Industrial Advisory Board (IAB) Meeting Minutes

Friday, April 19, 2019
Lory Student Center Grey Rock Room


ECE Department: Tony Maciejewski, Dezarai Brubaker, Alauna Sutton, Courtney Johnsrud, Karen Ungerer, Katya Stewart-Sweeney, HJ Siegel, Margaret Cheney, Ali Pezeshki, Anura Jayasumana, Sudeep Pasricha, Megan Emmons, Biyun Xie, Gillian Fahey, and a small group of ECE sophomores

Guests: Kirsten Batalden (Kaufman & Robinson)

1. Introduction and Welcome (Jeannine Looney, IAB Vice President)
   Jeannine opened the meeting, welcomed the new IAB members (Lynda Allen, Lockheed Martin; Robert Burke, Wolf Robotics; Veronica Cavallaro, EWB; Jon Grooters, ACS Power), shared the day's agenda, and then turned it over to Tony Maciejewski, ECE Department Head, for the department update

2. Agenda and Department Update (Tony Maciejewski, ECE Department Head)
   Tony welcomed the meeting attendees and provided an update on the following topics:
   
   Andrea Leland is no longer with the department.
   Awards:
   • Sid Suryanarayanan- foresee, R&D 100 Award
   • Carmen Menoni, President Elect of IEEE Photonics Society
   • Diego Krapf, Abell Outstanding Mid-career Faculty Award
   • Kevin Lear, Abell Teaching, Mentoring, and Service Award
   • Katya Stewart-Sweeney, Office of International Programs Distinguished Service Award
   • Chandra, IEEE GRSS Best Paper Award
   • Chandra, World Meteorological Organization Team Award
   • Delta Pi Chapter, IEEE-HKN Outstanding Chapter Award

   Other Department News:
   • Students compete in dumpster dive competition
   • Upcoming events
     - Annual Best Paper Contest in June
     - Commencement set for Friday, May 17

   Charts and Data:
   • College of Engineering research expenditures
- ECE research expenditures
- Proposal activity
- ECE student credit hours
- College of Engineering student credit hours
- National enrollments by discipline
- CSU engineering enrollments
- Biomedical dual majors
- ECE spring enrollment
- ECE nontraditional undergrads
- ECE first-generation undergrads
- ECE freshman enrollment
- Freshman admissions outlook
- National persistence in engineering
- ECE freshman retention rates
- Women in engineering
- Women in ECE
- ECE undergraduate degrees awarded
- ECE graduate degrees awarded
- International enrollments
- ECE percent of international degrees awarded
- Percentage of Tech Unicorns founded by immigrants
- Career outlook for ECE majors

**Update on Fall Action Items:**

- **Action Item:** Distribute the “Unconscious Bias” survey from Harvard
- **Status:** Survey was shared via ECE/IAB webpage
- **Action Item:** Offer diversity training for ECE faculty, staff, and students; leverage campus resources
- **Status:** Many offerings available through CSU including new classes being offered this fall, Women in ECE group led by Prof. Olivera Notaros

**Update on Fall Activity Items:**

- Results of the IAB dot survey
  - Question 1: Have you ever noticed students/faculty/employees treating each other differently based on their gender, sexual orientation, race, ethnicity, religion, family status, age veteran status, economic status, ability, etc.?
    - Majority tended to say “frequently”
  - Question 2: How comfortable would you feel intervening in a situation like this?
    - Many said “very comfortable”, while a few said “not at all comfortable”
  - Question 3: Have you ever been treated differently in a professional setting (classroom, workplace, conference, meeting) based on your gender, sexual orientation, race, ethnicity, religion, family status, age, veteran status, economic status, ability, etc.?
    - Split into 2 groups, one that tended toward “never” and one that tended toward “frequently”
  - Question 4: If you answered yes to the above question, did anyone intervene?
    - Majority tended to say “no”

- Sticky note exercise
Best practices to change the culture around diversity and inclusion from your experience?
- Case studies, microinequities training, strong executive sponsors, share personal stories, celebrate diversity, build diverse teams, promote awareness especially with unconscious bias, take an unconscious bias test, have a clear message that “this is not ok”

What initiatives can ECE implement to create a more inclusive environment where all people feel welcomed and valued?
- Run realistic classroom scenarios and see how students respond, ECE tshirts, empower ECE students to be diversity ambassadors, diverse faculty, diverse role model mentorship

Status:
- Prof. Anura Jayasumana conducts a class session on unconscious bias.
- There is a Social Responsibility from the sophomore year onward.

3. Virtual (Simulated) Internships (Megan Emmons, ECE graduate student)
Megan Emmons has designed a simulated internship experience, modeled on a similar experience at the University of Wisconsin, that will start as a 1 credit freshman course in the fall. Internships have been shown to give confidence and motivation, and in many cases increase retention. Megan is considering a wind farm project idea that would incorporate the five main subsections of ECE. It would be split into two phases, planning/design and implementation.

4. ABET survey (Tony Maciejewski)
- The ABET Accreditation visit will happen this fall
- Reviewed updated ABET outcomes

5. Prep for Engineering Days (Tony Maciejewski)
Considerations:
- How are we doing overall?
- Can you see the impact of your previous suggestions?
- What are the strengths and weaknesses of the senior design program?
- What changes/improvements would you recommend?
- Which projects stand out, and what makes them great?

Assessing professionalism in projects
- Complete enclosed rubric to build on SP16, SP17, SP18
- Acceptable to use “n/a” or “.5” in your ratings
- Results of SP18 assessment of professionalism in senior projects shared in presentation
  - Students ranked highest in communication and teamwork

6. Breakout Session: Simulated Internships (Facilitated by Jeannine Looney)
Considerations for Breakout:
- What professional skills are possible to simulate in this type of class?
• How are these skills best simulated?
• How much should be virtual and how much in person?

**Key Points and Suggestions:**

• These projects should be real (rather than virtual). It would be a good idea to include the Engineers in Residence. There should be some role playing.
• The internship should help the students decide whether or not they want to be an engineer. It should promote fun and excitement. It should help them see that engineering is not all physics and math classes.
• The project should show the breadth of engineering without spreading the students’ focus too thin.
• Actual internships allow them to work with real engineers on real projects with real equipment. How can this be simulated? Maybe engineers can be brought in from Vestas or other companies.
• The internship should incorporate teamwork, communication, time management, presentation skills, teach them to ask questions, develop problem-solving skills, and promote curiosity.
• This generation cares about making a difference more than money. How can we show them that engineers are making a difference?
• The project is designed to make them consider ethical issues.
• What is the criteria for success? How does the student (engineer) know they’ve solved the problem?
• Which is more important? Seeing the range of disciplines in engineering or seeing the types of jobs available to engineers? They should be able to see that not all engineers work in design.
• They should be able to apply theory to solve problems, within reason. They project needs to balance discipline and creativity.

7. **Election (Mike Stiles)**

The board unanimously voted in favor of Steve Pacheco (Woodward) to serve as the IAB vice president for the upcoming academic year; Mike Stiles becomes president.

8. **Closing Remarks (Tony Maciejewski)**