The Department of Physics is requesting funds to assist it in assessing the climate for undergraduate, graduate, and faculty women in the Physics Department, and in the development and implementation of strategies to assist in the recruitment and retention of female students and faculty.

The project consists of two parts. The first will be an internal self-study requiring data collection, interviews, meetings, and their synthesis into a report on the current status of women at all levels within the Physics Department. This report will then be reviewed internally, and will also be sent to a standing committee that has been formed by the American Physical Society's (APS) Committee on the Status of Women in Physics (CSWP), at the request of Daniel Stein, Physics Department Head. The standing committee is part of a team that is planning to conduct a 'Climate for Women in Physics site visit' at the University of Arizona. This is a new program offered by the APS to any department that requests such a review.

The aims of these visits are three-fold: 1) to identify a set of generic problems commonly experienced by minority and/or women physicists, 2) to intervene to solve many of these generic problems and 3) to address problems arising in the particular physics departments visited and help improve the climate for minorities or women (both students and faculty) in these departments. The goal of these meetings is to provide the site visit team with the quantitative and qualitative information they need to assess the climate for women in the host department. Following the visit, the site-visit team writes a report to the department chair, detailing the findings of the visit and offering suggestions on improving the climate for women. The department chair is asked to respond in writing to the team, describing actions taken to improve the climate.

The APS pays the travel costs for the site visit leader. However, the remainder of the expenses --- in particular, travel costs for the other team members --- are the responsibility of the department. The APS has urged participating department chairs to request support for the visit from their university.

More information can be found at the APS CSWP site visit web site http://www.aps.org/educ/cswp/visits/index.cfm.
enthusiasm. And we are optimistic that that the inquiry will lead to several pragmatic steps that we can take to ensure a hospitable environment for women in future years.

**Methodology and Procedures**

**Data**

The majority of data for this study will be collected via voluntary surveys and interviews. Undergraduate and graduate students, faculty, student advisors, and administrators will be invited to participate. Survey questions will be designed to assess the respondent's perception of attitudes and interactions of department peers, faculty, and administrators. For example, a typical student survey may ask the respondent to characterize on a scale from 1 to 5 the friendliness of the department, the accessibility of their advisor and teachers, or the extent to which they felt respected by their peers. Brief interviews given to female students, faculty, and administrators will expand on survey questions and allow for more detailed responses. All participation will be voluntary and the confidentiality of survey respondents and interviewees will be protected.

Relevant administrative data will also be collected for the study. This includes hiring and promotion records, graduate student enrollment separated by gender, counts of undergraduate physics majors separated by gender, and graduation records.

**Procedure**

The surveys and interviews will be written and administered by the American Physical Society's Commission on the Status of Women in Physics (CSWP) as part of their "Climate for Women Site Visit Program". The CSWP states the goals of these site visits are to identify a set of common problems experienced by women in physics, intervene to solve many of these problems, and to address problems specific to particular departments in order to improve the climate for women within those departments (3). The CSWP has conducted 15 site visits to United States Institutions since 1990.

The tentative date for the site visit to the UA physics department is October 22, 2004. A team of four female physicists has been chosen by the CSWP to conduct the visit. Prior to the visiting date, CSWP will ask the physics department to administer its student surveys. The format for these surveys is web-based, and students will be invited to take them with email communication. Additionally, the visit team may request administrative data, including records of female hires and records of student enrollment, to be collected and sent to them in advance of the visit.

On the site visit day, the CSWP team will hold brief interviews and meetings with the department chair, female faculty, female graduate and undergraduate students, administrators, graduate and undergraduate advisors, and other department members. At the end of the day, the team will give an exit interview to the department chair.
Program Description

Title: An inquiry into the climate for women in the University of Arizona Physics Department

Purpose and Objectives

The purpose of this study is to assess the climate for undergraduate, graduate, and faculty women in the physics department and to develop and implement strategies to assist in the recruitment and retention of female students and faculty.

Rationale and Background

Despite steady progress over the past few decades, physics still lags behind most other scientific disciplines in its ability to attract and retain female students and professionals. For example, data collected for the year 1998 showed that the percentage of bachelor degrees earned by women in both mathematics and life sciences was close to 50%, and in chemistry was over 40% (1). The equal number in physics was far less promising, with only 19% of bachelor degrees having been earned by women (1). This trend persists at all levels of the academic ladder, with the representation of women decreasing at each higher step. For instance, the percentage of Ph.D.'s awarded to women in physics was 13%, compared with roughly 25% in math, 30% in chemistry, and 45% in biology. In 1998, only 6% of physics faculty in the United States were women, and of those only 3% were full professors (1).

The reasons underlying the poor representation of women in physics remain unclear. One traditional explanation suggests that women do not choose to pursue careers in physics because they are not socialized to enjoy mathematics or technical work. Another explanation suggests that women see the long hours required in a lab as being incompatible with their desire to have a family. However, both explanations seem insufficient, given that significant numbers of women choose to study mathematics and other scientific disciplines, all of which also require demanding hours, competence with technical equipment, and/or knowledge of advanced mathematics (1). In a nationwide survey given to graduate students, the American Institute of Physics found that female students were less likely than their male counterparts to characterize their departments as friendly or to report that their department encouraged self-confidence; correspondingly, they were more likely to say that their departments made them feel like an outsider (2). The same survey asked graduate students to choose among reasons why they felt discouraged in physics. The second highest reason cited by the female graduate students (32%), but significantly less so by male students (20%), was the climate of their department (2). In order to understand the extent to which these national issues are present in the UA physics department, we propose to conduct an inquiry into the climate for women. Based on responses given at a meeting of female graduate students and faculty last spring, as well as on informal discussions with undergraduate students, we believe that this study will be met with cooperation and
summarizing the results of the study and outlining a few concrete suggestions the department can take to improve or maintain a hospitable climate for women in the department. The team will also send a written report to department chair shortly following the visit.

In addition to the study conducted by the CSWP, we propose to do a self-inquiry into the climate for women in the UA physics department. To facilitate this, an internal committee will be assembled consisting of two female faculty, two graduate students, and two undergraduate students from within the department. The function of this committee will be two-fold. First, the committee will conduct its own review of the administrative data assembled for the inquiry and, taking into account the findings of the site visit team, it will outline its own strategies for improving the climate for women in the department. Second, the committee will be charged with implementing and monitoring these strategies and programs.

Reports and Follow-up

Six months after the site visit, the Department Head and internal committee will prepare a report assessing the department's progress on improving the climate for women. This report will be sent to the American Physical Society's CSWP. In other institutions, the CSWP reports that site visits have lead to increased recruitments and appointments of female faculty and students, regularly scheduled meetings between department chair and female department members, an increase in the number of female seminar speakers, and improvements in the undergraduate and graduate advising processes. We believe that conducting an inquiry into the climate for women in the UA physics department will lead to similar improvements in our ability to recruit and retain female students and faculty, and will be a step toward correcting the under representation of women in physics.

Citations


(2) Franz, Judy R. Improving the Climate for Women in Physics http://www.aps.org/educ/cswp/visits/summary.cfm

(3) APS CSWP site visit web site http://www.aps.org/educ/cswp/visits/index.cfm