Environment and Sustainability Visioning Committee (ESVC)

Final report and recommendations to Provost Russell Moore

March 29, 2013
To: CU-Boulder Provost Russell Moore
From: Environment and Sustainability Visioning Committee (ESVC)
Re: Final report and recommendations
Date: March 29, 2013

The Environment and Sustainability Visioning Committee (ESVC) at CU-Boulder was formed in October 2012 and asked to “…develop a broad vision for how existing campus strengths in the study of the environment and sustainability can be leveraged to create new, cutting edge opportunities in scholarship and education. The key focus should be on identifying the unique opportunities that may exist through the promotion and development of programmatic synergies on the Boulder campus, and then providing recommendations for how these synergies could best be fostered.”

Invitation to ESVC members by the Provost, October 2012; See full text of formal charge to the Committee at www.colorado.edu/esvc

Members of the Environment & Sustainability Visioning Committee, 2012-13

Sharon Collinge, Chair, Professor and Director, Environmental Studies Program; Professor, Ecology & Evolutionary Biology
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Executive Summary

In October 2012, CU-Boulder Provost Russell Moore convened a 15-member Environment and Sustainability Visioning Committee (ESVC) to “think boldly about how we might best capitalize on our existing strengths in the areas of sustainability and the environment, as well as build strength in emerging areas of environmental inquiry.” This interdisciplinary committee met as a group and with units across campus from November 2012 to March 2013 to identify emerging opportunities in research, education, and outreach in environment and sustainability; to inventory existing strengths; to review models from other institutions; and to propose scenarios for administrative reorganization to increase our visibility and recognition in the realm of environment and sustainability.

In this report, we describe ways in which CU Boulder can take innovative and bold steps in: 1) research and creative work, by further fostering interdisciplinary collaboration and by providing leadership in environment and sustainability research that is “problem-defined,” “user-inspired,” and “solution-driven”; 2) education, by promoting new types of education that reach a broad community of learners (e.g., professional masters’ degree programs, increased online access), and by developing new undergraduate and graduate programs that are flexible, rigorous, and interdisciplinary; 3) outreach and community engagement, by furthering public participation with faculty and students working on sustainability issues; and 4) organizational structures, by creating a new College focused on interdisciplinary themes and able to further dissolve barriers across units and colleges.

We identified 10 major interdisciplinary themes in environment and sustainability that integrate research, education, and outreach to address some of society's greatest challenges in the coming decades. These themes complement the disciplinary strengths of the university and provide new opportunities for research and education across campus. These broad areas include human ecology, the built environment, food and water, human health, land use, climate change and adaptation, minerals and energy, conservation and biodiversity, environmental communication, and culture and history. Our survey of campus researchers revealed key existing strengths at CU-Boulder in climate change and adaptation, human ecology, environmental communication, biodiversity and conservation, and water, and noted varying interest but a lack of extensive capacity in the areas of food, human health, and the built environment.

We recommend that CU-Boulder create a new College focused on environment and sustainability. A new College would enhance our stature by increasing the visibility of our academic strengths, create new opportunities for interdisciplinary education, improve student recruitment, retention, and career opportunities, and provide a compelling case for new donor support. We propose an integrative structure for the new College, with strong ties to existing colleges, institutes, and programs. To do this, we propose a flexible and porous system of faculty rostering that will facilitate engagement of faculty and students from across campus and the external community in environment and sustainability research, teaching, and outreach. We anticipate initial involvement of 40-60 existing CU faculty fully rostered in the new College, an initial budget of $20-25M, and a commitment of 20-30 new faculty lines over the next 10 years.
Section I: ESVC process and timeline

The ESVC first convened on November 5, 2012, and met regularly for 90-minute sessions from early November 2012 to late March 2013. We proceeded by following five major steps (Fig. 1) that aligned with the formal charge given to the committee by Provost Moore (see www.colorado.edu/esvc). In this final report, we provide our recommendations for organizational restructuring, discuss key issues related to a new organizational structure, and provide a recommended implementation plan for the next 18-24 months.

The ESVC followed a five-step process, based on the charge from the Provost:
1) Identify emerging opportunities in environment and sustainability
2) Inventory existing strengths at CU-Boulder
3) Review models from other institutions
4) Recommend ideas for implementation
5) Communicate proposed plan

We created a web site (www.colorado.edu/esvc) and held two community meetings (December 2012 and February 2013) where the campus community was invited to review our progress and provide input. These meetings were recorded and are available at the web site. In early February 2013, we hosted a two-day visit from a team of three external advisors who met with top-level administrators, faculty, students, department chairs and program directors, and institute directors, to discuss possibilities for organizational restructuring. The advisors’ report is also available at the web site. Throughout the six-month process, committee members met with a wide variety of constituents across campus to provide information and seek input, including meetings with faculty, department chairs, institute directors, and students.

We identified several key motivations at the level of the campus, departments and research institutes, and individual faculty for organizational change centered on the themes of environment and sustainability. For example, at the institutional level, we noted multiple inefficiencies in the way that environment and sustainability are taught at the undergraduate level, including redundancies in the undergraduate curriculum as well as missed opportunities to create cross-cutting interdisciplinary programs. CU’s research institutes provide an organizational structure that facilitates interdisciplinary research; but the current structure inhibits interdisciplinary teaching, especially collaboration across colleges, e.g., Law and Environmental Studies, Environmental Design and Business. At the individual level, for example, truly interdisciplinary research activities can lead to problems in promotion and annual merit evaluations in highly disciplinary departments.
Section II: Existing strengths, emerging themes, and new investments

(a) Existing strengths

The University of Colorado at Boulder already has very strong programs in the areas of geoscience, atmospheric sciences, ecological sciences, environmental social sciences, environmental engineering, sustainable design, and legal and policy research related to the environment and sustainability. By many quantifiable, independent metrics, CU-Boulder is a world leader in research in the broad areas of the Environment and Sustainability (E&S). We are consistently ranked in the top five in research funding in the environment as measured by NSF statistics, especially in the areas of atmospheric and Earth surface research. Funding in these areas hovers around $90M a year, making this general area of research the largest at CU-Boulder. It is a concern that we have not kept pace of late with our peer institutions in these areas in terms of research funding, lagging slightly behind the national growth rate in funding in these areas. We also consistently rank as the top university in the world in publishing and in citations of publications in the full spectrum of environmental journals, as defined by, and with data from, the Web of Science. This is an important accomplishment, yet one that is not well recognized either at CU nor, importantly, among prospective students. This disparity between perception and reality helps drive our need for a more visible, and coherent organization of sustainability efforts on campus. We have worked hard to achieve our leadership position, and maintaining that position should be a campus priority.

(b) Current campus units working on environment and sustainability issues

While these statistics make it clear that CU has multiple strengths in E&S, there are no consensus definitions or clear boundaries around “environment and sustainability” (E&S) work. By its nature, work on environmental issues often crosses disciplinary boundaries and identifying existing strengths is a task that will initially leave out some groups or units that consider themselves part of one or more of these areas, as well as include some that may be surprised to find themselves in the list. As part of our review of E&S activities at CU Boulder, we compiled a list of all campus units (ranging from colleges to RAPs to volunteer groups) that had some significant engagement with environment and sustainability research, teaching, or practice. The level of engagement with E&S ranged from one or two deeply committed faculty members (e.g., Art) to entire programs or Centers for which virtually all activities fall under E&S (e.g., INSTAAR). In total, we identified 66 distinct units that are engaged in work related to E&S (Appendix I).

(c) Emerging themes in E&S studies and relationships to campus units

To better understand CU’s current strengths and to make recommendations for future directions in E&S investment, we classified E&S work into 10 broad themes (Table 1). We conceive of these as very broad problems, challenges, or groups of research areas in environment and sustainability, to which many different types of research can contribute. For example, work within the Food and Water theme could include study of atmospheric drivers of precipitation, drivers of human use of water, engineering solutions to heavy
water use by agriculture, and economic and demographic projections of future food and water needs in different regional and global areas.

**Table 1.** Ten broad themes or challenges in E&S scholarship. We organized much of our thinking about current strengths and future directions for E&S at CU Boulder around these themes. However, we also recognize that many other themes or challenges can also be identified.

<table>
<thead>
<tr>
<th>Theme or Challenge</th>
<th>Distillation into research area</th>
<th>Short-Hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do we mitigate the impacts of human population growth and consumption patterns?</td>
<td>Mitigate the impacts of human population growth and consumption</td>
<td>Human ecology</td>
</tr>
<tr>
<td>How do we design the built environment to be equitable, economically viable, and environmentally sensitive?</td>
<td>Design of the built environment to be equitable, economically viable, and environmentally sensitive</td>
<td>Built environment</td>
</tr>
<tr>
<td>How do we protect and enhance human health in a changing environment?</td>
<td>Protect and enhance human health in a changing environment</td>
<td>Human health</td>
</tr>
<tr>
<td>How do we provide adequate water and food for a growing population?</td>
<td>Provide adequate water and food for a growing population</td>
<td>Food and Water</td>
</tr>
<tr>
<td>What are the impacts of changing human settlement patterns, land use, and migration on the environment?</td>
<td>Impacts of settlement patterns, land use, and migration on the environment</td>
<td>Land use</td>
</tr>
<tr>
<td>How do we mitigate and adapt to a changing climate?</td>
<td>Mitigate and adapt to a changing climate</td>
<td>Climate adaptation</td>
</tr>
<tr>
<td>How do we ensure adequate mineral and energy resources for future generations?</td>
<td>Ensure adequate mineral and energy resources for future generations</td>
<td>Minerals &amp; energy</td>
</tr>
<tr>
<td>How do we conserve biodiversity and protect and restore natural ecosystems?</td>
<td>Conservation and restoration of biodiversity and natural ecosystems</td>
<td>Conservation &amp; biodiversity</td>
</tr>
<tr>
<td>How do we effectively engage communities in environment and sustainability research and education?</td>
<td>Communication of environmental issues to the public</td>
<td>Communication</td>
</tr>
<tr>
<td>How do we understand and integrate humanistic dimensions of environment and sustainability?</td>
<td>Culture/history related to environmental issues</td>
<td>Culture &amp; history</td>
</tr>
</tbody>
</table>
To understand how CU units and individual researchers currently work in these different areas, we first made a list of all the units that have some substantial engagement with each theme (Appendix I). As this compilation reveals, CU contains units with substantial participation in all but a handful of these E&S research areas. We have particular strengths in climate change and adaptation, human ecology, environmental communication, biodiversity and conservation, and water, while we are currently lack extensive capacity in the areas of food, human health, and the built environment.

