

The Department of Mechanical Engineering – Engineering Mechanics Proudly Presents Professor Jeffrey E. Froyd Texas A & M University



Jeff Froyd is the Director of Faculty and Organizational Development in the Office of the Dean of Faculties and Associate Provost at Texas A&M University. He served as Project Director for the Foundation Coalition (FC, <u>http://www.foundationcoalition.org</u>), an NSF Engineering Education Coalition among six institutions that systematically renewed their undergraduate engineering curricula, assessed their renewed curricula, institutionalized many of their innovations, and extensively shared their results with the engineering education community and specifically with a number of schools. He co-created the Integrated, First-Year Curriculum in Science, Engineering and Mathematics at Rose-Hulman Institute of Technology. A multidisciplinary team of faculty members taught the integrated curriculum where it satisfied the requirements for first-year mathematics, chemistry, physics, engineering design, engineering graphics, engineering statics, and computer science. Rose-Hulman was recognized in 1997 with a Hesburgh Award Certificate of Excellence for its innovative curriculum. He has authored or co-authored over 50 papers on curriculum innovation, curriculum integration, assessment of curricular innovations, and the process of curricular change. He has served for seven years as an ABET Program Evaluator in both electrical engineering and computer engineering and is an Associate Editor for the Journal on Engineering Education.

Thursday, Feb. 19, 2009 3:00 – 4:00 p.m. Room 112, ME-EM Bldg.

Improving Engineering Education: What is the plan?

Numerous national reports have clamored for sustained, systemic improvements in engineering education, e.g., increases in the number of engineering graduates, improvements in the diversity of engineering graduates, and engineering graduates that are closer to precarious, fleeting portraits of ideal engineering graduates. Despite the uproar, serious, carefully designed approaches to change in engineering education, especially at an institutional level, have yet to be crafted. While empirical research on change in higher education as well as for-profit organization exists, its influence on change strategies appears to be slight, but growing. This presentation first reviews prior work on change in engineering education, including selected research on higher education. Then, the presentation offers a framework for change. The framework for change includes at least four decision points:

- Outcomes for improvement plans, i.e., What results are we looking for?
- Foci for improvement, i.e., What are we going to try and change?
- Strategies for improvement, i.e., What big-picture approach are we going to use?
- Activities for improvement, i.e., What are effective actions to support improvement?

Opportunities for further research are explored. An interactive presentation with significant audience participation in anticipated.

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