the physics community

What barriers impede women's science careers?

Students of high-school age now believe the roles of women in science should be equal to those of men—and lagging behind the attitudes of the students themselves are those of their families, peers and potential employers. Because women who have attained a high professional standing in the sciences experience little discrimination, it becomes clear that the barriers along the way must be changed for an increased participation of women in science fields. These and other conclusions were reported at the symposium of the Committee on the Status of Women in Physics at the Washington Meeting of The American Physical Society.

The symposium consisted of reports on 10 National Science Foundation-funded studies that sought to determine factors influencing education and career decisions by women in science—seven of these were summarized by M. Joan Callanan of the NSF. Investigators in three other projects also spoke: Lee Burks of the Georgia Institute of Technology reported on the woman professional in science and engineering, William K. LeBold of Purdue University related the findings of his national poll of high-school students and their career decisions and John F. Christman of Loyola University reviewed his study of young women participants in the NSF-supported Student Science Training Program.

Burks found in her study that women can succeed in a full-scale professional capacity without necessarily foregoing marriage or child-bearing. Moreover, these women are highly committed to their careers and experience only moderate amounts of sex-related discrimination on the job.

Over 1100 responded to Burks's questionnaire, which was mailed to women sampled from professional society mailing lists. She emphasized in her report that these women represent a "highly select group—the survivors of a lengthy process of screening and attrition which, particularly for women, represents the path to professional maturity." Aside from Burks's general observation that these women contradict what might be called the "professional woman as freak" stereotype, she found evidence that the factors involved in the process of professional advancement operate with "differential sharpness against women." Problem areas that Burks considers accessible to policy intervention either by employer or by governmental action are salary differentials, career-development opportunities and personnel policies affecting the two-career family.

What are the factors that influence women early-on in their decision to pursue a career in science? LeBold conducted a national poll of more than 9000 young men and women of high-school age and found only a small minority held strong sexist views (in other words, 89% of the respondents approve of a career in science for women). The young women who intended a career in the physical sciences had high grades, had been placed in honors or advanced mathematics programs, and were more likely to attend college than the other women respondents.

Significantly, LeBold found physical-sciences-oriented men and women influenced more by their families and friends than by the school teachers and counselors. However, the men of this group had higher expectations than the women, and a higher proportion of the women reported "excellent" grades than those of other women or men. This supports the indications of Burks's survey of professional women in the sciences in that, early in the screening process, science-leaning women encounter discriminatory attitudes—in this particular instance, young high-school women had to achieve more than the men, and were taught to expect less.

Christman's survey of 1189 high-school women who participated in the NSF program during 1965–74 had an 84% response. Although 70% of these women had envisioned a career in the sciences while in high school, 85% had changed their career goals after entering college. Less than 1% indicated that they were currently in a physics-career track. These women cited discriminatory practices and the absence of effective role models as primary deterrents to the selection of a science career, whereas marriage did not appear to be an important factor. Christman said that if more career counseling were done (particularly on the secondary-school level), the change could result in an increased participation of these women in science.

The findings of other NSF-funded studies were reported by Callanan, NSF program manager for women in science, and several of the conclusions point to an affirmation of the case for sex-screening and discrimination towards women who plan and pursue a career in science or mathematics. Results of two such studies are reported here.

Jane Aufenkamp and Natalia Meshkov, under a grant to the Federation of Organizations for Professional Women, made a comprehensive review of the existing data and literature on the participation of women in the sciences from 1970 to the present. In the area of employment they found the majority of women to be working in academic institutions; between 1968–69 and 1972–73, the percentage of academic positions in science held by women only increased from 19.1% to 20%. In addition, more women than men were holding non-science positions or occupied positions within the sciences that would classify them as underemployed.

At Rensselaer Polytechnic Institute, Edith H. Luchins surveyed mathematics majors and found that nearly three times as many women than men were discouraged from a career in mathematics by teachers and advisers; similarly, more women than men were discouraged by family and friends.

Speaking at the close of the symposium, Nancy M. O'Fallon of Argonne National Laboratory stated that "physics-department heads should now realize that it is in their own best interests to tap the other half of the population". —BCC

AAPT to run education information pool

The Information Pool, which includes documents and reprints on all aspects of physics education (laboratory instruction, curriculum guides, resources and career information are some of the topics), has been transferred from the Society of Physics Students and the now terminated Education Division of the American Institute of Physics to the American Association of Physics Teachers. Persons interested in the Information Pool should contact the AAPT, Graduate Physics Building, State University of New York, Stony Brook, N.Y. 11794.

in brief

Joseph R. Dietrich, chief scientist, nuclear power systems, Combustion Engineering Inc, has been named vice-president of the American Nuclear Society. At the same time Vincent S. Boyer, vice-president, engineering and research department, Philadelphia Electric Co, succeeded to the office of president. Each will serve for one year.

S. J. Lindenbaum (City College of the CUNY and Brookhaven) has accepted a one-year appointment in ERDA's Division of Physical Research as deputy for scientific affairs, high-energy physics program.

Copies of *Expenditures for Scientific and Engineering Activities at Universities and Colleges, Fiscal Year 1974* (NSF 76-303) are available from the Superintendent of Documents, Washington, D.C. 20402 at $1.15 per copy.