

Industry-Partnered Active Learning - The Learning Factory

Tuesday, December 5 at 2:30 PM
Dabney Hall, DAB 124

Prof. John Lamancusa
Mechanical Engineering Dept.
Penn State University

Abstract: On February 21, 2006, the National Academy of Engineering recognized the achievements of the Learning Factory with the Bernard M. Gordon Prize for Innovation in Engineering and Technology Education. The co-founders were commended. For creating the Learning Factory, where multidisciplinary student teams develop engineering leadership skills by working with industry to solve real-world problems.

The specific innovations of the Learning Factory partnership are:

- Active learning facilities, called Learning Factories at each partner institution, to provide experiential reinforcement of the power of engineering science, and a realization of its limitations
- Strong collaboration with industry through advisory boards, engineers in the classroom, and industry-sponsored capstone design projects;
- Practice-based engineering courses integrating analytical and theoretical knowledge with manufacturing, design, business concepts, and professional skills;
- Dissemination to other academic institutions (domestic and international), government and industry.

This seminar describes the origins, motivation and philosophy of the Learning Factory, and provides specific details of Penn States implementation of the Learning Factory concept.

Biography: John S. Lamancusa is a Professor of Mechanical Engineering and the Director of the Learning Factory at Penn State. Before coming to Penn State in 1984, he was employed at AT&T Bell Laboratories where his technical experience included electronic packaging, product design and acoustic design of telecommunications equipment. He was an adjunct faculty member at the Stevens Institute of Technology in 1984 and instituted and taught the first graduate course in robotics at that institution. At Penn State, he teaches courses in design, vibrations, noise control, product dissection and mechatronics, and supervises senior design projects. He received his Ph.D. in mechanical engineering, with a minor in electrical and computer engineering, from the University of Wisconsin-Madison in 1982. Dr. Lamancusa earned his B.S. in mechanical engineering from the University of Dayton in 1978. His areas of academic research and industrial consulting include mechanical design, design for manufacture, noise and vibration control, mechatronics, and musical acoustics. He directs the Learning Factory, an interdisciplinary partnership with industry to integrate design, manufacturing and business realities into the engineering curriculum. Since its inception in 1994, the Learning Factory has facilitated over 600 student design projects for more than 140 companies, involving 2000+ students in ME, IE, ChE, EE and CSE. He is a Research Fellow of the Humboldt Foundation and a registered professional engineer. He was awarded the 2006 Gordon Prize for Innovation in Engineering Education by the National Academy of Engineering, and the Joel Spira Award from ASME.