



by Carolyn F. Shettle

Division of Science Resources Studies

# ISSUE BRIEF

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*For the first time in over two decades, in 1995, unemployment rates were the same among men and women with doctoral degrees in science and engineering.*

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# Is The Gender Gap In Unemployment Disappearing?

Are women at a disadvantage in the doctoral science and engineering labor force? Has the gender gap in unemployment narrowed during the past two decades? Do marriage and children have different effects on male and female unemployment? The answers to these questions are important to science and engineering policy makers, program administrators, and individuals in— or considering entering—the doctoral science and engineering labor force. Statistical information needed to provide the answers is presented here.

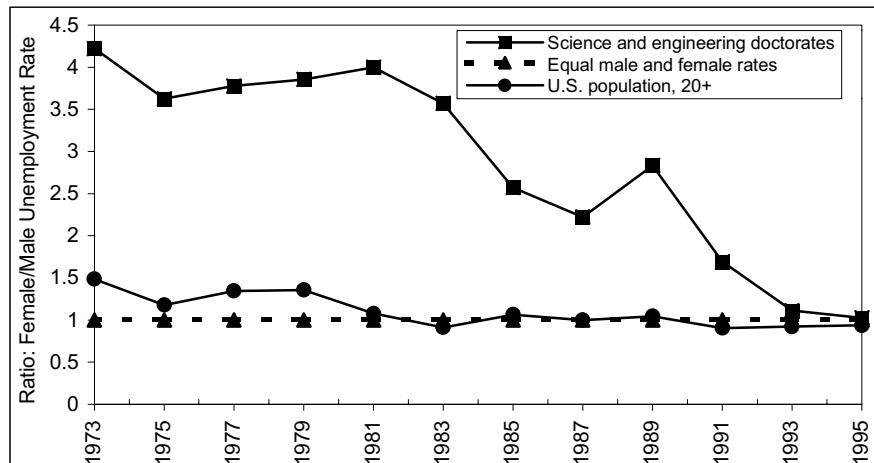
## Trends in the Gender Unemployment Gap

In 1995, the unemployment rate for both men and women who hold doctoral degrees in science and engineering was 1.5 percent. This is in stark contrast to the situation in 1973, when Maxfield et. al. (p. 5) found, “...the unemployment rate for women ... substantially higher than that for men (3.9 percent versus 0.9 percent).” In the intervening years, the gender gap in unemployment, measured by the ratio of female to male unemployment, steadily narrowed (chart 1).

Results of studies of the gender gap, controlling for other factors, are consistent with the premise that the gender gap in unemployment among those with doctoral science and engineering degrees is disappearing. Maxfield et al. found that in 1973 in all age groups and all degree fields, women had considerably higher unemployment rates than men. The smallest reported difference was in the field of mathematics where the rate was 1.9 percent for women, compared to 1.4 percent for men. A National Science Foundation study of factors affecting unemployment in the 1993 doctoral science and engineering population (forthcoming), found no statistically significant difference between unemployment rates for men and women, after controlling for variables such as field of degree and years since degree.

The vanishing gender gap in the doctoral science and engineering population is a reflection of a similar trend in the general population (U.S. Department of Labor, p. 32). In 1973, the unemployment rate for women in the general U.S. population, aged 20 and over, was substantially higher (4.9

**Chart 1. Ratio of female to male unemployment rates of persons with doctoral degrees in science and engineering and persons 20 years of age and over in the overall population: 1973-95**



SOURCES: Doctoral statistics from National Science Foundation/SRS, Survey of Doctorate Recipients. General population figures from Bureau of Labor Statistics, Current Population Survey.

Is the Gender Gap In Unemployment Disappearing—page 2

percent) than that for men (3.3 percent). By the early 1980s, the gender gap in the general population had been eliminated—approximately a decade before its disappearance in the science and engineering doctoral population.

