Welcome

Introducing today’s visitors and new members …

- Kamran Eftekhari Shahroudi, Woodward
- Michael Pichler, Coors Brewing Company
- Wayne Rewinkle, Analog Devices
- ECE student representatives

New members who could not make today’s meeting:

- Barthold Lichtenbelt, NVIDIA
- John Perzow, Analog Devices
Agenda

- Department Update & Fall Action Items
- Northern Colorado Economic Outlook
- Colorado Collaboratory
- Break
- Breakout Session: ECE Focus Areas of the Future
- Industry Spotlight: Intel
- Student Presentations
- Elections
- Lunch
- Next Steps & Closing Thoughts
Department Update

Tony Maciejewski
Prof. and Head, ECE Department
Department News

- Dr. Carmen Menoni Leads $2.5M ONR Laser Project

- Chandra Named Associate Dean for International Research

- $2M Antenna Upgrade to CHILL

- ECE Participates in Collaboratory Project (more later from Dr. Troxell)
Department News

- ECE Research and Student Projects in the News (see ECE web site)
  - SimPooch published in media outlets throughout Colorado and the world, including the BBC
  - Laser research featured

- ECE to Celebrate 100 Years of Graduates – we will be seeking ideas from the IAB

- Adjunct Faculty Member Bill Eads Establishes Scholarship for ECE Students
Department News

- Engineering Career & Internship Fair Becomes Two-Day Event – thanks for your participation

- Department Continues Emphasis on Recruitment with Special Events and Personal Visits
  - Engineering Exploration Day Draws Record Turnout

- Professional Development Institute Picks up Steam

- ECE gets rave reviews in fall 2007 ABET visit! Thanks for your support.
Department News

Remaining Spring Events
- ECE Graduation Reception (announce Best Paper Contest winner) and Commencement Ceremony: May 16

Planned Fall Events (dates forthcoming)
- Student Advising Day
- Alumni and Friends Event
- IS&T Day for High School Students and Counselors
- Engineering Exploration Day
Trends in Freshmen Enrollment

- CpE
- EE


Bar graph showing the enrollment trends from 1997 to 2007.
Undergraduate Degrees Awarded
Graduate Degrees Awarded

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Number</th>
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<tbody>
<tr>
<td>2002</td>
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<td>2007</td>
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Legend:
- ME
- MS
- Ph.D.
Percent of Graduate Degrees Awarded to Int’l Students
ECE Research Expenditures

Projection for FY08
Fall Action Items

- Revisit agenda items not addressed during the first breakout session.
  - **Status:** Discussing during today’s breakout session.

- Obtain feedback from board regarding department’s wish list.
  - **Status:** Karen Ungerer sent the list following the fall meeting. We have not yet received any feedback or ideas from the board on how to better communicate our equipment needs.

- Increase student-to-student interfacing.
  - Held phone-a-thon in January, where current students called prospective students to “sell” them on the ECE department and answer questions. Current students also provide tours and meet with prospective students.
Fall Action Items

- Educate high school counselors of who we are and what we do.
  - **Status:** Presented department overview as part of ISTeC’s IS&T Day for High School Students and Counselors; reached 22 counselors from high schools around Colorado.

- Utilize high school counselors to identify students interested in STEM disciplines.
  - **Status:** Leveraged new FIRST scholarship to reach out to counselors for assistance in identifying top-tier students.

- Improve perception of engineers; get away from “geek” image.
  - **Status:** Examples of “cool” ECE careers were featured in Exploration Days presentation and as part of new bulletin board in the engineering building.
Fall Action Items

- Provide personal attention to ECE students.
  - Status: ECE forums for faculty and students held in fall and spring to personally address students’ questions and concerns. “Connections” lecture series created to increase faculty interaction with students. ECE Degree Exploration Fair with faculty and students was held.

- Target older, non-traditional students; partner with employers to get their employees advanced degrees.
  - Status: Submitted proposal to grad school to solicit funding for this effort. Invited industry to ECE Grad Visit Day.

