

SURVEY AND SITE VISITS EVALUATE 'CLIMATE' FOR WOMEN IN PHYSICS

There *are* women in physics, but not very many. That situation, which in the US has remained essentially unchanged for the past five years, has generated much debate and also some action. Among those who are trying to increase the representation of women in physics, the academic climate—how faculty and students behave both inside and outside the classroom—is seen as key.

Two initiatives sponsored by the American Physical Society and the American Association of Physics Teachers are intended to evaluate and address the climate for women in physics. The first involves on-site assessments of various physics departments, followed by specific recommendations for changes. The second is a nationwide survey of graduate physics students in the US; the results of that survey were released in July.

Persistent climate

The climate issue is nothing new, nor is it unique to physics. In "The Classroom Climate: A Chilly One for Women?," a paper released by the Association of American Colleges back in February 1982, Roberta M. Hall and Bernice R. Sandler discussed how an unsupportive academic environment affects women in all disciplines. Among other things, the report suggested that "faculty behavior [that] is supportive and reinforcing can be the crucial element in preventing women students' attrition and in enhancing women's chances for both academic and career success in male-dominated areas."

What makes physics different from other "male-dominated areas" is the severity and persistence of women's underrepresentation. According to the last five years of AIP data, women account for only 15% of the BS degrees in physics and only 11% of the PhDs. While engineering, medicine and other sciences have shown increased representation of women, the situation in physics has remained

stagnant.

With this in mind, the AAPT Committee on Women in Physics and the APS Committee on the Status of Women in Physics devised a program for making changes at the local level, within individual physics departments. According to APS Executive Officer Judy R. Franz, who, together with Bunny C. Clark of Ohio State University and Mildred Dresselhaus of MIT, headed the program, a team of five observers, usually prominent women physicists, would visit a department—at the request of the department chair—and spend the day meeting with the chair, with women graduate students and postdocs, and with advisers and selected faculty.

"If there were any women physics faculty, we met with them, and sometimes we also included women faculty from related fields, such as chemistry," Franz said. Later a written report describing problem areas and suggestions for overcoming those problems would be sent to the chair, who was asked to write back in six months and describe what, if anything, had changed since the visit.

Initially APS funded visits to five universities in 1991 and 1992. A later grant from the National Science Foundation allowed ten additional universities to be evaluated; the last of these visits, to North Carolina State University, will be completed in the fall. (See the box on the next page for a list of participating schools.)

One of the main complaints voiced by grad students during the visits was the lack of communication in the department, Franz told PHYSICS TODAY. "The best departments were those where communication is good and where the department chair is strong and sympathetic.

"Most problems did not seem to be matters of money," Franz added. "For example, where there were few women faculty, we recommended inviting more women speakers. And because it often seemed difficult for

the women to feel they're part of the enterprise, we recommended social activities that encourage the interaction between faculty and students.

"What we heard in several departments was that there had been a sexual harassment charge, which the men felt had been handled well," Franz said. "The women, on the other hand, felt it was not taken seriously."

The overwhelming concern was the job situation. "That tended to overshadow many of the differences between men and women," Franz said. However, the teams did observe some "backlash" problems, where male students felt their female peers had an edge in the job market because of affirmative action. But according to a recent study by the AIP education and employment statistics division, women physicists fared worse than men in the difficult job market of the past four years. After statistically controlling for job experience, the study found that the unemployment rate for women physicists is now twice that of their male peers.

National survey

In conjunction with the site visits, the AIP education and employment statistics division conducted a nationwide survey to identify problems and concerns of female students and contrast them with those of male students. A preliminary report of the survey results, released in July by AIP's Jean Curtin and Christine J. Cassagnau, states that women were generally less positive about their treatment by their advisers, other physics faculty and other graduate students. For example, 52% of US men (as opposed to foreign men studying in the US) responding to the survey said that they find it easy to discuss ideas with faculty in their departments, but only 38% of US women gave that response. Likewise, 87% of US men said that other graduate physics students respected their

Schools Assessed

Bryn Mawr College
Harvard University
University of Illinois,
Urbana-Champaign
Kansas State University
University of Maryland
Michigan State University
University of New Mexico
North Carolina State University
(fall 1994)
University of Pennsylvania
Rensselaer Polytechnic Institute
University of Rochester
Stanford University
State University of New York,
Stony Brook
University of Texas, Austin
University of Virginia

opinions, compared with 72% of US women.

