

**Minutes of the Southeastern Electrical and Computer Engineering Department Heads  
Association Meeting, November 9, 2007**

Presiding: Mark Law, Chair, Department of Electrical and Computer Engineering, University of Florida

In attendance: John Gowdy (Clemson University), Victor Debrunner (Florida State University), Gary May (Georgia Tech), Jim McClellan (Georgia Tech), John Peeples (The Citadel), Paul Devgan (Tennessee State University), Jeff Jackson (University of Alabama), Gregg Vaughn (University of Alabama at Birmingham), Samuel Richie (University of Central Florida), Mark Law (University of Florida), David Russomanno (University of Memphis), John Kelly (North Carolina A&T University), Ioannis Viniotis (North Carolina State University), Lee Casperson (University of North Carolina at Charlotte), Daniel Fleetwood (Vanderbilt University), Ashok Iyer (Virginia Commonwealth University), Reza Adhami (University of Alabama at Huntsville), Larry Holloway (University of Kentucky), Mahmoud Manzoul (Jackson State University), Steve Parke (Tennessee Tech University), Tangali Sudarshan (University of South Carolina), James Thorp (Virginia Tech), John Ventura (Christian Brothers University), Clive Woods (Louisiana State University), Kang Yen (Florida International University)

Dr. Mark Law, president of SECEDHA, called the meeting to order at 8 am and asked all attendees to introduce themselves. The meeting agenda included presentations on DSP First – Georgia Tech’s Approach, a math preparation discussion, Undergraduate Recruiting, and ABET Review of Fall 2007 Visits. Prior to lunch, the SECEDHA and SCEEE business meetings were held. After lunch, Dr. Law conducted the annual SECEDHA survey.

**DSP First – Georgia Tech’s Approach**

Presented by Dr. Jim McClellan, John and Marilu McCarty Chair of Electrical Engineering, and Director of the Center for Signal and Image Processing, Georgia Tech

A professor in the School of Electrical and Computer Engineering at Georgia Tech, Dr. McClellan made a presentation entitled “Experiences Teaching DSP First.” This course, which covers both digital signal processing and analog signal processing, incorporates sounds and images—things that students understand, see, hear, and manipulate—in the class materials. Among the first things that students learn about are sound spectrograms and what the spectrogram means in a sound. The ECE faculty at Georgia Tech decided to make a signal processing course—ECE 2025 Introduction to Signal Processing—its introduction to the field because they wanted to have an engaging, hand-on first course in the curriculum.

At the time, the DSP faculty group was—and still is—considered the best in the world. The faculty members involved with the course wanted the students to learn how things work, attract them to mathematics and computers, and establish the links between them. A book entitled *An Introduction to Discrete Systems*, written by Ken Steiglitz, heavily influenced the faculty members who created the course. Another influence came from within the ECE DSP faculty who added computer projects (circa early 1990s) into their courses and wrote texts of signal

processing exercises that require experience with MATLAB and FORTRAN. ECE 2025 resulted from a curriculum revision in the early 1990s and was taught for the first time as a sophomore level, computer engineering course in 1993 with an enrollment of 10 students. In 1998, faculty began teaching the course in a unified EE and CmpE undergraduate program, with over 120 students engaged. Today, over 500 students per year take the course.

Dr. McClellan stressed the three major concepts covered in the course: 1) All signals have frequency content; 2) Filters alter the frequency content. For instance, a filter can blur or sharpen an image; and 3) Three domains of analysis – time-domain, frequency domain, and z-transform. DSP material is actually covered in a two-course sequence—ECE 2025 and also ECE 2040 Circuit Analysis. They use two texts, *Signal Processing First* and *Circuit Analysis*. The course objective for ECE 2025 is for students to understand mathematical descriptions of signal processing algorithms and to express those algorithms as computer implementations. Topics covered in the course include spectrum of sinusoids, where students learn about complex numbers. Students have told Dr. McClellan that this is the hardest math class they have ever taken and that they really have to adapt to using math as a language, like electrical and computer engineers do. Additional topics are sampling, FIR Filtering, Frequency Response, IIR Filters, and Spectrograms: Time-Frequency – another place where math becomes significant. The labs with ECE 2025 are critical in demonstrating DSP applications and their relevance. Labs include beamforming, music synthesis, image filtering, deconvolution, touch-tone decoding, and AM communication. Students enjoy the work with sound and synthesizing complicated signals. They work with musical notes and human speech and how to manipulate them into single notes, chords, songs, computer-generated speech, and many other ways. Text messaging has also become a popular topic, where students learn how the characters travel from here to there, whether “there” is across town or across the world.