Second, we designed a campus wide survey advertised to all Chairs and Directors at CU to distribute to faculty in their units. The survey asked about respondents’ engagement and interests in these 10 themes, as well as their most important collaborations with other CU scholars. A total of 86 people responded to the survey. 73% were faculty and a smattering of other types of respondents (5 of the 9 ‘other’ respondents were graduate students, which also included one each of: senior instructor, administrative assistant, outreach staff, and collections manager). Formal rostering affiliations of respondents included a total of 47 campus units. Three central patterns emerged from this survey that give insights into the areas where we recommend that CU either invest in new positions and programs in E&S scholarship, or create structures that encourage greater cross-unit interactions.

**First,** a large fraction of respondents reported that they had active involvement in each of the 10 E&S themes (Table 1, Fig. 2). Themes with large numbers of highly involved CU scholars included *Biodiversity & Conservation, Communication of environmental work,* and *Human Ecology.* However, many respondents were involved more tangentially (i.e., reported “low involvement”) in several other themes, including *Minerals and Energy, Food and Water, Human Health,* and the *Built Environment.*

**Fig. 2.** Results of survey of CU faculty involvement in 10 themes related to environment and sustainability. Bar heights reflect number of respondents reporting low, medium, or high involvement in each theme.
Second, we believe that key targets for future investment at CU could be the themes in which many scholars report low-level involvement, but few are centrally focused. The ratio of low- to high-level involvement quantifies this for each theme (Fig. 3). From our survey, environmental aspects of Minerals and Energy and Human Health stand out as areas where there is a great deal of interest, but few scholars who dedicate themselves centrally. Three other themes: Built Environment, Food and Water, and Culture and History are intermediate. We note that these survey results could either be because there really are few scholars dedicating themselves to a field at CU (we believe this is the case for environmental aspects of Human Health) or because scholars actively working in a field do not perceive the connections of their work to environmental issues, and therefore did not respond (we suspect this is more the case with Minerals and Energy).

Fig. 3. Survey of CU faculty involvement in 10 themes related to environment and sustainability. Bar heights reflect the ratio of low- to high-level involvement for each theme. For example, a high bar here indicates that there is widespread low involvement, but few faculty are highly involved.

Third, we also used survey results to map the collaborative interactions among scholars at CU working on E&S issues (Fig. 4). While we can only map the collaborations of the respondents, there are several informative patterns that emerge. We note that there are many collaborative interactions that involve E&S research across the campus, and interactions span multiple departments, centers, institutes and other groups. We note that ENVS, INSTAAR, and CIRES are central players in multiple collaborations, along with many faculty in other groups. Finally, some strands of logical collaboration are not being utilized: a situation that we hope can be remedied by creation of a new College. As these results
show, scholars with interests in environmental work at CU already have a dense network of collaborations on campus, but there are also many potential synergies that are not being exploited.

**Fig. 4.** Interactions among different units on the CU campus related to E&S research and scholarship. Width of interaction lines is determined by number of reported collaborations from survey of the CU community.

**Recommendations for future investment and growth**

Beyond the overall goal of creating a new College to foster E&S research, teaching, and outreach, we suggest three more specific recommendations to immediately begin building on our strengths and to use untapped potential at CU in specific areas of E&S.

**1) Areas where CU has clear potential for leadership but isn't a leader now**

Several areas at the intersections between different thematic areas of E&S work appear particularly likely to be emerging areas of excellence at CU, given more attention and investment:
• Anticipating and mitigating the environmental impacts of a rapidly changing energy landscape. While green or at least greener energy supplies are being rapidly developed, especially in our region, attention to the often-high local impacts of these cleaner energy sources is relatively poorly understood. As a result, needless impacts are being built into a new infrastructure system, replicating old mistakes and magnifying the environmental costs of energy production. CU and associated labs have great expertise in alternative energy sources, land use planning, biodiversity and conservation, and water and air pollution. However, connections between these fields are currently weak, hindering our ability to address these issues.

• Integrated understanding of the human health and environmental connections to the built environment. CU has multiple research groups working in different aspects of environmental design and engineering, but these fields and researchers do not have strong connections to existing expertise on local and landscape connections to the natural world of different human constructions and landscape modifications, or with researchers focusing on how human health is shaped by local natural and constructed environments.

• The integrated analysis of water use, food production, and population growth. Due to CU’s immediate neighborhood, the Front Range, and its regional setting, the arid west, we have unparalleled opportunities to investigate these joint aspects of human activity and ways to maximize their sustainability. In addition, CU has widespread expertise in many physical, social, humanistic, and biological fields related to this broad set of issues.

(2) Where new faculty lines will be especially important

CU has many resources to more effectively and efficiently pursue E&S research, teaching, and outreach but lacks extensive capacity in some fields. These are areas where we strongly recommend investment in new faculty lines that could bring outsized benefits:

• Environmental aspects of human health
• Global and regional study of sustainable food production and water use
• Integrated projection of future population growth and resource use
• Sustainability and the built environment

(3) Competitive proposals to address E&S challenges

As a complement to the work of planning a new College, we suggest initiating a modest, but critically important, competition to explicitly foster interdisciplinary work on central E&S themes and at the same time to dissolve barriers that currently exist between different units at CU. We recommend a competition to fund 3 working groups at the rate of $15-20K per year for 3 years [see also Section IX: Implementation]. Particularly promising fields for such proposals include, but are not limited to:
• Preserving human health and ecological integrity in Colorado, as populations and resource demands increase
• Effective communication of complex environmental topics to diverse communities: translating information into behavioral changes
• Mitigating accelerating energy demands and their environmental costs through design and behavioral change

Section III: External visibility and recognition

The creation of a new College focused on environment and sustainability at CU Boulder would raise our profile in these fields and enhance our competitive advantage. We recognize that we have the elements to foster interdisciplinarity in ways that [almost] no other institution can; our competitive advantage is strong in the integration of physical and natural sciences, social sciences, humanities, engineering, and design and planning. We are interdisciplinary in a way that almost no one else is.

Our recommendation to form a College focused on environment and sustainability would foster stronger communication and messaging to both internal and external audiences about CU’s considerable capacities and strengths in environment and sustainability themes. This would greatly enhance CU’s connections on these topics with donors, students, and employers. We identify several key elements of a successful strategy for enhanced external visibility and recognition:

(a) Improved visibility of academic strengths

CU-Boulder’s strengths in environmentally related disciplines are exceptional. Under the current organizational structure, however, these strengths exist across disparate centers, institutes, departments and partnerships. Consequently, our strengths are only slightly leveraged in terms of combined exposure and external visibility and are perceived by external audiences to be weaker than they really are. Concerted and synergistic efforts to market CU’s environment and sustainability brand for academic purposes would raise the overall profile of CU and would help with external research funding, conference and workshop opportunities for students and faculty, and general exposure in state and national media. By building stronger connections between faculty and students in environment and sustainability, a new College will also enhance the internal visibility of CU’s academic strengths in these areas, thereby creating more opportunities for collaborative interdisciplinary research and teaching.

(b) Compelling case for focused donor support

A new College focused on environment and sustainability would provide an obvious and easily described target for donor support and philanthropic contributions. The advantages of this are well documented at other universities (e.g., Institute of the Environment at University of Minnesota, Woods Institute at Stanford, Nicholas School at
Duke). In the past, CU and the CU foundation have had success in cultivating donors who seek to fund sustainability related projects or initiatives. Funding for sustainability related initiatives typically has strong bi-partisan support, and a number of important existing and prospective CU donors have expressed interest in making contributions in this area. A new College that gathers together CU’s expertise in these areas would capitalize on these opportunities and help to demonstrate the University’s commitment to leadership on environment and sustainability. This would provide an obvious focal point for a long-term fundraising campaign.

(c) Enhanced interdisciplinary career opportunities for CU graduates

With the creation of a new College, individual disciplines and professional schools and programs will continue to exist and thrive at CU. But this should not stand as an obstacle to more aggressive support across the campus for interdisciplinary teaching, research, and outreach. We expect that the new College would operate as a focal point for environment and sustainability, with careful attention to connections with units across the campus to enhance opportunities for interdisciplinary research and teaching, including new interdisciplinary degree programs. This will help CU address emerging research themes and will better position our graduates for post-graduate careers. As private and public sector organizations turn their attention to sustainability, they are increasingly looking for graduates who can speak across disciplines and marshal the tools needed for interdisciplinary problem solving. As an example, major international organizations such as US AID, the Asian Development Bank, and the World Bank are increasingly seeking graduates who have the ability to work at the intersection of environmental policy, impacts, and design. Anecdotal evidence further suggests that Environmental Field Officers and the groups they represent repeatedly discuss the need for students who have this perspective and are interested in understanding complementary issues such as culture, society, and political science.

