

WOMEN IN ENGINEERING (WIE) INITIATIVE

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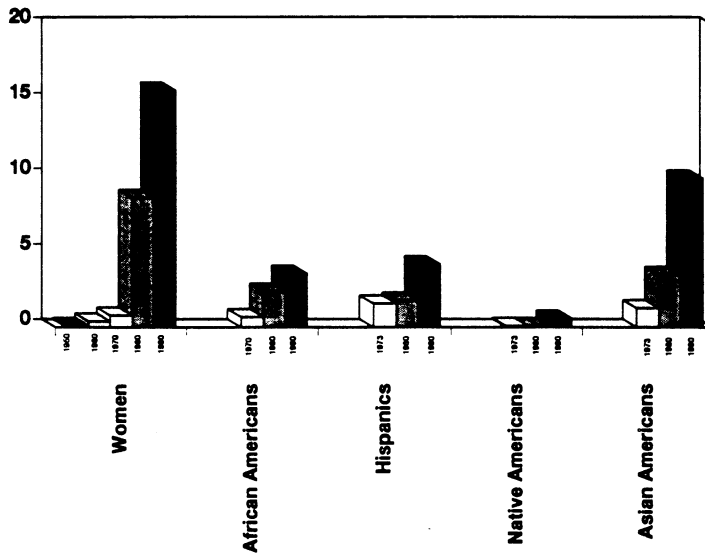
The Women in Engineering (WIE) Initiative at the University of Washington was formally established in the Fall of 1988. Dr. Suzanne G. Brainard has been Director of WIE since its inception.

The College has had a long-term commitment toward the recruitment and retention of women, as well as underrepresented minorities and differently-abled persons, to engineering. This commitment is consistent with recommendations made by the American Society for Engineering Education Deans' Task Force on the Engineering Student Pipeline, one of which was that "Deans should establish a goal to more than double the percentage of women enrolled in engineering programs in the next decade." The University of Washington's WIE Initiative is a response to that commitment.

The need for increased participation of women in engineering is particularly important because, according to the U.S. Bureau of Labor Statistics' recent projections, "Our pool of talent for new scientists and engineers is predominantly female or minority disabled - the very segments of our population we have not attracted to science and engineering careers in the past." In terms of the growth of the overall workforce during the period of 1985-2000, white females are expected to account for nearly one-half of the workforce growth. White males are expected to make up only about 15% of the growth.

As shown in the following graphic, the participation of women in engineering has increased substantially over the past forty years. However, we have a long way to go to reach parity.

Shifts in Participation in Engineering by Women and Minorities: Percentages of Bachelor's Degrees in Selected Years, 1950-1990



When the WIE Initiative was in its initial planning stages, a committee of undergraduate and graduate students assisted in the preparation of an "ideal design" of a program to meet women engineering students' needs. The first task was to identify major barriers to women students in engineering. They found that isolation, competition, low self confidence, childbearing and childbearing issues, lack of role models, insufficient financial assistance, and lack of hands-on experience as major concerns to women enrolled in our College of Engineering.

With these needs in mind, the WIE Initiative was started with the primary goal to increase the participation and retention of women in engineering at the undergraduate and graduate levels. WIE's specific objects are to:

- * Deliver programs focused on retention, academics, and study skills;
- * Assess perceived barriers to success to gain insights into student needs;
- * Conduct outreach activities to increase the numbers of women recruited and retained in engineering;
- * Track students from the point of entry through career, to profile engineering students and to monitor their progress.

Some of the specific services offered by WIE can be categorized in the following manner:

Mentoring

Students are paired with professional engineers who act as role models and assist with the transition from academic life to professional life.

Big Sister Program

The Big Sister Program provides women in engineering with support and encouragement through relationships with upper-division and graduate women students.

Support Groups

Weekly support group meetings are scheduled to informally share information, discuss problems, and to express the joys and frustrations of engineering.

Seminars

WIE sponsored seminars are held periodically on such topics as writing research papers, self confidence building, expectations of the world of work, and team building.

Tutoring

Tutoring services are available, on a one-on-one basis or in study groups, for pre-engineering and the major level engineering courses.

Scholarships and Fellowships

In addition to actively seeking private support for scholarships and fellowships, WIE maintains an up-to-date listing of all scholarships and fellowships available to women in engineering.

Annual Women in Engineering Conference

An annual Women in Engineering Conference is scheduled with the purpose of encouraging female students to continue their engineering studies, to build self confidence, and to provide greater awareness of the opportunities within each field of engineering.

International Exchange

Several students have participated in an exchange with Ecole Polytechnique Feminine (EPR). American students spend six months in Paris attending classes at EPR and working part-time in a French company.

The WIE Initiative at the University of Washington has been extremely successful. Over 700 students were served last year. Women undergraduate majors in engineering now represent about 20% of the total undergraduate enrollment. At the graduate level, slightly over 18% of the graduate students are women. This is particularly important to the recruitment and retention of women in engineering because it should provide greater numbers of women faculty members. Women faculty members are critical to the success of recruitment and retention programs.

Additional accomplishments of the WIE Initiative was its selection as the site for the Western Regional Center for Women in Engineering through a grant from NSF, was one of the co-founders of WEPAN, and recently initiated a Freshman Intervention Program from a three year grant from the Alfred P. Sloan Foundation.

WIE has been very active in seeking undergraduate scholarships from the Weyerhaeuser Company Foundation, the Intel Foundation, and the Hewlett-Packard Foundation. In addition, WIE is the recipient of two graduate fellowships, totalling \$100,000.

There are many challenges for the Deans and Program Directors. The issue of funding continues to be a major problem. As higher education funding in most every institution continues to be unstable, programs established to support the recruitment and retention of women in engineering have had to share in these reductions. This places greater reliance on private funding, which also is becoming more difficult to acquire.

We also must be more active in outreach programs. It is important for us to provide information to the younger student, particularly at the elementary school level, about the excitement in the world of engineering. Activities such as a summer camp for middle school girls and introduction to engineering design problems offered in the local schools, are examples of successful activities we have experienced on our campus.

