

**Minutes of the Southeastern Electrical and Computer Engineering Department
Heads Association Meeting, Georgia Tech Hotel and Conference Center
November 6-7, 2008**

Presiding: Gary May, Chair, Department of Electrical Engineering, Georgia Tech

In attendance: Ed Schlesinger (Carnegie Mellon), Ashok Iyer (Virginia Commonwealth University), John Peeples (The Citadel), Nick Younan (Mississippi State), Edit Kaminsky Bourgeoi (University of New Orleans), Shirshak Dhali (Old Dominion University), Yogendra P. Kakad (University of North Carolina-Charlotte), T.S. Sudarshan (University of South Carolina), Jeff Jackson (University of Alabama), Mark Law (University of Florida), John Ventura (Christian Brothers University), Victor DeBrunner (Florida State University), Dan Fleetwood (Vanderbilt University), Mahmond Mazoul (Jackson State University), Santiderpaul S. Devgan (Tennessee State University), David Russommano (University of Memphis), Issa Batarseh (University of Central Florida), Larry Holloway (University of Kentucky), Mohammad Alan (University of South Alabama).

Dr. May called the meeting to order at 8:05 AM and introduced the day's agenda:

- Curriculum Innovation at Carnegie Mellon
Speaker: Dr. Ed Schlesinger, Carnegie Mellon University
- BS/MS Programs
Organizer: Dr. Issa Batarseh, University of Central Florida
- Best Practices for Industrial Advisory Boards
Organizer: Dr. John Peeples, The Citadel
- Lessons Learned from ABET visits
Organizer: Dr. John Peeples, The Citadel
- Business Meeting/Survey – Dr. Gary May, Georgia Tech
- SCEEE Board of Directors Meeting

It is noted that the dinner speaker the preceding night was Dr. Don P. Giddens, Dean of the Georgia Tech College of Engineering. Dr. Giddens spoke on the topic of “Changing the Conversation: Public Understanding of Engineering”.

1. Curriculum Innovations at Carnegie Mellon, Ed Schlesinger of Carnegie Mellon University.

After round table introductions of attendees, Dr. Schlesinger discussed the undergraduate curriculum at Carnegie Mellon University. The curriculum attempts to provide options for students to pursue deep specialization or broad generalization, as deemed appropriate to the student's life goals. The fact that many EE and ECE majors practice outside of engineering after graduation is one motive to provide this flexibility. One thought is that engineering is to some, the “new liberal arts”.

The curriculum approach is to cover most of the circuits and digital bases in but a few, required “named” EE courses. A freshman introduction to engineering and four core courses at sophomore level cover electronics and analog circuits, signals and information processing, introduction to computer systems and structure and design of digital systems. These five plus possibly an engineering mathematics course form the engineering core. Study beyond the core is elective guided by simple breadth, depth and coverage rules. This freedom of choice allows for easy entry into or exit from the program, encourages double majors and the combined BS/MS option.

Several interesting observations arose during discussion. First, thorough advising is critical to success. The introduction course also emphasizes the importance of the choices that can be made within the curriculum. Some classes may make with only 5-6 students but 20 is about normal. Multiple capstone options exist, but all have specific prerequisites among the breadth and depth choices. The curriculum does present interesting challenges in faculty scheduling, but the results seem to be worth the extra effort. One half to two-thirds of the students elect to pursue the combined BS/MS program, in part due to the flexibility of the program as well as to obtain the advertised higher starting salaries.

2. BS/MS Programs, Dr. Issa Batarseh of the University of Central Florida

Dr. Batarseh overviewed the BS/MS program in EE at the University of Central Florida, now the 6th largest campus in the US, with over 50,000 students, including 2400 undergraduate and graduate ECE students. Dr. Batarseh overviewed studies by Pennfield of MIT of societal shift and their implications for engineering education over the past 120 years, including the need for advanced research and application degrees. Dr. Batarseh then overviewed BS/MS program similarities and differences at University of California Berkeley, University of Massachusetts Lowell, University of California Santa Cruz, Ohio State, Maryland, Washington, Florida International and University of Central Florida. Most courses allow the application of up to 15 credit hours to both degrees, require that students declare (apply) for the program after completion of around 60 undergraduate hours with a GPA of between 3 and 3.5 on a 4 point scale.

