26.9	28.7	31.2
Computer sciences	14.0	16.0	23.5	27.6	25.2	25.3	27.4
Engineering	5.2	6.3	5.7	6.4	6.5	8.7	11.3
Life sciences	27.1	29.6	29.5	31.5	34.2	36.5	37.1
Mathematics	13.6	11.8	12.2	13.8	15.5	18.1	19.3
Physical sciences	9.0	9.3	12.1	12.2	14.5	15.6	18.2
Psychology	39.5	43.3	41.2	41.8	43.5	46.1	48.9
Social sciences	25.5	26.7	29.1	29.1	30.9	32.1	36.2

NOTE: Academic employment is limited to U.S. science, engineering, and health doctorate holders employed at 2- or 4-year colleges or universities and does not include postdocs.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 1993–2006.

Summary

Women represent increasing shares of tenured and tenure-track faculty and of full-time full professors with S&E doctorates. To a large degree, these gains reflect women's increase in the percentage of S&E doctorates awarded. By 2006 women's share of tenured and tenure-track faculty was the same as their share of 1958–2004 S&E doctorates; however, their share of S&E full professors remained lower than their share of 1958–2004 S&E doctorates. Unmarried women and women without children made greater numerical gains in their percentage of full professors from 1973 to 2006 than married women or women with children.

Data Notes

The main source of the data for this InfoBrief is the NSF Survey of Doctorate Recipients (SDR), a survey conducted biennially from 1973 to 2003 and in 2006.

TABLE 8. Women as a percentage of full-time full professors, by marital status, presence of children in the home, and field of doctorate: 1993–2006

Marital status, presence of children in the home, and field of doctorate	1993	1995	1997	1999	2001	2003	2006
Married							
All science, engineering, and health fields	7.4	8.7	9.1	10.9	12.6	14.3	15.5
Computer sciences	S	S	S	19.5	14.2	8.3	11.3
Engineering	1.4	1.7	1.2	2.2	2.9	3.6	4.4
Life sciences	8.8	10.5	12.0	13.9	15.9	19.7	21.5
Mathematics	4.2	5.8	4.6	7.1	7.8	7.1	7.0
Physical sciences	3.0	3.4	3.4	4.5	5.1	6.0	6.9
Psychology	18.9	20.3	18.1	22.3	23.3	26.2	26.8
Social sciences	9.4	10.2	12.4	12.9	16.4	17.6	18.7
Not married							
All science, engineering, and health fields	24.5	28.1	28.4	32.6	33.3	35.2	40.9
Computer sciences	S	S	S	S	S	34.3	51.7
Engineering	S	S	S	S	S	6.1	13.7
Life sciences	34.6	40.7	40.1	43.0	47.9	46.4	51.6
Mathematics	22.7	16.2	13.9	21.1	19.8	20.7	17.9
Physical sciences	7.6	10.4	11.6	15.6	14.2	12.8	17.9
Psychology	42.9	44.8	45.5	52.0	47.1	54.0	60.1
Social sciences	23.5	26.6	30.0	32.8	34.8	39.1	40.2
With children in the home							
All science, engineering, and health fields	7.7	9.5	10.0	12.2	13.2	15.8	16.0
Computer sciences	S	S	S	21.0	14.4	8.0	16.6
Engineering	1.3	1.6	1.6	2.6	3.6	5.8	5.6
Life sciences	9.9	11.5	13.0	14.4	17.2	19.7	19.7
Mathematics	3.2	5.6	4.1	7.9	6.6	6.1	6.6
Physical sciences	2.9	4.6	4.0	7.6	5.6	6.9	9.2
Psychology	20.3	21.7	19.5	24.0	23.9	31.2	30.3
Social sciences	8.8	10.3	12.2	13.4	16.1	20.2	19.9
No children in the home							
All science, engineering, and health fields	12.0	12.9	13.2	15.4	17.7	19.5	21.7
Computer sciences	S	S	S	25.7	26.8	20.8	18.7
Engineering	1.6	1.9	S	1.9	1.9	2.2	4.4
Life sciences	14.4	17.3	17.8	20.5	22.5	27.5	30.8
Mathematics	10.0	8.7	6.5	9.3	10.3	11.3	9.9
Physical sciences	4.1	4.0	4.6	4.4	6.8	7.4	7.7
Psychology	27.4	27.1	26.4	31.8	32.3	33.3	35.1
Social sciences	14.4	15.0	17.8	18.8	22.3	23.0	24.6

S = suppressed for reliability; fewer than 50 weighted cases.

NOTE: Academic employment is limited to U.S. science, engineering, and health doctorate holders employed at 2- or 4-year colleges or universities and does not include postdocs.

SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Doctorate Recipients: 1993–2006.

The SDR provides data on people who have earned science, engineering, and health doctorates from U.S. institutions and who are employed in the United States. Thus, the faculty data included in this report refer only to U.S. faculty with science, engineering, and health doctoral degrees from U.S. institutions. The Carnegie classification used in this InfoBrief is the 1994 version of the Carnegie Foundation for the Advancement of Teaching's classification of academic institutions. Because the 2006 SDR used the 2005 classification system, data were presented only from 1973 through 2003. All the academic employment estimates in this InfoBrief are based on sample data and are subject to sampling errors. Generalized variance functions were used to estimate the standard errors of the estimates, and statements made about the differences are statistically significant at the .05 level or less. Further SDR-related information can be found at http://www.nsf.gov/statistics/doctoratework/. For further information on this InfoBrief, contact Joan Burrelli.

Notes

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2. In this InfoBrief, life sciences doctorates include those in health and biomedical sciences.

3. In this InfoBrief, trends in doctorate conferral begin in 1958, about the upper limit for year of doctorate of S&E doctorate holders in the U.S. labor force in 2006. Starting in 1958 also allows a period of 15 years after doctorate receipt for S&E doctorate holders surveyed in 1973, which is sufficient time for many to be appointed to full professorships.

4. Data on computer science doctorates were not collected until 1978.

5. Full-time faculty include full, associate, and assistant professors and instructors employed 35 hours or more per week in 2- or 4-year colleges or universities.

6. In computer sciences the number of women in earlier years was too small for reliable estimates, and the decline from 1999 to 2006 in the percentage of full professors who were women is not statistically significant.

7. Differences between research institutions and other doctoral and baccalaureate institutions were not statistically significant.

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