



Engineering and Science Education Seminar
Friday, April 10, 2009, 9:00 – 10:00 am
302 Rhodes Hall

An Engineering Degree Does Not Necessarily an Engineer Make---Findings from a National Survey Study of Engineering Students

**Dr. Sheri Sheppard
Stanford University**

Dr. Sheppard will be speaking about findings from the NSF-funded Academic Pathways Study (APS) and the Academic Pathways of People Learning Engineering Survey (APPLES). In 2003 NSF funded the Academic Pathways Study (APS), a multi-university research project to address:

- * What does the engineering student experience look like?
- * What factors are related to persistence in an engineering major?
- * What factors are related to persistence in engineering work?

Underscoring all three of these questions is---how can engineering education be improved? The first two of the research questions have mainly been explored through a longitudinal study of 160 engineering students at Howard, Stanford, UW and Colorado School of Mines. Both qualitative and quantitative methods were used. In addition, a freshman-senior matched-pair data set from the National Survey of Student Engagement was analyzed to explore not only persistence in engineering, but in other majors as well.

The first and third questions have been explored through a cross-sectional survey, called Academic Pathways of People Learning Engineering Survey (APPLES) that involved 21 engineering schools beyond Howard, Stanford, UW and Colorado School of Mines. APPLES has allowed us to validate/confirm our detailed findings from Howard, Stanford, UW and Colorado School of Mines, and to explore the engineering student experience at a boarder range of engineering schools.

Presenter Biography

Sheri D. Sheppard, Ph.D., P.E., is the Carnegie Foundation for the Advancement of Teaching Consulting Senior Scholar principally responsible for the Preparations for the Professions Program (PPP) engineering study, the results of which are in the report *Educating Engineers: Designing for the Future of the Field*. In addition, she is professor of Mechanical Engineering at Stanford University. Besides teaching both undergraduate and graduate design-related classes at Stanford University, she conducts research on weld and solder-connect fatigue and impact failures, fracture mechanics, and applied finite element analysis. In 2003 Dr. Sheppard was named co-principal investigator on a National Science Foundation (NSF) grant to form the Center for the Advancement of Engineering Education (CAEE), along with faculty at the University of Washington, Colorado School of Mines, and Howard University. She was co-principal investigator with Professor Larry Leifer on a multi-university NSF grant that was critically looking at engineering undergraduate curriculum (Synthesis); one of her key contributions in Synthesis was the development of a pedagogy called mechanical dissection.

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