Industry Advisory Board Meeting
Department of Electrical Engineering
April 12, 2013 - SWR 3A75

Meeting Minutes

Attendees

       Mr. Tom Abrams – Chair (Santee Cooper),
       Mr. Tracy Blackmon (Duke Energy),
       Mr. Bob Bush (Government Solutions Group),
       Ms. Tonia Morris (Intel Corporation),
       Mr. Steve Tibrea (Savannah River National Lab),
       Mr. Lee Xanthakos (SCANA)

Absent:

       Mr. Marty Wilson (Flextronics) was unable to attend.
       Ms. Krista Marks (Nimbee) was unable to attend

EE Faculty attendees:

       Dr. Mohammod Ali, Graduate Director (at the time)
       Dr. Charles Brice, Undergraduate Director
       Dr. MVS Chandrashekhar
       Dr. Roger Dougal, Chair
       Dr. Paul Huray
       Dr. Goutam Koley
       Dr. Enrico Santi
       Dr. Grigory Simin
       Dr. Bin ZhangDr. Viji Avali
       Minutes

Morning Session

- Dr. Dougal introduced attendees: faculty and IAB members. Mr. Lee Xanthakos (SCANA) replaces Marcus Harris. Ms. Tonia Morris (Intel) replaces Tina DeFelice. Krista Marks of Nimbee was not able to attend. Marty Wilson (new member Flextronics) was unable to schedule at last minute.
- Dr. Dougal presented state of the department, including issues and challenges.

    - Numbers of enrollment
    - Number of faculty
    - Retention
    - Operating budget
    - Research effort
    - Recruitment
    - Space (classroom and research lab)
    - How to grow our department and maintain our performance

- Funding for scholarships to attract high quality students

- Dr. Dougal described new trends in education. Where we should be heading to provide the high quality engineers to the industry.
    - Mr. Metts demonstrated a new USB-connected multifunction electrical measurements device as an example of new technology available to help students learn.
    - Providing online classes can be an essential way to increase revenue. MIT and Stanford offer classes that have 500 or more students enrolled. We should explore this further.

Afternoon Session

Dr. Dougal continued on the presentation.

- Providing students with the right technology is important.
- Dr. Dougal mentioned department trend towards "paperless". But still using notebooks for lab courses. IAB members said that their companies keep documents electronically. For example, Sharepoint is used at SCANA. Intel uses OneNote but it is not mandated based on individual preference. Tablet devices are more convenient.
- The board asks what is being used and Dr. Dougal explained to them about Blackboard and how each instructor has their own course website.
- Issues on classroom and lab space discussed – growing program will outgrow lab space.
- Research lab space for new faculty is also a challenge. A few of our new faculty are still waiting on lab space to start their research.
- Limited resources for support staff.
- A main concern is that we need to explain ourselves to the higher up how we do business. We are performing in the top 10 in the country but if resources are being taken from us, there is a possibility that we might not be able to maintain the performance.

IAB feedback to Faculty

Members expressed concerns regarding the information Dr. Dougal presented. They see that the department is having many challenges to overcome to make sure we are still performing at a high level. They would like to put together their suggestions to present to the dean.

Report on IAB and student session

IAB members tried a new format, asking students specific questions and letting each student respond in turn.

Question 1 – Why did they come to USC?
- Residency
- Scholarships

- Positive first impression during campus tour and EE lab tour. The Board recommended to keep doing what we are doing. We need to make sure we capture what has been done. Dr. Avali is doing a great job on these Outreach programs.
- The lab tour shows them what they will be doing and helps them understand what to look for when they are here.
- Transfer process from other campuses or schools is easy.
- Good location and weather

Question 2 – Why did they choose Electrical Engineering?
- Employment opportunities
- Liked idea of more hands-on experiences in the labs and like to work on things
- Positive experience in 302 Lab when they took the tour

Changes desired by students
- Students are struggling in certain courses that are too conceptual and too detailed in the beginning.
- More real life applications would be helpful in 321 and 331
- Pre-lab assignments for 302 were suggested
- Lab equipment in higher level courses is too old

Other student comments
- Exposure to Electrical Engineering in High School is helpful to get students to understand what EE is
- Lab 302 is students' favorite
- Lab 301 is demanding and challenging but the students agree they learn a lot at the end
- IEEE student organization is weak. Not many EE students join and low participation in activities. We need to encourage more fundraising activities, i.e., faculty vs students chili cook-off or faculty vs IAB or faculty vs. student competitions or The Board is interested in sponsoring an event for IEEE. Something to get more faculty/student interactions.
- The faculty is not always as enthusiastic as they should be. Interaction with faculty is good and helpful but currently students often have to initiate. We need more socializing among faculty and students, for example, an end of semester get-together.
- Students would like help to prepare for Fundamentals of Engineering Exam. Since the exam has been revised, the department should look into this and see if we need to do anything to help students be better prepared. (Less generic engineering content, more discipline specific emphasis.)
- Co-op and Summer Internships – not many EE students have participated. A few students do work in USC research labs. Many students lack working experience in industry. Companies encourage summer internships. Though students might not be put in a real engineering job, still the companies see it as an in-depth interview. They get to see what the students are like. If they like them, they will hire them.
- Considering holding a forum to give students opportunities to ask questions of the IAB and raise concerns. The members are open to joining as a panel and answering questions to the students especially about summer internships.

IAB's recommendations
- We need to makes sure we educate students well to provide higher quality workers for the industry and research effort should also well-prepare the students.
- Involve graduate students in providing feedback – possible having 2 student sessions with the board
- Maintain quality of our PhD program while continuing to improve undergraduate program
- Follow industry trends. If we need to produce graduates in Biomedical field, start moving that direction.
- Draft standard format for next meeting
  - The Chair and faculty present to IAB in the morning
  - Lunch
  - The Board takes 30 minutes to put together their response presentation and talk to Dr. Dougal
  - Make presentation to the Dean.
  - End the meeting at around 3 or 3:30 PM
- Look at creating a database of alumni (where they are now)
- Suggested new IAB candidates – Google, Boeing, Amazon, Continental Tire, Nucor, etc.

Action Items:

1. All – Mark calendars: Fall 2013 IAB meeting date will be **Friday November 1, 2013**.
2. All – Hold tentative: Spring 2014 IAB meeting date **Friday April 4, 2014**. Date to be confirmed no later than Fall 2013 meeting.
3. Dougal - send draft agenda to Chair Tom Abrams one month prior to next meeting so Chair can solicit IAB member requests for topics or data to be presented by faculty at the meeting.
4. Dougal - develop draft standard agenda for fall and spring meetings. Include time for IAB to report to the Dean at the conclusion of future meetings.
5. Dougal - Request Dean to attend during late afternoon of Fall meeting to receive Board recommendations.
6. Dougal - Contact Mr. Lee Xanthakos at SCANA about summer internship
7. Dougal - Find out how people (IAB members, alumni, or anybody) can specify EE department as recipient when making USC donations. (Mr. Bush mentioned that it was hard to make a donation online and make sure the money comes to EE.)
- Abrams – Together with input from IAB members, draft IAB By Laws and forward to Dougal. Simple structure – not so complex as the reference example. Probably having two main sections
  1. Mission statement
  2. Board's responsibilities and tasks (statement of purpose), and procedures i.e. chair and vice chair rotation.
- All - consider other companies and individuals and make recommendations for recruiting new members, targeting 10 to 12 members in total, or three to five more members by fall meeting. The Board should represent industries state-wide and across different industries.