This report summarizes progress and plans made on recommendations from the 25 April 2008 meeting of the Engineering Advisory Council of the University of Colorado at Boulder. This report, as well as prior reports and summaries of past meetings, may be found at: http://engineering.colorado.edu/overview/advisory_boards.htm.

1. Announcements & College Updates
   The College of Engineering and Applied Science continues to do well in many respects. Freshman applications are up 39% over the past two years. The Fall 2008 freshman class appears to be the largest and most qualified on record (final census is later in the semester). Research grant funding is up 23% over the past two years. New centers such as the Colorado Center for Biorefining and Biofuels (C2B2) and the Center for Research and Education in Wind (CREW) show considerable potential for further growth. The Engineering GoldShirt Program has been approved for campus funding, and pilot activities and recruitment of its first class starting Fall 2009 have begun. The engineering program in partnership with Mesa State College has begun, with about 50 students enrolled in pre-engineering this Fall semester. The Systems Biotechnology Building has received state approval and is in the architectural design phase. The Aerospace and Energy Systems Building has received Regents’ approval and will be considered for state approval this academic year.

   Specific recommendations from the 4/25/08 meeting are given below in italics, followed by the responses on progress made:

   Each EAC member should send Vern Norviel (vnorviel@wsgr.com) the name of one potential prospect for supporting the Systems Biotechnology Building – Only about a half dozen EAC members have sent in suggested names, and more are sought.

   60-70% of the engineering workforce in the energy sector is eligible to retire within 10 years – how will we recruit more students, especially from underrepresented groups? Our strategic plan, Engineering 2020, calls for 15-20% growth in our enrollments, which is consistent with responses by EAC members for projected hiring needs over the next 10-15 years. Strategies to attract and prepare more students for engineering study include partnerships with school districts and community colleges, the Engineering Honors Program, Engineering GoldShirt Program, a proposed Engineering Leadership Program, improved marketing, and increased financial aid.

   EAC members would like to be involved in calling prospective students – We will ask our Director of Recruitment and Outreach to reinstate this process for willing EAC members in Spring 2009. Based on feedback, coaching will be provided.

   Include entrepreneurship in biotechnology research efforts - Biological, biotechnological, and biomedical research is prominent throughout the College, with more than $3.0 M in grants from NIH in FY 2007-08. Further, as a research theme, it has been highly
successful, both within the College of Engineering and Applied Science and within the remainder of CU, in entrepreneurial development. The most recent examples are start-up companies, OpX and 3Q Matrix, one based on biofuels development and one based on photopolymerization of biodegradable materials for wound healing. These endeavors were fostered by close collaborations between engineering college faculty, the Technology Transfer Office, and local venture capital providers and entrepreneurs. The Technology Transfer Office, in particular, continues to provide seed grants in the biotechnology area, especially targeted to entrepreneurial activities, and it provides assistance to those faculty who wish to have their technologies commercialized through start-up companies.

2. Campus Update
   The entering freshman class for Fall 2008, estimated at 5,750, is expected to be the largest in history. Moreover, the enrollment of nonresident students has increased to back over 40% after having dipped for a few years. As a result, funds are expected to be available to grow the faculty and plan for new buildings. For example, 7 of the 15 new tenure-track faculty this year in our college are in growth lines supported with new funding from the college and campus, and the two top building priorities for state requests from CU-Boulder (Systems Biotechnology Building, Aerospace and Energy Systems Building) both involve our college. Campus strategic planning continues, with reports of committees on implementation plans for Flagship 2030 (see http://www.colorado.edu/flagship2030) due later in September 2008.

3. Strategic Planning
   The new strategic plan for our college, Engineering 2020, has been written and is available at http://engineering.colorado.edu/downloads/StratPlan/strategicplan.pdf. It includes seven strategic initiatives under the themes People, Places and Programs, with tactical strategies or action items identified for each initiative.