(d) Improved student recruitment and retention

According to a survey of incoming freshman during orientation in the Fall of 2013, 41% made their decision to come to CU, in part, based on their sense of our sustainability reputation. CU’s current reputation is strong, even amidst highly disparate and comingled offerings. Educational and research accomplishments, while distinguished, are far from effectively marketed. The fact that CU research on climate and the environment is routinely cited in the press helps with CU’s public green image, but the current branding—from the students’ perspective—it can be argued, is largely garnered from the activities of the Environmental Center and the efforts of the Director of Sustainability. There are also efforts by many faculty to communicate research on environment and sustainability to broader audiences through public lectures and opinion/editorial pieces that are widely read. The centralization of these strengths into a single entity would help further our recruiting capacities. All aspects of environment and sustainability—including non-academic elements—could enjoy a more pronounced position as part of the new College going forward so as to increase the external visibility and success of all.
(e) Clearly identified hub of activity

Many students, employees, and visitors alike have difficulty identifying a locus of sustainability functions on the CU Boulder campus. A highly visible new College will provide prospective students and visitors with a tangible attractant, as well as a walk-in location they can touch and feel once they arrive. The new College would become a central clearinghouse of all sustainability-related activities and opportunities that transcends academics. Even non-academic achievements could be highlighted, thus retaining students through referrals to student clubs, service, volunteering, jobs, internships, and leadership development pathways. Not all students aim to matriculate in classes or degrees in sustainability; some just want to explore sustainability as part of their daily lives, e.g., by growing local food or participating in new alternative energy programs. It is clear that if students are involved in meaningful activities outside of the classroom, we will have greater success in both retention and recruitment.

Section IV: Administration and administrative structures

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<thead>
<tr>
<th>What's in a name?</th>
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<tr>
<td>The ESVC discussed at length possible names for a new entity focused on research, education, and outreach in environment and sustainability at CU-Boulder. The new entity could be called either a College or a School (left column) and could contain any or all of the words Environment, Sustainability, Earth, Design (right column).</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>College</th>
<th>Environment</th>
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<tr>
<td></td>
<td>Sustainability</td>
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<tr>
<td>School</td>
<td>Earth</td>
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<td></td>
<td>Design</td>
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The committee favored the word College, which allows flexibility in internal organizational structure; for example, Colleges can have Schools within them. We recommend that the name be formalized as implementation discussions proceed and the new entity takes shape. In this document, we use the phrase “the new College” to refer to this new entity.

(a) Alternative administrative structures

There are many different ways to create new structures that will foster synergies in research, education, and outreach in the environment and sustainability at CU Boulder. A great strength of current environmental and sustainability (E&S) scholarship and teaching on the Boulder campus is its extensive and inclusive network of faculty and researchers involved in collaborative E&S work. Much of this network is ad hoc and centers on
collaborative research activity, with participants moving in and out of the network at will as circumstances warrant. One of the key reasons for considering a new E&S institutional structure at CU Boulder is to organize this network and to provide greater opportunity for interdisciplinary teaching initiatives. However, a new structure runs the risk of imposing new barriers for \textit{ad hoc} participation in E&S activities. We assert that a critical aspect of any new structure be that it maintains porous boundaries so that faculty and researchers not rostered in the new organization can move easily across its boundaries to participate in E&S research, teaching, and outreach.

With these goals in mind, the ESVC considered a range of options as part of the visioning process and in the preliminary report (January 2013), we proposed five alternative structures and solicited external feedback on these options. Each of these options is illustrated below, with comments regarding key components and a summary of the pros and cons of each option.

**Scenario A – “The umbrella model”:** An institute of the environment with no formal rostering or administrative structure.

**Pros:** highly porous, relatively easy to develop, provides external visibility to the university.

**Cons:** weak affiliations, potentially adds additional burden to faculty service loads, does not address structural impediments to education and research.
Scenario B – “Small college model”
School of the Environment and Sustainability: Two core existing programs (ENVS and ENVD) with rostered faculty; School has “porosity” in teaching, research, and outreach activities with additional faculty from other units, Centers, Institutes, and the external community.

Pros: Addresses issues in both the ENVS and ENVD programs and creates a new structure for additional educational development.
Cons: Holds 12-15 tenure track FTE at present and does not bridge across existing programs. Does not formally address the issue of bringing together the many aspects of environmental studies (including, physical and biological sciences, social sciences, and humanities) on campus.
**Scenario C – “Multiple unit model”**

**School of the Environment and Sustainability:** Multiple core existing (ENVS, ENVD, EVEN) and new (Environmental Law and Policy, ENLP; Environmental Communication, ENCO; Earth and Environmental Sciences, EES; others) programs with rostered faculty; Institutes included in the School with rostered faculty; School has “porosity” in teaching, research, and outreach activities with additional faculty from other units, Centers, Institutes, and the external community.

**Pros:** more sustainable and appropriately sized than Scenario B, offers opportunity for growth in research programs, could help consolidate and advertise environment and sustainability research and education on campus.

**Cons:** Leaves many faculty outside the walls of the new College. Does not clearly address the issues of multi-unit rostering in institute faculty.
Scenario D – “Hybrid Model”

**School of the Environment and Sustainability:** Two core existing programs (ENVS and ENVD) plus *shared* new departments (e.g., Sustainable Business), *shared* existing department with ENGG (e.g., CEAE), *shared* existing departments with A&S (e.g., EBIO, GEOG, GEOL, ATOC), *shared* faculty with other Schools (Law, Business, JMC), research Institutes with *shared* faculty. (Institutes included in the School with rostered faculty). School has “porosity” in teaching, research, and outreach activities with additional faculty from other units, Centers, Institutes, and the external community. This model has elements of Scenario C, plus formal sharing of departments such as Geography that have extensive teaching and research expertise in sustainability and the environment, and *shared* faculty between other colleges and the new College.

**Pros:** addresses the broad issue of providing a home to all environment and sustainability researchers on campus, breaks down cross-college barriers.

**Cons:** adds another level of potential administrative structure on top of or in parallel to existing structures.
Scenario E – “Working Group model”  
**School of the Environment and Sustainability:** Organizational structure based on “grand challenges;” faculty join working groups or research units each centered on research/educational themes that are renewed every 5-10 years. Degree programs include cross-cutting core curriculum in existing and new interdisciplinary programs drawing on faculty expertise across campus. Most faculty rostered within School; others affiliate in 80/20 or 20/80 agreements. This model abandons the concept of departments in favor of ‘working groups’ that can be formed and dissolved over time in response to emerging research themes. It also decouples stable components of the undergraduate curriculum from departmental control to ensure staffing and support over time.

**Pros:** allows for flexible change in response to emerging research or educational themes and provides a home for all faculty from across campus through a diversity of rostering arrangements.  
**Cons:** a major departure from existing academic models with uncertainty regarding the administrative structures. Potential to lose strength in traditional disciplinary education.
(b) A new integrative model

After extensive review of these five scenarios, along with presentation to and discussion with constituencies across the campus, the ESVC recommends an integrative model that combines elements from all five of the previous models. Details regarding research administration, educational programs, and space and infrastructure are discussed on the following pages. The exact structure of this model will require additional discussion and feedback from all potential affiliated units but the general model is flexible enough to facilitate a variety of eventual configurations. This model has three key features:

1. The creation of a new College, led by a new Dean.
2. The formation of the new College in dialog with the broader university community with representation from all departments and institutes that may wish to have partial or full affiliation with the new College.
3. Our recommendation that the university establish clear rules regarding the distribution of tuition revenue in a manner that recognizes both student credit hour generation and the number of undergraduate majors in programs, in order to minimize impacts on other colleges and to facilitate the development of more transparent and sustainable models for allocation of resources.

| An integrative model for a new College focused on environment and sustainability |
|---|---|---|
| **Other Colleges** | **New College** | **Other Colleges** |
| **Research Coordination and Administration** | **Educational Programs** |
| Departments with co- or mixed rostering across colleges | Existing Undergrad & Grad Degrees |
| Working Groups | ENVS, ENVD, ENVEN, SbD, SSI, Baker RAPs |
| Faculty rostering occurs in mixed models from partial to full affiliation Porous boundaries allow cross collaboration between faculty in existing colleges and new College. |
| **Educational Programs** | **Faculty** |
| New Undergrad Degrees | New Prof MS |
| Earth & Env. Sciences, Env. History & Culture, Sustainability |
| New Grad Degrees | New PhD |
| | Commonly required undergraduate courses |
| | Certificate programs |
| | Minors |
| | Shared elements – courses, programs, minors, and service courses |
| **Space and infrastructure** | **Institutes** – partially or fully transferred to new college |
| Departments - moved to new college |
| Centers – partially or fully transferred to new college |
| **Faculty** – Tenure track faculty and instructors – Affiliation by transfer of FTE or formal MOU |
| Research faculty - External community: Labs, private sector with expanded opportunities for teaching and student engagement |
(1) Research coordination and administration in the integrative model

It is important to establish clear guidelines for the administrative structures that govern faculty tenure, research affiliations, and processes such as annual merit review. Our proposed integrative model includes core academic units that would have a primary affiliation with the new College. The units most likely to be included on this list are ENVS and ENVD but we strongly encourage an open and continuing dialog with units such as (but not limited to) ATOC, GEOG, GEOL, and EBI0, to determine the degree to which faculty or units may wish to establish an affiliation with the new College. Some of these units may wish to remain in their current college but individual faculty might prefer an affiliation with the new college. These arrangements are described in “Section V: Rostering” of this document but if a department has some faculty FTE from A&S, and some faculty FTE from the new College, then the administrative structure and reporting functions of the unit can still flow through one college or the other. Such arrangements already exist for graduate school rostered faculty so this is a limited departure from current university practice.

