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Women's S/E Doctorates Double Between 1971 and 1981

The number of science and engineering doctorates awarded to women more than doubled between 1971 and 1981 to 4,020, or 23 percent of the total. In contrast, the number of men receiving science and engineering doctorates fell by 20 percent to 13,600. The growth in the number of these doctorates awarded to women, however, was insufficient to offset fully the decrease in the degrees awarded to men.

The 1971-81 period witnessed a dramatic shift in doctorate production trends. The number of degrees awarded in all fields reached a peak of almost 33,800 in 1973, culminating a long-term series of annual increases dating back to 1957. Between 1973 and 1978, the number of doctoral degrees awarded declined by almost 9 percent. Since 1978 annual doctorate production has stabilized at about 31,000. The trend for science and engineering degrees followed the same pattern—reaching a peak of 19,000 in 1973, declining by more than 10 percent to 17,000 in 1978, and recovering slightly to 17,600 by 1981.

The relatively small changes between 1971 and 1981 in total and science-and-engineering degree produc-

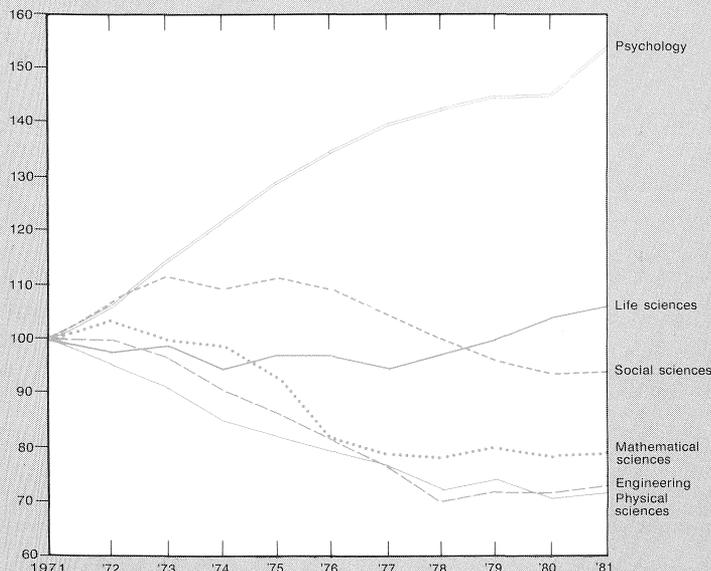
tion stemmed from rather substantial but offsetting changes in the basic factors underlying this degree production—i.e., in the pool of potential new doctorates and in the proportion of members of that pool who actually acquired these degrees. The potential pool, defined statistically as the number completing baccalaureates seven years earlier, doubled; the fraction acquiring doctorates (the completion rate) fell dramatically—by almost 50 percent.

There were substantial field differences in production trends during the 1971-81 period. Most notable were decreases in engineering (down to 2,530 or 28 percent below the 1971 level) and in the physical and mathematical sciences (down 29 percent to 3,210 and 22 percent to 960, respectively). In contrast, psychology had a dramatic 57-percent increase, reaching 3,360 in 1981. The life sciences also reached a new high level of 4,780 in 1981—a modest 5-percent increase over 1971, but this field experienced declines in some years during the 1971-81 period. The social sciences declined to 2,790, or about 7 percent below the 1971 level.

The patterns of growth and decline in the science and engineering fields were related to the changes in the sex distribution of the new doctorates. Fields with the largest proportions of women (psychology and the life and social sciences) were among those showing increases in the number of degrees awarded during the 1971-81 period; in fields with lower proportions of women (engineering and the physical and mathematical sciences) the total number of doctorates fell. Women's representation, however, increased in all science and engineering fields, but changes were not uniform. In 1981, as in 1971, the proportion of women was greatest in psychology (44 percent in 1981) and lowest in engineering (28 percent in 1981).

The 1971-81 growth of science and engineering doctorates awarded to women is the result of both the more rapid relative growth in the female baccalaureate pool in science and engineering, which nearly tripled in those ten years, and the less rapid decline in the female doctorate completion rate in those fields. That rate fell by only 27 percent.

Index of S/E doctorate production by field, 1971-81
(1971=100)



S/E doctorates awarded by field and by sex, 1971-81

Field	1971		1973		1975		1977		1979		1981	
	Total	Women (percentage)										
All fields	31,870	14	33,760	18	32,950	22	31,710	25	31,220	29	31,320	28
S/E total	18,950	10	19,000	13	18,360	15	17,420	18	17,240	21	17,620	23
Engineering	3,500	*	3,360	1	3,000	2	2,640	3	2,490	2	2,530	1
Physical sciences	4,500	5	4,080	6	3,710	8	3,420	9	3,320	11	3,210	13
Math. sciences	1,240	8	1,230	10	1,150	10	960	13	980	15	960	17
Life sciences	4,560	14	4,500	18	4,400	20	4,270	20	4,500	23	4,780	25
Psychology	2,140	25	2,460	29	2,750	32	2,990	36	3,090	41	3,360	44
Social sciences	3,010	13	3,370	15	3,350	20	3,140	21	2,860	26	2,790	28

* Less than 0.5 percent

Note: Detail may not add to total because of rounding

SOURCE: National Science Foundation and National Research Council