Dr. McClellan pointed out that ECE 2025 is required not only for ECE majors, but also for students studying biomedical engineering (BME). He thinks that BME involvement has led to more interest in biomedical applications with ECE students, and it helps expose BME students to the vastness of ECE and how it impacts their discipline. For instance, students examine models of EKG signals and interpret what they mean, as well as other sound signals from different biomedical applications. The BME students leave the course appreciating how signal processing is useful to them. Animations and GUIs are another really powerful way to illustrate complicated ideas. A generation or two ago, Dr. McClellan said professors would draw something on the board, and it was up to the student to determine how it might work in practice. In contrast, ECE 2025 shows how a process really works and demonstrates the role of math in the application

Dr. McClellan said that the course has attracted a lot of interest from industry. Students use Code Composer Studio from Texas Instruments, Simulink from Mathworks, and LabVIEW from National Instruments. Involved faculty members are also trying to design a migration path for this area from the sophomore to senior level, moving from DSP using math to software development to hardware development. He also noted that the term “algorithm engineer” is currently in vogue because our students need to know text programming, the graphics side (LabView), digital signal processors, and FPGAs. One criticism that he hears is ECE 2025 is a MATLAB course, but FPGAs are actually what you do on the job. Another obstacle is that C programming is needed in a DSP environment. What students learn in ECE 2025 may or may not

be how industry will conduct these processes in the future, but it is simple and adaptable enough for students to learn and implement. ECE DSP faculty members are reworking the DSP First lab projects with Mark Yoder, a longtime colleague from Rose-Hulman Institute of Technology in Indiana. Dr. Yoder, Dr. Ron Schafer (GT-ECE Regents' Professor Emeritus), and many TAs and undergraduate students were instrumental in making this course a reality.

After the presentation, Dr. McClellan answered the following questions posed by the SECEDHA meeting attendees.

1) Does this course totally replace a signal and systems course?

Dr. McClellan said that it partially replaces it. All ECE students take a set of courses in the basics, and then they can choose from suites of courses in which to specialize. But yes, we don't have a traditional signal and systems course, and this particular course is four credit hours. Dr. McClellan feels that ECE is such a vast field and touches virtually everything in life that you need to have a course that exposes a lot of different things to everyone.

2) How have the students changed in order to have a DSP First course to get them engaged in ECE?

Dr. McClellan believes that the change is due largely to computers. Students do tons of things on computers, and they want to be able to relate things to what they can do with computers. In contrast, previous generations of students focused on mathematics. Dr. Gary May (Georgia Tech) wondered whether the math approach even worked in the first place for some engineering students. When applications are in the forefront of engineering studies, he feels that it helps in retaining underrepresented minority and female students, but he has no hard data to prove that. Another person commented that the BME link to the DSP course is interesting.

3) Are students better prepared to handle this material?

Dr. McClellan said no. He thinks that ECE 2025 has made the good students better and more tuned in to the field. Students who invest something in the course think it's fantastic. When it was first introduced, he commented that some ECE faculty members thought that this course was a power play by DSP and was met with suspicion, but that was never the case or intention. If anything, it has helped enrollment in other technical interest areas, particularly in controls systems. He said that you will always have students who do not make the effort and not much can be done about that. Personally, he said that his hardest undergraduate EE course was his first one, and it was emag-based.

4) How can this course be used at other universities?

Dr. McClellan said that much of this material is online and is willing to share. He estimated that 30 U.S. universities have adopted it. He also noted that international adoption of the course is increasing and has been more prevalent recently.

5) What kind of programming experience do ECE students at Georgia Tech receive?

