



College of Engineering  
Department of  
Mechanical & Industrial Engineering

## Special Interactive Seminar for Faculty

4:30-5:30pm, Thursday, November 9<sup>th</sup>, 2017  
Patrick F. Taylor Hall 3250H

### Teaching Engineering in a Manner Consistent with How People Learn (The CDIO Initiative)



by **David C. Wisler\***

Member NAE  
GE Aviation (GE Aircraft Engines), retired  
MIT CDIO Engineering Education Initiative

Engineering, more than any other discipline, has transformed people's lives for the better. It brings technology to life and nourishes the well-being, prosperity and growth of a nation. Therefore to remain competitive and be a world leader, a nation must assure that its engineers are properly educated.

With the advent of the research university in the last half of the 20th century, the pendulum of engineering pedagogy swung from a practice-based curriculum to an engineering science-based model. Engineering faculty have increasingly moved from teachers who had real, engineering work experience to those engaged almost totally in research with no practical engineering experience. This produced a fundamental change in the qualifications of graduating engineers, a change that industry wants to have re-evaluated. At the same time, a revolution in the study of the human mind and how people learn took place. Unfortunately in too many cases, the findings of this research have not affected engineering pedagogy.

This seminar presents an approach to resolve these issues in a manner that is consistent with how people learn and that produce engineers who are 'ready to engineer' when they graduate. It presents the Core Learning Principles for effective teaching and introduces CDIO, the innovative framework that integrates traditional disciplinary knowledge with engineering practice skills.

\* Dr. Wisler's distinguished career at GE Aviation spanned 38-years, during which he conducted and managed advanced technology programs. He is recognized as an international expert in turbomachinery aerodynamics technology. His work to improve airfoil shapes and understand the complex flow fields in the rotating components of gas turbine engines has been instrumental in reducing losses (reducing fuel burn) and improving performance. After retiring from GE, he joined the MIT CDIO Initiative to revitalize engineering education worldwide. Dr. Wisler is currently a Subject Matter Expert for the Office of Naval Research.

He is: A member of the US National Academy of Engineering

An elected member of the GE Aviation Hall of Fame

A past Sr. Vice-President and Fellow of the American Society of Mechanical Engineers (ASME)

Editor ASME Journal of Engineering for Gas Turbines and Power

An Associate Fellow of the American Institute of Aeronautics and Astronautics

The only 3-time winner of ASME's Melville Medal (best paper in all 17 ASME technical divisions), winner of two best paper of the year IGTI Gas Turbine Awards, ASME's Aircraft Engine Technology and R. Tom Sawyer Awards.