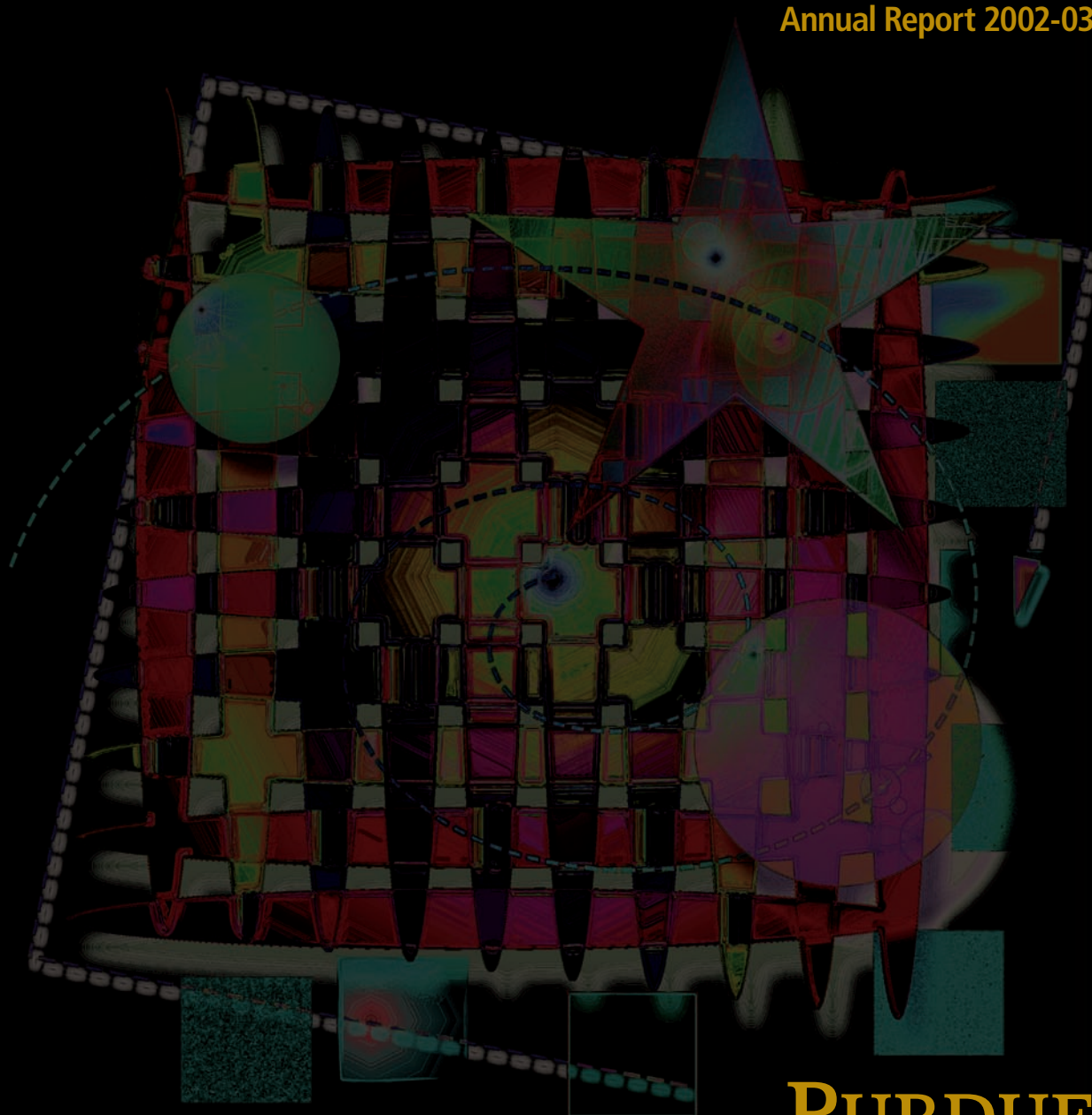


Women in Engineering Program

Annual Report 2002-03



PURDUE
UNIVERSITY

Schools of Engineering



Reflections from the Director

As I reflect on the past year, one thing comes into particularly sharp focus—the collaborations that WIEP has had, and continues to have, both inside and outside of Purdue. I believe these collaborations are absolutely critical to the success of the Women In Engineering Program and its quest for “preeminence.” We collaborate with the Admissions Office for our Engineering Preview Day for Women (formerly known as Career Day) to offer same-day admissions decisions to prospective students who bring a completed application. We also meet monthly with the Admissions Office, Freshman Engineering, the Minority Engineering Program, and the Division of Financial Aid to improve the quality, consistency, and creativity of our recruiting efforts.

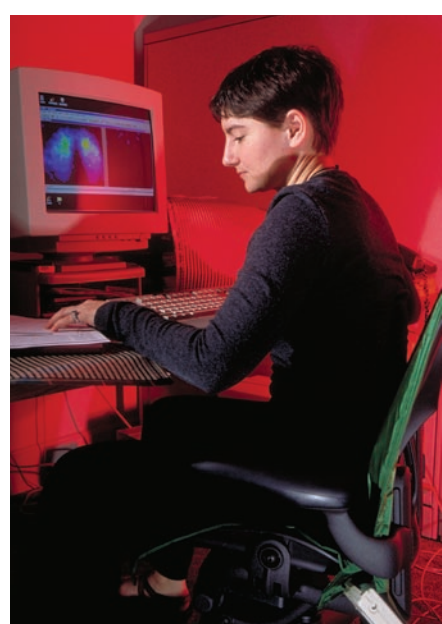
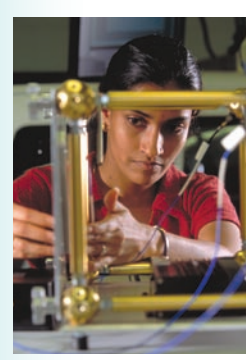
WIEP collaborates with the Women in Science Program in sharing recruiting information, operating the tutoring center in Earhart Hall, and changing the climate for women at Purdue University. We’ve worked with Purdue’s ScienceBound Program (www.purdue.edu/oop/sciencebound/index.html), the Minority Engineering Program, and Girls, Inc (www.girlsinc.org) to expand the reach and impact of our Outreach activities. We’ve worked with the Dean’s Offices in the Schools of Engineering, Science, Technology, and Agriculture to improve the climate for women.

WIEP has built a strong relationship and collaboration with the Purdue Section of the Society of Women Engineers (SWE) for many joint efforts—like the SWE Annual Awards Weekend and the Engineering Preview Day for Women. We collaborate with University Housing, Learning Communities, and the Freshman Engineering Honors Program on our Earhart Residential Program. And on a national level, the staff of WIEP is very active in WEPAN, the Women in Engineering Programs & Advocates Network (www.wepan.org). Cathy Deno, WIEP’s Administrative Assistant works half time for WEPAN, and I was a WEPAN National Conference Co-Chair for the conference held in June 2003. This collaboration keeps us up to date on the latest research and thinking regarding women in engineering.



With the commitment and support of the entire university behind us, the Women in Engineering Program is going to “the next level: preeminence.” We hope that you will join us.

