

Launching Tomorrow's Leaders Metrics Purdue University's Discovery Park

Purdue University's Discovery Park was created in 2001 to transform how knowledge is generated, integrated, and applied in local, regional, state, national, and global businesses and communities. Discovery Park is an integrated, interdisciplinary hub of eleven centers that supports discovery and learning and drives the delivery of innovation.

Purdue University's Strategic Plan, approved in 2008 under President France Córdoba, explicitly establishes three synergistic priorities for the University: Discovery With Delivery, Launching Tomorrow's Leaders, and Meeting Global Challenges. This document reflects metrics for the pivotal role that Discovery Park plays in Purdue's capabilities to launch tomorrow's leaders through innovative programs to broaden student learning beyond traditional disciplines and professional development programs for many constituent groups.

For the fiscal year 2007-08, the metrics include:

1. **566** graduate students were involved in Discovery Park research projects, industrial internships, master's programs, or graduate certificate programs. Both the master's program in Ecological Sciences and Engineering Interdisciplinary Program and the Graduate Certificate Program in Veterinary Homeland Security are new and were developed through Discovery Park.
2. **3296** undergraduate students at Purdue were involved in Discovery Park affiliated classes (Certificate in Entrepreneurship and Innovation Program, Center for the Authentic Practice of Science in Education classes, energy-related courses), internships, or activities. Another 700 undergraduate students at institutions other than Purdue were enrolled in classes through the Center for the Authentic Practice of Science in Education courses.
3. While diversity metrics are not available for all undergraduate programs, diversity breakdowns are available for enrollment in the beginning course for the Certificate in Entrepreneurship and Innovation: **24%** female; **5%** African American; **5%** Asian American; and **2.4%** Hispanic (n= 1049; see full chart next page).
4. **7321** K-12 students participated in activities to enhance learning and broaden their perspectives on Science, Technology, Engineering and Mathematics learning and careers.
5. **5684** adult learners participated in workshops, conferences, training sessions, short courses, lectures, or retreats. These participants include faculty from Purdue and many other institutions, physicians and clinicians, corporate executives from companies, and healthcare administrators. This number does not include 87 veterinarians who completed the Graduate Certificate Program in Veterinary Homeland Security (they are counted in the graduate student category).
6. **130** K-12 teachers were involved in 58 Discovery Park projects to extend their knowledge and skills.
7. **268** tours with over 2500 visitors were conducted in the Birck Nanotechnology Center and the Bindley Bioscience Center to extend perspectives on innovation and to develop partnerships.

CERTIFICATE FOR ENTREPRENEURSHIP AND INNOVATION

The Certificate for Entrepreneurship and Innovation Program, supported through Discovery Park’s Burton D. Morgan Center for Entrepreneurship, is one of Discovery Park’s most successful initiatives to extend student learning in non-traditional ways. Purdue undergraduates receive a “Certificate” after the completion of fifteen course hours or five courses related to entrepreneurship. The course offerings complement any major at Purdue, and students are enrolled from every College/School in the University. The requirements include two introductory courses in entrepreneurship and a capstone course.

Since the inception of the program in 2004, 131 certificates have been awarded to students: about 100 of these were awarded in 2007. Based on the program’s success, a study abroad opportunity was developed; 22 students traveled to China in 2008.

The program reaches a diverse group of students. Enrollment in the introductory course, ENTR 200—Introduction to Entrepreneurship, through the spring semester 2007 reflected the following:

	Number	Percent
Male	801	76.40%
Female	248	23.60%
Caucasian	833	79.40%
Asian American	54	5.10%
African American	50	4.80%
Hispanic	25	2.40%
Native American	2	0.20%
Unreported, missing or other	85	8.10%

INTERNS FOR INDIANA AND DISCOVERY UNDERGRADUATE RESEARCH INTERNSHIPS

These Discovery Park internship programs prepare students for the leadership needs they will face tomorrow in two ways: (1) the Interns for Indiana program places student interns in start-up companies where they work as a member of the small, start-up team to make a company successful; and (2) the Discovery Undergraduate Research Internship Program places students on interdisciplinary research teams to work on cutting-edge discoveries.

The Interns for Indiana program places about 100 students per academic year in start-up companies. The majority of these students are undergraduates, but a few graduate students participate as well. This program helps to keep students in the state: of 112 students tracked, 66% accepted positions in the state of Indiana upon graduation. More than one-third of non-Indiana residents who participated in the program accepted positions in Indiana.

The Discovery Undergraduate Research Internship program also supports slightly over 100 undergraduate students annually.