Further, we suggest that the new College develop the working group approach described in Scenario E (p. 19) as a test of a new and flexible approach to faculty rostering. These working groups would need to be housed within a broader administrative structure that would allow for processes such as promotion and tenure but we recommend that the potential benefits of this type of flexible affiliation should be explored in the new College.

(2) Educational programs in the integrative model

The new College should be established in a way that takes advantage of existing undergraduate and graduate degrees. We suggest that the departments or programs that are fully affiliated with the new College transfer their degree programs to the new College so as to ensure minimal impact on current student populations and to reduce the delay in the implementation of the new College.

In communication with a wide variety of units and faculty on campus, we heard support for the creation of new degree programs in areas such as Earth and environmental sciences, sustainable business, and environmental history and culture. These programs would require contributions from many different existing units but offer the potential to improve CU’s degree offerings in new and appealing ways.

One of the most obvious and direct ways that the creation of a new College can benefit the whole campus community is through the creation of new minors and certificate programs and through more transparent crediting of the financial costs of providing common, high volume undergraduate courses. Minor and certificate programs offer the potential to provide valuable job skills to students in the new College and beyond. Programs such as the new business minor and potential certificates in computer science, geospatial sciences, and statistics could offer existing departments an opportunity to increase enrollments and would allow students from across campus the ability to add highly relevant skill sets to their degree program.
In recommending the formation of a new College, the ESVC emphasizes the need to engage all vested units in the creation and management of undergraduate degree programs. The current degree program model places primary control of degree programs in individual tenuring units and in doing so works against the creation of efficiencies and shared educational benefits that can come from a more broadly based approach. We note that decisions regarding undergraduate course offerings are often heavily influenced by the need to supply teaching assistant positions to graduate programs and are therefore prone to decisions that may not serve the broader college or university (or undergraduate) needs.

(3) Space and infrastructure in the integrative model

The units that would potentially be part of a new College already have space allocated to them but each are generally scattered across campus, and there is no single current location for environment and sustainability teaching and research on campus. Over the longer term, the creation of the Sustainability, Energy, and Environment Complex (SEEC) on East Campus will address the long-term space issues of these units and we note that a new College could be an important educational component for future residential and academic build-out of East Campus. The Campus Master Plan, specifically the East Campus Vision section, contains long term plans for bringing together units across campus that work in the areas of sustainability and the environment. The ESVC encourages the administration to follow through on the vision found in the Campus Master Plan.

Additional infrastructure needs relate to library and computing resources. To be recognized as a top public research university, CU Boulder requires the personnel, scholarly resources, and information services that only a great library can provide. It is the Libraries’ mission “to be central to the University community’s discovery, communication, and use of knowledge by providing materials, information, and services that support the University’s mission.”

In this report, the ESVC recommends new investments in the form of faculty hires, administrative structure, and fundraising resources. Likewise, new research and teaching initiatives must be supported through access to information and corresponding research assistance and information literacy instructional programs. The ESVC has identified 10 key scholarly themes in the area of the environment and sustainability; however, CU’s library collections do not currently have strengths in some of these areas. In addition, research and publishing in environment and sustainability is growing rapidly. This trend, coupled with the steeply rising costs of many journal access packages and the need for new technical infrastructures and human resources to support new modes of access to digital information, requires new investment in the CU Libraries in order to support the new College.

Environment and sustainability research is highly interdisciplinary and the new College will place great importance on community engagement. These conditions create the need for accessing research publications and data in Open Access venues that provide public access outside of traditional disciplinary silos. The Libraries must provide institutional repositories and other digital infrastructures (as well as their corresponding human
resources) so the digital collections, data and other media used and created by these communities are available to the campus and the world. Costs associated with these needs are in addition to traditional library collection development budgets. As part of the implementation of the new College, the Libraries will conduct a thorough assessment of the collections and infrastructure needed to support teaching and research in environment and sustainability. The Libraries will communicate with the implementation team as the process moves forward and will provide the assessment to the implementation team, Dean of Libraries and the Provost for further discussion.

From “big data" to small data and beyond, research and teaching in all the scholarly themes identified in this report have become increasingly reliant on data resources, computing technologies, and information systems. In order to conduct cutting-edge scholarship, faculty and students must have support from the College through the provision of coordinated services and technical infrastructure. The Committee recommends the creation of a lab within the new College but open to faculty and students across campus that is dedicated to data analysis, visualization and modeling, and informatics.

Section V: Rostering of faculty

The most important resource in a university is the faculty who teach, administer, and carry out research and creative work in the institution. In considering the creation of a new College centered on environment and sustainability, the ESVC focused particular attention on the details of faculty rostering (where the FTE is administered) and tenure home in the current university structure. CU Boulder has diverse and innovative approaches to faculty rostering and location of tenure home. At CU, these can be done in a conventional model of a single rostering and tenure home within a college and department, or in novel ways such as faculty whom are rostered in an institute and tenured in an academic department. In this sense, CU Boulder has already pushed the boundaries of how faculty manage affiliations on this campus. We highlight this as a success story from years of innovation on this campus but we also note that the nature of these arrangements can be ad hoc and constrained (mostly) to faculty housed at institutes. Here we suggest that these flexible appointments should be expanded to include a broader range of faculty currently housed in academic departments, institutes, and hired into the new College.

In considering how to approach the allocation of faculty FTE to the new College and the process of tenure, promotion, allocation of teaching resources, and tracking of DA-ICR flow, we identified a set of principles that should guide decisions regarding faculty affiliations.

(a) Principles that guide faculty rostering

(1) The new College should have porous boundaries that allow a variety of faculty affiliations reflecting the diversity of faculty and institutional interests on campus.
Most faculty will have long careers at CU Boulder during which their research and teaching interests may change dramatically. It is the ESVC’s unanimous opinion that the boundaries of the new College should be ‘porous’ so that interested faculty from a variety of departments, colleges, and Institutes can formally affiliate with the new College in the manner which is best suited to their career goals and research and teaching interests.

On the CU Boulder campus, there are already a variety of arrangements for how faculty affiliate with different units. We suggest that, as part of the creation of the new College, the university formally recognize a range of potential types of affiliations that reflect varying degrees of faculty interests in research, teaching, and outreach in environment and sustainability. These include the following possible affiliations, which could be made on a temporary (term) or permanent basis with the use of a formal MOU between the new College and other colleges, departments, and institutes.

**Table 2.** Types of appointment, allocation to new College, and allocation to other unit for a range of faculty rostering options.

<table>
<thead>
<tr>
<th>Type of appointment</th>
<th>% allocation to new College</th>
<th>% allocation to other unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>No affiliation</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Limited affiliation</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>Split appointment</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Primary affiliation</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Full affiliation</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

One of the most substantial objections and barriers to creation of a new College is the potential to add yet more service and administrative burden to faculty who may already be heavily burdened. The appointment breakdown above recognizes that 1) faculty should have substantial input into the nature of their appointment and 2) it is critical that appointments are made in a transparent and clear way through the use of formal MOUs. As an example, a 20% commitment of time to the new College might specifically include the teaching of 1 co-listed course and service to 1 committee in the new College. The specifics of these appointments can vary with individual faculty members but the underlying principle is that the time and energy commitment is explicit and agreed to by all relevant parties, including the primary rostering unit.

(2) The success of the teaching and research missions of the university depends on the ability of units to allocate faculty resources to needed instructional activities and the ability of units to leverage DA-ICR into the continued support of research activities on campus.

For a university to function, there must be sufficient faculty resources to carry out the educational and research activities of the university. The ESVC recognizes that there is a need to maintain existing disciplinary excellence on campus while building new capacity in interdisciplinary education and research. At the most practical level, this means that the creation of a new College must occur in a manner that recognizes the need to maintain
existing educational activities and specifically the delivery of undergraduate degree programs.

As noted above, the ESVC strongly believes that faculty from a range of colleges, departments, and institutes should be able to affiliate with the College should they choose to do so. However, we also recognize that existing degree programs must continue and that faculty staffing for these programs is essential. To address this concern of weakening existing programs while still maintaining access of faculty to the new College, we suggest that the MOUs that detail faculty affiliations with the new College are developed in partnership with the primary rostering unit. The University can facilitate arrangements that are beneficial across colleges and units by ensuring student credit hour generation is allocated fairly to units with jointly affiliated faculty and allowing a greater diversity of co-listing of courses across not just departments but across college boundaries. These types of arrangements have the potential to benefit not just faculty but also departments that are struggling to balance student demand for classes with faculty teaching interests and capacity.

The university has a recently established (2008) policy for DA-ICR allocation that is in use across campus. The ESVC believes that current DA-ICR policy provides a logical roadmap for handling the DA-ICR implications for changes in faculty affiliations as the result of the creation of a new College.

(3) The university should build on the success of past flexibility in faculty hiring and affiliations, and consider standardizing a flexible approach to faculty affiliations across colleges.

The presence of institutes and graduate school rostering at CU-Boulder has led to some unique innovations in the structure of faculty affiliations. At CU, we see two parts to faculty affiliations: rostering (where the FTE is administered) and tenure home. Space (and often annual merit) typically follows the FTE, and DA-ICR follows space. Teaching follows the tenure home, as do promotion and tenure metrics and protocols.

