

## Discovery Learning Center (DLC)

### Historical Accomplishments

#### Collaboration

DLC proposals and projects have involved:

- 176 faculty, 11 Colleges, all DP centers, 59 Departments/units
- Over 115 Companies and 52 External collaborators
- Over 700 Student researchers and entrepreneurs

#### Research Activity

- Facilitated submission of 107 proposals for ~ \$300 million.
- \$30 million in sponsored funding, \$11 million in endowments
- More than 20-fold return on investment in 5 years.

#### Support to Academic Units

DLC has contributed > \$870,000 to support academic units, including:

- \$100,000 start-up contributions
- \$150,000 cost share
- \$500,000 seed grants

### Recent Accomplishments (18 months)

- Facilitated submission of 49 proposals worth \$87 million.
- \$5.26 million in new sponsored funding
- \$7 million in sponsored funding in final negotiation (NSF)
- New Centers: Assessment Research Center, and Susan Butler Center for Leadership Excellence

### Examples of DLC Research Projects:

#### Improving Undergraduate Education

- NSF Undergraduate Research Center: *Center for Authentic Science Practice in Education (CASPIE)* – a multi-institutional collaborative examining new models for providing authentic research experiences in intro undergraduate chemistry labs.
- NSF CPATH: *Extending a Bottom-Up Education Model to Support Concurrency from the First Year* – examining an experiment to revitalize undergrad computer science and computer engineering education using parallel program design.
- Lilly Foundation: *Interns for Indiana* – Assessing the impact of a novel internship program with high tech start-up companies aimed at stemming the 'brain drain' of college graduates and enhancing economic development.

#### Developing New Teaching Technologies

- *Introduction to Aerospace Design* – engineering, technology and engineering education collaborating to design and research the effectiveness of an online, gaming-based course to teach fundamentals of design in an aeronautics course.

### *Advancing Research that Revolutionizes Learning*

Through externally funded research projects, innovative programs, and collaborative partnerships, the DLC is addressing a fundamental global challenge: **translational research in learning**, especially in Science, Technology, Engineering, and Mathematics.

Since its inception in 2003, the DLC has focused on creating, developing, and nurturing interdisciplinary research contributing to:

- the science of learning;
- assessment and (re)design of innovative educational programs;
- the development, testing, and deployment of new interactive learning technologies; and
- the promotion of educational equity and enhanced diversity.

### Future Opportunities and Aspirations

**New Building:** A 90,000 square foot, state-of-the-art DLC building is under construction, featuring:

- Cutting edge classrooms equipped for learning research
- Highly flexible science lab teaching research space
- Breakout spaces, learning commons and conference rooms
- Office and collaboration spaces for research groups

This unique facility provides Purdue researchers with novel opportunities to study learning and the science of learning.

#### Enhancing Diversity

- NSF LSAMP: *Louis Stokes Alliance for Minority Participation* – bridge, retention and support programs to double minority graduates in the STEM disciplines.
- NSF S-STEM: *Recruiting and Retaining High Need, High Potential Students to Food, Environmental, Engineering, and Life Sciences* – Agriculture and the business community partner to recruit, retain, and equip high need / high potential students using novel learning experiences.

#### Improving the Pipeline: K-12 Education

- Howard Hughes Medical Institute: *Electronic Field Trips in Comparative Biology* – assessing the effectiveness of electronic field trips to bring cutting edge science and scientists to rural middle school classrooms.
- NSF nCLT: *Center for Learning and Teaching in Nanoscale Science and Engineering* – developing and evaluating high school professional development programs to integrate nanotechnology into high school science curricula.