Dr. McClellan said that ECE students must take two programming courses, while BME students only have to take one. Students initially grumble about MATLAB, but they eventually get it. Dr. McClellan said that he is convinced that there is a "programming gene." He also said that time

becomes a factor in what you are able to teach in ECE 2025, but felt that is true for any ECE course.

### **Math Preparation Discussion**

Led by Dr. Mark Law, University of Florida

At the spring SECEDHA meeting, it was noted that four of our weakest points are in math. He polled the ECE department heads on whether they were happy with the calculus and differential equations courses at their universities. A few were relatively satisfied, while most were very unhappy with the quality of instruction. One department head said that a linear algebra course replaced the old differential equations course. He had his faculty meet with the math faculty, and the EE faculty told the math faculty what specific aspects weren't working. The math faculty members were able to receive this feedback in an unfiltered fashion, and they responded positively to it.

The following are comments made by various department heads:

Dr. John Peebles (The Citadel): Math majors take EE math courses and like them better.

Dr. John Kelly (North Carolina A&T): We are placing increased emphasis on the FE. We need to work on improving student math skills, which are critical for passing the exam.

Unknown: A motivation for using DSP First at another university is that math books from the 1960s to present day are useless. In any given class taken by ECE majors, a third of the students might have had exposure to complex numbers, and that number is shrinking.

Dr. Ashok Iyer (Virginia Commonwealth University): Our math department is very concerned with how students are being prepared in high school. We have definite issues in that area.

Dr. Law asked how many universities use math professors to teach math, rather than teaching assistants. Most responded that university professors are teaching the math courses. Dr. Law then mentioned that his department has a new complex variable and linear algebra course. Students take this course and another course similar to DSP First, with the credit hours rearranged a bit. Dr. Law then asked who uses the FE exam to measure ABET outcomes. The consensus was most departments do not since most students do not take the exam. More department head comments follow:

John Kelly (North Carolina A&T): We have more failings in algebra than in calculus.

Ioannis Viniotis (North Carolina State University): When a connection is made with other areas, students see math as valuable. They use MATLAB.

Reza Adhami (University of Alabama at Huntsville): We have a course called Engineering First (EE 100). Overall, the students who pass EE 100 fare better in the curriculum. They take it their

very first seminar, and it gives them the chance to use their imagination. Today, we learn by clicking. For those of us who are older, we had to look at the equation on the board, figure it out, and imagine what it could do.

Larry Holloway, (U Kentucky): Physics is where I made my first math connections. Now it's reverse for students; they get math first and then the physics and chemistry.

Unknown: I know of a math professor who is "scaling up" his course. The math teacher teaches, and then the students teach other and ask questions about the material. The EE faculty is not sold on this approach. However, others said that they see this scenario at their institutions too.

Jeff Jackson (University of Alabama): Are homework assignments required? Some departments do not have resources to collect and grade it.

Unknown: He prefers seeing students use "dumbed down" calculators for FE. He thinks that students are more comfortable with the less functional calculator. The less glitzy calculators actually make students figure out the problem.

This portion of the meeting closed, with Dr. Law making an appeal for nominations for IEEE teaching awards. He said that the nominating committees are having an especially difficult time getting nominees this year, so please nominate faculty members who you feel are deserving of these honors.

### **Undergraduate Recruiting**

Presented and led by Dr. John Gowdy, Clemson University, and Dr. Mark Law, University of Florida

Dr. Gowdy provided an overview of Clemson's ECE recruitment program. They frequently use a brief video tour about unmanned aerial vehicles (UAVs) to showcase an application that uses various aspects of ECE and provides chances to explain how they operate the vehicle. At Clemson, ECE tends to lose students to mechanical engineering and civil engineering. They think that they lose students to ME, largely because NASCAR's popularity with students, most who come from the Carolinas, Virginia, Tennessee, Georgia, and Florida, where the sport is popular. Civil engineering participates in a highly visible National Concrete Canoe Competition in which the Clemson team usually does quite well.