Beth M. Holloway
Beth Holloway
Director, Women in Engineering Program



Mission

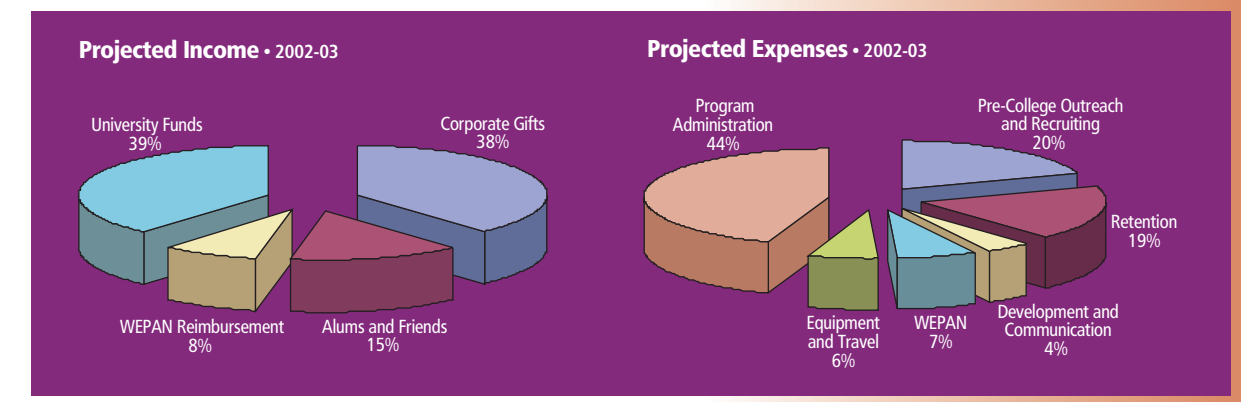
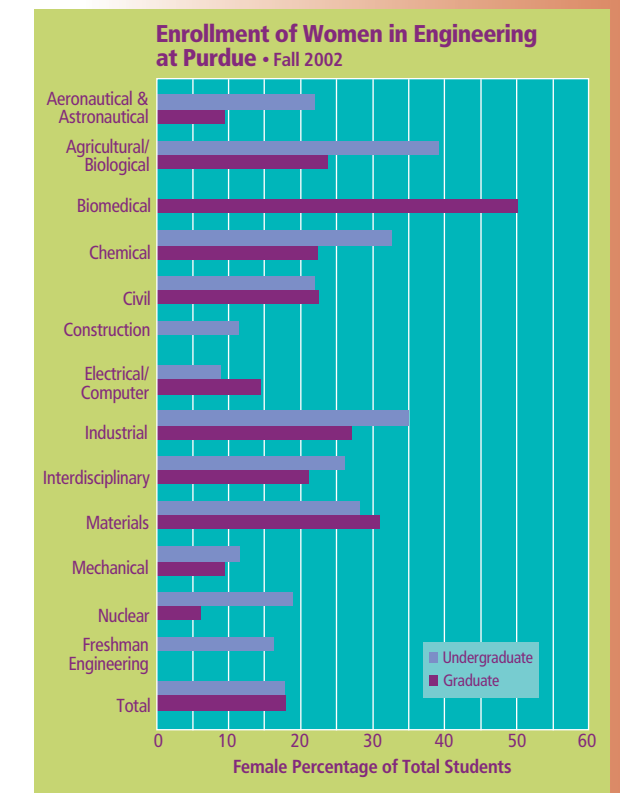
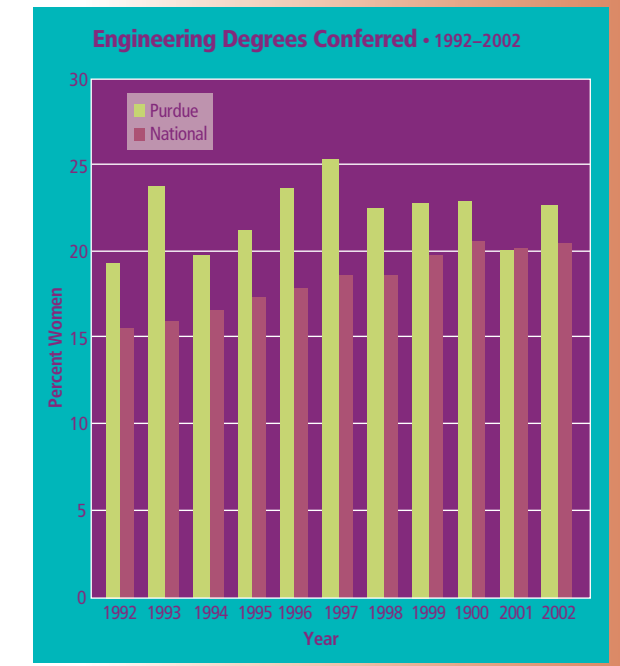
The Women in Engineering Program at Purdue University is dedicated to enriching the profession of engineering through the full participation of women. We develop and direct activities that provide:

- encouragement for girls and young women to study engineering
- information about careers and companies
- an environment conducive to the successful completion of student’s studies.