4. Subcommittees
   4.1 Education and Outreach Committee
   Good progress has been made on several educational and outreach fronts. The Engineering Honors Program continues to grow, the Engineering GoldShirt Program (formerly called ‘Redshirt’) has been approved and a coordinator (Karen King, formerly at the Denver School of Science and Technology) and faculty director (Jana Milford, Associate Chair of Mechanical Engineering) have been hired, and the CU-Boulder/Mesa State College engineering program has started. Responses to specific recommendations from the 4/25/08 subcommittee meeting are given below:

   Prioritize critical items for targeted fund raising for the Engineering Redshirt Program; explore a work-study program –

   1. Wrote successful proposal for seed funds from Engineering Education program at NSF
   2. Received agreement for continuing funds from campus to offset program costs
   3. Hired a program coordinator, Karen King
   4. Jana Milford has accepted the position of faculty director
   5. Obtained $93K gift funding from two former EAC members
   6. Starting now on curriculum development
   7. We expect many of the students to be work-study eligible from family socio-economic status, and earn-learn support is part of the program budget
8. Scholarship funds are needed (request EAC support) for participants to help them offset the expense of an added year to their engineering education

For the CU-MSC program, determine how demographic data will be interpreted. Will we count URM at MSC as part of UCB totals? Will accreditation ensure consistency/quality of the degree?

1. The approved memorandum states that students entering the program at MSC are officially considered MSC students for the first 2 years, then UCB students once starting upper-division courses. Aggregate demographic data combine these two cohorts.

2. Terry Mayes determined three accreditation options:
   a. Transcript will indicate that the degree is from CU-Boulder (with no location specified) – in this option students may move somewhat seamlessly between the two programs;
   b. Transcript will indicate that the degree is from CU-Boulder, Mesa State location;
   c. Transcript will indicate that the degree is from Mesa State.

   We will proceed with option (a) with a possible transition to (b). The accreditation process will require consistent quality and learning objectives.

The Eship programs should engage local entrepreneurial support programs such as TechStars –

1. Both undergraduate and graduate courses are very full with students who seem very eager to learn entrepreneurial professional skills
2. While we expected the graduate program to have around 15-20 students, the current number enrolled in the first junior class is over 40
3. We have had several exchanges and meetings with both the TechStars founders, Jason Mendolson and Brad Feld (Brad has agreed to join the core E-ship advisory board) and with Tech Transfer Office, which is being very supportive of the University wide business plan competition spearhead by Jill Rennert of Silicon Flatirons, Stephen Lawrence and Frank Moyes of the Deming Center, and Kurt Smith of the College E-ship program. Continued engagement of these entities as well as others will strengthen the E-ship program as it grows and matures.

Participate in the upcoming Amendment 46 training session and consider support for an Amendment 46 counter initiative –

1. The original training session was postponed, and it has not been rescheduled
2. Counter initiatives that are “pro-affirmative action” did not obtain the necessary signatures and approvals for the November ballot
3. The CU-Boulder Office of Diversity and Equity has sent out information on this subject

Revisit the goals and objectives of K-12 outreach for the strategic plan; specifically determine alignments with the 18 goals for the Flagship 2030 plan; pursue more direct industry involvement –
1. Two of the seven initiatives in Engineering 2020 (#1 – Increase undergraduate and graduate student enrollments, quality, and diversity and #3 – Create and support a culture of diversity and engagement) include K-12 outreach and are aligned with relevant Flagship 2030 initiatives.

2. In addition, another initiative (#4 – Construct engineering building additions and begin a new engineering complex) includes a second phase of the Integrated Teaching and Learning (ITL) Laboratory, which will provide for K-12 education as well as meet needs for hands-on undergraduate education.

3. Partnerships with industry are included in our strategies to attract and prepare more students for engineering study.

4.2 Resource Development Committee (RDC)

The Engineering Development Team is gearing up for the capital campaign and has recently added two staff members. Eric McCready joined the team on 8/18/08 as an Associate Director of Development. Aleta Sherman started on 9/3/08 as Director of Corporate and Foundation Relations. One more staff addition is expected in 2009.

Progress on subjects discussed at the 4/25/08 subcommittee meeting is summarized below, followed by actions taken on specific recommendations:

Investment in CU Engineering (I-CUE)
The I-CUE campaign reached nearly $1.7M – including cash, pledges and corporate matches. Faculty fellowships have been instrumental in recruiting and retaining the nine outstanding new faculty receiving these named fellowships.