ECE at Clemson also gets a list of accepted engineering students each year, and they send letters to these, encouraging them to consider EE or CmpE as a major. In the letter, they provide resources on the Clemson ECE web site, as well as links to Discoverengineering.org and to videos on the IEEE Spectrum site (<http://www.spectrum.ieee.org/video>). The other department heads in attendance also agreed that the ME prevalence over ECE seems to be a trend in the SECEDHA schools.

At Georgia Tech, Dr. May said that the School of ECE offers a freshman robotics course, based

on the FIRST LEGO Mindstorms platform. He said that more education and awareness are needed about the EE and CmpE components in robotics and that it's not all just ME. An introductory microelectronics course called Silicon Earth will be launched in the near future.

Dr. Law showed some slides about an ECE retention seminar course on ethics and professional issues for freshmen and sophomores. In addition to satisfying the ethics requirement, the course also provides experience in soldering, kit building, and debugging, as well as a software introduction covering cluster, MATLAB, and Spice. They also have a packaging contest for building either an AM radio or logic probe. After taking the course, 77 percent of the students said that they were likely to major in ECE. They also offer an elective robotics course called ECE Adventures that uses a platform developed at Carnegie Mellon. The course is targeted at freshmen and sophomores in ECE and undecided engineering majors. Students build circuits and microcontrollers, use electronic test equipment, and receive training in written and oral communications. After taking this course, 55 percent of the students said that they were likely to major in ECE. Dr. John Peeples (The Citadel) said that they participate in FIRST LEGO League. Their students go to the area middle schools and high schools to mentor local students, and they leave some of the Mindstorms kits with those schools.

With iPods and iPhones so prevalent, Dr. May (Georgia Tech) said that we have to think about the everyday devices that we use and make their connections to ECE technology better known with students. It was also mentioned that ECE should make our tie-in with bio devices better known – these devices really help people and benefit society. For instance, Medtronics has a kit that demonstrates signals used in biosystems. Students learn about the applications, and they get to see what the signals look like, as well as measure period and amplitude.

It was suggested that a repository for recruiting tools be added to the SECEDHA web site. Dr. Law said that he would be happy to post any materials or tools that we are using. It was mentioned that IEEE.tv features short videos about ECE applications, with most running 10-15 minutes. Dr. Jeff Jackson (University of Alabama at Tuscaloosa) said that students present demos at their area schools. One demo is on how the Van de Graaf generator works. Since Van de Graaf grew up in the Tuscaloosa area, the name is well known, so a personal hometown connection can be made.

Dr. Larry Holloway (University of Kentucky) said that they have recently joined Project Lead the Way and wanted to know if others have joined and/or found it useful. He said that it provides engineering curricula for middle school and high school students, as well as a high school biomedical sciences curriculum. Dr. Peeples (The Citadel) mentioned that he is on the board for this organization. The Infinity Project was also mentioned as another worthwhile tool.

It was asked how involved ECE departments are in the recruitment process at their universities. Dr. Gregg Vaughn (University of Alabama at Birmingham) said that the university does their part, but he calls all of the ECE scholarship recipients personally and asks them to attend UAB. Dr. May (Georgia Tech) said that they cooperate with the university, but they have a recruiting and outreach office which participates in and leads ECE-specific efforts, such as summer camps for middle school and high school students and high school teacher training.

Dr. Clive Woods (Louisiana State University) said that their computational technology center hosts a boot camp for local students that focuses on parallel computing. Dr. Peeples (The Citadel) said that their department hosts a spend the night with a cadet activity before they declare a major. Prospective students stay overnight on campus, go to class, and “shadow” ECE cadets during the next day. They also cooperate with university recruiting efforts. Dr. Steve Parke (Tennessee Tech) said that they use student ambassadors. They host an engineering fair during the second week of class, where they show robotics, signal processing, and other applications that are eye catching. They also have freshmen seminar students participate in labs where they build a take home project and do other experiments, such as snap circuits. They also have ECE freshmen teaching local K-12 students about circuitry. Dr. Ashok Iyer (Virginia Commonwealth University) said that they have a community action grant that funds two LEGO League competitions and two US FIRST competitions. They work with the inner city schools in Richmond.

