IfI Keeps Talented Purdue Grads in Indiana

The Interns for Indiana (IfI) program—funded by the Lilly Endowment, Inc.—has proven to be enormously successful at keeping talented Hoosiers in Indiana after graduation. Since its inception in the Summer of 2004, 314 Purdue Interns have worked 135,000 hours for 113 high-tech, Indiana start-up companies. Of the 221 interns who have graduated thus far, 70% have taken jobs in Indiana compared with twenty-five of those students now work full-time for their IfI company, and six have started their own companies in Indiana.

Site Preparation begins for Purdue’s Discovery Learning Research Center

Purdue University’s new $10 million building to house the Discovery Learning Center is on track for completion in late 2008. Following the groundbreaking ceremony last Fall, the bid process is set to begin in April, and the site is being prepared for construction this Summer. The innovative 17,000-square-foot-facility will feature state-of-the-art learning research laboratories, a project demonstration laboratory, a science teaching lab, and a small “black box” theater-style room. Additional conference space, a learning commons, and collaborative work and meeting spaces for research teams and study participants also are included in the design.

Learning Center’s Affiliate Profile

As of February 20, 2007, the Discovery Learning Center had over 403 affiliates representing 10 University schools or colleges.

News Notes Feedback:
www.purdue.edu/discoverypark/learningcenter

Discovery Learning Center Launches Serious Games Initiatives

The Discovery Learning Center (DLC) has launched several initiatives to promote research and development in the area of digital media and game-based learning. Scholars and scientists have begun developing innovative interactive software and high-end visualization techniques to capture the imagination of the digital generation. The Federation of American Scientists’ Summit on Educational Games (2006) concluded that “players exercise a skill set closely matching the thinking, planning, learning, and technical skills increasingly demanded by employers in a wide range of industries.”

- The DLC has joined with the Envision Center for Data Perceptualization, and the Center for Continuing Education and Conferences to sponsor the Games-to-Teach Competition which will award up to $150,000 to the best Purdue faculty-led team that designs and develops an on-line game-based course for Purdue credit. The competition is open to all tenure track faculty at Purdue University’s West Lafayette campus. Pre-proposals are due April 2, 2007, and semifinalists will be asked to submit full proposals by May 15, 2007. For more information, visit www.purdue.edu/dlc/gamecompetition.

- In addition, the DLC and the Envision Center are sponsoring a Serious Games Forum to showcase industry partnerships and demo new developments on Thursday, April 5, 2007, beginning at 8:30 in 121 Morgan Center. Representatives from MOVES/Naval Postgraduate School, Lauer Learning, Microsoft, and BreakAway, Ltd. will conduct sessions.

- Noted author, game designer, and internationally acclaimed speaker, Marc Prensky will deliver the Discovery Learning Center’s Spring Lecture, “Education and Learning in the Twenty-first Century: Engaging Today’s Digital Learner,” on Monday, April 16, 2007 at 7:00 p.m. in Fowler Lecture Hall. While on campus, Prensky also will conduct a workshop for students and meet with the Center’s Game-Based Learning Committee.

For more information or to register on-line, visit: http://www.purdue.edu/dlprensky

GK-12 Enhances Science and Math in Middle Schools

A $1.6 million National Science Foundation award is making it possible to infuse four Indiana middle schools with new science experiences. Eight GK-12 Fellows, Purdue doctoral students representing the STEM disciplines (science, technology, engineering, and mathematics), serve as “visiting scientists” for eight local middle school math and science teachers.

The inaugural class of fellows is getting first hand experience with middle school students working up to 20 hours a week assisting with curriculum development and modification as well as providing direct in-class science support. Under the direction of Dr. Melissa Dark, assistant dean and associate professor, College of Technology, the fellows, teachers, and students cooperatively work to enhance the quality of STEM education in rural and small town middle schools, develop STEM graduate student fellows’ understanding of public school science educational needs, provide professional development for middle school teachers, and foster lasting and mutually beneficial partnerships between the university and area school corporations.

Select members of the GK-12 program traveled to Washington, D.C. in March for the annual meeting at the National Science Foundation, to showcase their achievements. Other GK-12 representatives will present their research at the Association of American Geographers annual conference this April in San Francisco.

News Notes: Spring 2007

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**Center Launches Informal Learning Initiatives**

**A Note from the Director**

We have had a busy year at the DLC, and the Spring holds promise for more exciting new initiatives. The success of the most recent development, described on the cover highlight the growing importance and multiple opportunities of digital media to enhance what and how we learn. Virtual environments, scientific animations, and remote instrumentation are among the ways in which technology and Purdue's cyber infrastructure are both enabling and creating new learning environments.

I am especially pleased to see that the Center’s earliest initiatives have resulted in more students staying in Indiana for their first jobs because of their internship opportunities in high-tech, start up companies through the Interns for Indiana (IfI) program. DURI has provided authentic research experiences that we hope will result in more students pursuing graduate degrees. The NSF funded GK-12 program is a great example of our mission to promote the integration of research, engagement, and learning to further innovation in education.