Systems Biotechnology
Two gifts totaling $3 million for the Systems Biotechnology Building are expected to close by the end of October bringing the total private gifts raised to-date to just under $24 million. Chancellor Peterson will visit three major gift prospects in Palo Alto on September 30. All three are protégées of Marv Caruthers and will be guided in the direction of combining their efforts to complete the funding of the biotech building. Several more proposals have been discussed and will have their course of action set (go or no-go) September. Several prospects for smaller gifts have indicated a willingness to support the building.

The first major gift proposal to provide programmatic support for the Colorado Initiative for Molecular Biotechnology (CIMB) was completed in August 2008. It will provide $5 million for the CIMB endowment but is contingent on raising an additional $95 million, so it will be booked as progress payments are achieved and paid. Three major gift proposals are currently outstanding: a one-time gift of $5 million and two for ongoing commitments of $5 million annually. One donor has indicated a willingness to consider a $100 million gift to endow the $5 million/yr perpetually but wants to see how the CIMB evolves during the next several years. The third donor is early in negotiation and is expected to agree to the same $5 million/yr terms but may be persuaded to give $100 million right away. The first two of these gifts should close before Thanksgiving. The third may take until early 2009. An effort to secure $10 million through corporation and foundation gifts has begun but is in its very early stages.
Energy Initiative
Twelve of twenty Energy Initiative Leadership Council seats are committed, initially for two-year terms at $50,000 per year. This funding pays for operational costs of the Energy Initiative and for seed grants. The first meeting will take place this fall and will discuss activities in which the Council will engage (public policy, awareness initiatives, research direction, and more). The group is also raising additional funds for seed grants in research areas that will be directed by the group’s members but not proprietary to any one company or contributor. These funds do not provide direct support to the College of Engineering and Applied Science, with exception if a college faculty member successfully applies for a seed grant.

Campaign Update
The development team is working on annual and campaign plans to build and cultivate a strong pipeline to help us reach our campaign goals. A committed and engaged volunteer group will provide much needed assistance – whether personally thinking about a campaign gift or helping us identify and cultivate those who have the ability and affinity to do the same. The campaign is expected to be formally and publically announced in Fall of 2009, and we will be suggesting a multi-tiered strategy to take advantage of this announcement and ideally have a few significant campaign announcements of our own.

Continue to involve faculty in fundraising – The development team has been actively working within their liaison assignments to ensure connection to each department, and we are slowly rolling out fundraising initiatives with several departments. For example, Jessica Wright Bowen is helping the Department of Mechanical Engineering and the Department of Civil, Environmental and Architectural Engineering in undertaking mini-campaigns to raise funds from alumni to honor retiring faculty, and Dorea Ferris is helping the Aerospace Engineering Sciences Department to actively raise funds for the new aerospace and energy systems expansion. Individually, we are expected to bring donors together with faculty; one example is Ann Scott’s work in arranging several small venue events in CA, one of which is hosted by Steve Dunn and scheduled for mid-September.

Build alumni support and giving in their early years – The development team will be rolling out the comprehensive plans for the annual fund campaign, a new leadership gift campaign, and a Dean’s Society gift club. These efforts are being managed by Ann Scott and implemented by Lindsey Foos. These programs will, ideally, increase alumni giving participation overall and create a means for consistent year-over-year giving from the alumni. Alumni events organized by Carrie Goldin are typically targeted at younger alumni.

Focus campaign fundraising efforts on very large gifts from a smaller population with capacity – The development team is working on multiple prospect lists and discussing outreach plans in consideration of these individuals. We will need support from the RDC and campaign committee, as well as other volunteers, to help us reach out to their individual connections who may be willing and able to give large gifts in this campaign.

Expand use of email and consider colorado.edu ‘forever’ address. Through the efforts of our Alumni Director, Carrie Goldin, the College is moving to newsletters via email. The development team is considering the recommendation to move key communications to email, but will be challenged with initially securing and then keeping email addresses up-
to-date. We are also considering outreach via online communities such as LinkedIn, FaceBook, etc. And, our hope is that a proposed new RDC subcommittee structure will enable our volunteers to recommend “outside-of-the-box” approaches to alumni outreach. In following the suggestion that we consider using the colorado.edu “email for life”, we’ve discovered that alumni who do not opt-in to “email for life” shortly after graduation will not be able to get their colorado.edu email address back. The development team, in conjunction with the Alumni Director, will discuss how we might be able to effect changes in this policy, but it may take significant time and effort.

