

MINUTES AND RECOMMENDATIONS
04/11/03 Meeting of the
Engineering Advisory Council & Resource Development Committee
College of Engineering & Applied Science
University of Colorado at Boulder

INTRODUCTIONS & ANNOUNCEMENTS

EAC Chair George Sissel introduced new members Kevin Coyne (Sun Microsystems), Bob Krebs (Thelen, Reid and Priest, LLC), and Jill Tietjen (Technically Speaking, LLC). He also introduced several returning members. Dean Rob Davis introduced JoAnn Zelasko (Assistant Dean for Administration), Marc Thompson (Director of Engineering Development), Mario Vidalon (Director of the Center for Advanced Training in Engineering and Computer Science), and Wayne Ambler (Director of the Herbst Humanities Program).

COLLEGE UPDATE

Rob Davis provided a college update and report on progress made on previous recommendations, including the Discovery Learning Center (DLC), Planning for the Future, Climate for Diversity, and Resource Development. He also described recent budget cuts and a proposed Center for Professional Engineering Education. Details are available in the slides provided with the meeting materials, with a short summary given below.

Discovery Learning Center: A Managing Director (JoAnn Zelasko) and Faculty Director (George Morgenthaler) have been appointed, including a major responsibility to increase DLC usage and activities. The \$2 million shortfall in funds for DLC equipment and capital construction will be a major focus of fundraising efforts. A \$100K annual operating budget has been established with funds from the dean's office and the Engineering Excellence Fund.

Planning for the Future: The College has recommended that a research center (CADSWES) and possible new research initiatives be moved to the Exabyte Building (one mile off campus), but that academic programs such as Computer Science remain on campus. The College is also investigating the addition of floors and wings to the current Engineering Center, which might be done in stages at lower cost than a new building.

Climate for Diversity: While student retention efforts (such as MEP, WIEP, and First-Year Projects course) have shown success, enrollments of underrepresented groups in the College remain low (19% female, equal to the national average; 7.5% underrepresented minorities, half the national average). A recent statistic projecting that female freshmen enrollment for Fall 2003 is down (about 13% of the expected entering class) generated considerable concern and discussion. Suggestions included the College taking a more

active role in freshmen admissions (currently controlled by a central admissions office), expending more efforts on juniors and seniors in high school, and examining whether negative publicity has impacted enrollments. Rob Davis also reported that 98% of the faculty have attended a Sexual Harassment Policy & Awareness Workshop in the past year.

Resource Development: The College has exceeded its seven-year campaign goal of \$54 million by \$20 million. However, current and endowment gifts in 2002-03 are at less than one-third of the annual goal. Major foci of the coming year will be naming opportunities for the DLC, named endowed professorships, the Hands-on Earn-Learn Program (HELP), and the Dean's Fund for Excellence.

Budget Cuts: The state appropriation to CU-Boulder is being cut \$11M (13%) this year and \$17M (23%) next year, reflecting the current economy and national trends. Prior to the cuts, state funding was only 25% of the campus general fund, or 11% of the campus total funding, among the lowest in the country. The College is taking a \$1.5M cut (6% of its general fund), primarily from faculty reductions and cuts in administrative programs by moving Engineering Management and Interdisciplinary Telecommunications to a cash-funded enterprise.

Center for Professional Engineering Education: As a means of addressing cuts in the general-fund budget, the College has proposed forming a partnership with the Division of Continuing Education that will include the Center for Advanced Training in Engineering & Computer Science, Engineering Management and Interdisciplinary Telecommunications. It was recommended that the College have a high level of involvement in this center and that oversight is provided by college faculty and with industry participation. It was also suggested that the Division of Continuing Education be renamed to reflect professional education and quality (e.g., Division of Professional Education and Life-Long Learning). A task force with faculty, student, alumni, industry, and administrative members has been formed and is addressing the various issues. Kevin Coyne from the EAC is on this task force, and Art Dawson, Bill Richardson and other EAC members expressed interest.

STUDENT PRESENTATIONS

Two students from Engineers Without Borders, Christina Osborn and Patrick Niedermeyer, made presentations on the recent efforts of student teams to assist developing communities through engineering projects such as irrigation, wells, and footbridges. The faculty founder and advisor, Bernard Amadei, also shared his perspectives. EAC members expressed interest in the projects and in how Engineering Development can help support participating CU students.

