New Data Show Uneven Progress for Women and Minorities in Science

A new comprehensive compilation of historical and current data provides confirmation of a rapid increase in the education of women and minorities in science and engineering, but it also indicates that progress in employment and advancement has not kept pace, particularly for women.

Since 1970, both women and minorities have increased substantially their proportion of earned degrees in the sciences and engineering. Women have moved ahead faster than minorities in this preparation stage, but the small number of minority men who have acquired the necessary credentials has moved up faster in the workforce than women of any race.

These and hundreds of other statistical findings are available in a new 1978 edition of *Professional Women and Minorities—A Manpower Data Resource Service* prepared by Betty Vetter, Eleanor Babco, and Judith McIntire of the Scientific Manpower Commission, a participating organization of the AAAS.

For example, the report points out that in some fields where the participation of women was particularly low, the proportionate increase has been spectacular. Women were less than 2 percent of the entering class in engineering in the fall of 1969, but were more than 11 percent of the fall 1977 class—a 763 percent increase. Their share of earned bachelor's degrees rose from less than 1 percent in 1969 to almost 5 percent in 1977.

Women earned only 15 percent of the doctorates in the biological sciences in the decade of the sixties, and 23 percent of those doctorates in 1977. Their share of all science and engineering doctorates has increased from 8 percent in the sixties to 18 percent in 1977. Minorities still make up less than 9 percent of the 1970's doctorates in science and engineering, and non-Asian minorities are less than 3 percent of the total.

However, the progress evident in the increasing proportion of women and minorities who are earning the necessary credentials is not being matched in hiring, particularly for women.

At every degree level, in every field of science, within every age group, women continue to have higher unemployment rates than men. In 1977, the unemployment rate for women doctoral scientists and engineers was 3.6 percent compared to a rate of 0.9 percent for men. This shows little improvement since 1973 when male science and engineering doctorates again had a 0.9 percent unemployment rate compared to 3.9 percent for women.

Relative unemployment rates are one measure of progress; another is salary differences. In 1977, as in all previous years, a large and significant difference in salaries continued to exist between fully comparable men and women scientists. Except for new baccalaureate graduates in engineering, men received higher salaries than women in every field, at every level of experience, at every degree level, and with every type of employer, and in many instances that salary difference has increased since 1970.

Another important indication that women are not moving upward professionally at nearly the rate of their climb in educational preparation is their proportion of employment and academic rank among cohorts of academically employed doctoral scientists and engineers. Among all those who received their Ph.D.'s from 1970 to 1974, 4.4 percent of the men but only 2 percent of the women have reached the rank of professor. Among men, 29.5 percent are associate professors but only 17.8 percent of the women have reached this rank. At the bottom, only 10.8 percent of the men are still instructors or lecturers but 18.2 percent of the women hold this rank. The variance holds true in every field.

Minority men make up a much smaller segment of the new doctorate population in the sciences than do women. Minority men earned 5.3 percent of the doctorates in bioscience awarded from 1973 through 1976 compared to the 23 percent earned by women (including 2.2 percent earned by minority women). But Hispanics, American Indians, and blacks combined earned only 3 percent of all science and engineering doctorates in those 4 years. Their proportion in the physical sciences is even less.

Available data indicate that minority men are progressing in the professional labor force at comparable rates with white men of similar credentials, while minority women are statistically comparable to majority women in their slower advancement.

Professional Women and Minorities is designed to provide statistical manpower information on the professional workforce in the United States and availability data for women and minorities within this professional workforce. Utilizing the data collected by various agencies of the government, professional societies, women's caucuses, and others, the Sci-

AAAS Travelers

The AAAS has been asked to send representatives to the International Symposium of Engineering, 19–23 February 1979, in San Salvador, El Salvador. The theme for the meeting, sponsored by the Universidad Centroamericana Jose Simeon Canas, will be "Technology Appropriate to Developing Countries."

AAAS members who plan to be traveling in the area at that time and/or who know of colleagues on sabbatical in the region who might be able to attend should contact the Office of International Science at the AAAS address.