

Mentoring, Retention, and Professional Opportunities

The college is seeking to motivate, mentor, and nurture our graduate students to increase the retention rate and to ensure that our graduates are among the most highly sought worldwide. Providing graduate students with active advising, faculty and peer mentoring, learning communities, rich research experiences, and professional role models will help us reach this goal.

Professional development opportunities are crucial when preparing our graduates for leadership roles. Some of these opportunities will include:

- > **Interdisciplinary research**
The nine signature areas established by Purdue Engineering, along with the facilities at Discovery Park, make it possible to offer graduate students a wide range of interdisciplinary experiences.
- > **International experiences**
Many faculty in the College of Engineering have international collaborators. Multinational corporations are seeking employees with international experience and are, in some cases, willing to create international opportunities for students.
- > **Extensive and meaningful participation in professional societies**
Students will be strongly encouraged to attend national meetings, present papers, participate in technical groups within the society, and build strong professional networks.

We are committed to graduating larger numbers of PhD students prepared for leadership positions, especially for faculty appointments where they can influence the next generation of engineering leaders. In addition, emphasis will be placed on enhancing the quality of the student’s graduate education experience, including shortening the average time for degree completion.

Assessment

An assessment plan will be developed to run parallel with all of the recruiting and retention initiatives. Some of the initiatives will require more time than others to show results, but all will be reviewed periodically and revised or terminated as appropriate.

Moving Forward

We are at an amazing period in the history of science and technology. Far-reaching scientific and technological advances are happening more quickly than ever. We’ve seen the decoding of the human genome and the rapid growth of biotech and information technology. We are on the brink of a truly global economy, and we need every resource available to us, every form of “human capital.” That’s why we’re placing our graduate program among the college’s top priorities.

Profile

WOMEN IN ENGINEERING’S GRADUATE MENTORING PROGRAM

Contributor: **Janine Reklaitis**, Associate Director of the Women in Engineering Program

Connections, interactions, and global networking are words used constantly in academia and industry. Their relevance is impressed upon us every day when we look upon the faces of the engineering graduate students coming in from so many countries to connect and interact with other students and faculty at Purdue.

The Women in Engineering Program’s (WIEP) **Graduate Mentoring Program** (GMP) is just one of the resources that help to establish these critical connections for underrepresented engineering students. WIEP has been actively recruiting and retaining undergraduate students at Purdue for 36 years. However, the GMP has been in existence only since 1994, when it began with 50 participants. Over the last three years, participation has increased to close to 100 students. Although the GMP continues to reach as many of the 396 female graduate students in engineering as possible, the program is not just about the numbers. Given their strenuous curriculum and busy lives, perhaps 40 of these 396 students come to



any given GMP meeting, but all students are drawn into meaningful mentoring relationships and given multiple resources for their academic, personal, and professional development. The focus is on providing useful information and a supportive environment that results in a less stressful, more productive, and more confident approach to graduate studies. Programs like the Graduate Mentoring Program help to retain women students and to change attitudes held by these students, their peers, and their professors.

The GMP offers a mix of presentations on academic skills and stress-relief as well as fun activities. A small sample of past topics by dynamic, experienced corporate speakers and faculty include technical writing, job searches and interviewing, resolving conflicts, cooking on a budget, and financial management. This year, a poster session on women engineering graduate student research will be included. Sharing their accomplishments and inspiring each other by their academic productivity increases confidence and offers the encouragement that ensures women engineers succeed!

For more information visit: <https://engineering.purdue.edu/WIEP/>

Spotlight

INSPIRE

Contributor: **Cynthia Sequin**, University News Service

Elementary school teachers are coming to Purdue this summer to find new ways to incorporate engineering principles in the classroom.

The goals of the program are to foster an interest in engineering and ultimately increase the number and diversity of students entering the university to study engineering.

The Summer Academy at the Institute for Preschool-12 (P-12) Engineering Research and Learning, known as INSPIRE, is conducted by Purdue’s Department of Engineering Education. The two-week project includes about 60 teachers from Indiana and all over the country, including Colorado, Florida, Illinois, and California.



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Visit Purdue Engineering online at: <https://Engineering.Purdue.edu/Engr>

From the Dean

We have great hope in the future of our graduate students. Whether they are called to solve a public health crisis in Mumbai, or design and build the next great civil works project in Alaska, the graduate students in our classrooms are eager for an experience that is as realistic, exciting, and engaging as their careers will be upon graduation.

They will work in a world where technology is advancing at a remarkable rate, and where people are coming together to solve challenges such as energy, environment, and poverty. In short, we are inspiring and encouraging graduate students to engineer a better life for all.

In this issue of *In Focus*, we report on the future of Purdue Engineering's graduate programs.