A presentation was also made by Mark Binsfeld, Brendan Rudack, and other students of the Formula Society of Automotive Engineering. They and faculty advisor Larry Carlson described activities to build a light-weight, high-powered car and drive it in national competitions. Fundraising efforts were also described.

INTELLECTUAL PROPERTY

Vern Norviel presented a concept for improving technology transfer in the College, based on discussions he had with Bob Krebs. He noted that the large dollars received by universities for intellectual property come from a few 'home runs' and that CU may have missed out on a few major opportunities. He and Bob proposed forming a subcommittee to review papers and reports from college faculty to try and spot patentable developments. Ray Hauser and others expressed interest in serving on this subcommittee. It was also noted that patenting should be part of the faculty evaluation process.

STRATEGIC PLANNING

A college-wide strategic planning process is underway. It includes an initial vision provided by the Dean, summary plans developed by individual departments and programs, a college-wide plan built on department/program plans, and internal/external feedback. The process is targeted for completion in Fall 2003. Strategic planning initiatives and vision for education, research, and development were presented by John Bennett, Stein Sture, and Marc Thompson, respectively, and JoAnn Zelasko overviewed the proposed process and timeline. Their slides were included with the meeting materials, and highlights are included with the reports below from the subsequent breakout groups. Strategic planning was the focus of the breakout groups, with findings and recommendations presented below. The viewgraphs used in the reports presented by the breakout groups are attached.

BREAKOUT GROUPS

Education Breakout Group: John Bennett presented the five areas of education focus:

- Graduate education
- Undergraduate education
- Educational infrastructure
- Diversity
- Outreach

Our graduate education initiatives include increased recruiting, courses to support research methods and technical writing, and training for academic and research careers. Our undergraduate education initiatives include education for leadership and citizenship, design and research experience, and interdisciplinary programs. Deploying new laboratory and classroom models are part of the infrastructure initiatives. Diversity and outreach are focused on increasing the pool of minority and female students and graduates.

Dan Hernandez reported on the findings and recommendations of the breakout group. The breakout group focused on the diversity of the college's student population, piqued by the diversity data provided in the college update. As stated in the college update, our retention efforts have had positive results, but our incoming enrollments remain low.

John Bennett will be putting significant focus on understanding the reasons why the incoming female students have decreased and establishing an action plan to turn this around quickly. John solicited EAC members who want to participate in this effort. Strong support was also expressed for the growing Herbst Humanities Program.

Research Breakout Group: Stein Sture presented the four areas of research strategic focus:

- Develop nationally leading research program
- Foster opportunities for interdisciplinary centers and groups and respond to national initiatives
- Analyze and build on core strengths
- Build excellence in our Ph.D. program

Don Deutsch reported on the findings and recommendations of the breakout group. The breakout group focused on how to increase the grants received by the junior faculty, the statistics and rankings of the College, and improving the utilization of space in the College for new research. It was recommended that the College provide increased tactical support to junior faculty by introducing them to funding networks and connecting them to industry funding sources. It was also recommended that the College investigate ways to reduce teaching loads in order to increase the research productivity of junior faculty. Providing a culture of excellence will help attract and retain top faculty. The Dean's office should focus on catalyzing large-scale industry and government initiatives. It should also review and revise space allocations.

SWOT Analysis Breakout Group: JoAnn Zelasko led the group in completing a template that provided data, questions to be answered during the strategic planning effort, and recommended actions in each of the four SWOT quadrants. Charlotte Field reported on the findings and recommendations of the breakout group.

College Strengths:

- New buildings (ITLL, DLC)
- Research funding
- Quality of undergraduate education
- Continuity of intellectual community

College Weaknesses:

- Are we addressing budget by spreading the pain versus narrow cuts?
- Lack of identity/What is the focused vision for the college?
- Professional memberships/recognition (e.g. National Academy of Engineering)
- Not achieving recognition of undergrad research/education, communications on "value" of CU (e.g. ITLL, DLC)
- Low women/minority representation
- Under utilization of DLC building

College Opportunities:

- Colorado as the "second" silicon valley

- Pursue enterprise status for the College
- Maximize building resources such as DLC

College Threats:

- Are we missing the Boat for Course of Study that may be the “future”?
- Focusing on too much with too little
- Lack of focus on use of technology in teaching

Questions to be answered in the strategic planning effort:

- Are we strategically focused such that we are not just spreading the pain of budget reductions across the departments?
- How do students do after they get out? (We suspect big bang for the buck.)
- Are we using “limited funding resources” in the most effective way across engineering disciplines (e.g. buy equipment to be shared by multiple departments)?
- How can we quickly utilize the DLC resources effectively? Should policies be reviewed with input to occupancy?
- Determine whether enterprise status should be pursued and will it provide benefits to the College.