Dr. Gowdy (Clemson) suggested assembling some “how does it work” talks, perhaps 15 minutes in length to explain how something works.

### **ABET Review of Fall 2007 Visits**

Presented and led by Dr. Jeff Jackson, University of Alabama at Tuscaloosa, and Dr. Dan Fleetwood from Vanderbilt University

*Dr. Jeff Jackson, University at Alabama at Tuscaloosa*

The electrical engineering degree program and the computer engineering option were reviewed by ABET October 14-16. The electrical engineering program was visited by an academic who was serving as a PEV for the first time, while an industrial representative serving as a PEV for the 25th time visited the computer engineering option. One observer came from the state licensure board. Communication was lacking from the evaluator assigned to review the CmpE option; there was difficulty in setting and confirming a visit schedule with that individual, while the EE program evaluator very much wanted to schedule time with faculty, staff, and students. The EE evaluator wanted to know about our procedures for handling poor students, capstone design examples and demos, alumni surveys, loop closings for program improvements, and applications of probability and statistics.

Dr. Jackson said that they made a concerted effort to match EE faculty with the EE evaluator and CmpE faculty with the CmpE evaluator. Both evaluators visited with the staff member who handles student records, requirements verification, and other academic issues. The evaluators also visited with two classes – Circuits and Capstone Design. An additional binder was provided to the evaluators with documentation addressing specific questions and concerns. He noted that the evaluators seemed to appreciate having that additional information as a resource.

They had some concerns about the language of PEOs and assessment process for PEOs, but that seems to be a common concern for EE and CEO programs, plus it also seemed a universal concern across the programs within Alabama’s College of Engineering. ECE is now working on

new/revised PEO statements that should be complete, including feedback from constituencies, before the end of the year. Observations included resources/equipment needs for labs and the enrollment trend in the computer engineering option.

Overall, Dr. Jackson thought that the ECE ABET experience at Alabama went very well. He felt that the evaluators were well-trained and came to the program visits without agendas. They were very thorough, and they asked good questions and expected good answers. As the process progressed, the better it became. They were forgiving of many “new faculty responses,” which Dr. Jackson appreciated, given that half of the ECE faculty has been at Alabama for only two years. He also said that much effort went into formulating consistent PEV reviews across the college.

Ongoing changes for the ECE programs at Alabama include restructuring PEOs and assessment mechanisms, revisit program outcomes assessment process, and continued buildup of lab facilities.

General comments after Dr. Jackson’s presentation:

Dr. John Gowdy (Clemson University) - ABET involves three-fourths of their required classes and half of their senior classes.

Unknown – We just provide summary data on students passing the course and provide none on those who fail. Those who fail are not products of our program, so no real need exists to measure them.

Unknown – With our capstone design courses, we are looking for developments and ideas that are changing the field.

Unknown – Surveying alumni who have graduated within three to five years seems to work best.

*Dr. Dan Fleetwood, Vanderbilt University*

Both the EE and CmpE programs at Vanderbilt have been visited, with the EE program having been recently evaluated. One of our strong points is that we are located at a nationally known and respected private university. The evaluators found three weaknesses in our program, but they are probably addressable during the due process response period.

The lessons that we learned from previous visits are not to expect anyone else to carry the ball and to use a good model for your self-study. He thanked Dr. Law from the University of Florida for providing such a good example to follow. Dr. Fleetwood also strongly recommends using the ABET evaluator checklist as your outline; he feels that this is the most efficient way to evaluate a program and to provide information about a program. He suggests just providing the facts and to be brief and write clearly. He said not to substitute volumes of material for precision and to be quantitative. It is important to show data, improvement, and involvement of constituencies. He



would not use anecdotal evidence and stories; those things cannot replace data. It's also important to be complete and thorough and to communicate with ABET visitors early and often.

Dr. Fleetwood recommends national training for evaluators. While some training sessions are better than others, the experience is definitely worth the time. His experience with industrial evaluators is that some are good, while others are not – largely because they do not understand the academic side. No shortcomings were identified for Vanderbilt's EE or CmpE programs.

