

# Inquiries Into Inquiry (I<sup>2</sup>)

## Distinguished Teacher/Scholars Program

The Teaching Advancement Board selected Bertram C. "Chip" Bruce and Kim C. Graber as its Distinguished Teacher/Scholars for the 2006-2007 academic year. The program recognizes outstanding faculty members who actively enhance teaching and learning on campus and supports innovative projects that recipients develop. Distinguished Teacher/Scholars serve as consultants and mentors to other faculty members and departments seeking to explore new instructional methods and revitalize their teaching programs.



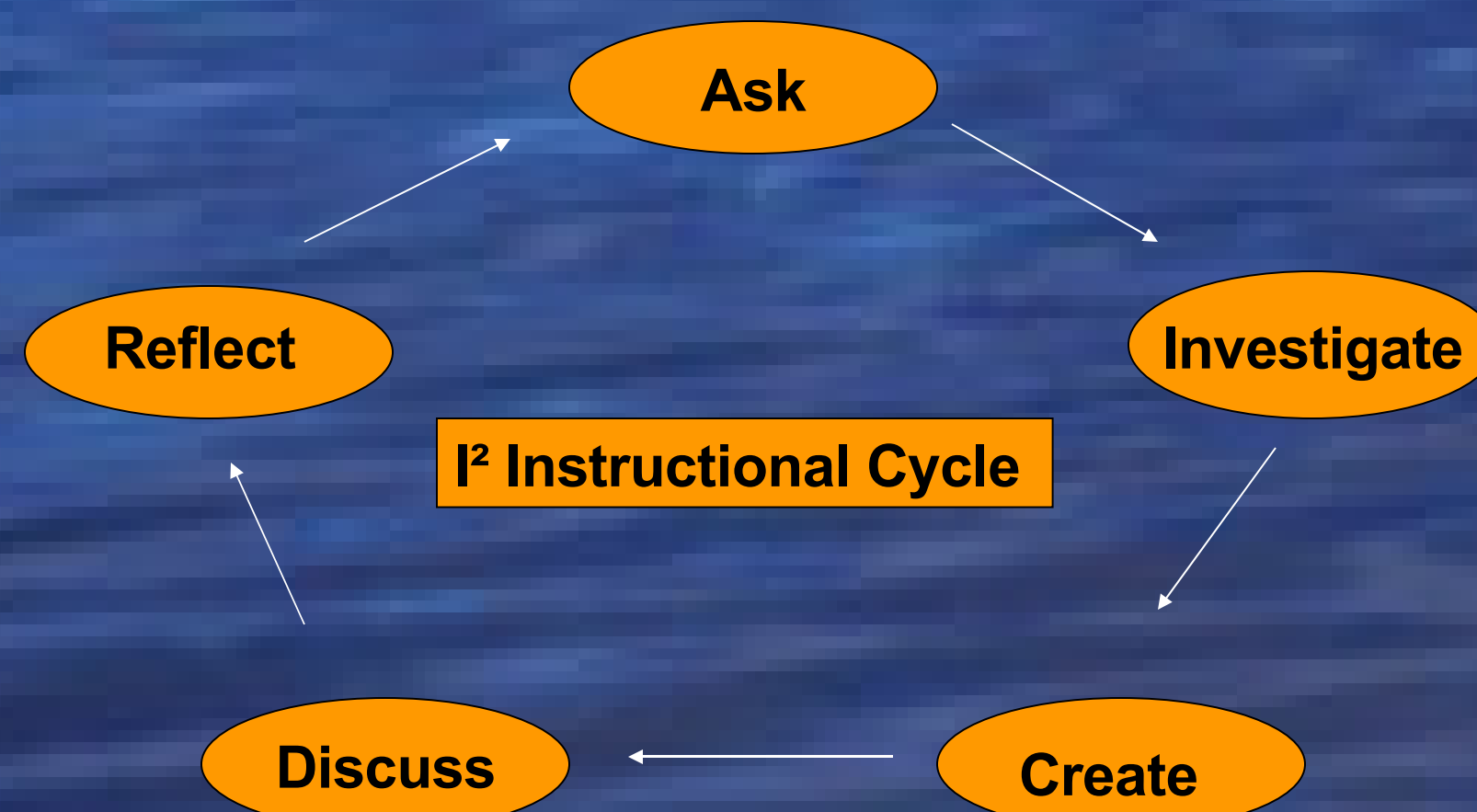
## What is I<sup>2</sup>?

This is a new initiative at UIUC developed by the Distinguished Teacher/Scholars, Chip Bruce and Kim Graber, with support from the Office of the Provost and the Center for Teaching Excellence.

We define *Inquiries into Inquiry* as explorations into the nature of knowledge construction in disciplines by scholars, teachers, and students.

The first part of this initiative involved inviting faculty from across campus to participate in weekly reading/discussion meetings of the UIUC SoTL (Scholarship of Teaching and Learning) community. During the second part, five groups of SoTL participants elected to submit a proposal to complete a year-long project. These projects are highlighted within the circular diagram on this poster.