We also maintain strong relationships with alumnae and employers who generously support our program.

Objectives

- To provide career information and encouragement to pre-college girls and young women to continue achievement in math and science and consider engineering as an appropriate career choice.
- Encourage women to matriculate at Purdue University in the Schools of Engineering.
- Ensure a climate in the Schools of Engineering that allows young women to reach their full potential.
- Provide opportunities for women engineering students to develop leadership skills that can be utilized in their future lives.
- Encourage women to consider graduate education and academia among their options upon graduation.
- Maintain open communication with alumnae and their employers to encourage their continued participation in and support of the Women in Engineering Program.



Purdue University Womenengineers

Since its inception in 1969, the Purdue Women in Engineering Program has been committed to increasing the number of women engineering graduates. Our programs are designed to increase the recruitment, retention, and graduation of women engineering students. Each year, we reach out to support and inform over 2,000 girls and young women—from elementary school through graduate school.

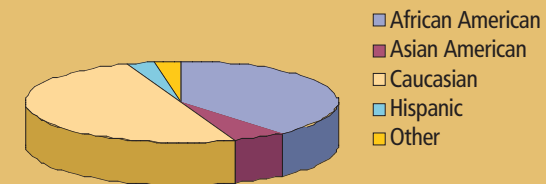
Following is a description of our individual programs, with a spotlight on four of the programs:

- our two summer camps, Love Engineering At Purdue (LEAP) and Exciting Discoveries for Girls in Engineering (EDGE),
- the Personal Connection Program,
- the Earhart Residential Program, and
- the Women in Engineering Seminar (ENGR 194).

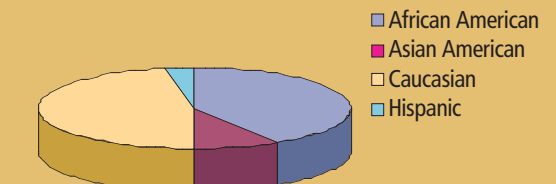
“The best thing about EDGE was the hands-on activities. I loved constructing the robot.”

—EDGE Camper

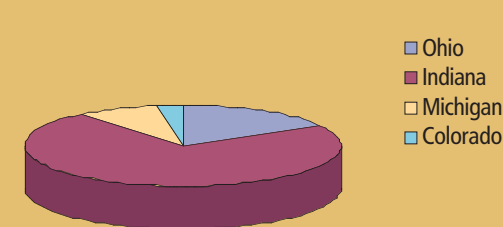
LEAP 2003 Ethnicity



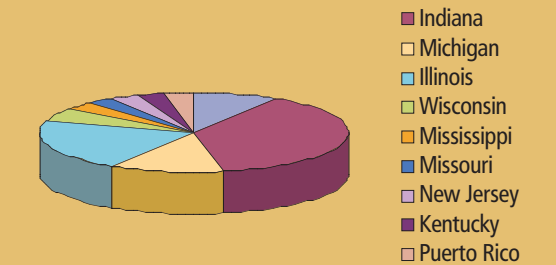
EDGE 2003 Ethnicity



LEAP 2003 Home States



EDGE 2003 Home States



Outreach

Backpack Buddies: Elementary school students participate in hands-on engineering activities assisted by Purdue engineering students and alums. Facilitators also share career and educational information with the participants. The young girls receive Purdue backpacks upon the successful completion of two semesters. *Sponsored this year by a SWE Exxon Mobil Grant and Boeing.*

