

SOCIETY OF WOMEN ENGINEERS OVERVIEW

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The Society of Women Engineers is a non-profit educational service organization of graduate engineers and women and men with equivalent engineering experience.

SWE's mission is to stimulate women to achieve full potential in careers as engineers and leaders, expand the image of the engineering profession as a positive force in the quality of life, and demonstrate the value of diversity.

SWE's specific objectives are:

- To inform young women, their parents, counselors, and the general public of the qualifications and achievements of women engineers and the opportunities open to them;

- To assist women engineers in readying themselves for a return to active work after temporary retirement;

- To serve as a center of information on women in engineering; and

- To encourage women engineers to attain high levels of education and professional achievement.

SWE has been in existence for over 40 years. It was founded in 1950 and incorporated in 1952. SWE's headquarters office is located in New York City.

SWE is a Charter Member of the engineering umbrella organization, the American Association of Engineering Societies (AAES); an Affiliate of the National Society of Professional Engineers (NSPE) and an Affiliate of the National Council for Research on Women. SWE was an official sponsor of National Engineers' Week for 1993 and will continue its sponsorship in 1994. The Society is also an active participant in Engineers for Education (E4E) and the Engineering Workforce Commission. E4E is a national program endorsed by the White House in support of increasing the engineering workforce for the year 2000 and beyond.

WOMEN IN ENGINEERING CONFERENCE: INCREASING ENROLLMENT AND RETENTION

1993 WEPAN National Conference

SWE funded a national survey of women and men engineers this year; the results will be published in time for SWE's National Convention in June, 1993. SWE conducts surveys of women graduate engineers, published and distributes the results of these surveys in *A Profile of the Woman Engineer*, produces publications relating to career guidance and professional development for women in engineering and publishes an informative magazine, currently known as the *U.S. Woman Engineer*. The name of the magazine will change to *SWE: The Magazine of the Society of Women Engineers* beginning with the July/August, 1993 issue.

The Society has an international membership of more than 17,000 women and men. There are currently over 70 member sections and over 250 student sections located throughout the United States and Puerto Rico.

As part of its national educational activities, SWE administers approximately 40 scholarships annually, varying in amount from \$1000 to \$4000 and totaling more than \$60,000. All SWE administered scholarships are open only to women majoring in engineering in a school, college or university with an accredited engineering program, and who will be in a specified year of study during the academic year following presentation of the stipend. All stipends are announced in the spring or summer for use during the following academic year.

Scholarship information and applications are sent to the Deans of accredited engineering schools in October and March of each year. Applications and information can be obtained from the Deans of engineering or from SWE Headquarters in New York. Local SWE Sections and Student Sections also have information regarding these scholarships.

Applications for freshmen and reentry scholarships are available from March through May and are due no later than May 15. Recipients are notified by September 15. There are currently five (5) freshmen scholarships, two (2) of which are renewable for three (3) years, (eighteen recipients) and one (1) reentry scholarships.

Applications for upperclass and graduate scholarships are available from October through January and are due no later than February 1. Recipients are notified by May 1. There are currently fourteen (14) upperclass scholarships available to sophomores, juniors and seniors (twenty four recipients) and one (1) graduate scholarship.

Career Guidance activities are a major part of what SWE is all about. These activities are those that encourage people who are not engineers to consider the option of engineering. This covers a very wide range of people, from K thru College level and even beyond that. Accordingly, there is a wide range of Career Guidance activities. Some common activities include:

Speakers Bureau of members to speak to schools, SWE Student Sections, community groups, etc.;

SWE Certificate of Merit program to honor high school girls who excel in science or math;

Judging and assisting in science fairs;

Job shadowing, which gives an idea of what an engineer really does on the job;

Participation in a school's career day;

Local scholarship programs to encourage engineering students;

Weekend seminars or contests such as Expanding Your Horizons or Mathcounts to encourage love of science and math;

Work with Girl Scouts in technical type badges as well as an engineering badge.

The Society annually recognizes Sections, Student Sections and members for their outstanding programs in Career Guidance.

SWE is in its 5th year of participating in a NASA funded grant comparative study of the effects of four different long term early intervention programs on the entry of underrepresented minority women into college engineering programs. Four tasks have been designed to identify junior and senior high school minority women with an aptitude for science and math and introduces them to engineering by linking them with successful role models and providing them with opportunities to actively experiment with engineering problems. The goal of the project is that all participants enter a college engineering program. Program participants are underrepresented minority women (Black, Hispanic, Native American, and Pacific Islander). There are four programs conducted by SWE volunteers across the country. These programs are:

Higher Education Outreach Program (HEOP) which follows 8th graders through high school, 20 students in each of 6 locations (St. Louis being one of the locations);

Essay Contest - 7th graders submit essays on famous women in technical or engineering fields; winners attend NASA Space Camp; 4 winners in each of 4 locations;

Science Fair; Space Campership Contest - 8th thru 11th graders, participants who enter a project in a science fair are given the opportunity to attend a NASA Space Campership;

Big Sister Program - mentoring/tutoring for 11th and 12th graders; 2 sites are used for this research.

Interventions vary in amount of volunteer effort; formality of curriculum, intervention tools, periodicity of interface, intensity of interface, grade level at initial intervention, amount of mentoring and locale. Participants in all programs should enter college engineering programs at significantly higher rates than non participants in the same school, the same geographical area, and nationally. Non-participants attending the same schools will also enroll at higher rate than for their geographical area and nationally, but at a lesser rate than participants. No effects beyond the participant's own school are expected. Participants will have higher math achievement test, PSAT and SAT scores than non participants. Engineering program entry of participating students is directly related to the amount of mentoring received.

In view of the SWE's mission and goals collaborative efforts between SWE and Women in Engineering programs is a very natural fit. SWE's experience in the area of career guidance allows the ability to coordinate efforts in this area. It would be very beneficial for WEPAN and SWE to coordinate programs which take place at the Student Section level. Women in Engineering Directors should collaborate within their respective academic institutions to obtain full benefit of career programs already in place. WEPAN members can also coordinate with local Section as well as Regional activities in the area of career guidance. This can be done with joining in SWE career guidance activities already in place as well as joining in the planning and implementation of new programs. On the Regional level, WEPAN members should be invited to participate in Regional Conferences as speakers, panelists, and possibly in the career fairs. A joint effort would greatly enhance programs already in place and provide the avenues for the development of new ones. SWE is very much in favor of collaborative efforts. The more participation in career guidance activities the greater the impact on potential future women engineers. This can only lead to a "win-win" situation for both organizations.