Minutes of SECEDHA (Southern ECE Department Heads Association) Annual Meeting, held at Georgia Tech Hotel and Convention Center, November 13-14, 2009.

Attendees: Issa Bartarseh (Central Florida), John Board (Duke), Laura Bottomley (NC State), Victor DeBrunner (Florida State), Paul Devgan (Tennessee State), Shirshak Dhali (Old Dominion), Ian Ferguson (UNC Charoltte), Dan Fleetwood (Vanderbilt), John Gowdy (Clemson), Larry Holloway (Kentucky), Sam Harrison (NC A&T), Ashok Iyer (Virginia Commonwealth), Gary May (Georgia Tech), Mark Nelms (Auburn), Steve Parke (Tennessee Tech), John Peeples (Citadel), David Russomanno (Memphis), T.S. Sudarshan (South Carolina), John Ventura (Christian Brothers), Nicolas Younan (Mississippi State),

Thursday, November 13, 2009

Evening Speaker

The evening speaker was John Gowdy from Clemson, and the topic was the Clemson University on-line undergraduate program in electrical engineering. The intent is for a complete electrical engineering BS degree completely via on-line instruction. The program was initiated in partnership with the Energy Providers Coalition for Education (EPCE). The program has been approved by the Clemson Board, but has not yet been considered through ABET.

The program so far has primarily focused on summer course teachings. Responses by students have been positive so far, and has attracted very distant students across the US.

- All (almost all?) EE lecture courses are now available by distance learning. These courses are in a standard format, using powerpoint for presentation material and Camtasia for video, markups, audio, etc. The resulting course for distribution is a windows WMV file.

- Quizzes are proctored. Several types of proctoring methods were presented.

- Interactions with the faculty are through email, telephone, discussion boards, and on-line meetings. It was mentioned that the students in distance learning classes seem to want more interaction with faculty and TAs than students in traditional lecture classes.

- Non-EE courses (such as calculus, physics, etc.) are not being offered, but these can be taken through other universities' distance learning programs or through local universities and community colleges.

- Plans are being developed for teaching lab courses, where students will buy a lab setup using a National Instruments "ELVIS" system, and students will use a webcam to show and demonstrate their work remotely.

- Tuition for on-line classes is about 10% more than in-state tuition. This is less than out-of-state tuition.

Friday, November 14, 2009

Business Meeting:

Due to technical issues with the presentation equipment, the agenda was rearranged to hold part of the business meeting while waiting for the technical issues to be resolved. The meeting was opened by Issa Batarseh of University of Central Florida. Nominations were taken for officers for 2010. Mark Nelms of Auburn was nominated and elected for Secretary, Larry Holloway (University of Kentucky) was nominated and elected for Vice Chair, and John Peeples (The Citadel) was nominated and elected as Chair.

Session 1: Invited speaker

Laura Bottomley of North Carolina State spoke on recruitment of women into electrical and computer engineering. A big issue in bringing more women into EE is rephrasing the message of what is EE. Some efforts on this recently have focused on portraying how EE makes our world different, including discussing how engineering affects things around us. Some of this should be done at the K-12 level. Examples include "Engineering – Go for it" website (http://www.egfi-k12.org/), brochures, and materials, and the NCSU "The Engineering Place" (http://www.engr.ncsu.edu/theengineeringplace/).

Dr. Bottomley discussed survey results as to why women don't choose engineering, and why women don't stay in engineering. Many of the reasons women choose to leave engineering are the same ones why men leave engineering – thus addressing these issues should help in engineering retention across all students.

At NC State, efforts have resulted in a 2% increase per year in women engineers over several years. Strategies included changes to the freshman engineering class to include more hands-on activities, targeted communications to potential students, women in STEM living/learning communities, and a more inclusive departmental displays and presentations (examples – having both men and women in the pictures and posters in the department).

Session 2: Curricula Comparison

The first speaker of the session was John Board (Duke). He presented on Duke's recent curriculum reform, sponsored by NSF. Problems with the previous curriculum included no real ECE exposure for students until the second year, the curriculum was circuit centric, courses were heavy on theory and light on practice, and there were too many required courses without enough flexibility. The curriculum change that they undertook was for Integrated Sensing and Information Processing theme based curriculum design. This involved deconstructing/reconstructing/rebalancing core courses, all of which now include major project-based learning. Project management is now covered throughout the curriculum. Data indicates that students after the curriculum change have better learning, and student retention has improved.

