Dr. Michele Miller is an Associate Professor in the mechanical engineering department at Michigan Tech. She has been a faculty member since 1994. She received degrees in mechanical engineering at Duke (BS) and N.C. State (MS and PhD). In between undergraduate and graduate school, she worked for General Motors as a manufacturing engineer. Dr. Miller’s performs research in the areas of precision engineering and microsystems. She is new to research on engineering education but hopes to grow this aspect of her research.

Dr. Debra Charlesworth is an Assistant to the Dean of the Graduate School and Instructor in the Mechanical Engineering-Engineering Mechanics department at Michigan Tech. She has been at Michigan Tech since 1999. She earned a bachelor of science from Michigan Tech in Mechanical Engineering before earning degrees in Biomedical Engineering from Northwestern University (M.S. and Ph.D.). She has also worked at General Motors and 3M as an engineering intern. Her research interests are composite biomaterials for orthopedic applications and engineering education.

Thursday, Nov. 1, 2007   3:00 – 4:00 p.m.   Room 112, ME-EM Bldg.

**Problem Solving Obstacles in the Research Lab:**

**Perceptions of Graduate Students and Faculty**

The transition from dependent to independent learner is an important part of the graduate school experience. The transition is overly bumpy for many students (and their faculty advisors). This paper describes a survey of faculty and graduate students administered at Michigan Tech. Twenty-two faculty and thirty-six graduate students from a variety of engineering and science disciplines completed the surveys. The surveys asked respondents to rate the importance of a variety of factors to success in graduate school. Students were also asked to rate themselves on each factor both now and as they saw themselves upon entering graduate school. Factors were grouped into three domains: Knowledge, Attitude/Communication, and Problem Solving. Faculty rated factors in the Problem Solving domain as much more important than the other two while students rated factors in the Attitude/Communication and Problem Solving domains as being nearly equal as most important. Of the three domains, students reported the least amount of improvement in the Attitude/Communication domain, and the most improvement in the Knowledge domain. The importance that students assign to Attitude/Communication factors, especially relative to the faculty, was an unexpected finding from the survey. It is recommended that faculty and the university as a whole find new ways to address this aspect of graduate student experience.