One of our primary goals was to have faculty become more immersed in how students learn. Another goal was to encourage them to become more reflective in their roles. The diagram below highlights the cycle we believe best represents the ideal I<sup>2</sup> instructional model:



## Shrinking the Large Classroom: Experiential Learning in a Large Enrollment Course

Jose J. Vazquez, Economics  
Shelly J. Schmidt, Food Science and Human Nutrition

### PURPOSE

To develop ways to close the gap between what is available for the "small" versus the "large" class in terms of experiential learning.

### DESCRIPTION

We will design two experiential learning techniques that could be easily used by an instructor teaching a large enrollment course anywhere. We will implement these two techniques in two large courses in the university: the Microeconomics Principles Course (ECON 102), which has about 800 students, and the Introduction to Food Science and Nutrition Course (FSHN 101) which has about 600 students. In the assessment stage we will use questionnaires and other measures to assess the efficacy of the activities by both the students and instructors of these two classes.

## Inquiry Learning Driven by Real World Science: How Do Students Use Data?

Barbara Hug, Curriculum and Instruction  
Thomas Johnson, Geology

Science education has been shifting from understanding scientific facts, to conceptualizing science as a constantly evolving body of knowledge. Students are expected to experience this for themselves by carrying out scientific inquiries. In this project, we begin to address how we engage and support students in the practices of scientific inquiry. We are interested in understanding how our students engage in a range of scientific practices and the impact these practices have on their understanding of current issues facing the country.

We will carry out this project by designing and using an instructional sequence in two different science courses that will engage students in independent investigations. We will focus our attention on understanding how students generate questions and identify and use data. Students will be given a currently contested theory of the impact of global warming on severe weather. Using reading and class discussion, students will develop questions that they will seek to answer based on subsequent data selection and analysis. Students will access data from NASA and NOAA, and visualize it using a data visualization tool (My World).

## I<sup>2</sup> Projects

Facilitated by:

Chip Bruce, Library and Information Science  
Kim Graber, Kinesiology & Community Health

"We strive to provide a supportive community to dialog about new ways to think about teaching and learning."

The projects developed by the research teams foster inquiry and leadership for the improvement of student learning and reflective teaching. They expand conceptions of learning and teaching by linking to the community, crossing disciplinary boundaries, or involving teachers and students in new roles.

## Taking it Home

Ruth Yontz, Finance  
Cleo D'Arcy and Darin Eastburn, Crop Sciences  
Walter Hurley, Animal Sciences  
Rebecca Roach & Shelly Schmidt, Food Science & Human Nutrition

As teachers, we hope that our students will relate what they are learning in the classroom to their daily lives. Our project is designed to investigate if and how students "take home" their classroom learning and experiences.

This study is designed to address several related questions. Do students relate what they are learning in the classroom to their daily lives? Do students "take home" knowledge, experiences, and skills gained in class and apply them or reflect on them in settings outside the classroom? If so, how, when, where, and with whom does this transfer occur? At the beginning of the Spring 2007 semester, students in five courses, representing four disciplines of study, will be asked to volunteer to participate in the study. Participants will be asked to write bi-weekly online journal entries describing if and how they have recently related course content learning to their daily lives. Data will be coded and analyzed for themes within and across the five courses.

## National Writing Project New Site at University of Illinois Urbana-Champaign

Elizabeth Morley, Writers' Workshop  
Gail Hawisher, Center for Writing Studies  
Sarah McCarthy, Curriculum & Instruction

The National Writing Project (NWP) is a collaboration between universities and the schools in their areas based on the premise that every student deserves a skilled writing teacher. It began in 1974 at the University of California, Berkeley.

The NWP helps experienced teachers of writing at all levels become writers, leaders of their peers, and scholars of composition research. It stresses the importance of writing in every class, not only language arts. Successful teachers attend invitational summer institutes at their local writing project sites where they examine their classroom practice, conduct research, and develop their own writing skills. During the school year, these teachers provide professional development workshops for other teachers in their schools and communities.

We propose to build coalitions with schools in Urbana-Champaign and nearby towns, include people from different units of the university, and establish contact with other Illinois NWP sites.

## What is Learned? / What is Aerospace?

Timothy Wolfe Bretl and Victoria Coverstone  
Aerospace Engineering

### WHAT

Our goal is to identify learned skills that are not explicitly being taught: creativity, critical thinking, problem definition, transfer of concepts between contexts, effective communication, teamwork, social networking, etc.

### HOW

We will look at homework from students enrolled in AE 252 (Introduction to Dynamics), taught by Dr. Bretl. This class has 90 second-year undergraduates in Aerospace Engineering. Some homework problems take advantage of skills that are not in the syllabus: "Pose a problem of your own. (A homework or exam problem, a design problem, a 'real-world' problem, etc.) Then, suggest a solution."

### WHY

Technical concepts (such as fluid dynamics, aircraft structures, or orbital mechanics) are the "keys" that allow students to enter the discipline of Aerospace Engineering. But other learned skills may ultimately be more important for life-long productivity and continuing education and may be what differentiates engineers in one discipline from another. If teachers are aware of what is actually being learned, they can more effectively facilitate the learning process.