The second speaker was John Ventura (Christian Brothers University). CBU recently reformed the 1st year engineering experience class. The class, ECE101 "Introduction to Engineering Problem Solving", is a 3 credit hour class. The purpose is to introduce the engineering discipline and engineering careers, and cover the role of engineering in society. The first half of the course is on engineering problem solving, and uses the book by Landis. The second half of the course includes brief introductions to Excel, Numerical methods, C++, and Matlab. There is a lot of writing expected in the class, which is submitted on-line. It appears that the revised class has improved the retention rate in EE and given students a better understanding of what to expect later in the curriculum.

Session 3: Student Activities and Extracurricular Competitions

Nicolas Younan (Mississippi State University) spoke on student activities at Mississippi State University. Miss. State students are involved in the EcoCar competition (formerly the DOE Challenge X). This is an advanced vehicle technology competitions, with 17 selected universities. The goal is to improve vehicle emissions and efficiency. It is a 3 year competition, going from modeling and simulation, to building a prototype, to refinement. This is student led. Other student activities presented include the 2009 UAS student competition, the IEEE Southeastcon Robotics Competition, the Data Fusion Competition, the IEEE Southeastcon and ACM software competitions, and others.

Issa Batarseh (Univ. of Central Florida) presented on UCF student activities. These include the ACM International Collegiate Programming Contest, and the DARPA Urban Challenge. Dr. Batarseh also discussed UCF retention activities, including the UCF NSF EXCEL program, the NSF REU program, the UCF STEP program, and others.

Mark Nelms (Auburn) presented on Auburn student activities. These include the US DOE Solar Decathlon competition, the autonomous lawnmower competition, and robot competition.

Session 4: ABET Feedback from Recently Visited Programs

Vic DeBrunner (Florida State University) reported on their recent visit by ABET. Several issues were commented on by the ABET visitors. Under criteria 1, there were comments about students taking courses before passing prerequisites, and the use of staff instead of faculty for advising (the issue was a lack of career advising since advising is done by staff instead of faculty). Under criteria 2, Dr. DeBrunner said that the recommendation was to have a PEO review process clear, with several data collections feeding into the six-year review, as well as the importance of having an industrial advisory board. Under criteria 3, there were issues with separating EE and CPE students in data collection for separately accredited programs. This brought active discussion among the members of the meeting, as other department chairs questioned whether this was an issue with the ABET reviewer instead of an issue with ABET, as separation of data for these groups can be difficult.

Paul Devgan from Tennessee State University presented on Tennessee State University's recent ABET visit. John Ventura then reported on the recent visit to Christian Brothers University. Dr. Ventura discussed a variety of surveys used by CBU, including surveys from University of Pittsburgh on attitudes and curriculum, and an alumni survey and teaching goals inventory both developed by Diamond.

Session 5: ROUNDTABLE

The Roundtable participants were Dan Fleetwood (Vanderbilt), Gary May (Georgia Tech), and Victor DeBrunner (Florida State). The first topics discussed were budget cuts. Several universities indicate some programs shut down due to the budget cuts, and several universities had furloughs.

Another topic discussed was tenure/promotion expectations. This topic was raised by Larry Holloway (Kentucky), due to a request by University of Kentucky to have more clear expectations for tenure and promotions for each department. Several other universities indicated that they are now also starting to have similar "guidelines" expected. These included UCF, Citadel, and Miss. State.

John Board (Duke) asked about advisory boards and using alumni vs. industry, and a discussion followed. Paul Devgan (Tenn. State) initiated a discussion on the issue of combined CS and EE departments. In response, Issa Batarseh of CFU referred to his presentation from a few years ago at ECEDHA on coexistence of the programs.

Regarding possible topics for next year, there is interest in having a discussion of MS projects vs. theses. Also, for next year's meeting, the meeting should target to end by 1:00 or 1:30.

As final business, the annual survey was taken on ECE related items. John Peeples led the survey, and that is presented in a separate report.

(Minutes submitted by Larry Holloway, Secretary)