

2009-2010 Graduate Seminar Series

The Department of Mechanical Engineering – Engineering Mechanics

Proudly Presents

Professor Sheryl A. Sorby **Michigan Technological University**



Dr. Sheryl Sorby is a Professor of Mechanical Engineering-Engineering Mechanics and Director of the Engineering Education and Innovation research group. She recently served as a Program Director within the Division of Undergraduate Education at the National Science Foundation. Dr. Sorby received a Bachelor of Science in Civil Engineering in 1982, a Master's in Engineering Mechanics in 1985, and a PhD in Mechanical Engineering-Engineering Mechanics in 1991, all from Michigan Technological University. She was Michigan Tech's first graduate exchange student, attending the Federal Technical Institute in Zurich, Switzerland for the 1983-84 academic year. She has been on the faculty at Michigan Tech since 1986. Dr. Sorby is the former Associate Dean for Academic Programs in the College of Engineering and the former Department Chair of Engineering Fundamentals at Michigan Tech. Her research interests include graphics and visualization. She has been the principal investigator or co-principal investigator on more than \$5M in external funding. She was the recipient of the Betty Vetter research award through the Women in Engineering ProActive Network (WEPAN). In 2007, she received the Distinguished Service Award from the Engineering Design Graphics Division of ASEE. She was the recipient of the Dow Outstanding New Faculty Award and the Distinguished Teaching award, both from the North Midwest Section of ASEE. Her proudest achievement is the success of her three children.

Thursday, Jan. 21, 2010 3:00 – 4:00 p.m. Room 112, ME-EM Bldg.

Developing 3-D Spatial Skills for Engineering Students

The ability to visualize in three dimensions is a cognitive skill that has been shown to be important for success in engineering and other technological fields. For engineering, the ability to mentally rotate 3-D objects is especially important. Unfortunately, of all the cognitive skills, 3-D rotation abilities exhibit robust gender differences, favoring males. The assessment of 3-D spatial skill and associated gender differences has been a topic of educational research for nearly a century; however, a great deal of the previous work has been aimed at merely identifying differences. Dr. Sorby has been conducting research in the area of spatial skills development for more than a decade aimed at identifying practical methods for improving 3-D spatial skills, especially for women engineering students. This presentation details the significant findings obtained over the past several years through this research and identifies strategies that appear to be effective in developing 3-D spatial skills and in contributing to student success.

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