Leah H. Jamieson

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Next Issue: Fall 2006

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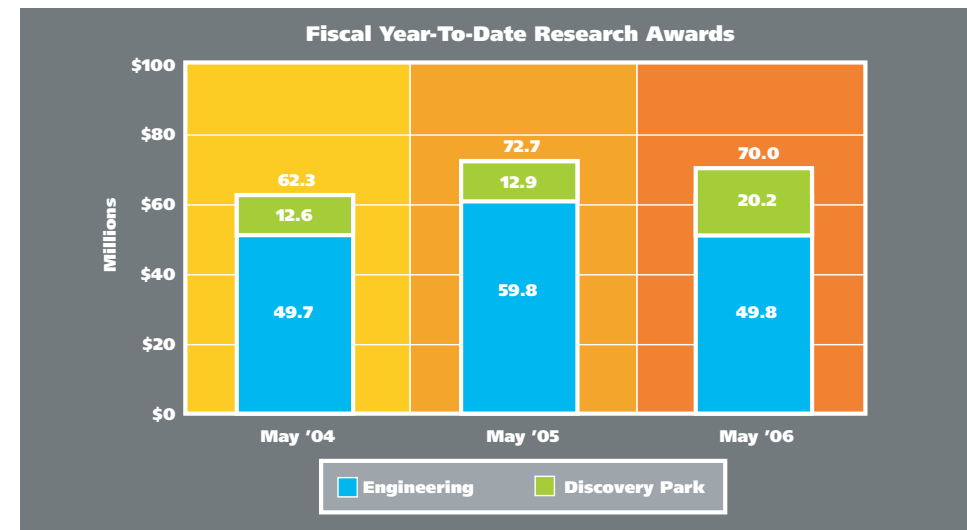
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Research Update

Contributor: Jay Gore, Associate Dean of Research and Entrepreneurship

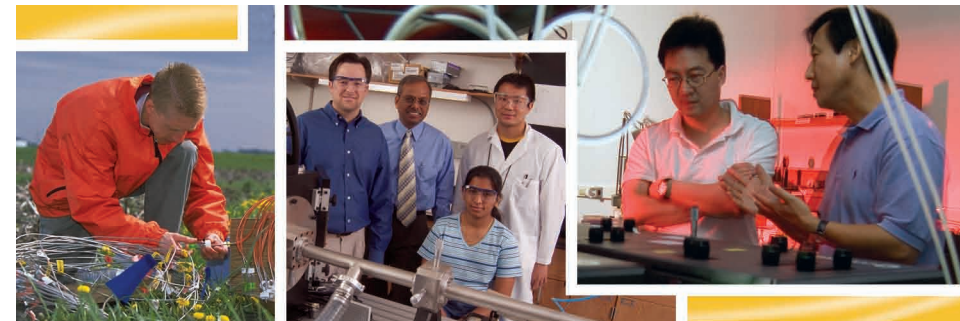


In May 2006, the College of Engineering (excluding Agricultural and Biological Engineering, and Computer Science) extramural research cash awards were close to \$6M. This increases the year-to-date award total to \$70M, a 12.4% increase over May '04 but a 3.9% decrease from last year. Our research in Discovery Park has grown over the last year by 56.6% to \$20.2M. Our strategic goal is to double the college's research awards by 2007, and we are on track.

Cover Story

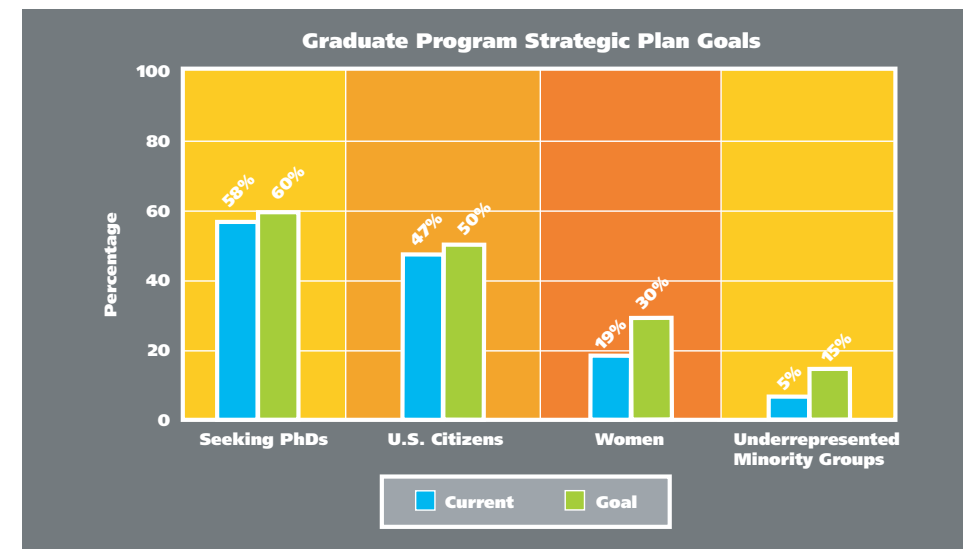
INSPIRING LEADERS

Contributor: Audeen Fentiman, Associate Dean of Graduate Education and Interdisciplinary Studies



A strong graduate program is essential to fulfilling Purdue Engineering's mission to prepare leaders and innovators for academia, industry, and government. Our graduate program is currently ranked sixth in the nation by *U.S. News and World Report*. Improving that ranking will require an increase in the number and quality of PhD graduates.

