

The Nuts and Bolts of Program Planning: Recruitment Programs

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Women in Engineering Programs aimed at recruiting high school women into engineering were begun at Purdue University in the early 1970's. As was true throughout the United States, women comprised less than 2% of the engineering enrollment at Purdue in 1970. Recruitment efforts were expanded throughout the 1970s and by 1980 enrollments of women had increased to more than 18%. This figure was 5-6% above the national average and has remained so throughout the 1980s.

Over the years many types of recruitment programs have been developed and implemented. Some of them have been discontinued or adapted as the result of a continuing process of evaluation. This paper will describe the essentials of program planning including preparation and evaluation for programs to recruit women into engineering.

PREPARATION: WHO, WHAT, WHEN, AND WHERE

Who?

The first decision in developing successful recruitment programs revolves around "WHO" will be the focus of the program. If a program is directed at students, choices must be made about the age group to be targeted—*grade school, junior high, high school, college, or adult women*. Once the age group has been selected, choices need to be made whether special characteristics such as *ethnic minority groups or students with disabilities* will be specifically targeted.

Recruitment programs may also focus on the *parents, teachers or counselors* of young women. These people in general are very supportive of a young woman's decisions, but if they have little information about engineering, their uncertainty and doubts are

often perceived as disapproval. A young woman will not usually make a career decision that seems unacceptable to important people in her life. Another consideration regarding programs for teachers and counselors has to do with their individual academic background. Math and science teachers might benefit from programs which describe specific engineering disciplines or research areas. While program planning for grade school teachers or counselors must be based on the reality that these professionals frequently have little received little information about math and science-based careers and sometimes have apprehension about them.

What?

The type of program is another consideration in planning. Indirect contacts might include letters to prospective students, a telephone calling program, posters, videos, merit awards, and an essay contest. Any of these programs, by itself, may be somewhat ineffective, however, when offered as part of a coordinated effort, they may fulfill a particular need. If a multi-faceted program is not possible, indirect contacts should be foregone in favor of one or more direct contact programs.

Over the past years Purdue students made a *telephone call* to every woman student who had been admitted to the engineering program, asking if she had any questions. For the past two years letters have been sent to these prospective students with a return card asking if they would like to be called by a student or freshman counselor. This seems to be a more efficient use of time, yet one which gives prospective students the same opportunity.

Merit awards to prospective engineering women were abandoned several years ago. Follow up contact with students who were offered awards, but chose to go somewhere else, indicated that a merit award made no difference in their decision where to attend school. Merit awards are still used very effectively as incentive to continuing students. The awards, sponsored by industry and alumnae, are presented each February at a Society of Women Engineers Brunch. Last year more than \$12,000 in awards were given to some 40 young women.

Video tapes have been developed which include engineering students and alumnae. These young women are visited in the classroom, in activities, at work, and at home to give prospective students an idea of the breadth of personalities and types of work

involved in engineering. The videos are used as part of various recruitment programs and are also made available to high school teachers and counselors for use in the class room and with high school interest groups.

Posters have been developed to appeal to the high school student and to the grade school or junior high student. The high school poster includes brief interviews with Purdue students who tell why they chose to study engineering and how they like it. When these posters were initially developed, they were mailed out to 4,000 high school junior/seniors each summer. This approach seemed to have minimal success, so now they are used as a hand out at some of the on or off campus programs. The grade school poster was developed to break through the stereotype of engineers. It included pictures of a woman athlete, a mother with her child, a woman in a hard hat, and one in a business suit. The poster questioned "Which one of these is an engineer" and then proceeded to say that they all were. This poster included a pad of return post cards and was mailed to every grade school and junior high library in the state of Indiana.

An *essay contest* is sponsored by the Society of Women Engineers at Purdue which reaches out to junior high students, asking them to write on a subject related to engineering. This year the topic was "If I were an engineering, I would..." The winner is brought to campus for a visit with some of our women students. The second and third place winners are given certificates and Purdue memorabilia and all students who enter are given certificates. The contest is open to both boys and girls. One of the professional sections of SWE does an essay contest where students write biographies about a successful woman scientist or engineer.

