

Semi-Annual Report: Progress on Recommendations from the 9/29/06 Engineering Advisory Council Meeting

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1. Introduction

This report summarizes actions taken and plans made by the College of Engineering and Applied Science in the University of Colorado at Boulder, in response to recommendations made by the Engineering Advisory Council (EAC) at its previous meeting on 9/29/06. The recommendations and previous reports are available at http://engineering.colorado.edu/overview/advisory_boards.htm.

2. College Update

The discussion by EAC members after the Dean's PowerPoint update primarily focused on student recruiting and grant funding. The specific recommendations and responses are provided below.

Make scholarship decisions and call prospective students early (March and April are too late) – Scholarship decisions and calls were made this year starting in December. Most were completed by February, including a focus on inviting students to the Explore CU Engineering Day on 3/10/07, but some have continued in March and April due to late applications and rolling admissions. Calls were made by faculty, staff and students, based on feedback that prospective students and parents want to talk with someone currently at the college.

Be aggressive in offering more scholarships, then go after needed funds – Besides \$20K for the first year of I-CUE scholarships, the Dean committed an additional \$55K in scholarship funds this year to recruit new students, in advance of having the funds in hand.

Provide assistance to students in finding private scholarships – There is a CU website that provides links to information on private scholarships: http://www.colorado.edu/finaid/scholarship_searches.html. In addition, our scholarship support staff shares scholarship information with students individually and during informational or orientation events.

Highlight new biotechnology building and initiative in recruiting materials and presentations – The new *CU Engineering Signature* brochure includes the biotechnology building/initiative, and a set of materials has been assembled for publicity and fundraising purposes. Recruiting materials will be updated in the coming year, closer to the building start date.

Engage federal legislators from Colorado to support CU initiatives – Senators Allard and Salazar, as well as Representatives Perlmutter and Udall, have been engaged to promote a campus-wide Energy Initiative and participated (except Allard sent a staff person and letter) in the press conference to announce the formation of the college-led Colorado Center for Biorefining and Biofuels (C2B2). Governor Ritter also attended the C2B2 press conference

and two recent fundraising dinners for the biotechnology initiative. Representative Udall is also promoting a Space Entrepreneurship Center spearheaded by a local company (SpaceDev) and our Aerospace Engineering Sciences Department.

An advocate with federal agencies is needed, and the lack of progress is insane – So far, the college request to establish such a position has not been granted. A meeting of EAC corporate representatives with Chancellor Peterson has been scheduled just prior to the 4/20/07 EAC meeting. On a positive note, the campus recently provided funding to hire a staff person who will assist college faculty with grant proposals.

The energy initiative should be broader than biorefining and biofuels – C2B2 is the first program of CU's Energy Initiative to be established with the aid of state collaborative funding, but efforts in other areas are underway. Within our college, major federal grants have been recently announced for solar and clean-coal technologies. See <http://ei.colorado.edu> for more information on the campus energy initiative.

3. I-CUE Update

Investment in CU-Engineering (I-CUE) is proceeding well. Four initiatives (high-school partnerships, energy, materials, and space) have received college funding and are underway. The first round of campus funding has been allocated, and includes a new faculty position in space systems, a staff position to help with grant proposals and personnel, and two graduate assistantships. Specific recommendations from the 9/29/06 EAC meeting and progress made are given below.

Advertise earn-learn and discovery learning to prospective students – These opportunities are included in promotional materials and described at the Explore CU Engineering Day and Open House. Moreover, letters are sent to our top prospective students who receive merit scholarships, inviting their participation in these programs.

Offer summer courses with credit to high-school students to help connect them to CU and provide college preparation – This recommendation is also part of the college diversity plan, with implementation targeted for summer 2008.

Establish alumni efforts at the department level to get support for I-CUE funding – Targeted appeals for I-CUE support are taking place this fiscal year and will be expanded to broader alumni groups, including department affiliations, starting summer 2007. Though not directly focused on fundraising, our college recently hired a Director of Alumni Relations, Carrie Goldin, who will coordinate both college and department alumni relations.