Dr. Fleetwood's best advice is to show up for appointments on time, be your normal self, *and* let them be their usual selves. Most evaluators are there to help and do not have an agenda. He said to be prepared to discuss your role in assessment, meeting outcomes and objectives, the general state of your department, and research focus, among other things. He said *not* to use the visit as a lobbying opportunity or a complaint forum about anything, especially about ABET. He said not to be overly chatty or to volunteer information in addition to or above and beyond what is asked.

He said that EE/CmpE program objectives at Vanderbilt have gone through three iterations in six years. Sixty percent of their alumni return their surveys, and they include a few questions that can be tracked over time on surveys. Vanderbilt's ECE program wants to reach an alumni survey response and return rate of 80 percent. They want to verify the attainment of learning outcomes because this is what ABET is all about. Their ECE programs used the A-K criteria. They also specified knowledge of probability and statistics and knowledge of math. Any course with computer in its title must also demonstrate that graduates have knowledge of discrete mathematics. The outcomes must make the linkages and mappings easily understandable.

ECE at Vanderbilt employs the following assessment processes, with all results reviewed by the department chair and shared with advisory board:

- 1) Direct – strongly encouraged by ABET – embedded assessment of student work product tailored to the specified outcome. Their goal 7/10 on all outcomes/program criteria – a 7 constitutes a mastery of elements and then goes up. 10=exceptional, 8/9=outstanding, 6/7=good, 4/5=fair, 2/3=poor, 0/1=unacceptable.
- 2) Indirect (also helpful) – senior exit surveys.
- 3) They also gave examples of individual assessment and lifelong learning, with lifelong learning expanded to include recall of knowledge from previous courses and applying it to present courses they are taking.

Dr. Fleetwood also recommends reducing all results (outcomes, means, student totals, courses) into one table. Now that their visit is finished, they will discuss the results as a faculty, and he will make points that he wants to emphasize as leader of the department. When he serves as a program evaluator, he does not want hugely extensive data; he wants assessment data that is quantitative.

His further impressions are that much variability exists from team to team. Some team chairs want to help programs write good educational objectives–sometimes perhaps more than ABET would like. You have to show that you are making measurements and using them to try and improve your programs. Lab safety is also becoming more of an issue. He added that a good

team chair will expect a low mark to go away 30 days later, but the program being evaluated needs to implement changes to be in compliance.

General comments after Dr. Fleetwood's presentation

Dr. Gregg Vaughn (University of Alabama at Birmingham) – All of their program documentation was put online, and their ABET evaluator loved it.

Dr. John Kelly (North Carolina A&T) - FCAR is a nice method to use, plus they also used online documentation. They had course assessment teams and course outcomes teams.

Jeff Jackson (University of Alabama) – <http://www.webebi.com> had good tools to use.

Unknown – We had a party for the students who completed the ABET surveys.

### **SCEEE Meeting**

Led by Dr. Paul Devgan, Tennessee State University

First, Dr. Gary May, SCEEE treasurer, gave a report of the Development Fund and Founders Fund. As of December 31, 2006, the Development Fund had a total of \$1,349,552, with earnings of \$47,403. From those earnings, two grants of \$19K apiece were awarded. One went to Dr. David Arnold at the University of Florida and the other to Dr. William Robinson at Vanderbilt University. As of December 31, 2006, the Founders Fund had a total of \$616,823, with earnings of \$21,472.

SCEEE in 2007 continued its prompt compliance with the various filings of required statutory and legal items with local, county, state, and federal government entities.

SCEEE infrastructure: There are ongoing issues with funds being used to support recordkeeping. SCEEE trustees agreed to destroy old records. Terms for four SCEEE directors will expire soon; elections need to be conducted in the near future to find their replacements. Dr. Devgan said that the SCEEE accounts have \$19,000 per SCEEE grant and \$18,000 for operational needs, plus \$3,000 has been put aside for proposal evaluations.

#### *SCEEE votes and results*

Minutes from the SCEEE Board of Directors meeting were approved, with corrections.

A motion was made to allocate \$19,000 for 2 proposals. All in attendance approved.