Our strategic plan calls for renewing our commitment to strengthening our nationally recognized graduate program, particularly the PhD program. In Fall '05, an internal assessment committee was established to review three aspects of graduate education: recruitment, retention, and assessment.

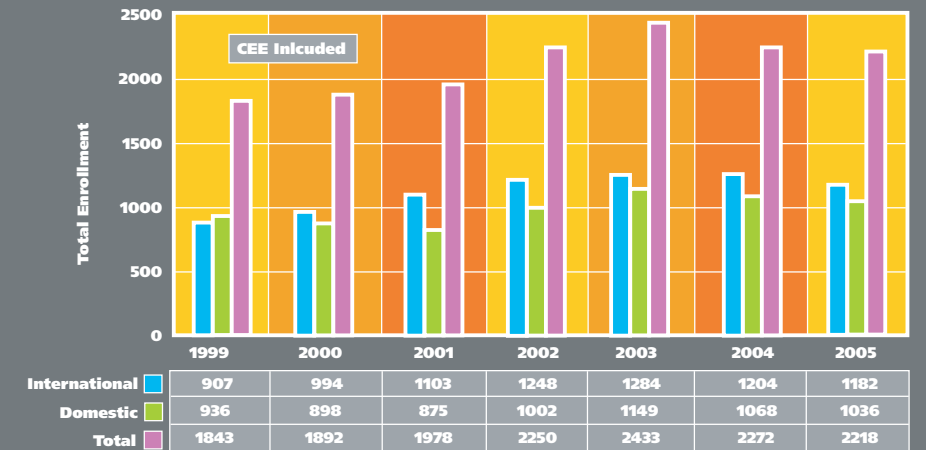


The college's Graduate Education office is working with the schools' graduate chairs and graduate administrators as well as members of the Engineering Leadership Team to develop and implement a detailed plan that will move Purdue Engineering's graduate program toward achieving its goals.

The plan, being drafted this summer, will serve as a starting point for discussions in Fall '06. It takes into account preliminary recommendations by the internal assessment committee and information gleaned during early discussions with each school. The plan to improve and promote the graduate programs will be revised and immediately implemented following an early-fall meeting.

While parallel efforts on recruiting and retention must be maintained, our focus during the 2006-07 academic year is expected to be on recruitment. Once an enhanced recruitment process is established, with mechanisms in place to maintain that process, we can shift our focus to retaining our enrolled graduate students by creating opportunities for mentoring and professional development.

Engineering Graduate Programs: Total Enrollment 1999-2005 Trends



Recruiting Domestic, Women, and Minority PhD Students

Currently, more than half of Purdue Engineering's PhD students are international, and as graduate education and career opportunities in other countries improve, the number of international students willing to come to the U.S. for an education and stay for a career will decrease. Our strategic plan calls for an increase in the number of domestic PhD students. The need for domestic PhD engineers is especially critical at national laboratories and in government agencies devoted to defense and security.

We would also like to increase the number of women and minority students—a largely untapped pool of domestic talent. Employers who hire our students are seeking to diversify their workforce and have a strong preference for hiring from institutions that can provide that diversity.

Doctoral students become leaders in academia, industrial research programs, and in formulating national policy. To remain competitive, the U.S. needs a continuous stream of leading thinkers. To maintain its influence and reputation, Purdue needs to produce a significant number of those leaders. That is why we will recruit the best and brightest for our PhD programs, with an emphasis on recruiting domestic, women, and minority students.

Possible future components of the recruiting effort include:

- Collaboration among the many Purdue programs that involve undergraduates in research on campus during the summer, such as SURF, MARC-AIM, and programs managed by the Minority Engineering Program, the Women in Engineering Program, and the Graduate School.
- Identifying potential graduate students around the nation early in their undergraduate careers and making them aware of opportunities at Purdue.
- Developing connections with potential graduate students through current faculty, staff, students, and alumni.
- Identifying pools of non-traditional students who are, or could soon be, prepared for graduate work in engineering, such as strong math and science students at liberal arts schools.
- Emphasizing that Purdue provides not only an opportunity for an outstanding technical education, but also opportunities for personal and professional development that prepare a person for leadership positions in academia, industry, or government.