



Title: Converging Technologies V: Mechatronics

Date/Time: Thursday, July 31, 10:00 AM – 12:00 PM

Location: Renaissance Austin Hotel

Description: Presenters from industry and education will discuss the convergence of mechanical and electrical skill sets to create a new wave of technical skills in this converging technology session on mechatronics.

Hands-On Activities with Programmable Logic Controllers (PLCs)

Presenter: Dan Barbuto, Dutchess Community College

A Programmable Logic Controller (PLC) is an example of mechatronics – a programmable electronic device that controls a mechanical system. Companies are looking for technicians who have some proficiency with PLCs, or are looking to train their current technicians in PLC use. The companies are diverse, including manufacturing, power generation, and control systems companies. PLCs are part of a variety of industry applications, and thus appeal to industry collaboration, yielding an increase in technology program enrollment.

Proficiency with PLCs is best developed in a course or training that includes hands-on activities. This session will demonstrate lab benches built for courses and training that use an inexpensive and portable approach, but still include all of the steps of connecting and programming complete PLC applications.

This session will describe the hands-on PLC activities, and provide a list of materials, wiring diagrams, teaching materials, and examples, as well as demonstrate the download and execution of some working examples.

The intended audience for this session is educators who may not have experience with PLCs, and may not have the funding and/or lab space to commit to a full-scale PLC lab.

Title: TBD

Presenter: Anu Saha, National Instruments

Presenter Bios:



Daniel C. Barbuto is an assistant professor and the program chair for the electrical technology program at Dutchess Community College in Poughkeepsie, New York. He received his bachelor's degree and master's degree in electrical engineering at Manhattan College, and has an active Professional Engineering License. He was an electrical engineer for nine years in power and control systems, involving generation and distribution, design and construction, before becoming a full time teacher in 2002. In

addition to the students in the program at Dutchess, Dan teaches classes to students from IBM, NXP Semiconductors, and Verizon. He has developed new courses for Dutchess in power

systems and automated systems, and is adding more and more hands-on activities to the program courses each semester. Graduates of the Electrical Technology program are currently in high demand in a widely varied array of local companies, but many are looking for technicians with experience in Programmable Logic Controllers, which inspired the creation of hands-on PLC lab benches.



Anu Saha is an Academic Product Engineer at National Instruments (NI), where one of his focuses is enhancing technology education through adoption of LabVIEW and ELVIS platforms into curricula. He started his career at NI in 2003 as a member of the Engineering Leadership Program. After completing a branch assignment in South Korea, where he helped the branch adjust to its rapid growth, Anu returned to the NI corporate headquarters in Austin, Texas, to support customers in the Applications Engineering department. He holds a bachelor of science in computer engineering and a bachelor of science in electrical engineering from the University of Tennessee.