The addition of four faculty fellows: Dr. Deborah Bennett, Educational Psychology; Dr. James Mohler, Computer Graphics Technology; Dr. Eric Riggs, Earth and Atmospheric Sciences; and Dr. Karl Smith, Engineering Education, provides added expertise for the Center’s programs and strengthens the collaborative opportunities for all.

**Museum Display makes Nanoscience Accessible to the General Public**

Although the subject of recent movies, books, and advertising, the intricacies of nanoscience is still a mystery to most individuals. The Discovery Learning Center, in partnership with Purdue’s College of Agriculture, spearheaded the development of a museum display focused on making nanoscience more accessible to students and adults. This 400 square foot display, highlighting research efforts at Purdue University, was on display at the Indiana State Museum from February through July 2006. In August, the display moved to the Indiana Fairgrounds for a two week run. The exhibit will travel to various other museums in Indiana and the Midwest throughout 2007.

**Garfield Gaming Lab Aims to Increase Interest in STEM Subjects and Informal Education**

The DLC has partnered with PAWS, INC. and Carnegie Mellon University’s Alice Project on an NSF informal science education proposal. If funded, the interactive, problem-based museum/science center exhibit would engage visitors in an informal arcade-like setting to teach the science and technology behind computer games. Designed for middle school age youth, the exhibit would teach component parts of gaming-related technology through a series of “technology” stations including an animation and music station, a storyboarding and programming station, a virtual reality quest, and a gaming station. The arcade would feature Garfield and friends as well as Carnegie Mellon’s Alice character.

**DLC’s Experiential Learning Assessment Models presented at Conference**

Representatives from the Discovery Learning Center presented two research papers at the 5th Annual Hawaii International Conference on Education in January, 2007. The DLC Interdisciplinary GK-12 Program assessment model was presented by project internal evaluators, DLC Faculty Fellow, Dr. Deborah Bennett and Doctoral Candidate, Melissa Dyehouse. Their presentation focused on the evaluation model for the GK-12 program, including the development of a logic model and the collection of multifaceted evidence to examine participant change. The use of logic models to provide an integrated and coherent representation of project elements was discussed, and initial program data were shared.

Recent research on the Interns for Indiana (IfI) program was represented by DLC Intern Coordinator Amy Childress whose presentation addressed the experience of students and adults. This 400 square foot display was presented by project internal evaluators, DLC Faculty Fellow, Dr. Deborah Bennett and Doctoral Candidate, Melissa Dyehouse. Their presentation focused on the evaluation model for the GK-12 program, including the development of a logic model and the collection of multifaceted evidence to examine participant change. The use of logic models to provide an integrated and coherent representation of project elements was discussed, and initial program data were shared.

**92 Students Participate in Faculty Research**

Funded by the Lilly Endowment, the Discovery Park Undergraduate Research Internship program (DURI) is showing early promise of success with more than 82% of interns indicating that a DURI experience either increased or reinforced their interest in attending graduate school. Since its inception in 2005, students have participated in 164 internships designed by 80 faculty mentors across all 10 Discovery Park Centers. The DURI program also has served as a model for soliciting additional external funding for a broad range of programs including: a NIH proposal with the Oncological Sciences Center to fund a long term research experience for oncology science education research and a USDA proposal for a summer research experience on Purdue’s campus for students from an historically black college or university.

**CASPiE Introduces Undergraduates to Authentic Research Experiences**

Over 900 freshman chemistry students will conduct original and authentic research as part of their undergraduate chemistry laboratory class work in universities throughout Indiana and the United States this Spring as part of a multi-Institutional collaborative effort led by Purdue University.

The Center for Authentic Science Practice in Education (CASPiE), established in 2004 as part of the Division of Chemistry of the National Science Foundation’s Experimental Undergraduate Research Centers program, is designed to address major barriers to providing research experiences to younger undergraduate science students. Drawing on authentic research to teach students the fundamental skills of science as well as the process of scientific discovery, CASPiE courses are based on and actively linked to the work of scientists. In addition to a 350-student section of General Chemistry at Purdue University, CASPiE courses are underway at Ball State University, the College of DuPage, Harold Washington Community College, Moraine Valley Community College, Olive-Harvey College, Northeastern Illinois University, University of Illinois at Chicago, Vincennes University, the University at Buffalo, and the State University of New York.

Students will assist with research on topics related to antioxidant content of foods, biodiesel production from waste animal fats, solid-phase organic synthesis, biosensors, and using zinc oxide films for solar energy conversion. All research modules are based on active research programs under the direction of faculty at Purdue University, University of Illinois at Chicago, and Northeastern Illinois University.

The collection of data from the Spring implementation will provide researchers with information regarding whether or not CASPiE laboratories help teach students the process of science and further inspire them to pursue advanced degrees and careers in science.