The second type of program is the direct contact program which includes programs in the community, those at teacher or counselor conferences and on-campus programs.

Whether held on or off campus, our *one day or evening programs* contain some common elements. Most important is the role models. All of these programs include Purdue women students and working women engineers. The role models are chosen carefully so that their abilities and lives seem attainable to the younger prospective student. The programs include information on engineering as a career, as a college major, and personal information such as how engineering can be combined with a family

or outside interests. Each program invites parents to participate and some of the day long, on campus programs even have special sessions specifically for parents. On campus programs are supported in part by registration fees and in part by industry grants. Off campus programs are supported by local companies and are sometimes held at their facility and include a tour of engineering work areas.

Purdue also has a *week-long summer program* and although it is co-ed, great care is taken to recruit young women so that their participation is close to 50%. This program includes sessions in engineering labs, computer classes, engineering design activities and social activities. Women students serve as counselors who live on the floor in the residence hall with the high school students and participate in many of the activities.

A new activity at Purdue is the *Girl Scout Sleepover*. This weekend activity includes Purdue students helping the girl scouts earn their "Putting It Together" badge, touring engineering facilities, and informal talk.

Presentations at *conferences for high school counselors* have not been very successful. When students are asked who suggested they consider engineering, it is often a math teacher. This year engineering students and staff will be making presentations at several state and regional *conferences for high school math teachers*. It is anticipated that this use of time will be more productive.

When?

Planning for recruitment programs should include consideration of when is the most effective time. Early intervention programs can be offered at almost any time of the year. Important choice points for students occur around sixth grade (the first time gender differences occur on math achievement tests), near the end of eighth grade (when students choose high school courses), during the junior year of high school (when students make application to college and choose a major), and during the senior year (when students make a final college choice).

Other factors critical to planning when to have a recruitment program include availability of facilities, participants, role models, faculty, and staff. Dates should also be coordinated to cooperate with Admissions Office programs and agreements.

Where?

Finally, decisions must be made regarding where to hold a particular program. On campus programs are often the most effective type of direct recruitment programs. They give prospective students a chance to visit the campus, perhaps stay in university housing, and enjoy greater contact with university students. Successful recruitment programs may also be held in hotels, high schools, or at industrial sites. The hotel or high school in a particular community is convenient and may allow more students, parents, or teachers to attend. Industrial sites allow another possible program element if a tour of engineering facilities can be arranged.

EVALUATION

An important part of program planning is the development of an evaluation instrument or follow-up of some kind. An evaluation instrument might include some measurement of attitude toward engineering or toward your institution. Pre- and Post-program evaluations can give measurable results of the value of a particular program. If evaluation results of past programs are available, they should become a significant part of program planning.

Part of a merit award program at Purdue included a follow-up letter to students who decided not to accept the award which was offered to them. Student responses indicated many reasons for choosing another university, but none of them had to do with the size of the merit award offered to them. These results led to a new distribution of merit award funds and at the present time no discretionary funds are used for merit awards.

Evaluation results of several direct contact programs indicate that prospective students believed that the panels of university students and practicing women engineers were the two most important parts of these programs. Results also indicated that all sources of contact with prospective students were equally effective. Similar numbers of students learned about the program they attended from a math or science teacher, a counselor, or by direct mail (list purchased from the College Board Student Search).

Recently, an information fair was added to on-campus programs in response to student comments that they wanted to learn more

about many different areas of engineering. Continuing evaluations will surely lead to further changes in many of Purdue's recruitment programs.

Results of evaluations have suggested several critical components for successful recruitment programs. They are:

Include Role Models
(both students and practicing engineers)

Have Experiential Activities Whenever Possible

Have Attractive Materials for Students to Take Home

Be Attentive to the Inclusion of Minority Students

Encourage a Support Network Among Student Participants

Continuity of Contacts Indicates a Commitment
to Prospective Students

Offer Variety, Not All Programs Appeal to All Students

Specific information about Purdue's various recruitment and retention programs can be obtained by writing to this address:

Women in Engineering Programs
Purdue University, ENAD Building
West Lafayette, IN 47907