



Seminar

Friday, September 19, 2008, 3:30 – 4:30 pm

112 Brackett Hall

Educating Engineers for the 21st Century: Upsetting the *Status Quo*

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Global competition in both manufacturing and professional services places new demands on today's engineering graduates. Teamwork, communication, and entrepreneurial skills, along with social, economic, and environmental awareness, have become increasingly important to professional success, without diminishing the traditional need for scientific and technical competence. Most engineering educational programs, constrained by traditional academic culture and processes, have responded only slowly, if at all, to these changing needs, in spite of significant encouragement from organizations such as the National Science Foundation, the National Academy of Engineering, and the American Society for Engineering Education.

Potential drivers for educational reform do exist. Leading engineering educators and employers continue to make strong public statements supporting such reform. Probably more significant is the engineering accreditation process conducted in the U.S. by ABET, Inc. Over the past 15 years, ABET has implemented fundamental changes in its accreditation philosophy, criteria, and processes. Active encouragement of continuous educational quality improvement has replaced an arms-length auditing mentality and accreditation criteria now focus on demonstrated intellectual skills of graduates, rather than their seat time in classes. Beyond accreditation, NSF, NAE, and ASEE initiatives have fostered a growing community of engineering education scholars; increasing quality of engineering educational scholarship; and peer-reviewed, archival publications dealing with engineering education.

In spite of inertia inherent in the academic culture and reward system, there may be reason for cautious optimism. A consistent message from the engineering employer community, backed up with concrete incentives, could be a powerful force for implementing educational reform.

Presenter Biography

John W. Prados is Vice President and University Professor Emeritus at The University of Tennessee, where he has been employed for more than 55 years, beginning as a graduate assistant in 1953. For 13 years he was a full-time chemical engineering faculty member; then for the next 20 years he held various administrative positions, concluding with 15 years as Vice President for Academic Affairs of the statewide University of Tennessee System. He returned to the Chemical Engineering Department in 1989 and was Department Head from 1990-1993. From 1994 through 1997 he was Senior Education Associate in the Engineering Directorate of the National Science Foundation. He has served as Chair of the Engineering Accreditation Commission, Secretary, and President of the Accreditation Board for Engineering and Technology (now ABET, Inc.); Treasurer and Director of AIChE; President and Treasurer of Sigma Xi, The Scientific Research Society; and member of the Commission on Colleges and Board of Trustees of the Southern Association of Colleges and Schools. He is a member of the Board of Trustees of the new F. W. Olin College of Engineering in Needham, Massachusetts. From 1995 to 2001 he edited ASEE's *Journal of Engineering Education*. He is a fellow of AIChE, ABET, and ASEE, and is a Registered Professional Engineer in Tennessee. He received the BS from the University of Mississippi, and the MS and PhD from The University of Tennessee, all in chemical engineering. In 2007 he received the Lifetime Achievement Award in Chemical Engineering Pedagogy from ASEE.

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