4. Subcommittee Reports

4.1 Education and Outreach Committee

There were three major recommendations identified at the Fall 2006 EAC meeting:

Continue to engage with DSST and Centaurus High Schools – Last fall, ten Centaurus graduates matriculated in engineering at CU. These ten students had all participated in the Pre-Engineering Academy (PEA) at Centaurus, but only for one or two years (because the program is new). The College is closely monitoring the academic progress of these students, to identify ways in which we can help improve their academic preparation. As a result, we are creating a 2-3 day “Early Start” program that reviews essential material and helps develop college-ready study skills. We are also working with Centaurus to encourage rigorous course selection by Centaurus PEA students. We will also institute mandatory testing of readiness for Engineering Calculus (such testing is currently optional), and will require students with weak preparation to take the two-semester CALC I sequence (which has proven itself to be a significant contributor to later academic success).

DSST has not yet graduated any students; next year will be the first year that DSST has a senior class. We continue to be actively engaged with DSST. Further, these efforts are showing progress. Two thirds of next year’s senior class have chosen the Advanced Physics/Engineering track (over the Life Sciences track). This track includes AP Physics and a two-semester engineering course. On March 9th, approximately 40 current juniors from DSST visited the College for lab tours and a program that presented some of the opportunities for engineering graduates. Several of DSST juniors are undertaking internships in the College this year.

Prepare for Spring EAC discussion by reading “Attracting Rural Children to Undergraduate Engineering” – All subcommittee members have received this document, and will receive an update on recent progress prior to or at the Spring EAC meeting. In brief, funds have been raised sufficient to pilot this program in Grand Junction schools beginning in the 2007-2008 academic year. As part of the implementation of this program, we are working closely with the Western Colorado Math and Science Center, and with Mesa State College.

Work to improve the perception and “brand recognition” of CU Engineering – The campus leadership endeavors to convey the image of CU-Boulder as a welcoming, academically rigorous, and safe place to live and learn. The College’s efforts are more focused. In particular, we have worked hard to ensure that prospective students and their parents are aware that the College has the top-ranked engineering programs in the mountain states, and that our programs offer challenge, opportunity, and rigor. We work closely with the Office of Admissions. These efforts appear to be working, perhaps all too well. Fall 2007 applications to the College as of 3/25/07 are up 20%, offers of admissions are up 14%, and enrollment confirmations are up 23% over the same period last year.

4.2 Research and Corporate/government Relations Committee

Key recommendations from the 9/29/06 Research and Corporate/Government Relations Committee (RCRC) meeting are given in *italics* below, followed by actions taken or planned.

CU TTO should resolve timing issues on implementation of certain IP terms, and then market CU’s technology & TTO’s terms and emphasize its flexibility to work with industrial sponsors. TTO needs a marketing campaign on the CEAS IP, needs to develop a brochure summarizing CEAS IP, start-up, etc, and focus on industry outreach. – At the Fall ‘06 EAC

meeting, the RCRC members provided positive feedback on the CU's intellectual property rules and procedures, with the only recommendation that CU be more flexible on the length of the option period for an exclusive (or nonexclusive), royalty bearing (or royalty-free) license to intellectual property. The option period of six months (plus the 30 day election period) for the company to evaluate research results and make a decision about moving forward with a commercial strategy for the IP was considered too restrictive. Kate Tallman of the CU Technology Transfer Office has been working with Scott Donnelly regarding this issue and reached an agreement that long option periods can be granted to companies that commit to funding a project for a long period of time. Kate Tallman developed a FAQ document to explain TTO approach to IP terms. New language has been added regarding the length of the option period, which states: "In situations where the commercial horizon is farther out than eighteen months, and if the sponsor is willing to provide adequate funding to the project for several years, we are willing to renew the option period for several years while the research continues." The next issue that needs to be addressed is how to "market" the CEAS IP to potential industry. Kate Tallman suggested that someone else needs to be invited to the Spring '07 EAC meeting to help with this discussion, since this kind of marketing is not currently a function of the CU tech transfer office.

