

Engineering Technology Forum
April 8-10, 2015
Florida Keys Community College
Key West

General Summary

The 34th Engineering Technology Forum was hosted by the Florida Keys Community College at Key West. Representatives from 20 state and community colleges, the Department of Education, technical sales representatives, and local industry attended and participated in this year's spring Forum. This was the largest college participation in the history of the ET Forums. What made this Forum so special was the National Science Foundation (NSF) Advanced Technological Education (ATE) support for Florida's Engineering Technology Community of Practice of centers and projects.

The Wednesday morning Community of Practice began with Dawn Ellis, the college host at FKCC, introducing Dr. Jonathan Gueverra, President of FKCC, who welcomed the participants and vendors to the college.

Brad Jenkins, retired Associate Dean at SPC, introduced Alex Anzalone, Program Director, of Engineering Technology at HCC, as the new Chair for the ET Forum. Alex presented the program of the NSF/ATE Workshops for Wednesday, the topics for the ET Forum and the format for the Vendor Showcase.

The Wednesday ET Community of Practice began with the interaction with the National Science Foundation on-line presentation from Dr. David Campbell, the NSF/ATE Program Co- Lead, from the Washington D.C. office of the NSF. Dave provided an overview of the ATE program explaining the application and grant processes involving the Projects, ATE Centers, and the Targeted Research on Technician Education.

The NSF/ATE networking involved the following NSF Centers and projects from the state and community colleges, including the Connecticut College of Technology. This session provided the information and exposure to other Florida colleges the opportunity to get involved with the NSF for projects and collaborate with other centers. This setting provided the best format to have the state NSF grant recipients highlight their work.

The following colleges participated:

Robert Frank, Polk State College, OE/OE ASET degree, grant for \$900K.

Beth Bush, South Florida State College, Bioenergy, \$900K.

Jason Gasner, Seminole State College, Construction Technology, \$860K.

Karen Wosczyzna-Birch, Next Generation Manufacturing Center, Connecticut College of Technology Center originated in 2004, \$3M.

Natalia Chekhovskaya, Indian River State College, Laser -Tec, \$2.9M.

Ron Eaglin, Daytona State College, Center for Cyber Security.

Rick Frazer, Tallahassee Community College, \$200K.

James Capers, Indian River State College, Regional Center for Nuclear Education (RCNET), \$3.2M.

Richard Gilbert, FLATE Regional Center originated in 2003, \$3M.

All the PIs described their projects/centers, the outcomes, and at what stage they were in their respective grants. A question/answer session followed the presentations.

Phil Centonze, Principal, Pos-Impact, conducted a hands on workshop titled: Building Quality Programs that focused on Lean Process Management. Phil explained the principles and benefits of Lean to eliminate waste in a working environment. The hands on exercise provided the participants an opportunity to deploy the Lean Process in "Manufacturing a Boat". The participants organized into work cells to improve the flow of information and material in this process. Everyone enjoyed this activity and had a good time in making their "Boat".

The afternoon breakout sessions included Mechatronics training using equipment involving the programming of switches, actuators, and sensors used in both mechanical and electrical simulation as well as hands exercises using actual equipment with those programs. Steve Cerone, BlueGrass Educational Technologies, provided the trainers and equipment.

The other interactive session was conducted by Ted Norman, DOE State Supervisor for Manufacturing/Transportation, Distribution and Logistics, who presented the role that the Department of Education provides in regards to our programs in engineering technology. Ted provided the updates on the secondary and post secondary concerns, the certification and framework structures, the CAPE Act, and the industry certification updates as it applies to secondary education.

The Wednesday evening closing session of the NSF/ATE ET Community of Practice was held at the Sheraton Suites Hotel and included a reception and dinner with a presentation by Patrick Rice, Dean, on Alternative Energy at Florida Keys Community College. The evening concluded with a recognition and roast of Brad Jenkins, for his leadership of the Engineering Technology Forums.

The Thursday morning Engineering Technology Forum opened with the vendor roundtable discussing the trends that affect our technology programs and training opportunities. The topics and discussion included industry certification alignment, technology based simulation, holographic technology, course articulation to the colleges, the automation and mechatronics initiatives at the secondary and post secondary level, career pathways, apprenticeship programs, and STEM education initiatives.

The second session related to curriculum issues and featured the Polk State College "Open Entry/Open Exit" modular Engineering Technology degree. Lara Sharp and Robert Frank provided this update on this NSF funded project and explained how the program was set up with competency based courses. There are now 44 students enrolled in this unique program and Robert explained that students can enter at any time and start this on line program. The three credit hour courses are broken into one credit offerings and meet for 5 weeks each. The labs are hands-on and competency-based and the students schedule their own lab time. There have been some challenges with faculty management, counseling, financial aid, and standard course numbering, but most of that has been worked out. The one credit hour courses are now aligned with the common course numbering system for the 3 and 4 credit hour courses.

