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Employment Opportunities for Science and Engineering Graduates Show Recent Improvement

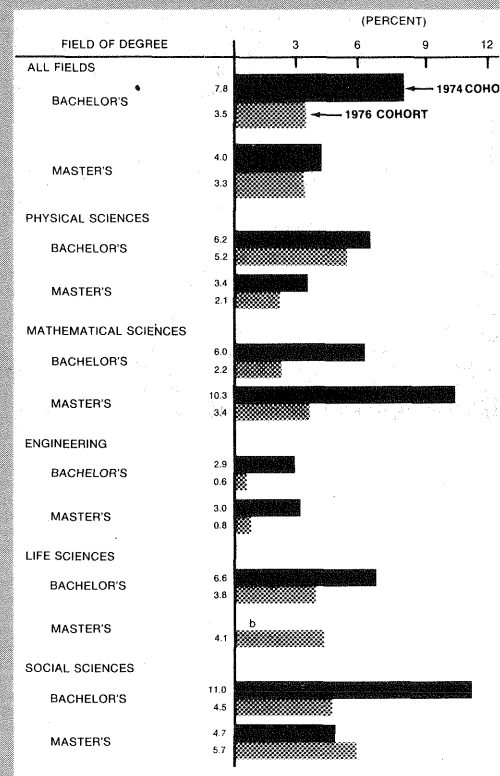
Information on employment patterns of new entrants to science and engineering (S/E) represents one of the best early indications of labor market changes for scientists and engineers. NSF has collected data on the 1978 demographic and employment characteristics of the 1976 S/E bachelor's- and master's-degree recipients which allow comparisons with analogous data relating to the 1974 graduating cohorts collected in 1976. The findings presented below, except for graduate school enrollment status, are based upon data provided by degree recipients, exclusive of those who were enrolled in graduate school on a full-time basis at the time of the survey.

- The general improvement in the U.S. economy between 1976 and 1978 was reflected in the employment opportunities of recent S/E graduates. Among bachelor's-degree recipients, the unemployment rates, two years after graduation, declined from 7.8 per cent in 1976 to 3.5 per cent in 1978; among master's-degree recipients, unemployment declined from 4.0 per cent to 3.3 per cent. The increase in employment opportunities for bachelor's-degree recipients was evident in all broad S/E fields of study; among master's-degree recipients, employment levels increased in all fields except the life and social sciences, in which decreases were noted. The overall unemployment rates for women baccalaureate recipients declined considerably during this period (from 11.0 per cent to 5.2 per cent), while the rates for women master's recipients increased slightly (from 4.7 per cent to 6.0 per cent). However, women's unemployment rates, generally, continued to be about twice those of men. The sharper decline in unemployment rates for baccalaureate recipients relative to those attaining a master's degree is consistent with general evidence that individuals with less schooling experience greater employment variability over business cycles.
- In both survey years, less than one-half of all employed S/E bachelor's-degree recipients were working in S/E-related jobs; among master's-degree recipients, about three-fourths were so

employed. Employment in S/E occupations, however, showed pronounced variability depending upon field of study. This finding is especially evident among bachelor's-degree recipients of whom those with engineering degrees were about four times more likely to be employed in S/E jobs as social science degree recipients. Although this effect persists among master's-degree recipients, the variability is substantially reduced. Thus, the attainment of a master's degree represents a substantial positive influence in acquiring an S/E-related position, especially in the science fields. In both survey years, the overall proportion of women employed in S/E jobs was about 15 to 20 percentage points below that of men at both the bachelor's- and master's-degree levels. This effect may be due in part to the pattern of degrees received by women as compared with men. Thus, few women receive an engineering degree which fosters S/E employment; instead, they are rather highly concentrated in the social sciences, which exhibit lower than average employment in S/E occupations at these degree levels.

- The increased employment opportunities during this two-year period appear to have had little overall effect on full-time graduate school enrollments. In both 1976 and 1978, about 21 per cent of the baccalaureate-holders and 17 per cent to 18 per cent of the master's-degree recipients were enrolled in graduate school on a full-time basis. However, the differences in enrollment rates between men and women at the post-baccalaureate level appear to have narrowed. This effect is consistent with other recent data which show that one-half of all students in institutions of higher education were women and that, in non-S/E fields, the number of women master's-degree recipients exceeds that of men. Following the receipt of the S/E master's degree, however, full-time graduate school enrollment of men (about 20 per cent) was substantially higher than that of women (about 12 per cent) in both years, although there was a slight increase in full-time enrollment rates for each sex during this period.

Unemployment rates of the 1974 and 1976 cohort of S/E bachelor's- and master's-degree recipients by field of degree: 2 years after graduation



^a Estimates for the 1974 master's cohort—especially unemployment rates for subfields—are subject to larger sample variability than comparable estimates for other cohorts. Sample size for this cohort was 1,000; this sample was increased to 4,000 for the 1976 master's cohort.

^b No cases of unemployment reported.

Source: National Science Foundation.