RCRC members will facilitate contacts with individuals within their companies who interact with government agencies. RCRC members, led by Scott Donnelly, will prepare and send a letter through the CEAS Dean to the CU-Boulder upper administration emphasizing the urgency and need for a government agency advocate. The committee would like this individual to be focused on the College instead of campus. The CU Federal Relations office staff will provide the RCRC with the link to the CU State and Federal Government Relations website, will set up a meeting with the RCRC members to learn more on how their companies interact with government agencies, and send a progress report and peer universities survey results by December 2006. – The EAC has recommended for over a year that the College or campus hire an advocate for CU with the federal agencies, to help position CEAS for improved grant success. Various models have been discussed, including a CU faculty member or professional employee who travels frequently to Washington, a consultant who lives in Washington, or a lobby firm. The CEAS Admin Council discussed this issue and is supportive of hiring an advocate or scout with the federal agencies. Rob Davis and Victor Bright contacted a number of other engineering colleges to find out what they are doing in this regard. In brief, none of the other colleges surveyed has a college-level person in Washington, DC. Campus-level presence in DC tends to focus more on Capitol Hill than the agencies, though some universities have recently established plans to establish a greater presence with federal agencies. The same is true at the University of Colorado. In November 2006, an extended decision was made at the CU administration level to not have a federal advocate in Wash, DC but instead have the Vice Chancellor for Research and the Chancellor do that advocacy. It was agreed that this issue would be revisited after the Fall 2006 elections. Rob Davis notified Scott Donnelly, Pam Drew and Ray Kolibaba to let them know of this extended decision to not allow our college to have a separate advocate for federal agencies. Scott, Pam, and Ray confirmed that they are still willing to help arrange for CU personnel to meet with their Washington, DC advocates to learn how their companies go about their federal advocacy, and Ray Kolibaba has since personally met with CU government relations personnel. In the mean time, Lynne Lyons of the CU System Federal Relations Office provided the RCRC with the link to the CU State and Federal Government Relations website.

To further pursue this issue, Rob Davis has arranged a meeting of Scott Donnelly, Pam Drew, Ray Kolibaba and Merc Mercure with Chancellor Bud Peterson and Provost Phil DiStefano just prior to the 4/20/07 EAC meeting, in place of the original recommendation to send a letter.

4.3 Resource Development Committee

The 9/29/06 RDC meeting started with an update on the Earn-learn Program. This program has continued to be popular with students, departments and donors, though long-term funding through endowments is still needed. The biotechnology building and I-CUE were subsequently discussed, and progress is noted below. Finally, a presentation was made by Ami Sadler on planned giving and on the Pension Protection Plan; the opportunities for tax savings of the latter through IRA gifts have been shared with several qualifying donors. Actions taken in response to specific RDC recommendations are provided below.

Planning for biotech fundraising should include a partnership of campus and foundation personnel, a dedicated professional fundraiser, and volunteers – Starting in Fall 2006, a biotechnology fundraising committee with a dozen CU and CU Foundation members has met biweekly, initially led by Rob Davis and Carolyn Whitehead, to plan strategy, identify prospects, and prepare materials. We are pleased that Art Dawson, an alumnus of our college and former EAC Chair, started in January as the dedicated development officer for the biotechnology building and initiative. Considerable groundwork has been laid with potential major donors, including two dinners attended by Colorado Governor Bill Ritter, CU President Hank Brown, CU Chancellors Bud Peterson (Boulder) and Roy Wilson (Denver), Nobel Laureate Tom Cech, Professor Leslie Leinwand (Director of the biotechnology initiative), and several prospects. Vern Norviel of the EAC/RDC, as well as several other volunteers, are being enlisted to help with additional dinners and fundraising efforts.

Development staff to send out a digest of survey results from the April 2006 meeting – The digest is being prepared and will be distributed at the April 2007 meeting.

Development staff to seek meetings with EAC and RDC volunteers to discuss I-CUE support and provide by the next meeting a summary of attractiveness and feasibility of I-CUE fundraising priorities – Considerable progress on this action item has been made, as will be discussed further at the 4/20/07 meeting. Discussions took place with EAC Executive Committee members first, which led to an initial commitment of over \$100,000 and the concept of a pooled EAC scholarship fund in addition to individual choices for supporting undergraduate scholarships, graduate fellowships, earn-learn assistantships, and faculty fellowships. All other EAC and RDC members have been sent letters about private support for I-CUE, and follow-up meetings and phone calls are being conducted by development staff, the Dean, and volunteer leadership. Undergraduate scholarships, earn-learn apprenticeships, and faculty fellowships are the early favorites of the private donors, whereas the top choice for commitment of department discretionary funds to I-CUE has been graduate fellowships. An overall goal of over \$1 million appears feasible. Attached at the end of this report is a description of *The I-CUE Challenge*, the private fundraising component of I-CUE.