Another major curriculum issue was the articulation of the MSSC-CPT industry certification to the ET degree. This was a continued discussion from previous forums held at Polk State and Gulf Coast. The articulation will remain at 15 credits. As

previously discussed, the language in senate bill 850 redefined the funding list for accelerated articulation for 15 or more credits. If the MSSC was reduced from 15 credits, this would affect the bonus funding that the high schools would receive from this accelerated articulation and remove the MSSC from the list. The general comments and concerns centered about the value of giving credit for 15 hours; the problem that the MSSC doesn't cover the introduction to electronics; the credits do not have to come from the Technical Core of the AS degree; the credit for the MSSC is good for the workforce initiatives; and that giving the 15 credits is a good incentive for students working on the AS degree in Engineering Technology.

After the break and Vendor Showcase, Niaz Latif, Dean, College of Technology, Purdue University Calumet, presented a session on the A.S. and B.S.E.T. degree articulations. Niaz highlighted the degree and program information at Purdue Calumet and the industry partnerships and curriculum development that have taken place. The entire curriculum is on the Purdue website. Niaz provided the articulations he has with a number of community colleges across the country. As an example, the A.S. degree courses offered at Ivy Tech transfers directly to Purdue. Purdue's \$1M lab facility includes equipment related to sensor design, machine design, and interfacing automatic equipment with advanced programming techniques into their mechatronics program. The mechatronics combines the mechanical design, manufacturing, and electrical control within the foundational context of the packaging machinery program. Niaz is looking to partner with Florida's state and community colleges offering the ET degrees that would transfer into the program. There is no articulation from the MSSC, but there is with the PMMI certification. The tuition for Indiana residents is \$217.65 per credit hour and for non-residents is \$521.50 per credit hour.

The luncheon was provided by the vendors followed by a tour of the Marine Engineering Building conducted by John Demeo and Jack Seubert. Jack provided a presentation about the basics of using side-scan and sector scan sonar. John provided a tour of the marine engine lab and the boatbuilding and refurbishing center. Everyone was very impressed with the facility and the equipment used throughout the program.

After the tour, Jason Gaschel, Seminole State College, presented the college's electric car for display and questions. Jason provided information about the car and how that project was developed and completed.

The afternoon Issues Forum provided an opportunity for the colleges to present their program advances and updates:

Ron Eaglin, Daytona State College, described the evaluation of the on-line engineering technology program. He explained how this evaluation is used to evaluate every course and presented the rubric used for this process for continuing improvement. Ron will provide this information to anyone that wants to use this evaluation for their programs.

Bob Seigworth, Lake Sumter State College, presented their new A.S. degree in Engineering Technology with the Relay/Substation Specialization. Bob explained what a relay/substation technician does and the opportunities to work for the electric power companies. This is only the 2nd program of this type in the country. To provide control of the smart grid, the program will use the SCADA (supervisory control and data acquisition) system to provide communication control of remote equipment. Duke Energy, a major partner, is also building a training substation that will be completed later this year and will also offer the students internships opportunities with Duke. Other

partners include CEMEX (a mining company), Power Grid Engineering, and Elite Construction.

The Thursday session was adjourned at 4:00PM with 20 people continuing the networking and discussions at dinner.

The Friday morning session opened with recognizing the vendors for their support of the Engineering Technology Forum.

The session on new technology and best practices included the college initiatives, accreditation initiatives, and the graduate tracking problems.

Ron Eaglin, DSC, announced that he will be seeking ABET accreditation for the B.S. degree in Engineering Technology in the fall of 2015. The ABET accreditation is now based on outcome assessments for the effectiveness of the programs. Ron also remarked that the outcome assessments for DSC is on the Daytona State's website at dscentdepartment.pbworks.com.

Nasser Hedayat, Valencia College, has applied for ABET accreditation for their B.S. degrees in Engineering Technology.

Additional discussion concerned the transferability of the AS degrees to the B.S. degrees in Manufacturing Technology and articulation to other universities and state colleges.

The tracking of graduates and the reporting system raised questions and comments concerning the reporting efforts and if there was a plan for the AS degree graduates to report on what those graduates actually do. There are students just taking a few courses, not seeking a certificate or degree, but just for updating their skills. Although they are not completers, they are using these courses for advancement. There is no way to report this activity since these students are not completers of programs. This topic will be an agenda item for the next Forum.

Another discussion topic involved the problems associated with students taking specialized courses at other colleges and receiving credit. This is a problem with articulation and revenue with the colleges and how that would be handled. Again this would be a topic for the next Forum.

The fall 2015 Forum has been tentatively scheduled for September 24-25, 2015 at Valencia College in Orlando. Additional information will be forthcoming on this Forum.

Following the adjournment of the Forum, the FL-ATE Manufacturing/Engineering Technology Workshop, was held in the afternoon under the direction of Marilyn Barger and Jay Matterson, Palm Beach State College.

Respectfully submitted,

Brad Jenkins
Alex Anzalone
Co-Chairs ET Forum