- Create an energy cluster involving NREL, CSU, CU, Mines.
  - Status: Collaboratory initiative under way (more from Dr. Troxell)
Fall Action Items

- Explore possibility of expanding mentoring opportunities.
  - **Status:** Currently seeking ideas and feedback from freshmen to determine effectiveness of ECE Peer Mentoring Program.

- Explore shadowing program and make internships available early on in student’s career.
  - **Status:** Andrea is working with IAB on Shadow Day. We have included freshmen and sophomores on distributions of available internship opportunities.

- Investigate the pre-engineering curriculum in high schools.
  - **Status:** Participated in local summit held by Poudre School District. PSD, area businesses, and university reps discussed how to better prepare high school and college students for today’s workplace.
Fall Action Items

๑ Involve students early on concerning elements of senior design.

๑ Status: The department formally adopted courses to give students credit for early involvement in senior design. Currently there are 8 underclassmen working on 7 projects with 6 professors. In addition, some seniors have expressed an interest in continuing work on their projects after graduation. As a result, the new course sequence will be: Pre-Senior Design, Senior Design, and Post Senior Design.

Follow-up to previous action item:

๑ Investigate the possibility of expanding the ECE seminar series to include two-part seminars from companies. The seminars would occur at CSU on the same day, back-to-back. The first seminar would focus on the company’s research initiatives, the second seminar would include more detailed information about the company (Fall 07).

๑ Status: QUALCOMM’s VP of Engineering recently gave a technical talk followed by a Q&A session and overview of QUALCOMM, including employment and other opportunities for ECE students.
*Update on Global Competition*

- The gap between the number of engineers produced in the U.S. vs. those in India and China is smaller than previously reported.
  - Statistics commonly used are inaccurate indicators because engineers are defined differently across international borders.

- Engineering grads in China and India face the prospect of substantial unemployment, despite high corporate demand for their service.
  - Quality of private institutions in India varies significantly.
  - Despite (or because of) recent surge in engineering grads, only a fraction of China’s top institutions have maintained their commitment to the quality of education they deliver.

*Source: Journal of Engineering Education, Jan 2008*
Update on Global Competition

- U.S. remains a leading source of high-quality global engineering talent.
  - Respondents stated that 80.7% of U.S. engineers were employable, while only 10% of Chinese engineers and 25% of Indian engineers were similarly employable.

- Dynamic vs. Transactional Engineers
  - Dynamic Engineers – individuals who are capable of abstract thinking and high-level problem solving using scientific knowledge, and are most likely to lead to innovation.
  - Transactional Engineers – individuals who posses technical training, but not the experience or expertise to apply this knowledge to larger domains.
Possible Topics for Fall IAB Meeting

- New Systems Engineering Program Under Way
  - Led by Ron Sega, ECE Professor and VP for Energy, the Environment, and Applied Research at CSURF.

- Work with IAB to update science and technical electives for specific career fields.
Northern Colorado Economic Outlook

Martin Shields, Regional Economist and CSU Associate Professor
David Keyser, Research Economist
Colorado Collaboratory

Wade Troxell, College of Engineering
Associate Dean for
search and Economic Development
Break
Breakout Session:
ECE Focus Areas of the Future

Facilitator:
John Nichols, IAB VP
Considerations

- In which areas should we hire new faculty?
- Based on your view of the industry and where it’s headed, which research areas make the most sense for the ECE Department?
- What curriculum changes are needed?
- What mechanisms do we implement to execute suggested changes (e.g., hire more adjunct faculty)

Parameters:
- Take into consideration the local, state, national, and international trends
- Constraints: Keep in mind that faculty could be hired for lifetime employment.
Industry Spotlight: Intel

Scott Makinen
Design Automation Manager for the Itanium Development Group
Senior Design Project Presentations

RamBox
Remote Door Opener
Elections

Facilitator: Fernando Tomasel
IAB President
Lunch
Next Steps and Closing Thoughts

Tony Maciejewski