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Women and Minority Scientists

The participation in science of women and members of minority groups is shockingly small, and the proportion of both groups drops at each higher level of degree, salary, academic rank, and administrative responsibility. A new report* which brings together virtually all available data on manpower trained and in training at professional levels shows that among almost 207,500 science and engineering Ph.D.'s in the U.S. labor force, 93.4 percent are white and 92.1 percent are male. Only 0.8 percent are black, 0.6 percent Latin, and 0.04 percent American Indian, while Orientals, who make up only 0.7 percent of the U.S. population, comprise 5 percent of science and engineering Ph.D.'s.

The proportion of women enrolled and graduating in these fields was higher in the 1920's than in any decade since, but is now rising faster than their opportunities for the jobs in industry, government, and academe that lead to responsible participation in the scientific work force.

In chemistry, for example, women have earned 19 percent of the bachelor's degrees, 20.8 percent of the master's, and 7.3 percent of the doctorates since 1960, and they earned 9.7 percent of the chemistry doctorates in 1973. However, at institutions awarding the doctorate in 1973 only 2.0 percent of the chemistry faculty above the level of instructor were women, and only 14.8 percent of federally employed chemists at all degree levels were women.

Blacks comprised only 1.2 percent of the 1973 doctoral chemists—a proportion higher than in other fields of physical science, but slightly below their 2.4 percent representation in the life sciences. The number of non-Oriental minority scientists and engineers remains so small that there is little statistical evidence of discriminatory hiring or promotion practices.

Blacks and women were about equally represented at 1.8 percent each among those who received bachelor's degrees in engineering in 1974. The Spanish surnamed rose to 2.5 percent of the class, while American Indians were still less than 0.1 percent. These graduates were easily placed.

In mathematics women earned 32 percent of the master's, and 10 percent of the doctorates in 1973, but only 6.7 percent of the full-time mathematical scientists at 20 leading universities in January 1974 were women. In the biological sciences, where women earned 30 percent of the bachelor's degrees, 30.5 percent of the master's, and 21.5 percent of the doctorates in 1973, only about 12 percent of employed Ph.D.'s that year were women.

The proportion of women Ph.D.'s in the social sciences was 17 percent in the 1920's, dropped to 11 percent in the 1950's, and rose to 15 percent in the 1970's, ranging from 6 percent in economics to almost 30 percent in anthropology. The unemployment rate is four times higher for women than for men with comparable training.

In medicine, where the proportion of women is increasing faster than in most other fields of science, women comprised 11.1 percent of the 1974 graduating class but 18 percent of the total enrollment and 22.2 percent of the first-year enrollment. However, only 7 percent of practicing physicians are women, and they are concentrated in the less prestigious, less well paid specialties.

While this and other recent studies show some improvement in the participation and utilization of women and minorities in science, the position of new women Ph.D.'s in a falling employment market has deteriorated over the past 5 years. Unemployment rates for women continue to be two to four times higher than for men with comparable education and experience.

It seems apparent that if women and members of minority groups are to be encouraged to prepare themselves for careers in the sciences, the scientific community as well as the employers of scientists in all sectors must offer them the same opportunity as white men to find suitable employment, to advance according to their abilities, and to be paid commensurately for their services.

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