In keeping with what Franz and the site-visit teams observed, 57% of all respondents cited "long-term career opportunities" as causing them to be discouraged about physics. About one-third of US women said the department climate was a reason for discouragement, compared with 20% of US men and 12% of non-US men.

According to Roman Czujko, head of the AIP statistics division, the differences between the men's and women's responses are generally not earth-shattering, but the fact that in nearly every category women gave a less positive assessment than did the men is significant. "And keep in mind that this is a self-selecting group," Czujko said. "The folks having the roughest time would've already dropped out."

Almost 85% of respondents, both men and women, said they definitely or probably will become professional physicists. When asked whether they would go into physics if they had to do it over again, about 80% of the US respondents and 65% of non-US respondents said they would.

Conclusions, expectations

Franz, Dresselhaus and Clark will soon complete a report summarizing their visits to physics departments. "From everything we hear," Franz said, the site-visit teams "have had an impact. We were able to point out to the department chair or to the faculty advisers some things that were causing frustration or discomfort to the women." Department chairs often later met with women students; in some cases more women colloquium speakers were invited.

It's yet to be decided whether more

site visits will be conducted, Franz says. She, Dresselhaus and Clark hope to develop a way for departments to assess themselves. And they plan to give talks on their findings, possibly at next year's APS March meeting or APS-AAPT April meeting. Beyond physics, the Association for Women in Science has received funding to carry out a similar site-visit program for other sciences, and Franz has talked to several groups that want to replicate the APS-AAPT approach for their respective disciplines.

"We've raised the consciousness within at least a few physics departments," Franz said. "That's a wonderful first step."

— JEAN KUMAGAI

CENTER FOR HISTORY OF PHYSICS RECEIVES \$600 000

Rose Hutchisson, the widow of the second director of the American Institute of Physics, has endowed the Center for History of Physics with \$600 000 for the Rose and Elmer Hutchisson Fund. The endowment, which has come to AIP following Rose Hutchisson's death, adds to the existing endowment of the Friends of the Center for History of Physics, which had reached \$1 million before this substantial contribution.

For Spencer Weart, the director of the history center, the endowment means more flexibility: "If we see an

opportunity to save documentation of great historical interest, we don't have to apply for a grant and wait the better part of a year before we know whether we can act or not."

The center will use the first proceeds from the new endowment to support worldwide collection of information useful to scholars studying the history of physics and allied sciences. For example, data on collections of correspondence will be indexed and made available on-line, and AIP will support oral-history interviewing in the former Soviet Union.

Rose Valasek, who graduated from Flora Stone Mather College in Cleveland, married Elmer Hutchisson in 1925. She was offered an assistantship for graduate work in history at the University of Minnesota, but at the time two people from one family were not permitted to have jobs at the university, so she was denied the opportunity. Elmer Hutchisson was assistant director of AIP in 1936-37 and director from 1957 through 1964, and he originated the Center for History of Physics and its Niels Bohr Library. He died in 1983 (see PHYSICS TODAY, August 1983, page 77).

Some of Elmer Hutchisson's other accomplishments as director included establishing AIP's advisory committees, its education department and its translation program for Russian-language physics journals, and originating the annual meeting of the Corporate Associates. While at AIP he also founded the *Journal of Applied Physics* and was its editor from 1937 through 1953.



AIP EMILIO SEGRE VISUAL ARCHIVES

Elmer and Rose Hutchisson admiring tokens of appreciation at his AIP retirement party in New York, September 1964.