

College of Engineering

**Engineering College Council
Meeting Notes**

October 9, 2003

The Engineering College Council (ECC) met in Ithaca on October 8 and 9, 2003. The following ECC members were present:

John Anderson	James Hauslein
Thomas Armstrong	James McCormick
Joseph Bonventre	Venkatesh Narayanamurti
Charles Brown	Justin Rattner
Troy Clarke	William Shreve
Tim Costello	Roger Strauch
Robert Cowie	Sherri Stuewer
Scott Donnelly	Evelyn Taylor
W. Kent Fuchs	

Non-ECC members present included Jim Thorp, Professor in Electrical and Computer Engineering and Chair of the Strategic Planning and Advisory Council and Deborah Cox, Assistant Dean for Strategic Planning, Assessment, and New Initiatives.

New Date for Spring 2004 ECC Meeting

Dean Fuchs announced that the ECC Spring 2004 meeting originally scheduled for April 21 and 22 would be moved to April 14 and 15. The ECC will join the Johnson Graduate School of Management (JGSM) in celebrating the 20th anniversary of the naming of their school.

A dinner will be held on Wednesday, April 14th. The Engineering College Council meeting and the celebration of the JGSM Anniversary will take place on April 15th. Jeff Immelt, President of General Electric, will give the Hatfield Address at 4:30 p.m. and the ECC will join the Johnson School Council and other guests and CSE Conference attendees for a gala reception and dinner honoring the Hatfield program.

On Friday, April 16, 2004, the Cornell Society of Engineers Conference begins – “Energy Demand and sustainable Development: Pathways to Economic, Social and Environmental Improvement”.

A reminder of the change in dates will be sent to each Council member's administrative assistant.

College Update by Kent Fuchs

October 2004 Events

Dean Fuchs explained that in October 2004 there would be a series of events to leverage the October 6th 25th anniversary of the Cornell Nanofabrication Facility.

On October 7, 2004 the College will celebrate the official opening of Duffield Hall. Duffield Hall has been funded by \$60M in private gifts, \$12M from the University to help with "move-in" and "fit-out". David Duffield has committed \$15M in matching if the College can raise an additional \$15M in endowment for the facility.

On October 8, 2004 the fall ECC meeting will take place.

New Programs

Jeff Lehman, Cornell's new President, is currently in Qatar to start his inauguration tour. The Cornell Campus will honor his appointment in inauguration ceremonies on October 16 2003. President Lehman is supportive of Cornell's research focus in nano science, information science, and advanced materials.

Progress is being made on two significant university facilities projects. Twenty five million dollars has been raised in support of the new Life Sciences Technology building. Engineering will have space in this facility for the biomedical, biophysics and bioinformatics programs.

A new Physical Sciences building is also being planned although to date no funding has been raised. This building, which will be located in the area of the current physical sciences space by Clark Hall, will house Chemistry, Physics and Applied and Engineering Physics (AEP).

Future engineering facilities plans (that are not yet approved) include a facility to move ORIE, Computer Science, Cornell Information Sciences, and the Theory Center. This facility would provide relief space for the critical needs of Electrical and Computer Engineering (ECE), Mechanical and Aerospace Engineering (MAE), and Materials Sciences and Engineering (MSE). The facility would need to be linked to the existing Engineering quad.

New Joint Majors

A joint BEE/CEE environmental major and a joint CS/OR major have been proposed and will be voted on at the October 29, 2003 College Faculty meeting. Faculty meetings have had outstanding attendance. Seventy-five out of 200 faculty attended the January 2003 meeting and 100 attended the Spring Faculty Meeting. Interesting topics have ensured good attendance.

Engineers without Frontiers

A new student group, Engineers without Frontiers (EWF), has been formed. Modeled after the Engineers without Borders program started in Canada, EWF's mission is to help worldwide communities. Last month they hosted a conference at Cornell that attracted 150 students from around the U.S. including 90 from outside of Cornell.

Capital Campaign Planning

The Cornell deans have been involved in planning the next Capital Campaign. College of Engineering departments submitted their Strategic Plans and Funding Priorities Lists, which were rolled up into College Funding Priorities and submitted to the Provost in April. The funding priorities won't be finalized until a year from now and the Capital Campaign won't be publicly announced for approximately two years from now.

College Benchmarking Metrics

Dean Fuchs presented an updated set of college metrics. He showed trend data in the area of applicant field interest, undergraduate field affiliation, graduate student enrollment, faculty numbers and diversity, funding components, research expenditures and research funding. (See PowerPoint slides on the ECC site.)

Applicant interests have changed predictably. Interest has fallen in Computer Science and has shown gains in more traditional engineering fields such as CEE and MAE.

Undergraduate retention is high at Cornell. About 80% of our students will graduate with an engineering degree within 5 years of entry and 90% will graduate with a Cornell degree. Underrepresented minority (URM) student retention is also good, averaging about 70%. This is almost double the national average in engineering undergraduate programs. About 14% of our undergraduates are international students.