By breaking the link between rostering and tenure home, the University has been able to award FTEs to non-tenuring units such as the Institutes, who then need to seek a partner tenure home for new faculty hires. The Institutes have been very purposeful in hiring interdisciplinary scholars in areas of study that departments may not or would not typically hire into. This has broadened the University, made it more flexible and adaptable as knowledge evolves, and contributed significantly to our tremendous success in receiving grants and contracts.

The hiring practices at CU, combined with clear rules on DA-ICR dispersal, have led to a great deal of freedom for faculty to pursue novel, interdisciplinary and cross-disciplinary research programs. For example, faculty can write proposals with other faculty anywhere else on campus, including any other college, and there is no penalty for doing so. We view this freedom as essential to a new College centered on sustainability and the environment, as these emerging fields are inherently interdisciplinary. In contrast to research flexibility,
there are clear bottlenecks and unnecessary silos in teaching. Because teaching typically follows a tenure home, and a tenure home is exclusively within the boundaries of a traditional academic department, it is challenging to create and teach a new interdisciplinary degree or certificate program, and nearly impossible for faculty to teach outside of their home tenuring unit. We suggest that this is unnecessarily stifling innovation in teaching programs. We recognize that teaching programs need to be sustained over longer periods of time to meet student needs, but we suggest that this can be accomplished within structures that support more innovative and flexible teaching.

The teaching structures of CU today look a great deal like the structures that were in place 50 years ago. In our evaluation, the implementation of faculty affiliations in a way in which teaching directly follows the tenure home creates a sense of permanence in the departments as well as in the degrees, and this both encourages silos, and stifles the creation of new approaches to designing curricula that best convey and deliver the knowledge of 2013. Accordingly, the ESVC recommends that all faculty, and particularly those in the new College, have the freedom to allocate part of their teaching to degree programs outside of their tenure home, that they be free to do this without penalty from any of their unit affiliations via the promotion and tenure processes and via annual merit review, and that mechanisms be established to allow new approaches to designing curricula and degree programs.

(b) Implementation

In “Section IV: Administration and administrative structures” of this report, we make recommendations on the units and institutes that would be appropriate to consider moving to the new College. Here we identify some of the rostering decisions that will need to be addressed should those units move and the reciprocal issues that will emerge for faculty in units that do not move to the new College.

The ESVC recommends the following allocation of faculty rostering arrangements to address the movement of departments and institutes into the new school (Table 3). For institutes that join the new College, we recommend that the FTEs (lines) for institute faculty should be transferred to the new College but that the other aspects of the faculty lines be negotiated on a case by case basis, so that individual faculty members are allowed to continue under their current tenure home arrangements.

For departments that are fully moved to the new College, we recommend that the default mechanism for rostering is that the associated faculty positions will also move to the new College (Table 3). This default could be modified on a case-by-case basis for faculty who have a strong motivation for remaining tenured in another college or department. There will likely be a number of departments that may not collectively decide to associate with the new College but which house faculty who individually would like to develop an association with the new College. For those faculty, we propose that individual MOUs can be used to address faculty interests in teaching and research (Table 3). In these circumstances, we believe that the presence of new College-associated faculty in departments housed in other colleges could facilitate the teaching of jointly or cross listed
courses, and facilitate continued dynamic interaction of faculty across campus. Further, this type of flexible appointment would allow departments in colleges and schools across campus to propose hiring faculty through the new College who could then sit and teach side by side with faculty from other colleges.

**Table 3.** Recommendations for faculty rostering arrangements; considering FTE, physical location, DA-ICR, teaching, service, merit and tenure home.

<table>
<thead>
<tr>
<th>Unit housing affected faculty member</th>
<th>FTE</th>
<th>Physical location and DA-ICR</th>
<th>Teaching</th>
<th>Service</th>
<th>Merit</th>
<th>Tenure home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutes that move to new College</td>
<td>Moves to new College</td>
<td>Unchanged; DA-ICR renegotiated as appropriate</td>
<td>By MOU</td>
<td>By MOU</td>
<td>By rostering unit</td>
<td>By MOU</td>
</tr>
<tr>
<td>Department or program that moves to new College</td>
<td>Moves to new College</td>
<td>Unchanged; DA-ICR renegotiated as appropriate</td>
<td>New College (adjustments made by MOU on case by case basis)</td>
<td>New College (adjustments made by MOU on case by case basis)</td>
<td>New College (adjustments made by MOU on case by case basis)</td>
<td>New College (adjustments made by MOU on case by case basis)</td>
</tr>
<tr>
<td>Departments remaining outside new College</td>
<td>No change</td>
<td>Unchanged</td>
<td>By MOU</td>
<td>By MOU</td>
<td>By MOU</td>
<td>By MOU</td>
</tr>
</tbody>
</table>

**Section VI: Student advising and core curriculum for the new College**

**(a) Integrated academic advising**

In a large and complex university such as CU-Boulder, academic advising is **fundamental** not only to guiding students toward appropriate academic and extracurricular opportunities related to their field of study, but also in determining their choice of major and in accessing opportunities that are outside the major area. The latter two responsibilities require significant knowledge about the university as a whole, not merely about the department of the major course of study.

We recommend that the new College house its own dedicated academic and career services advising center. This center would support the intention of the new College to foster interdisciplinary programs at CU-Boulder by consolidating resources and efforts, diminishing institutional barriers, reducing redundancies among undergraduate courses, and supporting existing and new interdisciplinary degree programs.
(b) Unique challenges of interdisciplinary programs

Student interest in interdisciplinary education is surging at CU-Boulder. According to the Fall 2012 PBA headcount of 16,813 undergraduates enrolled in the College of Arts and Sciences, 1,613, or 10%, were majoring in two interdisciplinary programs: International Affairs and Environmental Studies (809 and 804 respectively). These two degree programs are complex to navigate and the demands on academic advising are in turn unlike those in traditional departments with “stable” course offerings. The Environmental Studies major depends on courses taught by faculty outside the program and these courses come and go with enough frequency that adjustments to the degree audit are required every semester. The current ENVS major draws courses from four colleges and 16 programs; making it challenging for academic advisors to help students comprehend multiple course options. New degree programs proposed for the new College (e.g., in Earth and environmental sciences or environmental history and culture) would similarly require advising and degree auditing that is able to respond to the dynamic opportunities in the curriculum.

We stress that useful academic advising also needs to take into account several non-academic parameters that affect student choices and their experience at CU. Most notable is student loans. For example, lack of access to summer school tuition money will affect a student’s ability to take appropriate summer school courses, which may force a course overload for a semester, potentially impacting student performance and the quality of the student experience. Another factor is career opportunity. Students often regard the educational planning process and the search for majors in terms directly related to specific jobs or careers. The severance of academic advising from career services makes the investigation of this relationship difficult for the student. Academic advisors are unaware of relevant opportunities and the career services office is often unaware of the content of interdisciplinary majors.

Academic advisors in the new College should work as a team composed of environment and sustainability-oriented educators with backgrounds in either a program present within the college (e.g., ENVS, ENVD, others; see Section VII: Degree programs, below) or student services. Advisors should be able to advise in areas outside their expertise and should be able to refer students to other members of the team. We recommend that advisors in the new College should have relationships with liaisons from other student services offices so that referrals are made in a non-bureaucratic and student centric manner.

(c) An academic advising and career services center in the new College

We recommend that the new College house its own academic advising and career services center, with the following features and personnel:

- Academic advising about various programs of study related to environment and sustainability should be readily available to all students.
• The center should also streamline student access to pertinent student services such as financial aid, the registrar and psychological services.
• Closely associated with the academic advising center should be an environment and sustainability-focused career services office.
• The academic advising and career services center should also serve students from outside the College who are interested in environment and sustainability courses and programs that exist across the university.
• The center will be staffed by a Director and support staff, academic advisors, career services counselors, and liaisons from the offices of financial aid, the registrar and study abroad with part time presence in the College.
• Academic advisors would be paid competitive salaries as incentives to stay at the job for a long time, which increases institutional knowledge.
• Advisors would carry a typical case load of 300-500 students, depending on demand from outside of the College.

(d) Fostering community in an interdisciplinary setting

Interdisciplinary programs, for all their opportunity and flexibility, often create a scattered community. An academic advising and student services center in the new College could also serve students as a community center. Acknowledgement of the holistic responsibilities that a college takes on for its students can be reflected in using the Center as an undergraduate “home-room,” and encouraging the ENVS Club and other student groups to be based there.

(e) Core Curriculum in the new College

Although we recommend that most of the Core Curriculum for students in the new College should be shared with the entire university, the new College should create more classes that fulfill Core requirements for the College of Arts and Sciences. Obvious contenders would be classes in Contemporary Societies and Natural Science, but also courses in humanities, such as Literature and Arts courses that address the environment and sustainability through literature and US Context courses that address environmental history.

We envision that the new College will offer a variety of interdisciplinary undergraduate degrees that integrate natural and physical sciences, policy, law, social sciences, humanities, design, engineering, and business. Among many of the majors in the new College, there may be little to no overlap of major course requirements. Therefore, where shared courses are possible they should be pursued consciously, with the goals of unifying the student experience, consolidating teaching efforts, and reducing redundancy.

• Where overlap of environment and sustainability major coursework does exist, it should be openly discussed in the new College. This will reduce redundant efforts and encourage porosity among programs of study.
Many CU students seek courses in environment and sustainability without wishing to major in it. The new College should create opportunities for students from across campus to access appropriate environment and sustainability courses.

We offer below some ideas about opportunities for unity and overlap among the new College’s undergraduate curricula: (1) Core Curriculum area requirements, (2) Core Curriculum course offerings, (3) electives, (4) major coursework overlap, and (5) freshman seminars. We recommend that similar opportunities for curriculum overlap and porosity should be pursued for existing and new graduate programs as well.

