

2011-2012 Graduate Seminar Series

The Department of Mechanical Engineering – Engineering Mechanics

Proudly Presents

Professor Allan T. Kirkpatrick
Mechanical Engineering Department
Colorado State University



Dr. Allan Kirkpatrick is a Professor and former Head of the Mechanical Engineering Department at Colorado State University. He has BS and PhD degrees in Mechanical Engineering from the Massachusetts Institute of Technology. His research interests are in engineering education and the applied thermal sciences (fluid jet mixing, buildings, and internal combustion engines). He has authored 2 books and numerous journal and conference publications in these areas. Dr. Kirkpatrick is also currently the Director of the CSU Industrial Assessment Center. He is active in ASME as a member of the ASME Council on Education, and is currently a co-editor of the ASME Vision 2030 project on engineering education.

Thursday, Oct. 27, 2011

4:00 – 5:00 p.m.

641 DOW Bldg.

ASME Vision 2030 – Creating the Future of Mechanical Engineering Education

In 2009, the ASME Center for Education formed the ASME Vision 2030 task force to help define the knowledge and skills that mechanical engineering graduates should have to be globally competitive in the 21st century. What mechanical engineers do, and how they do it, is changing due to the expansion of the discipline's boundaries, impact of the globalization of engineering and manufacturing, increased professional expectations, and rapid technological innovation.

The Vision 2030 task force has identified the challenges of sustainable engineering, energy, and human health as ones where mechanical engineers should lead development of innovative and sustainable solutions. Based on extensive surveys of three groups, industry, early career engineers, and engineering educators, the task force has found that there is a strong need to strengthen two aspects of the undergraduate mechanical engineering curriculum: practical experience, and curricular flexibility. These survey results indicate that successful mechanical engineers in industry will, in addition to technical knowledge, need to have more depth in problem-solving skills, innovation, communication, and global team collaboration.

To strengthen the 'practical/professional experience' component of the students' skill set, the task force has recommended that Mechanical Engineering curricula contain a multi-year design/build spine. Professional skills such as problem solving, teamwork, leadership, entrepreneurship, innovation, and project management would be central features of the design spine. The task force has also found a need for ME Departments to increase their faculty diversification by both employing more faculty with significant industry experience and also creating faculty development opportunities in industry.