ENTREPRENEURIAL LEADERSHIP ACADEMY

The Entrepreneurial Leadership Academy, funded through a grant from the Kauffman Foundation, competitively selects ten mid-career faculty members each year to participate as Fellows. The Entrepreneurial Leadership Academy meets monthly to learn about the resources available at Purdue and the challenges of leading entrepreneurial enterprises. Some of these faculty members intend to use their entrepreneurial skills to launch a business; others intend to utilize these skills to lead new centers at Purdue, develop new research initiatives, create new courses, or assemble new grant proposals. The goals of the Academy are two-fold: (1) to provide the skills and knowledge to afford new opportunities to entrepreneurial faculty; and (2) to create an ever-expanding network of entrepreneurial faculty and leaders on our campus.

GRADUATE CERTIFICATE PROGRAM IN VETERINARY HOMELAND SECURITY

A web-based, graduate level, distance learning certificate program was developed for individuals involved in animal emergency response. Participants enhance their understanding of natural and intentional threats to animal health and strengthen their skills in management of animal-related emergencies. This activity is a cooperative effort among the Purdue University School of Veterinary Medicine, the Purdue Homeland Security Institute, the Indiana State Board of Animal Health, the Indiana State Police, the Purdue Graduate School, and Purdue University Continuing Education and Conferences.

More than 80 professionals from 27 states, Washington D.C., Singapore and Bermuda have enrolled in the veterinary homeland security program. Participants represent the veterinary profession, government, military, academia, law enforcement and industry. Completed projects included plans for addressing animal emergencies in various communities and the identification of community resources to be used in the event of emergencies involving animals.

THE ECOLOGICAL SCIENCES & ENGINEERING INTERDISCIPLINARY GRADUATE PROGRAM (ESE-IGP)

The ESE-IGP, developed by a group of faculty from across campus and facilitated by the Center for the Environment, was approved in 2003 and launched in fall of 2005. The Ecological Sciences & Engineering Interdisciplinary Graduate Program (ESE-IGP) provides students with educational and research experiences that integrate engineering, science, policy, and life cycle thinking concepts to addressing sustainable solutions that cut across multiple disciplines. The ESE-IGP partners with a variety of academic units that provide the discipline foundation under a set of complementary integrating themes. The ESE-IGP also serves as a catalyst to promote collaborative inter-disciplinary environmental and ecological research among Purdue University faculty members.

- The ESE-IGP is enhancing recruitment of top graduate students to Purdue in all environment-related areas at Purdue, which is benefiting multiple academic units. Faculty from 6 units within the Colleges of Agriculture, Engineering, and Science stated that the ESE-IGP applicants had higher GPAs, GRE scores, and level of maturity than applicants through their traditional department portal in their area of interest.

- Applicants increased from 7 in 2007 to 38 for 2008 (70% accepted), to over 40 prospects as of October 1, 2008 for the 2009 academic year.
- The ESE-IGP provides professional development through coursework and activities such as the ESE campus-wide symposium that attracted 175 students, faculty, and residents last year to Purdue on the topic of sustainability.
- The overwhelmingly positive impact of the ESE-IGP on graduate recruitment and education has resulted in financial support from the Deans of the Colleges of Agriculture, Engineering, Liberal Arts, Science, and Technology and the Provost Office for the 2008-2009 academic year.

KEY PARTNERSHIPS

A number of external partnerships are critical to Discovery Park's abilities to infuse the use of innovative technologies and thinking into initiatives that create the leadership of the future. Examples:

To develop new leaders in the Science, Technology, Engineering, and Mathematics fields, Discovery Park's Discovery Learning Center has 28 K-12 institutional partners, 6 community college partners, and 13 university partners. Of the many programs and partnerships under the umbrella of the Discovery Learning Center, the Center for the Authentic Practice of Science Education enjoys partnerships with 12 institutions of higher education, including the University of Queensland in Brisbane, Australia.

In the arena to cultivate better preparedness for pandemics on the part of many state and healthcare partners, Discovery Park's Homeland Security Institute is proud of the partnership outcome: An increase of Indiana's CDC Pandemic Preparedness Score from 38% in 2005 to 96% in 2008.

Discovery Park's Oncological Sciences appreciates a key partnership with the Hoosier Oncology Group which includes over 400 dedicated community and research center physicians in the following states and countries: Indiana, Michigan, Missouri, Nebraska, New Jersey, Ohio, Oregon, Pennsylvania, Texas, and Lima, Peru. This partnership is key to several of the workshops and projects facilitated through the Oncological Sciences Center.