



Title: K-12 to Two-year College Transitions

Date/Time: Wednesday, July 30, 1:00 PM – 2:30 PM

Location: Renaissance Austin Hotel

Description: This session will explore strategies for encouraging high school students to pursue a high tech education at a two-year institution, as well as strategies for transitioning students from high school to a two-year institution.

Florida's Unified Manufacturing Education System

Presenter: Marilyn Barger, Florida Advanced Technological Education Center (FLATE)

FLATE, the Florida Advanced Technological Education Center for Manufacturing, has partnered with eight Florida community colleges that have programs in manufacturing or related technologies to assess and reconstruct the statewide curriculum frameworks that govern these programs. Consensus has been achieved to construct a degree in Engineering Technology with several specializations, and is one component of the unified manufacturing education system in Florida. The two-year Associate in Science (A.S.) and Associate of Applied Science (A.A.S.) Degrees have been structured in a one plus one format. A college certificate is granted at the completion of the Engineering Technology Core (18 credit hours). The core courses include skills and knowledge that are required to successfully complete the Manufacturing Skills Standards Council (MSSC) certification examinations. The second year of the program delves deeper into one of the technical specialization tracks including electronics, advanced manufacturing, quality, mechanical design and fabrication, and advanced technologies. Related high school programs articulate to the ET Degree through the first of its kind statewide articulation agreement that utilizes the national MSSC certification as the key to the articulation. This allows for multiple entry pathways (incumbent workers, high school students, technical school students) all of which are eligible for 15 credit hours towards the 60 credit hour ET degree with the certification. This presentation will outline the development process and the components of the degree and entire unified system and an update on its current implementation.

Help Encourage Our Future Engineers

Presenters: Rick McMaster, IBM, and Donald Willhouse, LopezGarcia Group

Student interest in science, technology, engineering and math is critical to the future of the US industry and to our competitiveness, but fewer and fewer students are entering engineering here in the US. Students and their educators are getting the wrong message from industry on what's important and what it really takes to be an engineer, a scientist, a programmer or a contributor in another technical field. Examples of engineering and science are all around us but most people out there don't see it. And high among them are the students who are watching DVDs, playing video games, downloading videos – or making their own - who don't see the direct connection and how they can move it to the next level. Volunteers from industry need to get more connected with the students in their classrooms. It's easy to do and more fun than can be imagined. It can make a big difference.

The Discovery Engineering program in Central Texas has been in existence for over twelve years, growing from Engineers Week to a year round program where hundreds of technical professionals visit with tens of thousands of students in their classroom or other venues to encourage study of math and science as role models and to lead hands-on engineering activities to share the engineering experience. The activities are drawn from a wide range of sources – contributed by local engineers and their firms, from EWeek archives and from PBS shows such as Cyberchase and Design Squad. A local web site is used for sign-up of schools and volunteers and a repository of information.

The presentation will include a description of the organization, logistics, community support, volunteer training, and the activities used and messages conveyed in the classrooms by volunteers. In addition to describing the program, example activities will be made available and other resources will be provided.

Developing a Model for Seamless STEM Career Pathways

Presenters: Dean Fontenot, Texas Tech University T-STEM Center, and Timothy Maxwell, Lubbock Independent School District

The national STEM initiative is looking at ways to encourage students to complete high school with skills and knowledge that will enable them to be successful in technical careers and/or higher education. Texas Tech University has developed a model for seamless educational programs starting at high school. The program gives students the flexibility to exit the process at various points and join the workforce with the knowledge and skills needed to be competitive or continue to higher education levels. This presentation will discuss the development and implementation of the Seamless Automotive Technology Program as a model for other seamless programs.

Presenter Bios:



Marilyn Barger, Ph.D., P.E., is the Principal Investigator and Executive Director of the Florida Advanced Technological Education Center (FLATE), a NSF-ATE Regional Center of Manufacturing Education. She has been involved in curriculum development for B.S. and A.S. Engineering and Engineering Technology programs for over 15 years.



Dean Fontenot, is the Senior Director, for the Texas Tech University T-STEM Center and the Center for Engineering Outreach. She also teaches Professional Communications for Engineers in the College of Engineering. She holds a Ph.D. from Texas Tech University in English and a Master of Fine Arts from McNeese State University. She was involved in the Southwest Center for Advanced Technology Education, funded by NSF, and has been involved in working with K-20 outreach programs for twelve years.



Timothy Maxwell, Professor of Mechanical Engineering, received the Bachelor of Mechanical Engineering and Master of Science in Mechanical engineering from Auburn University in 1972 and 1973, the Diploma of the Imperial College in 1977 and the PhD in Mechanical Engineering from the University of London in 1977. He joined the Texas Tech University faculty in 1984. Dr. Maxwell's interests are in the thermal sciences and design with specialties in energy, automotive technology, and sustainability. He has served as a faculty advisor for Texas Tech teams participating in US Department of Energy sponsored vehicle design competitions for the past 20 years. Most recently Dr. Maxwell has worked with the Lubbock Independent School District, South Plains College, and the Lubbock Economic Development Alliance to develop a Seamless Automotive Technology Program.



Rick McMaster, Ph.D., P.E., is an Executive Project Manager in IBM's Global Technology Services. He has had a broad range of experience from worldwide technology development to his current role as program manager for the Education and Communication Center of Excellence. He is an early-adopter of education technology and pushes the limits of their application. Rick applies his project management and education development experience outside IBM as the chair of the local technical education outreach program, Central Texas Discover Engineering, which brings engineers to the Texas classrooms to encourage students in their study of science, math engineering and technology.



Don Willhouse, P.E. is currently an engineer with the LOPEZGARCIA GROUP in Austin, Texas. Don spent the majority of his adult life as an active duty Army Corps of Engineers officer, retiring after 26 years as a Lieutenant Colonel. He has held a number of positions with Austin firms and also served as Director of Licensing, Texas Board of Professional Engineers. His education includes a Bachelor of Science in Civil Engineering from the University of Houston, a Masters of Civil Engineering from Mississippi State University, and a Master of Science in Management from the University of Central Texas. Don is an Eagle Scout and a holder of the Silver Beaver award, being in Scouting for more than 56 years. He has also been awarded the Outstanding Public Service Award by the Federal Emergency Management Agency and the Service to People Award by the Texas Section, American Society of Civil Engineers (ASCE). Don is a past president of the Austin Branch of ASCE and the Vicksburg Chapter of the Mississippi Engineering Society. He currently serves as co chair of Central Texas Discover Engineering.