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http://www.foundationcoalition.org

The Foundation Coalition Newsletter

....an agent of change

From Jeff Froyd, Project Director Four Engineering Education Coalitions—Foundation, Gateway, Greenfield, and SUCCEED—are sponsoring a working conference called Share the Future III. The conference, to be held in Gainesville on the campus of the University of Florida, will feature 28 interactive two-hour workshops that are designed to share experience and knowledge gained by the coalitions during the past decade. It is the best opportunity to learn the most about what the coalitions have accomplished and learned in the shortest amount of time. The conference is open to anyone who would like to participate. The early registration fee is $100. You will be able to register online shortly. You can find more details, when available, at http://www.foundationcoalition.org/future.htm.

Cross-Coalition Conference in Gainesville FL: 3–5 March 2002

All workshops last two hours.

Date	Time	Student/Faculty	Assessment and Evaluation	Use of Technology	Curriculum Development	
Sunday	3:00 PM	Student-centered Approach to Effective Teaching	Course Evaluation for Measuring Learning Objectives	E-learning	Curriculum Integration: How and Why	Developing a Fluid Mechanics Classroom
Monday	10:15 AM	Learning Theory: What do we know about it?	Comprehensive Assessment of Design Projects	Effective Teaching with Technology	Building a Freshman Engineering Program	Concept Inventories for Engineering Sciences
	1:45 PM	Faculty Learning Communities	Course Objectives and Classroom Assessment	Instructional Technologies in the Classroom	Designing Innovative Classrooms	A Unified Approach to Engineering Science
Tuesday	8:00 AM	Student Mentoring Practices	Evaluation of Educational Research	Disseminating Educational Technologies and Resources	Multidisciplinary Design Case Studies	Classroom Culture—Dealing with Diversity
	10:30 AM	Bridge Programs Case Study	Establishing Trust in Educational Research	Developing Quality Technology-based Delivery	Curriculum Change, Resistance, and Leadership	Technical Presentations on Engineering Classes

6 Dec 2001 **FC Workshops at Wright State University, Dayton OH**
Jeff Froyd and P. K. Imbrie will offer "An Introduction to Active/Cooperative Learning" and "Technology-Enabled Learning" (e-mail: Froyd@tamu.edu).

4 Feb–8 Mar 2002 **Online Workshop: Designing a Successful Online Course**
Susan Haag and Leah Sutton (Arizona State U.) will facilitate this online course that teaches design, development, and evaluation of online courses: http://www.eas.asu.edu/elearn/events/dsoc/index.html.

Faculty Feature: Ron Roedel

Associate Dean of Engineering, Arizona State University

After winning ASU Parents' Association Professor of the Year teaching award for 1999–2001, Ron Roedel put the money to good use, buying this new BMW motorcycle.

I was invited to help create the first proposal for the Foundation Coalition (FC) and served on the committee at Arizona State University (ASU). They were looking for someone in electrical engineering interested in engineering education, and the concept of the FC appealed to me, so I said, "Sure!" I was receiving National Science Foundation dollars for research in electronic materials, so I wrote a portion of the proposal. Then, in 1992, I attended the FC meeting at the Frontiers in Education Conference to meet other Coalition members. I liked what I saw and decided to continue with this group. When the proposal was funded, each partner institution agreed to begin redesigning its first-year curriculum. At ASU I was on the planning committee that helped design integrated classes. We integrated engineering, physics, calculus, and English. Other colleges did not include English, but we thought it was important to include it, as communication is vital. I am still teaching the freshman integrated class.

In 1997, the ASU faculty team responsible for the freshman integrated program changed the curriculum. Instead of teaching the engineering class (4 credit hours) only in the fall and chemistry in the spring, they split the freshman engineering class into two classes (2 credit hours each semester), removed chemistry, and reduced the credit hours each semester from 15 to 13. This change allowed us to introduce students to engineering in a kinder, gentler way and to teach engineering both freshman semesters. Also, the change improved integration among the FC classes, as engineering was the mortar that held the class "bricks" together. In the first semester the engineering course focused on mechanics and the second on electromagnetics. We continue to follow this plan.

One aspect of our engineering curricula that needs attention is improving the bridge between the freshman and upper-division classes that embrace the FC goals. We attempted, unsuccessfully, to implement a sophomore integrated curriculum. This gap between the freshman integrated classes and the upper-division FC classes remains one of the outstanding challenges for the FC program at ASU, and I would like to work on a solution for this.

The *best* thing that has happened is that there has been a trickle-down effect. The idea of a project-based freshman engineering class that incorporates team learning and strong use of technology has been diffused to all the other introductory engineering classes. Students are engaged, and evaluation is worked into the classroom. The four fundamental thrusts of the FC have been institutionalized! *[These are (1) active and cooperative learning and student teams, (2) curriculum integration, (3) technology-enabled learning, and (4) continuous improvement through assessment and evaluation.]* Implementing the FC programs resulted in a systemic change in all our engineering programs.