Give option to regular donors to be removed from annual calling campaign – Our team regularly removes donors that we consider “regular” or otherwise inappropriate to solicit during this campaign. However, best practices state that all alumni should also be giving within the annual calling campaign, even if at $50, $100 or another amount. We will seek guidance from our RDC volunteers of how to structure a better campaign geared towards our multi-tiered segments, without putting them off or sending the wrong message. Perhaps George Sissel’s suggestion of a minimum annual contribution commitment might be the way to approach this matter.

Decision process involving campus is needed on whether engineering moves to east campus in future – The campus master planning session, including its vision for east campus, is to take place in 2008-09, and our college will actively participate. We have already engaged in the Facilities Management Department on the building opportunities we may have on east and main campuses. For development purposes, we will likely not solicit for our longer-term campaign capital initiatives until we have clarity on where the engineering buildings will be located.

4.3 Research and Corporate/Government Relations Committee (RCRC)

Good progress has been made in research programs. The new grants awarded to college faculty total $42.7M for FY07-08, the second largest amount in history. Funding sources show a broad distribution: 22% National Science Foundation, 20% industry, 18% Department of Defense, 10% National Aeronautics and Space Administration, 8% Department of Energy, 7% National Institutes of Health, and 15% other agencies. The Engineering 2020 strategic plan has identified six areas for investment (aerospace, bioengineering, computational science and engineering, energy, engineering education research, and materials science and engineering), with staging and priorities to be set in concert with implementation of the campus Flagship 2030 plans. Responses to specific issues raised at the 4/25/08 subcommittee meeting are given below:

Vetting of the corporate FAQ document that was generated by technology transfer by members of the RCRC should occur, with responses collated by Chris Bowman and discussed with Technology Transfer - The document has been vetted by the RCRC members and feedback was discussed with the Technology Transfer Office.

Vetting of the Washington liaison job description should occur, and a final job description arrived at with a goal of initiating the search prior to the fall EAC meeting - The document has been vetted with the committee and a final job description was prepared. That description will be presented to the administration prior to the EAC meeting to develop an action plan for hiring.

Committees consisting of EAC members and CU faculty will be put together to create white-paper summaries of opportunities within each of the critical research themes
previously identified in the strategic planning activity - Committees of EAC members and CU faculty were formed around several research areas including computational science and engineering, biotechnology, energy, space systems, and materials science. These committees were tasked with producing white paper action/implementation plans for each of these research areas prior to July 15; however, only one committee (Computational Science and Engineering – congratulations!) has completed its white paper. Another committee (Space Systems Science and Engineering) has submitted an analysis of strengths, weaknesses, opportunities and threats. Several of the others are nearing completion, which is expected soon. These white papers will be helpful in the implementation of our strategic plan.

5. Concluding Business

Final recommendations from the 4/25/08 EAC meeting and suggested agenda items for the 9/26/08 meeting are given below:

Include strategic plan report at the next EAC meeting – The new strategic plan is available at http://engineering.colorado.edu/facultystaff/Strategic_Plan.htm and will be discussed at the 9/26/08 EAC meeting.

Focus on excellence in the strategic plan (‘good’ is the enemy of ‘great’) – Good advice! The Engineering 2020 strategic plan focuses on seven initiatives to build excellence in people, places and programs. If resources are limited, further focus will be needed.

Consider closed session at next EAC meeting – A closed session for EAC members only is on the agenda of the 9/26/08 EAC meeting.

Better coordination of student recruitment is needed – To help provide for this coordination at the college level, the new position at Associate Dean for Student Cultivation was created in Spring 2008, and it oversees our major recruiting efforts including the Director of Outreach and Recruiting, the Multicultural Engineering Program, the Women in Engineering Program, and the K-12 engineering education activities by our Integrated Teaching and Learning (ITL) Program.

Include engineering portion of capital campaign at the next EAC meeting – An overview of the college goals and approach for the capital campaign is on the agenda for the 9/26/08 EAC meeting.