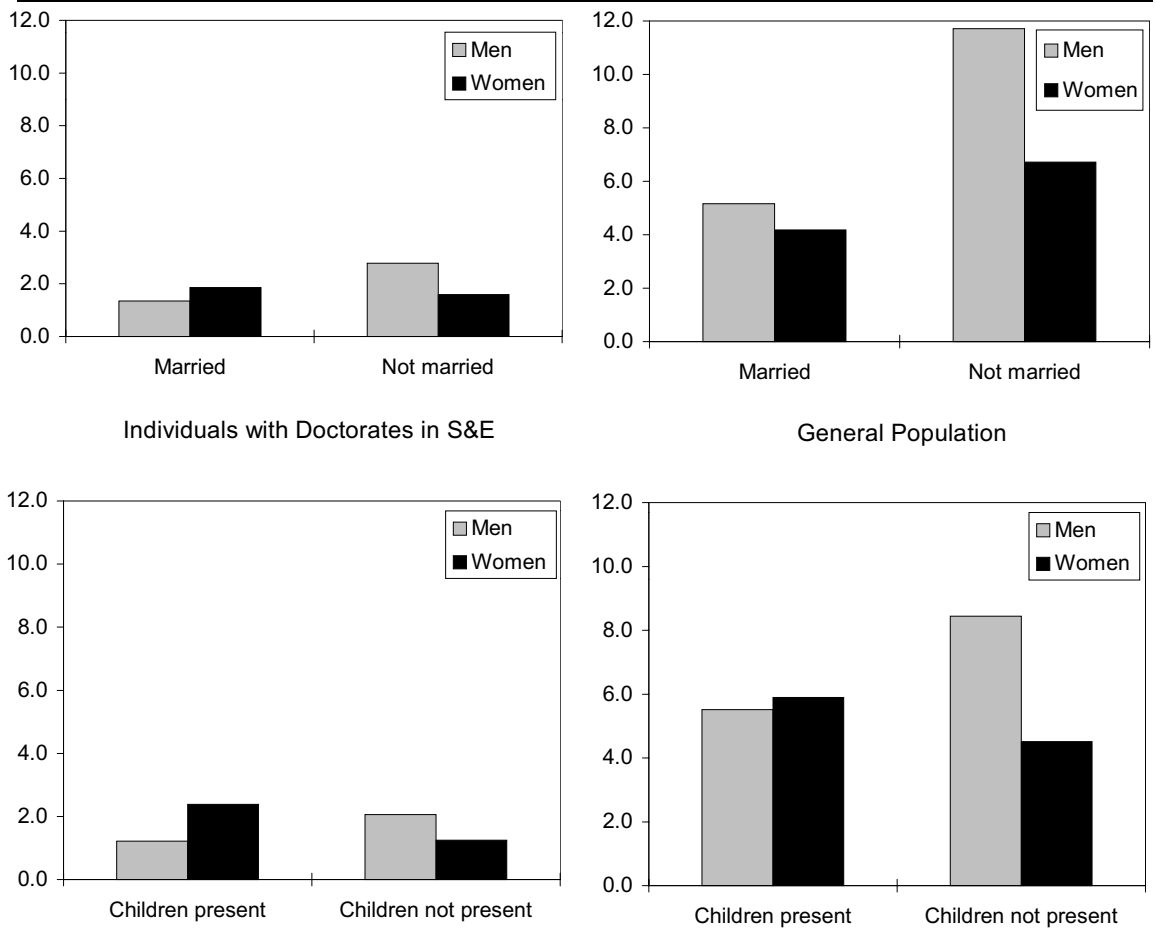
**Gender Roles and Unemployment**

Traditionally, men were expected to be the primary “bread-winners” in a family and women were expected to be homemakers. These roles presumably placed greater pressure on men to settle for sub-optimal jobs to support their families and placed greater pressure on women to stay at home or, if they were forced to enter the labor force for some reason, to accept

employment that did not place undue stresses on their family responsibilities. Because of these different roles, it is logical to expect marriage and children to lead to lower unemployment rates for men, but higher unemployment rates among women. This is, indeed, the situation in the doctoral science and engineering population (chart 2). In 1993, unmarried men in the doctoral population had higher unemployment rates than unmarried women, but married women had higher unemployment rates than married men. Similarly, unemployment rates were higher for men without children in the home than for women without children, but lower for men with children in the home than for women with children in the

Unmarried men had higher unemployment rates than married men, but unmarried women had lower unemployment rates than married women.

**Chart 2. Unemployment rates by sex and family status for individuals with doctoral degrees in science and engineering and within the general population, aged 25 and over: 1993**



**SOURCES:** Doctoral statistics from National Science Foundation/SRS, Survey of Doctorate Recipients. General population figures from Bureau of Labor Statistics, Current Population Survey.

## Is the Gender Gap In Unemployment Disappearing?—page 3

home. Controlling for other relevant variables did not change these relationships substantially (NSF, forthcoming).

In the general population, gender differences in the effect of marriage and children on unemployment are discernible, but less dramatic than those for the doctoral science and engineering population. Women without children in the home are considerably less likely to be unemployed (4.5 percent) than men without children (8.4 percent); however, women with children in the home are more likely to be unemployed (5.9 percent) than men with children in the home (5.5 percent). Among unmarried individuals, women had a substantially lower unemployment rate (6.7 percent) than men did (11.7 percent); however, married women had only a slightly lower unemployment rate (4.2 percent) than married men (5.2 percent).

### Key Terms

**Unemployed:** on lay-off or not employed but searching for work (during the four week period prior to the reference date).

**Labor Force:** unemployed plus employed individuals.

**Unemployment Rate:** percent of the labor force who are unemployed. Previously reported rates were adjusted to make them more comparable to recent rates.

### References and Related Publications:

Bureau of Labor Statistics, data from the Current Population Survey, (special tabulations, and information in U.S. Department of Labor, *Report on the American Workforce*, 1994.)

Maxfield, Betty, Nancy Ahearn, and Andrew Spisak, Commission on Human Resources, National Academy of Sciences, *Employment Status of Ph.D. Scientists and Engineers 1973 and 1975*, Washington, D.C., 1976.

National Science Foundation, *Characteristics of Doctoral Scientists and Engineers in the United States: 1987, 1989, 1991, 1993, and 1995*, NSF 88-331, 91-317, 94-307, 96-302, and a forthcoming report.

National Science Foundation, *Who is Unemployed? Factors Affecting Unemployment Among Individuals with Doctoral Degrees in Science and Engineering* (forthcoming).

National Science Foundation, *Women, Minorities, and Persons with Disabilities, 1996*, NSF 96-311.

For more information on doctoral unemployment, see NSF's forthcoming publication, *Who is Unemployed? Factors Affecting Unemployment Among Individuals with Doctoral Degrees in Science and Engineering* to be released in hard copy and on the Web (<http://www.nsf.gov/sbe/srs/stats.htm>).

This Issue Brief was prepared by:

**Dr. Carolyn F. Shettle**  
**National Science Foundation**  
**Division of Science Resources Studies**  
**4201 Wilson Boulevard**  
**Suite 965**  
**Arlington, VA 22230**

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