(1) Core Curriculum area requirements
Each college and school at CU Boulder requires undergraduates to take at least fifteen hours of Core Curriculum. Most of the courses are drawn from the College of Arts and Sciences Core. We recommend that the Core Curriculum requirements for students in the new College should be consistent for all majors and should closely, perhaps entirely, resemble the Core Curriculum requirements for students throughout the university.

(2) New College Core offerings
The new College should create environment and sustainability courses that fulfill the Core Curriculum requirements for students throughout the university. Obvious contenders would be classes that fit the Arts and Sciences Core in Contemporary Societies, Ideas and Values, and Natural Science. The new College also should also consider developing courses in humanities, e.g., offer Literature and Arts courses that address environmental challenges through literature, and US Context courses that address environmental history.

(3) Electives
The number of elective hours available to CU Boulder undergraduates is highly variable. For example, a sociology major in Arts and Sciences may have thirty elective hours to fulfill, while an environmental design student will have perhaps six. Regardless of amount, students often have strong predilections about what they wish to do with those hours and many students seek environment and sustainability-related topics.

We recommend that some environment and sustainability courses, both upper and lower division, should be open to "non-expert" students as electives. Also, some courses should be constructed to specifically serve two or more student populations. For example, a design class could encourage participation by business students, resulting in a collaborative and multidimensional learning experience.

(4) Enable major coursework overlap
The faculty responsible for delivering each degree program will, of course, determine the coursework requirements for their majors, however we recommend that they be encouraged to develop environment and sustainability courses that are accessible by all students but that align with their major requirements. For example, required seminar courses could bring together various environment and sustainability majors with the diverse skills required for problem solving. Further, we suggest that specific courses could also simultaneously serve degree requirements for several majors. (e.g., currently there is
some overlap among courses in EVEN, ENVD, and ENVS in applied ecology). This emphasis on major coursework overlap reduces redundancy among courses in different degree programs, thereby using teaching resources much more effectively.

(5) Create more "porous" first-year curricula
Due to the rigid course of study in the pre-professional majors related to environment and sustainability and the large number of credit hours required in the Environmental Studies major, many first- and second-year students at CU Boulder with interests in the environment and sustainability suffer real consequences for being unprepared to commit to a major as a first-year student. We recommend three actions that would actively support "undecided" majors with more "porous" first-year curricula: (a) highlight to students where overlap exists among environment and sustainability majors, (b) offer freshmen seminars, (c) unify the entry level classes that teach generic information on environment and sustainability topics. We summarize these three actions below:

(a) Highlight to students where overlap exists among majors
One way to better serve first- and second-year students is to clarify the overlap among the majors. For example, if a student is sincerely interested in ENVD, EVEN, and ENVS, s/he should be advised to take calculus and physics as a freshman, because all three majors require these courses. This academic advice will be more easily available to students with the recommended advising structure proposed for the new College. However, the faculty should be made aware of the potential for revising existing majors and designing new majors in a way that allows for the 18-year-old to hesitate, for a moment, at the start of college and to contemplate all their options.

(b) Offer freshman seminars on interdisciplinary pursuits
The new College could create first-year courses that explain the variety of options available and that unify the launching point for environment and sustainability degrees. Currently, the College of Arts and Sciences (and other colleges and schools) at CU Boulder are offering (or are considering) freshman seminars that encourage thoughtful exploration of opportunities at the university. The new College could do something similar. Such a course offered by Arts and Sciences, entitled "Academic exploration and critical decision making", enrolled roughly 300 students in the 2012-2013 academic year.

(c) Unify the entry-level classes
In conjunction with freshman seminars and major course overlap, the faculty of the new College may consider the potential for coordinating the curriculum of entry-level classes for all majors. This would unify the student experience, reduce curricular redundancy, and consolidate teaching efforts. For example, some current entry-level courses across three colleges contain similar components (e.g., Introduction to Environmental Engineering, Introduction to Environmental Studies, Human behavior in design and planning).
Section VII: Degree programs

Some of the greatest opportunities for the new College lie in strengthening existing undergraduate and graduate programs and developing new academic programs that reach a broad range of learners. The College has the potential to develop new interdisciplinary degree programs and enhance existing degree programs to better prepare graduates for the societal challenges we face. This section addresses these opportunities by describing the general academic context and existing programs and by exploring strategies and issues for new and existing degree programs in the new College.

These general principles guide our considerations of degree programs in the College:

- All currently accredited degrees would retain their accreditation.
- Existing degree programs in disciplinary areas would accommodate interdisciplinary electives throughout the curriculum and interdisciplinary capstone experiences.
- New degree programs in the College would encourage interdisciplinary learning, drawing on the diverse campus strengths in physical and biological sciences, social sciences, humanities, business, policy, engineering, and design.
- All degree programs will seek to prepare graduates for careers that address our complex environmental challenges.

(a) Overall perspective on degree programs

Many research universities have established schools or colleges focusing on the environment or sustainability. However, with “environment” and “sustainability” so broadly defined, the collection of disciplines, programs, and degrees included in these schools varies widely. It is convenient to cluster groups of schools into “academic constellations” according to the types of programs. One of the most common academic constellations focuses on programs and professions related to environmental science, with only moderate strengths in issues of land management, policy, and the built environment. Schools in this constellation include the Yale School of Forestry and Environmental Studies, the Nicholas School of the Environment at Duke, Michigan’s School of Natural Resources, and the Bren School of Environmental Science and Management at UC Santa Barbara. Other constellations could center on energy; still others might have strengths in Earth systems. Variations are inevitably related to the culture of the institution, the strengths of the particular university, and other purposes being addressed.

In our general canvassing of academic constellations related to the environment and sustainability, it appears few schools have developed programs with strong ties to the social sciences. Even fewer have developed links between the natural and built environment, involving architecture, engineering, urban planning, environmental design, business, and law. Given the strength and diversity of environmental programs at the University of Colorado Boulder, we have the opportunity to distinguish ourselves from the other schools by developing a comprehensive and integrated suite of degree programs that recognize and address these linkages.
The diversity of environmental and sustainability topics are naturally woven into undergraduate degree programs – even the narrowest undergraduate degrees require breadth – with opportunities for a core set of expository courses in the natural sciences, social sciences, and humanities. For example, as students further develop their specializations, there are opportunities to connect students and faculty in interdisciplinary teams to address realistic challenges. The benefits to be derived from such efforts are many and include:

- Students can learn to ask good questions about the future of the planet, including an understanding of political and individual decisions, and to interrogate sustainability concepts and their foundational assumptions.
- Reveal and assess the role played by social scientists and policy officials in promoting (and discouraging) a culture of environmental stewardship and sustainability.
- Connect academic training explicitly to applied sustainability practices to address “real world” problems.
- Spur increased team-teaching between environmental scientists, social scientists, engineers, entrepreneurs, historians, artists, and designers.

(b) Existing degree programs

The University of Colorado Boulder offers a variety of degree programs related to the broad areas of environment and sustainability. Most of the natural and Earth science degrees are relevant, including those in geology, geography, biology, chemistry, and atmospheric and oceanic sciences. Several degree programs in the humanities and social sciences have faculty and offer courses related to environmental topics, including environmental history, literature, art, theater and dance, policy, anthropology, sociology, ethics, and communication. Besides formal degrees, the University also offers a suite of undergraduate and graduate certificate programs related to environment and sustainability.

In addition to the many programs related to the environment and sustainability, there are three broad programs with specific degrees that focus on the natural and built environment: Environmental Studies (ENVS), Environmental Design (ENVD), and Environmental Engineering (EVEN). We envision that these programs would be considered for inclusion at the initiation of the new College, and discuss additional degree programs below.

Environmental Studies

The Environmental Studies Program (ENVS) offers BA, MS, and PhD degrees emphasizing the interconnections between environmental science, human values, and decision-making. Both the undergraduate and graduate degrees draw on courses and expertise from more
than thirty participating departments, centers, and other units on campus, emphasizing the Earth and natural sciences as well as the social sciences and humanities, business, law and engineering.

The undergraduate degree program currently serves almost 1000 majors and is designed to provide a broad, but integrative and rigorous education in environmental issues and problem solving, as opposed to a traditional, discipline-based training. The purpose of the major is to train students in the cause, scale, and remediation strategies of the major environmental challenges faced by society. Students acquire an awareness of the complexity of factors relating to human interaction with the environment, becoming acutely aware of the fact that environmental problems have both human and biophysical components.

**Environmental Design**

Environmental Design has a rich history at CU Boulder. It has been part of the overall fabric of the campus since the early 1970’s; its overall character in more recent years—owing to a variety of institutional and other factors—however, has resulted as a relatively “siloded” program. It currently has a particularly strong applied orientation that is architecturally focused in nature, lacks a strong research orientation (relative to other CU programs), and has a small number of tenure-track faculty.

The field of environmental design is inherently interdisciplinary in nature, addressing “the impact of the built environment on individuals and the natural world and creates a wide range of interventions informed by human and environmental systems.” Environmental design comprises architects, planners, landscape architects, interior designers, preservationists, building technology specialists, and researchers from a wide range of disciplines. The pursuits of environmental designers affect communities, landscapes, buildings, products, and the individuals who occupy and use them through shared body of knowledge and professional skills. Furthermore, environmental design professions operate on a variety of scales—from regions to buildings. They embrace a wide spectrum of approaches, including but certainly not limited to: urban modeling, post-occupancy evaluation, collaborative decision-making, architectural design, policy governance, and statistics.