In addition to the above, we are pleased to report on additional progress made on recommendations from the 4/21/06 RDC meeting:

Establish a reunion giving program – This program is being started with the Class of 1957, for which the Golden Reunion will be held in May 2007. The 215 college alumni from 1957 with known contact information are being called by development staff to participate in the reunion and giving program. The new Director of Alumni Relations for the College of Engineering and Applied Science will assist with future alumni reunion events.

Introduce passionate faculty and staff to prospective donors – Since the most recent EAC meeting, 25 different college faculty and staff members have met with individual donors and corporations for development purposes (these numbers do not include large alumni events or meetings with corporations for research purposes).

Identify and reach out to donors with \$25M capacity – Efforts of this magnitude have focused on several prospects for the biotechnology building and initiative.

Seek partnership and support from energy companies – Four large (Chevron, ConocoPhillips, Dow, and Shell) and seven small companies attended the press conference for the Colorado Center for Biorefining and Biofuels (C2B2) at the state capitol building on 3/19/07 as founding sponsors. Largely through the efforts of college faculty, it is expected that the number of sponsors will double within a year. In addition, Xcel Energy announced at a press conference on 3/13/07 that it will pre-purchase CU's 2007 Solar Decathlon house and serve as the College's primary sponsor for this event.

The I-CUE Challenge

Investment in CU-Engineering (I-CUE) represents a refreshment of the *Strategic Plan for Excellence 2003-2008* for the College of Engineering and Applied Science at CU-Boulder. I-CUE is focused on an injection of fresh ideas and resources to promote excellence. A tripartite approach includes:

1. *Strategic re-allocation of college resources*
2. *Strategic requests for new campus resources*
3. *Private fundraising to enhance the selected initiatives*

During summer 2006, a college-wide competition was held and four proposals were selected:

1. *Cultivating Diverse, Pre-Engineering Student Populations at our Doorstep*
2. *Promoting Energy Independence: Improved Resources and Utilization*
3. *Materials Science and Engineering*
4. *Space Systems Science and Engineering*

A total of \$1.5 million in college funds was committed to these initiatives over a two-year period. A request to campus is pending for another \$1.6 million in one-time support and \$1.3 million in annual, ongoing support of these initiatives.

The *I-CUE Challenge* is the private fundraising component of I-CUE. It is focused on support of people, as we believe an investment in the very best faculty and students will have the greatest impact over the long term. In particular, I-CUE offers the following opportunities for private individual and corporate support, each which will be leveraged at least 1:1 by college and/or campus funds from the University of Colorado (CU):

- 1. Undergraduate Scholarships** – Four-year scholarships averaging \$8000 each (\$2000/yr) will be offered to talented and diverse students from partner high schools, such as the Denver School of Science and Technology and the Lafayette Centaurus Pre-Engineering Academy, where CU is working to build interest in engineering.
Minimum current gift naming amount: \$4000
Minimum endowment gift naming amount: \$25,000
CU match: 1:1 up to \$2000 per year per student
- 2. Student Apprenticeships** – Earn-learn and discovery learning apprenticeships will provide \$3000 per year to each student working part-time with a faculty member in any department or program on a project that meets a programmatic need while furthering the student's education.
Minimum current gift naming amount: \$1500
Minimum endowment gift naming amount: \$25,000
CU match: 1:1 or \$1500 per year per student
- 3. Graduate Fellowships** – One-year fellowships of \$5000 each will be used to attract outstanding graduate students to all departments for PhD research in areas such as energy, materials and space. These prestigious fellowships will be in addition to offers of teaching and research assistantships.
Minimum current gift naming amount: \$2000
Minimum endowment gift naming amount: \$50,000
CU match: 3:2 or \$3000 per fellow for one year
- 4. Faculty Fellowships** – Three-year fellowships of \$10,000/yr each will be used for salary supplements and flexible research funds to attract the very best faculty prospects for all departments in areas such as energy, materials and space.
Minimum current gift naming amount: \$12,000
Minimum endowment gift naming amount: \$100,000
CU match: 3:2 or \$6000 per year per fellow

Donors may specify the department or program where their gifts are to be used. Similarly, donors may express preference that the scholarships are for students from a particular school or region, or to enhance diversity. Otherwise, I-CUE gifts will be allocated according to greatest need. To qualify for the CU match, gifts or commitments must be made during 7/1/06 - 6/30/08, and pledge payments must be received by 12/31/09. On endowments, the match will be on the first four years of distribution from the endowment principal.