Actions to capitalize on strengths and opportunities:

- Marketing to industry, students, and parents
- Increase undergraduate research opportunities
- Commitment level of following through with a strategic plan including details of goals, objectives, measurements, etc

Development Breakout Group: Marc Thompson presented the development initiatives and strategy, including:

- Clear vision, priorities and expectations
- Needs driven and numbers focused
- Responsibilities of team members
- Quantitative performance expectations

Terry Mayes presented a campaign progress report, Pat Sullivan provided a DLC update, Kristin Germain reviewed the opportunities for endowed chairs and professorships, and Alli Angulo introduced the new hands-on earn-learn program. Terry Mayes also provided an overview of proposed renovations and new capital construction projects at the College. The RDC provided feedback that the pay scale for the earn-learn program was on-par with summer interns and encouraged the College to carefully monitor the program in its startup to ensure that we maintain integrity in selecting students and assigning responsibilities.

The RDC was very enthusiastic about the Engineers Without Borders presentation and encouraged using this and other programs to attract new donors. RDC members reviewed

their 'job description' and were asked to comment to specific assignments, returning their commitment cards to a member of the Development Team.

UNIVERSITY UPDATE

Leonard Dinegar, Chief of Staff for CU President Betsy Hoffman, gave an overview of several budgetary and legislative issues facing CU:

1. CU has lost \$120 million in capital funding (buildings for Business, Law, ATLAS, etc.) over the past two years due to state budget cuts. The DLC was the last state-funded capital project before the budget cuts, and it was rushed under the wire due to strong private support.
2. The CU system has suffered a \$79M cut in state appropriations over FY03 and FY04, representing one third of its state funding.
3. Vouchers, in which state funding for higher education would go directly to the students, were recommended by a Blue Ribbon panel, but will likely not pass (they did not) due to implementation costs.
4. Enterprise status, for which CU would qualify with less than 10% of its total budget coming from state funds, would add flexibility on bonding issues for buildings and reduce purchasing constraints. It was recommended by the legislature (but later vetoed by the governor).
5. Quality for Colorado would phase in a tuition increase of \$1200 per year (above standard increases) to bring CU-Boulder instate tuition closer to that of its peers. The revenues would be used for financial faculty support, and academic progress. Quality for Colorado has received the support of the Commission on Higher Education and is pending the governor's approval.
6. Certificates of Participation allow the State to borrow for construction of academic buildings. This initiative is primarily targeted at the Fitzsimons site of the CU Health Sciences Center and passed.

Jack Burns, CU Vice President for Academic Affairs and Research, recounted the recent visit of Lt. Governor Jane Norton and how she was impressed with the Discovery Learning Center and the Integrated Teaching and Learning Laboratory and better understood the synergistic roles of research and education. Dr. Burns also discussed the recent Strategic Plan for Colorado Biosciences. There is a major CU initiative in biotechnology and genomics, including bioengineering aspects.

WRAP UP AND FUTURE ITEMS

The EAC/RDC meetings for next year will be held 10/24/03 and 4/16/04. The second terms of Dan Hernandez and Ray Hauser are ending, and these individuals were recognized for their outstanding service.

Possible agenda items for next year include soliciting feedback on the strategic plan, increasing female and minority enrollments, student presentations, follow-up on Engineers Without Borders projects, technology transfer, marketing the College, legislative update, status update on Engineering Management and Interdisciplinary Telecommunications, DLC usage and metrics.

Final recommendations included involving students and advisory boards in strategic planning, providing a list of EAC/RDC participants and fewer news articles in meeting packets, and highlighting projects such as service learning at the Engineering Recognition Ceremony.