The field has direct interface with disciplines in the sciences, social sciences, and technology fields in order to develop, for example, new standards and materials for “green” buildings, to anticipate the environmental, social, and economic impacts of development, to design for energy and water efficiency in buildings and communities, and to develop effective and sustainable communities.

Given the reach of the field of environmental design, the ESVC envisions particular and strategic opportunities to leverage many of the strengths of CU’s Environmental Design program. A new College in which disciplines traditionally associated with Environmental Design actively partner with environmental sciences, engineering, and policy has rarely been tried and could easily comprise a hallmark and signature component of a new College.
at CU. This is a very exciting initiative and one that could yield a distinct competitive advantage for CU. The relatively recent and beleaguered history of the ENVD program and its current overall composition (e.g., low balance of tenure-track faculty, an excessive orientation toward training “traditional” architecture majors, a lack of research prowess, lack of cross-listing of courses), however, fails to suitably allow the ESVC to see how these strengths could be crystallized.

Subsequently, the ESVC sees rich opportunity to re-invent the nature of the ENVD program that would consist of: (1) stronger ties to aligned units, particularly (a) Environmental Studies, (b) Civil, Architectural, and Environmental Engineering, and (c) Geography, (2) a tripling (at least) of tenure-track faculty, and (3) a focus, broadly speaking, that balances strengths and course offerings related to architectural studies, landscape, urban planning and perhaps other aligned sub-disciplines.

In terms of specific recommendations for degrees, the ESVC sees merit in more closely aligning the BENVD with the ENVS program and perhaps programs in CEAE. This could be done through more aggressive cross listing of courses. In addition, ENVD should pursue a Master’s program, perhaps that focuses on training professionals in matters endemic to the sustainability of cities and an accompanying PhD program.

**Environmental Engineering**

The mission of the Environmental Engineering (EVEN) Program at the University of Colorado at Boulder is to provide a multidisciplinary undergraduate environmental engineering education that emphasizes mastery of principles and practices, inspires service for the global public good, endows a desire for life-long learning, and prepares students for broad and dynamic career paths in environmental engineering. The undergraduate degree program in Environmental Engineering includes core coursework in advanced mathematics, biology, chemistry and physics, and engineering, as well as coursework specific to environmental engineering, including water and wastewater treatment, hazardous waste storage and treatment, and air pollution control. In addition, environmental engineering requires hands-on water, soil and air quality laboratory experiences, up-to-date skills in the use of computers for modeling and data analysis, and experience in the design of environmental engineering systems.

The EVEN degree program at CU draws on the expertise of more than 20 faculty from four departments: Aerospace Engineering Sciences; Chemical and Biological Engineering; Civil, Environmental and Architectural Engineering; and Mechanical Engineering. The required engineering courses in the program are offered in these four departments. Technical elective courses include three selected from a broad range of science and engineering courses, and three that are organized according to tracks in water resources and treatment, air quality engineering, chemical processing, energy, environmental remediation, and applied ecology. By the beginning of their third year, students should select one of these specialization tracks or the general environmental engineering track. Students can also create their own focus track in an area of interest, such as engineering for developing communities, or another focus. Students in the program are also encouraged to participate
in summer internships and in research at CU through independent study projects, senior theses, college-sponsored research, or as research assistants in sponsored programs.

(c) New degree programs and connections

The creation of a new College invites consideration of new curricula and degree programs to better address environment and sustainability themes and to better prepare graduates for professions in the related fields. We recommend that new programs fully embrace the notion of “porosity” and allow easy access for student participation from across the university. We particularly emphasize the opportunity to connect with existing and new residential academic programs (RAPs), including the Sustainable by Design (SbD), Sustainability and Social Innovation (SSI), and the Baker RAP (focused on natural and environmental sciences). We envision a core College curriculum that connects with other schools and colleges at CU, as well as several new degree programs that would be administered by the new College. Although specific details of educational programs will be the responsibility of the faculty, we offer several suggestions for new programs and opportunities for certificates and minors to enhance connections with existing programs. New undergraduate and graduate degree programs, minors, and certificate programs may include, but are certainly not limited to:

- Degrees in Environmental History and Culture
- Degrees in Earth and Environmental Sciences
- Minor or certificate in Environmental Management
- Minor or certificate in Environmental Informatics
- Minor or certificate in Environmental Entrepreneurship
- Minor or certificate in Environmental Communication
- Graduate degrees in Environmental Engineering
- Graduate degrees in Environmental Design; Sustainable Planning and Policy

We also emphasize the advantages of providing opportunities for lifelong learning, including professional masters programs, mid-career professional learning opportunities, and enhanced on-line availability for courses taught by CU faculty.

In contrast to the “silied” nature of many academic units, we strongly recommend that the new College adopt a new model of establishing strong and numerous connections between existing degree programs with the College and related programs outside the College. The most practical and effective strategies for program development will be strongly tied to existing degrees. Minors and certificate programs at the undergraduate and graduate levels offer connections to these existing programs. In particular, they provide further opportunities for students to take advantage of and demonstrate prowess towards sustainability type training, in addition to a formal degree in a different program.

Certificate programs, such as those described above, can be a link to a valuable and growing demand for non-traditional students in a market largely dominated by professionals seeking additional credentials to address the needs of changing workplaces.
aiming to better address fundamentals of sustainability. The education and training for these types of programs is not nearly as intense or deep as degree programs; however, it represents a valuable market for CU-Boulder to seize.

For example, the Sustainable Practices Program (SPP), currently administered by the Environmental Center at CU, is a non-credit, professional development training program offering courses and a professional certificate in Sustainability Management. The faculty are comprised by a mix of CU lecturers and community professionals.

Currently, the program is marketed and promoted statewide, although a small number of out-of-state participants enroll in the program. The focus of marketing is not nationwide due to the current requirement that participants attend courses in Boulder. As part of the program’s strategic plan, however, the aim is to move toward developing a 100% online, non-credit certificate program that can be offered nation-wide, while maintaining the same level of current staffing and staying within the program’s current modest budget.

The Environmental Center inherited the program in 2011 from Continuing Education, notwithstanding the fact that the EC is a non-academic unit at CU. Its current location, in the EC, is considered by many to be a “weigh station” of sorts, pending the creation of a new College. The program would welcome an academic home such as a new College focused on environment and sustainability.

We anticipate that the new College could be largely responsible for administering the Peak to Peak (P2P) Project, which provides faculty with forward thinking resources to formally integrate themes of sustainability throughout the curriculum at CU Boulder and beyond. P2P is principally motivated by the needs and desires of faculty on campus to weave in tenets of sustainability into select classes from all disciplines. The foundation of P2P is a two-day workshop (annual budget approximately $22,000) held at the beginning of the academic year; the program currently has over 100 fellows. It supports faculty from all ranks to learn more about how to incorporate matters of sustainability into their respective disciplines and provides a valuable focal point in pedagogical matters on campus.

Section VIII: Community engagement

The new College centered on environment and sustainability at CU-Boulder has the opportunity to be highly innovative in engaging communities outside the university in many new types of venues. We use the broad term “community engagement” to refer to a variety of activities that could be central to the new College, which are typically referred to as outreach, service learning, public participation in science, and environmental communication. Several existing Centers on campus provide these services and opportunities to broader communities, such as the Office for University Outreach, the Environmental Center, the Natural Hazards Center, the Center of the American West, the Deming Center for Entrepreneurship, the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment, the CIRES Education Outreach Program, and the Mortenson Center for Engineering in Developing Communities (see also Appendix I for a longer list of
relevant units on campus). We expect that these units well as others would be closely involved with the mission of the new College.

We also view opportunities for new synergies and forms of outreach that fully integrate humanities, social sciences, and physical sciences to actively engage communities. Here we present an example of one such new opportunity that could be highly visible and innovative in the new College:

“Center for the Arts, Environment, and Communication” (CAEC)
In 2011, the National Science Foundation issued this statement from all of its directorates and programs: “Achieving a sustainable human future in the face of both gradual and abrupt environmental change is one of the most significant challenges facing humanity.” Communicating these challenges to inspire people to act is critical. Combining CU’s resources in environmental and sustainability studies with interdisciplinary communication studies and professional training could position CU and its students as leaders in this realm internationally.

Social science tells us that to foster effective decision-making and action, good communication must include cognition and affect, working together. Similarly, information, “facts,” and analysis are not enough by themselves; communication must consider the values, attitudes, and beliefs of the audience it is meant to reach. With this in mind, communication and the environment are obviously a natural fit. But what of the arts? They can address sustainability in new ways and move people to act. Working with science and traditional communication, the arts can provide the missing ingredient for the “cognition + affect = effect equation” by making sustainability personal, visceral, tangible, and actionable.

To manifest these ideas, the CAEC would involve interested faculty from units across campus, including ENVS, JMC, Art, Theater and Dance, and a host of others. The center would have four pillars: collaborative research and creative work; interdisciplinary curricula; outreach and training for professional communities; and outreach to broader constituencies similar to that done by the Center of the American West.

There is a strong and active core of interested faculty to participate in a new Center focused on arts, communication, and the environment. For example, several faculty from a range of units across campus have recently proposed a "Climate Corps," which would include a certificate program for undergraduates (or even a minor), and internships. The CAEC would be the natural home for the Climate Corps. The CAEC could also be the administrative home for professional and online master’s degrees that would span communication and the environment, including environmental journalism.

In the realm of outreach to professional communities, the CAEC could be the home for the highly successful and visible Ted Scripps Fellowships in Environmental Journalism, now housed in the Center for Environmental Journalism. But the CEJ and the fellowships could be folded in to the new CAEC, assuming that the donor who funds the program would sanction such a move. The interdisciplinary nature of the CAEC would enhance the
fellowship experience, and the new Center would be likely to engender broader faculty participation and stronger administrative support.

