



Title: Converging Technologies Session I: Electronics

Date/Time: Wednesday, July 30, 10:30 AM – 12:00 PM

Location: Renaissance Austin Hotel

Description: The field of electronics is changing rapidly. The presentations in this session give unique perspectives on the challenges and opportunities that face educators and trainers in electronics today.

Megatrends in Electronics: What You Should Be Teaching Now and in the Future

Presenter: Lou Frenzel, *Electronic Design Magazine*

Each year, *Electronic Design Magazine* publishes a special issue called Megatrends where the latest trends in all sectors of the electronics industry are identified and discussed. By following the twice monthly issues and this special issue, one can readily summarize what is hot and what is not in electronics. That, in turn, can provide educators with clear guidelines as to what topics are important today and which will emerge in the future. In this presentation, Lou Frenzel, a Technology Editor for *Electronic Design* will summarize the current Megatrends and indicate the potential need for changes and updates in technology education to meet current and future employment needs. Topics will include the latest in wireless, networking, embedded computing, integrated circuits, the green power movement, and test/measurement developments.

Teaching Networked Electronic Systems – Are You Ready?

Presenter: Gary Mullett, *Springfield Technical Community College*

Applications of new sophisticated sensor and actuator technology are being deployed and envisioned in almost every field of technology one can conceive of. Networking technology has matured to the point of it being an expected resource and wireless networking is evolving so rapidly that it is being considered as an enabling technology for sensing and control applications that to this point were prohibitively expensive. These facts coupled together with the extremely low cost of embedded (ambient) electronic intelligence have brought us rapidly to a new generation of electronics – the era of “distributed electronic systems.” The question is: are today’s Electronics Technology programs prepared to teach the technicians of tomorrow the necessary skills needed to deal with systems that consist of distributed parts that may also be geographically wide spread?

These networked electronic systems have the very genuine potential to significantly impact almost every aspect of human endeavor and commerce by increasing productivity, reducing energy consumption, and improving health and safety – they will become more and more pervasive as time goes on! A new National Science Foundation funded, course, curriculum, and laboratory improvement (CCLI) project entitled the “Sensor Network Education Project” is going to strive to create new curriculum materials for both electronics and other non-electronics based areas over the next two years. The project is looking for interested partners to come along for what looks to be an interesting ride! This presentation will provide details about the project and how attendees can get involved!

Presenter Bios:



Louis E. Frenzel, M.Ed., is a Technology Editor for *Electronic Design Magazine* where he writes articles, columns, technology reports, and online material on the wireless, networking, and test/measurement sectors. He interviews executives and engineers, attends conferences, and researches those areas of electronics to determine the current state of the technology and reviews new products. Lou has been with the magazine for seven years. Formerly, he was professor and department head at Austin Community College (ACC) where he taught electronics for five years. He still teaches at ACC as an Adjunct Professor. Lou has 25+ years experience in the electronics industry. He holds a bachelors degree from the University of Houston and a masters degree from the University of Maryland. He is the author of 19 books on computer and electronic subjects. He has worked with MATEC as a contractor for five years on several National Science Foundation grants and is the principal author of the Work-Ready Electronics series. Lou was also the recipient of the 2007 MATEC Industry Recognition Award.



Gary Mullett, a Professor of Electronics Technology, presently teaches in the Electronics Group at Springfield Technical Community College (STCC) in Springfield, MA. A longtime faculty member and consultant to local business and industry, Mr. Mullett has served as Department Chair or Co-Chair for over 20 years. Since the late 1990s, he has been active in the NSF's ATE and CCLI programs as a knowledge leader in the wireless telecommunications field. A co-founder of the National Center for Telecommunications Technologies (NCTT) located at STCC, Mullett also played a principle role in the development of the innovative and long running Verizon NextStep employee training program. The author of two text books, *Basic Telecommunications – The Physical Layer* and *Wireless Telecommunications Systems and Networks*, Mullett did both his undergraduate and graduate work in the ECE Department at the University of Massachusetts at Amherst where he also taught the undergraduate sequence of courses in electromagnetics. He has presented at numerous national conferences, as well as internationally, on telecommunications and wireless topics and on the status of the education of electronics technicians at the two-year college level. His current interests are advocating for the transformation of technician education and developing curricula for the rapidly emerging field of networked, wireless sensors and actuators – often times referred to as ambient intelligence.