Love Engineering At Purdue (LEAP) and Exciting Discoveries for Girls in Engineering (EDGE): LEAP and EDGE are both weeklong residential camps. The LEAP camp started in 2000 and EDGE started in 2003. This summer, 36 middle school girls attended LEAP, and 35 high school girls attended EDGE. An ethnically diverse group from across the country (see charts

above), the campers toured engineering facilities to become aware of the many different options and types of engineering. LEAP campers assembled computers and hand-powered flashlights, which they took home with them. EDGE campers constructed several circuits with an electrical breadboard, which they took with them for further activities. Both

groups of campers worked on a Lego robotics team project that was geared for their capabilities. The campers also attended workshops on leadership and study skills, received computer training, and made electronic presentations about their experiences. *LEAP was sponsored this year by International; EDGE was sponsored this year by Delphi Corporation.*

“Our daughter didn’t know if she really wanted to go into engineering before this camp. After the camp she definitely wants to go to Purdue University for an engineering degree. She is also looking forward to next summer’s STEP program.”

—EDGE Parent



Web page scavenger hunt.



Building lego robots.



Computer construction.

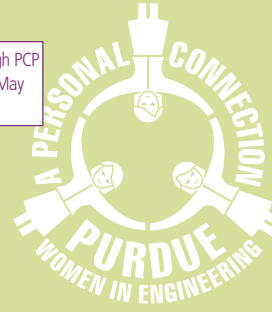
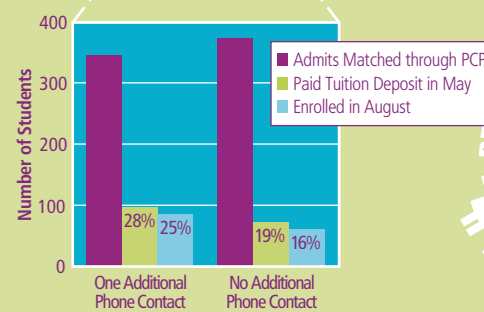
Recruiting

Engineering Preview Days for Women: Formerly known as Career Days, these one-day programs bring junior and senior high school girls to the Purdue campus with their parents and teachers to introduce the university's outstanding facilities, faculty, students and engineering alumnae. *Sponsored this year by Alcoa, Boeing, General Motors, and United Technologies.*

Personal Connection Program: The Personal Connection Program is designed to increase the enrollment of women in engineering through contact between admitted students and current women engineering students or alumnae. Young women admitted to the Schools of Engineering are matched with undergraduate women students or alumnae from their home area. Current students and alumnae answer questions about Purdue and engineering with the aim of encouraging the high school students to enroll in engineering at Purdue. In addition to this contact, program staff and volunteers attempt to call the out-of-state students during the Spring semester to answer any additional questions the admitted students may have. The program concludes when all women still admitted in May (those not canceling their admission) are sent a card with a magnetic photo frame with Women in Engineering contact information printed on it. The figure below show the results of the program. *Sponsored this year by Boeing, General Motors, and John Deere.*

Personal Connection Program (PCP) • 2002-03

| Students | Admits Matched through PCP | Paid Tuition Deposit in May | | Enrolled in August | |
|--------------|----------------------------|-----------------------------|-----|--------------------|-----|
| In-State | 205 | 126 | 61% | 110 | 54% |
| Out-of-State | 716 | 167 | 23% | 145 | 20% |
| Total | 921 | 293 | 32% | 255 | 28% |