The group discussed the voiced need for the BA/MA, recognizing the need, but concerned that strong engineering programs will find such programs difficult to embrace. Dr. Kakad pointed out that a minor in engineering for non-engineering students may be a first step toward wider adoption of the study of engineering arts.

3. Best Practices for Industrial Advisory Boards, panelists: John Peeples of The Citadel, Yogendra Kakad of the University of North Carolina Charlotte, and Mark Law of the University of Florida.

Dr. Peeples briefly discussed his advisory board, established in 2001 which meets twice a year and has 21 members who rotate through 3 year terms. Dr. Peeples comments that his board is engaged and is actively involved in the development and assessment of the

department's program educational objectives, and takes an active role in the review of the capital spending plan.

Dr. Kakad overviewed his board which consists of 7 departmental, 2 student and 9 industry members. He credits the board for the creation of his Industry Solutions Laboratory that funds senior projects and has a waiting list of industry partners willing to donate \$5,000 to participate. He additionally credits the board directly for the recent award by the state and industry of \$76M to establish an Energy Production and Infrastructure Center.

Dr. Law reviewed Florida's two boards, and ABET focused board that meets each spring and a broad-issues board that meets each fall. Dr. Law is in the process of establishing a third, west coast board to enable inclusion of California based graduates. He plans to travel to this board which will meet in the silicon-valley area.

Group discussions voiced board concerns ranging from administrative support to tendencies of some boards to focus on curriculum details while missing big-picture opportunities, or to give advice on things outside the department's control. Everyone agrees that boards are important to the life of the department, regardless of minor annoyances. Dr. May reminded the group that if you "ask for money, you will get advice, but if you ask for advice, you will often get money".

4. Lessons Learned from ABET Visits, panelists: John Peeples of The Citadel, Mark Law of the University of Florida, Tangali Sudarshan of the University of South Carolina, Joe Hughes of Georgia Tech

Dr. Law reviewed recent enhancements to evaluator training that include a better briefing book and, in his opinion results in very good team leadership which sponsors consistency in the evaluations across evaluators. He also mentioned that the focus now is on documented/demonstrated attainments, and that programs should adopt a-k inclusively. Also continuous improvement not based on assessed results is valid and should be reported.

Dr. Peeples program was visited in September with a good outcome. Dr. Peeples credits the assessment approach which included end of term meetings and discussion of every course taught, electronic collection and display of student work, and a thoroughly written and discussed self study with the outcome.

Dr. Sudarshan took the chair right after the 2005 visit to the University of South Carolina program. He reviewed his web based materials for the establishment and assessment of outcomes, the rubrics for each criterion and the schedule for outcome assessment. Changes are recommended and reviewed by committee for courses failing to meet or exceed 70% of any expected outcome score.

Dr. Hughes reviewed some of the challenges faced by large programs with multiple campuses pertaining to accreditation. Consistency is a large challenge when reviewing

multiple courses at two campuses involving about 115 faculty members and over 2000 students. Key difficulties exist in the need to cover a range of constituents to develop and assess credible program educational objectives. One obvious one is the need to consider sub-populations of each campus and of each program.

5. After lunch a short business meeting addressed the succession and election of officers. Dr. Issa Batarseh will succeed Dr. Gary May as chair, Dr. John Peebles will move to vice-chair, and Dr. Larry Holloway of the University of Kentucky was elected to the position of secretary. Dr. May reminded attendees of the ECEDHA national meeting to be in New Orleans, March 20-24, 2009, and closed the business meeting with the traditional annual survey.

{Insert Survey Results Here or Link to Results }

6. The Southeastern Center for Electrical Engineering Education meeting was held after completion of the SECEDHA business. Dr. Santiderpaul S. Devgan reminded attendees of the mission and activities of SCEEE, and moved that two grants of approximately \$24,000 each be awarded in 2009. The motion carried. Dr. Devgan reported that SCEEE is in good financial shape and that proposals for the 2009 awards will be due on April 1. The directors slated for retirement in 2008 were re-elected for another 3 year term. Dr. Devgan will publish official minutes of the SCEEE meeting.

With completion of all business, the 2008 meeting of the Southeastern Electrical and Computer Engineering Department Heads Association was adjourned. The next meeting is anticipated to be held at the same location on the first or second Thursday and Friday of November 2009.

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John W. Peebles, PhD. P.E
Secretary