

# Final Report of the Committee on the Status of Women Graduate Students and Faculty in the College of Engineering

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## Abstract

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## 1 Introduction

In the spring of 1993, Dean Schowalter convened a committee to examine the status of women faculty and graduate students in the College of Engineering. The committee met during the spring 1993 semester, and this document contains our final report and recommendations to the Dean.

The Dean's charge to the committee is reproduced below:

Engineering traditionally has been shunned as a course of study by American women, possibly because of public perception of a man with muddy boots and a hard hat on a construction site. This view was probably encouraged by many men in order to preserve the men's club. But times have changed and so will the field of engineering. More women must be convinced that engineering is a challenging field offering personal satisfaction and economic advancement. The profession must value the intellect, vigor and creativity of women in order to serve all of society. Yet barriers exist and the number of women engineers and their rank in the profession is far from equality with men. This represents an opportunity for enrichment of the field in both numbers and outlook; but more important, some barriers are artificial, discriminatory and not perceptual. The College of Engineering must undergo a self-examination to identify and diminish the barriers to women regardless of their origin. To this end, two committees will be formed; one to study the situation for undergraduate women and the other for graduate students and faculty. The charge to each committee is:

- To examine the climate in the College of Engineering for the attraction and the academic and professional development of women.
- To quantify, if feasible, the degree to which a hostile environment, sexual discrimination or harassment in the college has created a disincentive for learning and development of women.

- To recommend policy and operational changes in the college that will ensure equal opportunity for women.
- To report to the dean by May 15, 1993 the findings and recommendations of the committee.

The committee members were Marianne Winslett (chair), Carl Altstetter, Helen Huang, Vicki Jones, Trudy Kriven, Susan Lamb, Burks Oakley, Deborah Thurston, William Walker, and Susan Wrightson. Committee members were drawn from many different departments of the College (CS, ECE, MIE, MSE, GE, Physics, CE), and included faculty, graduate students, and staff.

The chilly climate for women in science and engineering has been documented in detail by others (see [Spertus 1991] for an excellent discussion of factors that keep women out of science and engineering, as well as an excellent collection of citations of relevant material). For example, the National Research Council determined:

The high rate of attrition of women in the field of S&E are seldom related to only academic talent and achievement. The major factors are the climate of the workplace, the competitiveness, subtle forms of sexual harrassment, off-track assignments, or limited responsibilities, and lack of encouragement. Other factors are lower salaries and promotion rates, inappropriate responses to reproductive hazards, and lack of provision for child-care. In addition, they also encounter subtle forms of women completing studies in traditionally masculine fields often encounter discrimination called "micro-inequities". For example, women who try to participate in classroom discussion are ignored or interrupted more frequently than men by both faculty and male students. There is also indication that faculty, teaching assistants and graduate students from certain cultures are less accustomed to the presence of female students in the classroom and laboratory and may discriminate against women consciously or unconsciously [NRC 92].

This report will focus on immediate actions that the committee recommends to improve the climate for women in the College of Engineering at the University of Illinois. Because Illinois produces a significant fraction of the nation's engineers, changes made here can have a significant effect on the national supply of female scientists and engineers. We believe that most of our recommended changes can be beneficial for other underrepresented groups in engineering, and, in many cases, for all engineers. We also list measures that we recommend for future action.

The committee recommends the following immediate actions, which will be described in detail in succeeding sections:

1. Establish a "Women in Engineering" program.
2. Establish a mentoring program for all new faculty in the College of Engineering.
3. Establish a mentoring program for female graduate students in the College of Engineering.
4. Publicize the University's policy on sexual harassment as it applies to computer usage in open laboratories.
5. Improve access to women's restrooms in the College.
6. Publicize appropriate ways of treating women in the classroom.

The remainder of this report is organized as follows. Section 2 contains our recommendations for immediate action. Section 3 contains our recommendations for future action.

## 2 Immediate Recommendations

### 2.1 Establish a "Women in Engineering" Program

Major engineering and science schools across the nation—including Purdue, University of Washington, Cornell, Michigan, Georgia Tech, Maryland, Colorado, Texas A&M, Iowa State, Dartmouth, and Carnegie Mellon—have established programs for women in engineering (WIE) and/or science. These programs act in concert with local grass-roots organizations (such as our own SWE and AWIS/OWIS) to recruit and retain women students in science and engineering through a variety of activities, extending from elementary school outreach programs through graduate-level programs. WIE programs typically operate through a combination of professional administration, work-study students as staff members, and grass-roots volunteers, using funds obtained from the university, government, and industry. To be successful, WIE programs generally require the commitment of one full-time administrator. The committee has collected information on WIE programs around the nation (available on request). The committee recommends that the College of Engineering establish a WIE program.

The committee also recommends that the College join the Women in Engineering Program Advocates Network (WEPAN). WEPAN's focus is on aiding the establishment and growth of WIE programs around the world. WEPAN provides literature on existing WIE programs (their goals, newsletters, individual programs, fund raising efforts, new ideas, etc.), and offers the advice of their staff to help guide WIE programs. When an organization is interested in providing special programs for women in engineering, the task is much more likely to succeed with the support of WEPAN. At the May 1993 "Women in Engineering" conference in Washington DC, directors of WIE programs around the world emphasized that they could not have begun many of their activities without the resources (materials, personnel, and ideas) of WEPAN. The committee has collected information on WEPAN (available on request).

### 2.2 Mentoring Program for New Faculty

New assistant professors face a multitude of challenges as they adapt to their new role. For some, the transition is harder than for others [Spertus 1991]:

I was ... the first full-time woman faculty member in my department. There really was difficulty among my male colleagues in associating with a woman as a colleague. I think they literally did not know how to talk to me, and as a consequence often just did not talk to me. They would ignore me. They would not invite me to have lunch with them, which was a very ordinary experience there ... they would walk past my office and ask the next person and never ask me. [Years later] I asked one of my colleagues why this was so. And he said, 'You know what would happen if I asked you to lunch ... People would talk' ([Clark et al 1986, pages 36-37] in [Sandler 1986, pages 7-8]).

At this time of transition, a mentor can be invaluable [Spertus 1991]:

The sponsor may serve many functions for the protege. First, the sponsor introduces and initiates the protege in the customs, demands, and expectations of academic life. Second, the sponsor shares his or her wisdom and knowledge with the protege, and provides encouragement and comments on his or her work. Third, the sponsor can provide career assistance for the protege by making recommendations to his or her colleagues at other institutions, or simply by sharing a bit of the deflected glow from his