Retention

Earhart Residential Program: Every year since 1994, undergraduate women majoring in engineering have been able to choose to live on one of three designated engineering floors in Earhart Hall. The women living here are primarily freshmen, although some sophomores remain on the engineering floors after their freshman year. The Resident Assistants (RA's) are usually upper-class or graduate engineering students as well, so the first-year women have next-door access to female engineering mentors who'll provide them with support and encouragement. Since first-year engineering students have a common freshman curriculum, the women on the engineering floors easily form study groups and social networks. In addition, the WIEP tutoring service is located in Earhart Hall. Our retention studies show that women who live in Earhart as freshman are retained in engineering at a higher rate than those women who did not (96% vs. 91%, based on the 2000 and the 2001 cohorts). We have also

Earhart Participation

| Year | No. of Women |
|---------|--------------|
| 1999-00 | 112 |
| 2000-01 | 87 |
| 2001-02 | 93 |
| 2002-03 | 108 |
| 2003-04 | 143 |

found that women who live in Earhart as freshman earn slightly better grades than the women living elsewhere. The table at left shows the number of women that have participated in the Earhart Residential Program since 1999. *Sponsored this year by Eastman Kodak.*



Residents on Earhart's engineering floors gather to kick-off the Fall semester.



ENGR 194, Women in Engineering Seminar and Peer Groups: This optional, one-credit class was established as a pilot project in 1976. Each year since 1978, from 150 to 190 first-year women engineering students have registered for this popular class. In the seminar, first-year students hear presentations from a variety of practicing engineers who talk about their engineering career choices, their daily routines on the job, and their challenges and successes in their professions as well as in their personal lives. Speakers range from recent graduates to established corporate executives. Each perspective is important and valuable for our students.

In addition, the first-year students meet weekly in small groups for even more active sharing of information and support. Groups are no larger than 8 to 12 members and are led by an experienced senior. Seminar speakers act as energizing role models, but it is the peer groups that provide much of the community building that is emphasized in retention literature.

The goals of the course are:

- To provide a variety of speakers who share their knowledge and experience about the many areas and career options available in engineering and to discuss the ways in which women balance their professional and personal lives.
- To stimulate involvement and interaction with working women engineers and with other women engineering students and organizations on campus.
- To provide information and strategies for the academic and interpersonal skills needed to succeed in engineering.
- To ensure a small group structure which provides information and promotes supportive relationships among peers with similar academic and career goals.

Sponsored this year by General Motors.

"I really enjoyed this class. Seeing all these successful women and hearing all their advice gave me the will to go. ♦ Just about every speaker taught me something new. ♦ I enjoyed the dual career couples very much. I thought it was great to hear about a balance between [them]. ♦ I liked the small groups because it was an opportunity to talk about life outside of school. It gave me a chance to learn more about college life and a chance to vent about what I was having problems with as a freshman." —comments from ENGR 194 students



ENGR 194 small group meeting.



Astronaut and Purdue alum Janet Voss shares her experiences with ENGR 194 students.



Retention continued

Graduate Mentoring Program: Women beginning their graduate education are grouped with more experienced students for formal and informal activities. The program supports women seeking advanced degrees in engineering and encourages them to prepare for academic careers. *Sponsored by Eastman Kodak and the Heads and Deans of the Schools of Engineering.*

M&M: Mentors & Mentees, Undergraduate Mentoring Program: One program matches first-year students with juniors and the other matches sophomores with seniors for formal and informal activities. In the context of mutual mentoring, students receive affirmation and strategies to succeed in engineering. The program is based upon eight monthly meetings that provide academic, personal development, and professional strategies. *Sponsored this year by Ford, General Motors, Kimberly-Clark, and United Technologies.*

MentorNet: The national electronic industrial mentoring network for Women in Engineering and Science matches undergraduate and graduate students from colleges and universities with practicing engineers throughout the United States. Purdue's WIEP is one of MentorNet's original university partners.

Tutoring Service: A free tutoring service for first-year classes is offered on a walk-in basis. Women who are upper-class science and engineering majors in their respective honor societies are employed and trained as tutors. In addition to providing homework help, the tutors are seen as mentors and role models. The tutoring service is located in Earhart Hall for the convenience of the women who live on the engineering floors there. *Sponsored this year by General Motors.*

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