Expenses totaling \$18,525 were approved for the SCEEE trustees, chairs, and secretaries. These expenses come from the Founders Fund.

A recommendation was made to replace Samir El-Ghazaly (University of Tennessee) who is no longer on the board to review SCEEE proposals.

The group then adjourned for lunch shortly after 12 noon.

### **SECEDHA Business Meeting**

Led by Dr. Mark Law, University of Florida

After a brief discussion, the SECEDHA attendees decided to have next year's meeting in Atlanta at the Georgia Tech campus, preferably at the Georgia Tech Hotel. As usual, the group will aim for having the meeting in early November, pending a check of the Georgia Tech football schedule, conferences, and other activities.

Dr. Law is rotating off the SECEDHA board as president, which means Dr. May (Georgia Tech) is now president. Dr. Issa Batarseh from the University of Central Florida is now the vice president. Each fall, a new secretary is elected to a three-year term. A desire was expressed to have a smaller school represented among the officer group, so Dr. John Peeples (The Citadel) was tapped to serve as secretary. Dr. Law volunteered to continue running the SECEDHA web site.

Ideas for the fall 2008 meeting were entertained. Dr. John Kelly (North Carolina A&T) suggested that everyone bring a "toy" of some kind, whether it's something that encourages students in the classroom or something that makes life easier for an individual. It was suggested that the group have a big activity on Thursday night and finish the Friday portion of the SECEDHA meeting by 2 pm. Dr. Law said that the fall meeting format could be discussed further during the SECEDHA spring meeting in San Diego.

### **SECEDHA Survey**

Conducted by Dr. Mark Law, University of Florida

The results of this survey are posted as a separate document on the SECEDHA web site at <http://www.ece.ufl.edu/secedha/meetings.html>.

After the survey concluded, the fall 2007 meeting of SECEDHA adjourned at 2 pm.

Total number participating – 21

Starting salary Ph.D. – 1, 65-69; 7, 70-75; 7, 75-80; 3, 80+

Starting salary BS/MS – 0, 0, 1 – 65-69, 1-70+

Faculty vacancies – 5-zero, 7-one opening, 3-two openings, 2-three openings, 4-more than three openings

Percent of research overhead returned – 1-zero, 1-1-9%, 6-10-19%, 8-20-29%, 1-30%+

Undergrad EE enrollment – 11-up, 4-same, 5-down

Undergrad CmpE enrollment – 6-up, 2-same, 5-down

Graduate enrollment – 9-up, 8-same, 2-down  
Monthly stipend – 0-less than 1K, 7-1-1.2K, 5-1.2-1.4K, 6-1.4-1.6K, 1->6K  
FE Exam requirement – 19-not required, 2-required, 0-required for graduation, 11-encouraged,  
10-on the fence  
% buyout returned – 16-100% remains with dept., 0-80-89%, 1-70-79%, 2-80%+  
Combined BS/MS – 12-yes, 6-no,  
Adjunct salary/course – 6-<5K, 14-5-8K, 0->8K  
Line item equipment budget – 10-yes, 10-no  
Lab fees – 15-yes, 5-no  
% lab fees returned to dept. – 3-100%, 1-75-99%, 4-50-74%, 2-25-49%, 0-0-25%, 3-0%  
graduate tuition fee charged to contract – 16-100% (in) 2-100%out, 1-<50% for out of state  
graduate tuition fee annual – 5-7K-12, 7-9K-4, >9K-2  
grad TAs/faculty – <1-4, 1-1.5-12, 1.5-2-1  
grad RAs/faculty – 0-2-8, 2-4-4, 4-6-3, 6+-1  
research expenditures/faculty – <50K-0, 50-100K-6, 100-150K-4, 150-200K-1, 200K-7  
grad student laptop required –  
undergrad student laptop required – 4-yes,  
undergrad computer required – 1-yes,  
credit hours – 120-0, 120-124 - 1, 124-128-14, >128 – 6  
trend on credit hours – same-15, no-0, yes-0  
dept. IT support – 9-yes  
in addition (College) – 17-yes  
happy with College support – 7-yes  
faculty salary – 0-3%-4, 3-6 – 11, >6-1