**2015-16 SIIP Teams**

**Reforming ISE's Stochastics Sequence: IE300, IE400, IE410, IE413**
This project focuses on integrating a computational component and challenging, data-driven case studies to advance the critical and creative thinking of students in these courses.  
*Alexandra Chronopoulou, Runhuan Feng, Doug King, Justin Sirignano, Richard Sowers. Consultant: Dallas Trinkle*

**A Project-Based Introduction to Aerospace Engineering**
This project is the beginning of an effort to implement project-based learning and student portfolios across the curriculum. Initial changes are in AE100 (Introduction to Aerospace Engineering).  
*Brian Woodard, Tim Bretl, Phillip Ansell, Vicki Coverstone, Steve D'Urso, Laura Gerhold. Consultant: Jenny Amos*

**Creativity, Innovation, and Vision: Online course development**
This team is creating modules and materials for an online course on creativity.  
*Bruce Elliott-Litchfield, Esteban Gast, Keilin Deahl, Marianne Alleyne. Consultant: Jose Mestre*

**Optimizing Collaborative Team Formation and Learning of Team Skills in Project-Based Engineering Courses**
The vision of this project is to integrate, study, sustain, and champion the use of a criterion-based algorithmic method for organizing students into effective teams in large project-based engineering courses. The CATME software tool will provide the team formation testbed.  
*Brian Bailey, Darko Marinov, Tao Xie, Ranjitha Kumar, Wai-Tat Fu, Karrie Karahalios. Consultant: Luke Olson*

**Adaptive Learning (PrairieLearn)**
This project aims to project an Algorithmic Adaptive Learning (AAL) system. This in a computer-mediated learning environment that adapts to a student’s performance, giving weaker students the support they need while challenging stronger students with engaging material at an appropriate level.  

**CEE398PBL: Project-Based Learning in CEE**
This project continues the development of CEE 398, a project-based learning course that develops critical thinking and engineering problem solving skills by identifying and proposing solutions to current civil and/or environmental engineering problems facing the University of Illinois campus community.  
*Jeffery Roesler (CEE), Bill Cope (EPOL), Arthur Schmidt (CEE), Lance Schideman (ABE), Morgan Johnston (F&S). Consultant: Jenny Amos*

**Computer-based Testing Facility (CS)**
This project is focused on designing and implementing a computerized testing facility to improve the quality of assessment in large courses. Infrastructure includes web-based exam sign-up, random student seat assignment, icard scanning proctor station, PrairieLearn compatibility, and automatic grading.  
*Craig Zilles, Brian Bailey, Wade Fagen, Bill Chapman. Consultant: Dallas Trinkle*
Improving Students’ Learning and Experience in ECE 110 and ECE 120
This project focuses on re-designing methods and materials for a large, introductory ECE class. The team will execute research-based instructional strategies to develop a community of instructors who agree on the metrics and goals of the course. Through this course revision, the project aims to excite students about the breadth and scope of ECE.
Geoffrey Herman, Chris Schmitz, David Varodayan, Serge Minin, Lynford Goddard, Michael Loui, Erhan Kudeki, Patricia Franke, Hyungsoo Choi. Consultant: Cinda Heeren

MatSE Curriculum Reform
This project aims to reform the Material Science and Engineering undergraduate curriculum by integrating computational materials modeling in sophomore and junior-level core courses, by developing a capstone senior materials modeling elective, and by recording and disseminating course content online.
Dallas R. Trinkle, Andrew Ferguson, Cecilia Leal, André Schleife, Kris Kilian, Shen Dillon. Consultant: Matt West

iDesign: Integrated MechSE Design Curriculum
This project aims to encompass and integrate MechSE design courses for freshmen through seniors. The objectives are to: (1) Produce engineers with competitive design skills, (2) Increase student/faculty interaction, (3) Increase student satisfaction with design courses, (4) Enlarge the pool of faculty willing and able to teach design, and (5) Facilitate ABET accreditation for design classes.
Elizabeth Hsiao-Wecksler, Steven Downing, Alison Dunn, Bruce Flachsbart, Emad Jassim, Blake Johnson, Seok Kim, Michael Philpott, Sameh Tawfick, Aimy Wissa. Consultant: Scott Carney

Physics 211-212: Improving Test Performance for Struggling Students
This project studies the best methods for providing students with an accurate assessment of their understanding, as well as appropriate materials to improve their understanding. This project includes data analysis from previous years’ work, the development of mastery exercises for Physics 100, and the development of an assessment question database for Physics 211 and 212.
Gary Gladding, Jose Mestre, Mats Selen, and Tim Stelzer. Consultant: Jose Mestre

(BioE Cancer Scholars) Challenge-inspired Learning: A Flipped Apprenticeship Model for Education
In this project, cohorts of undergraduate student scholars complete activities centered on cancer research to stimulate purpose-inspired learning. The scholars’ activities include taking classes, meeting with a faculty mentor, conducting research, and participating in clinical immersion.
Rohit Bhargava, P. Scott Carney, Andrew Smith, Dipanjan Pan, Marcia Pool. Consultant: Brian Bailey

TAM 210/211/212/251
This project focuses on the gateway TAM mechanics classes, which serve approximately 2500 student-enrollments per year. This project has applied state-of-the-art pedagogical and technology solutions to improve student engagement and enthusiasm. The current work is focused on ensuring the sustainability of the implemented changes.
Matt West, Geir Dullerud, Elif Ertekin, Randy Ewoldt, Blake Johnson, Mariana Kersh, Mariana Silva Sohn, Dan Tortorelli. Consultant: Brian Bailey