In addition to the "Climate Corps" faculty, others at CU have already expressed support for such a new Center, including those from the Center for Media, Arts and Performance and the University of Colorado Museum of Natural History. The museum, in particular could also be a venue for Center-facilitated interdisciplinary gatherings. The existing Museum Studies program could be involved through its two tracks: field research and education.

We suspect that a center such as the proposed CAEC might be a very fundable endeavor. Faculty in the sciences looking for collaborators on the broader societal impact aspects of their grant proposals could find them at the Center. The Center would seek support from foundations and private donors, as well as tuition recovery from new professional master's programs.

Section IX: Implementation of recommendations

(a) Moving beyond the ESVC External Advisors report

The February 2013 ESVC External Advisors report offers several useful implementation suggestions: the need for decisive, prompt action to anchor the Environmental Studies and Environmental Design programs; using the Environmental Studies and Environmental Design programs as the core for a new College with the potential addition of selected Institutes and Centers; establishing a 18-24 month period for joining the College as a core department, Center, or Institute; identifying new lines for ENVS and ENVD; providing modest seed money for working groups devoted to developing research and teaching agendas centered on interdisciplinary themes; developing a viable financial arrangement for the new College and other guidelines to action.

We took these guidelines into account in our discussions but argue here for a process that considers a broader range of organizational models, unfolds more quickly, features specific timelines and milestones; is guided by a newly appointed Implementation Committee in AY 2013-14; is directed by an Interim Dean in AY 2013-14; initiates a national search for a permanent Dean by Fall 2014; and launches a new College in AY 2014-15.

Recommended timeline and responsibilities:

Note: PO=Provost Office+; IC=Implementation Committee

Remainder of AY 2012-13

| March 29 | ESVC final report presented to Provost Moore |
| April-May | Response to ESVC report by CU community |
|          | Discussions and decisions on organizational structure (PO) |
AY 2013-14

Appoint Implementation Committee (IC) led by Interim Dean
Discussions and decisions: mission statement, budgets, rostering (PO)
Begin process for Regent approval (PO)
Devise work plan for AY 2013-14 (IC)
Develop budget for transition period support (PO)
Consult with ENVS and ENVD on new lines: AY 2014-15 search (PO)
Provide administrative staffing (PO)
Implementation Committee submits preliminary report on activities by February 1, 2014
Invite faculty and researchers to form working groups on selected research and educational themes; proposals due by December 30, initial reports due March 1, 2014 (IC)

[Goal is to fund competitive proposals for 3 working groups, $15-20K investment each year for 3 years]

Identify needs for space, facilities, library and data center resources (IC+PO)
Devise work plan for AY 2014-15 (IC)

AY 2014-15

Implementation Committee continues work (IC)
Working groups’ final reports due December 1, 2014; used to guide initial research investments (PO+IC)
Develop marketing strategy with Admissions for recruitment of new students (IC)
Identify and establish external Advisory Board (PO+IC)
Establish search committee and initiate national search for Dean (PO)
Work with HR on hiring process for initial administrative staff and dedicated development professional (IC)
Confirm and announce faculty affiliation and rostering processes for Spring 2015 (IC+PO)
Develop MOU templates to address a range of rostering models
Revisit decisions on financial arrangements, budget models (PO+IC)
Hire/appoint dedicated development professional for fund-raising and administrative staff (IC)
Draft diversity strategy for new College
Work on developing community engagement initiatives (IC)
Participate in undergraduate student recruitment activities (IC)
Final decisions on curriculum (IC)
Determine size of incoming classes, new budgets (IC+PO)
Implementation Committee submits final report on activities by February 1, 2015  
Establish new facilities/space/equipment/furniture (IC)

**Spring 2015** Welcome students, faculty, and community to College launch; coincident with move to SEEC (IC+PO)

**(b) The Implementation Committee**

A newly appointed Implementation Committee (IC) is needed to consider a range of important questions on curriculum and interdisciplinary initiatives that are critical to the establishment of a new College. The goal of the IC is to build on the ESVC recommendations and decisions made by the Provost’s Office; the intent is to move forward, not to revisit and duplicate previous efforts. The IC would include selected faculty from ENVD and ENVS as well as other faculty familiar with the ongoing efforts to enhance CU’s sustainability and environmental assets. The appointments would be made in August-September, 2013. It is likely the IC would operate through working groups/subcommittees as well as a collective group. An Interim Dean, appointed in September 2013, would direct the IC; some staff support (administrative and graduate research assistant) would be needed.

**(c) Examples of decisions to be made in the Provost’s office (PO)**

We recommend that the key decisions on organizational structure, pace of implementation, rostering and tenure processes, budget structure and revenue streams will be made by the Provost’s Office in consultation with the ESVC and other campus units by September, 2013. The basic issues determined by the Provost’s Office would include but not be restricted to:

- Organizational model: a College, a School, or some hybrid? What model provides the strongest base for making future strategic choices and encouraging porosity?
- Organizational change process: once a model is agreed on, what is the sequence and pace for implementation? How do these efforts fit with potentially similar ICJMT initiatives?
- Institutional strategies: what is the administrative structure? What models for affiliation/rostering in the College will be adopted? What is the funding source and what are viable financing arrangements? What new budget models are possible that assure the availability of courses and faculty? How are merit evaluation, workload distribution, tenure and promotion processes established? What are the options for aggressive, dedicated fund-raising and development initiatives? What are the staff implications?
- Initiating a national search for a Permanent Dean: criteria, qualifications, and selection process.

**(d) Examples of issues to be addressed by the Implementation Committee (IC):**

The Implementation Committee’s key responsibilities include curriculum development, interdisciplinary initiatives, supporting existing degree programs and encouraging
development of new minors and certificates, inviting and reviewing proposals for research and educational themes inviting further investment, and considering student recruitment and support strategies.

- **Academic development:** what are the preferred mechanisms for supporting integrated/interdisciplinary teaching and research? How are current ENVS and ENVD degrees sustained and new ones considered? Are degrees oriented to sustainability problems feasible? Is an emphasis on developing a minor and/or certificates an effective strategy?

- **Curriculum development:** should there be a Core curriculum in the new College? If so, what is the structure and content? How will courses be developed, approved, and introduced?

- **Learning and teaching practice/pedagogy:** would the new College feature a broad range of learning and teaching practices? What are the skills need in this area?

- **Student recruitment and support:** How to target students likely to be attracted to an interdisciplinary unit? How to coordinate recruitment with existing/on-going recruitment in ENVS&ENVD? How to create more effective coordination of advising, financial aid, career service, internships, and Study Abroad?

- **The Boulder campus:** How to avoid a zero sum perception from existing units and faculty? How could the SSI, SbD, and Baker RAPs be incorporated into the College? What are the space and facilities needs?

- **The Community:** how will engagement and outreach be structured on an on-going basis? Who are individuals and organizations beyond the university who could provide advice and support?

- **Graduate attributes:** where are graduate degrees situated and administered?

- **Professional associations:** are there accreditation issues associated with existing degrees and proposed new degrees?

*(e) Diversity statement*

The CU Boulder campus Diversity Plan: *A Blueprint for Action* (1999) calls for the community:

- To build and maintain an inclusive campus environment
- To recruit, support, retain, and graduate a diverse student population
- To maintain and enhance diversity in employment of staff, faculty, and administrators.
Research and teaching in the area of environment and sustainability is not only interdisciplinary, it is cross-cultural and global. The emerging themes that we identified involve, at their core, diversity, multiculturalism, and social justice. CU-Boulder has a strong diversity plan, but continues to struggle with achieving the goals set out in the plan.

The ESVC recommends that specific goals and concrete programs be a part of the new College. We recommend that the implementation committee reach out to campus groups such as the BFA Diversity Committee (http://www.colorado.edu/bfa/committees/diversity.html), the Office of Diversity, Equity, and Community Engagement (http://www.colorado.edu/odece/), and the Chancellor’s Advisory Committees (http://www.colorado.edu/odece/campusclimate/index.html) in order to construct specific goals and tangible programs central to the creation of the new College.

(f) **Budgetary considerations**

We recognize that creating a new College is financially ambitious; in this report we emphasize the revision of current budgetary models toward a new model that more closely tracks tuition revenue and unit needs. The sustainability of the new College will come from its tuition-generated budget and its ability to repay departments, colleges, and institutes for courses and faculty time devoted to teaching within the new College. We assert that accountability will be enhanced by greater budgetary connection between undergraduate and graduate majors who generate the tuition revenues and the units responsible for delivering the curricula. Sustainability and accountability may also be enhanced by the creation of a direct reporting relationship between the Dean of the new College, the Provost, and the Associate Vice-Provost for Budget and Finance. The February 2013 external advisors’ report concluded that:

“It would be a mistake to create an underfunded College of Sustainability and the Environment for solving the small problem of where to house ENVS and ENVD. If the University undertakes the formation of such a College, it is imperative to develop a well-reasoned funding plan to ensure the College has every opportunity to get off the ground and operate smoothly in the transition period of becoming more visible in the eyes of prospective students.”

To this end, we anticipate initial involvement of 40-60 existing CU faculty fully rostered in the new College, an initial budget of $20-25M, and a commitment of 20-30 new faculty lines over the next 10 years.
Appendix I. Academic programs, centers, student organizations and other entities involved in the scholarly themes identified by the ESVC. These lists represent a wide-ranging scan of the landscape at CU-Boulder. 66 entities represented (Not comprehensive).
### Appendix I, continued.

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