The graduate student (MS/PhD and MEng) trend direction is consistent with the goals in our Strategic Plan. The College wants to increase the number of PhD students and the PhD trend line is slightly up. The MEng enrollment is approximately steady, although a higher percentage are US citizens. Over 50% of our graduate students are non-U.S. citizens. Our continuing goal is to increase the number of U.S. citizens attending graduate school.

Our goal is to increase the number of the faculty in the college by approximately 30. Although their numbers are small (24 women faculty and 8 URM faculty), the College is doing comparatively very well in faculty diversity.

Budget increases in the College represent the University and College focus on improving faculty salaries. Significant progress has been achieved in making our faculty salaries competitive, especially at the Assistant and Associate Professor levels.

A greater percentage of our research expenditures come from engineering faculty working in centers. The vast majority of our research expenditures are funded by federal

funds with a small portion coming from business/industry, private and state funds. The College needs to increase the NIH funding.

Strategic Planning

Dean Fuchs explained that the college is in the midst of developing its Strategic Plan, and he sought the Council's frank and candid input. Dean Fuchs's introduced Jim Thorp, Chair of the Strategic Planning and Advisory Council who presented the key components of the Draft Strategic Plan including:

- Process
- Vision, Mission and Values
- Goals
- Unique Characteristics and Strengths
- Emerging and Enabling Areas of Research
- Objectives, Strategies, and Metrics
 - Community
 - Faculty
 - Facilities
 - Graduate Studies
 - Undergraduate Studies
 - Staff

The Council strongly supported the development of a strategic plan and gave substantial input. The synthesis of the input revealed the following themes:

Vision

- The vision should not be written in the present tense. It should convey the desired future state, capturing how Cornell Engineering should grow and change.
- The enduring theme of benefiting society is sound, but the vision should capture new ideas in engineering. As written, the vision is too broad and could apply to the University as a whole any time over the past decades.
- Ideas for making the vision more contemporary and more specific to engineering:
 - include consideration of stakeholders -- students, faculty, staff, donors, etc.
 - include what we are trying to change, including new engineering research areas
 - emphasize the importance of enabling interdisciplinary research and teaching
 - include the need for global and cultural awareness

Values

- The values need to be concise and provide answers to the question, "Is this the right thing to do?"
- Consider four values:
 - Aspire to Excellence
 - Act with Integrity
 - Respect Individuals
 - Value Diversity

- If left in their current form, consider wording changes:
 - #1) eliminate "at our best moments"
 - #2) add "by students, donors", etc. after "great trust placed in us..."
 - #3) replace word "courtesy" with "dignity"

Goals

- The goal should be to have the college ranked in the top five as a whole, but not every department must be top five. The goal should not be built solely around the USNWR ranking.
- The ordering of the goals is significant, and we want to focus on the overall reputation for research and teaching.
- In goal #2, combine "advanced materials and nanotechnology" as a single research focus area.

Research

- There was strong support for Energy and the Environment as an emerging research area.
- To achieve the goal of being in the top five engineering schools, we need not only support for the enabling/emerging areas, but also support for base research areas.

Community

- The Council fully supports the efforts to increase NAE membership among the faculty.
- There is strong support for continuing the dual emphasis on research and teaching; however, there is recognition that we are competing against schools with lower student/faculty ratios (either due to smaller undergraduate schools or research-only faculty). The Council supports looking at ways to facilitate research without abandoning the priority on teaching.
- The Council is very supportive of the plans to increase the faculty by 30 and lower the undergraduate student to faculty ratio to 12:1.
- The issues of dual careers is a challenge that can be most effectively addressed by a university-wide program.

Facilities

- Continued program integration with both the Medical and Business Schools is important and should be considered in facilities development.
- In addition to the allocation of new space, the effective use of "old space" must be a priority. Departments should account for space/student or space/faculty metrics.
- The Council strongly supports developing a master plan for facilities development.
- The project to develop a new building for Computer and Information Engineering (to house CS/CIS and ORIE) is consistent with College and University priorities on information science and would free up space for much needed expansion of ECC and MAE. Test the fit of this building into the master plan when developed.

- Designs for a new library and service center should be flexible to accommodate the needs/technology of the future.
- The Council fully supports the space for the AEP faculty in the new Physical Sciences facility.

Graduate Studies

- Recognizing that the MEng program both drains faculty resources and provides a unique source of department funding, the Council agrees that it is appropriate to explore alternate funding options that would enable optimization of the MEng program. However, there is recognition that the MEng degree is valuable to industry and support for enhancing its prestige.

Executive Session

In executive session, the Council reviewed ideas for consolidation of programs and discussions about the creation of a biomedical engineering department.

Additional ideas or comments generated:

- There is a need to address management of intellectual property.
- International connections (e.g. China/Cornell) need to be developed.
- Before closing the planning process, take it to the 50-100 key benefactors.
- Consider increasing PhD's/faculty/year to .7, which will require faculty to seek out more research grants to support PhD's.