School of the Environment & Sustainability
Campus Sustainability Working Group

Final Report: The Integrated Sustainability Initiative

March 2015

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contents

** Cover: word cloud depicts the attributes of the proposed sustainability paradigm as described by the members of the Campus Sustainability Working Group in this report.*

membership

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charge

The mission, purpose and deliverables of the Campus Sustainability Working Group (CSWG) follow the elements outlined in the October 2014 letter from ENVS Chair Sharon Collinge to Provost Moore:

> *"The purpose of this working group is to develop options for a strategic sustainability-related leadership, planning, and coordinating structure inclusive of academic, research, operational, and student engagement activities.*
>
> *An integrative leadership approach will be designed to enhance crosscutting research and teaching opportunities, improve coordination and efficiency across multi--unit sustainability initiatives, and crystalize a unified sustainability marketing and development strategy.*
>
> *The working group will explore peer campus sustainability models, evaluate how CU-Boulder's unique sustainability assets can best be integrated for maximum effectiveness, and deliver recommendations for inclusion in SES' report to the Provost and the Cabinet."*

Design a symbiotic campus sustainability strategic and organizational structure that aligns, catalyzes and leverages CU-Boulder's sustainability-related assets that, in turn, support and advance the mission of the SES.

The CSWG is also mindful that its Charge comports well with the Provost's vision of the **School of Environment and Sustainability** (SES):

> *"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…."*

Accordingly, the CSWG's charge is to promote a symbiosis: design a campus sustainability strategic and organizational structure that aligns and catalyzes all of CU-Boulder's sustainability-related assets which, in turn, support and advance the mission of the SES.

executive summary

This report details how CU-Boulder's mission and goals are supported and enhanced by a strategic and integrated sustainability vision and implementation approach across campus and community interactions. This approach brings together and harmonizes the breadth of CU-Boulder's sustainability assets via an **Integrated Sustainability Initiative** (ISI).

At the heart of this broad vision is a symbiosis that enables the integration of and benefits from the convergence of sustainability assets in support of campus mission and goals including the **School of Environment & Sustainability** (SES). In short, the ISI would both enhance the breadth of CU-Boulder's sustainability acumen while advancing the SES's success; a "rising tide raises all boats" approach.

This report first examines the current context and sustainability challenges the campus faces related to rapidly increasing student engagement and academic interests, operational efficiencies, community partnerships, and research opportunities that could enable a "campus as a living laboratory" symbiosis. The working group then details four key elements that provide a structure by which CU-Boulder would develop:

1) **Collaborative leadership**. A collegial leadership, governance, strategic planning and coordination structure that connects sustainability stakeholders with executive leadership to collaborate on innovative outcomes that align with campus mission.
2) **A strategic sustainability plan**. A comprehensive strategy and plan that integrates and leverages CU-Boulder's disparate sustainability assets and thereby broadly engages campus and community stakeholders in a shared vision and implementation process.
3) **An integrative catalytic process**. An embedded and deliberative organization of front line faculty, staff, and students that catalyze collaborations across academic, research, engagement, and operational units that, in turn, fosters discovery, involvement, efficiency, and innovation.
4) **A comprehensive branding, marketing and development campaign**. The integration of CU-Boulder's sustainability assets under a discrete brand, common vocabulary, and shared marketing and development.

This working group also analyzed how the implementation of these processes benefits campus academic, research, engagement, and community partnerships while delivering demonstrable contributions to campus goals of improved retention & graduation rates, new revenues & fiscal stability, and bolstered campus reputation.

Finally, the working group reviewed how some peer schools have successfully arrayed their sustainability assets to advance their campus goals. From the above reviews, the working group makes the following recommendations:

1. **Establish a cross-campus Sustainability Council** to collaboratively engage all stakeholders in planning how to deliver the vision of "embedding sustainability into the foundation of contemporary higher education."
2. **Produce a strategic plan and implementation analysis** outlining how CU-Boulder would adopt an integrative sustainability framework that cuts through and links academic, research, engagement, and operational units on campus while expanding on the existing Sustainability Alliance between CU-Boulder, the City of Boulder, Boulder County, and the Boulder Valley School District. This plan to be delivered by Earth Day, April 22, 2016.
3. **Empower the development of a comprehensive branding, marketing and development campaign** to capitalize on the strategic symbiosis of CU-Boulder's sustainability assets and thus boost reputation, recruitment/retention, and fundraising success.

guiding principles

"Our goal is nothing less than being the global leader in sustainability, and that aspiration carries with it great responsibility to advance on all fronts…"

- Chancellor Phil DiStefano. (2014 STARS Report)

Vision

The working group's principles, goals, objectives, and recommendations are based on its vision for CU-Boulder going forward to:

> *"**Embed sustainability into the foundation of contemporary higher education thus enhancing CU-Boulder's teaching, research and service mission.** This will better serve students, strengthen our fiscal position, and reaffirm CU-Boulder as a global leader in sustainability. We will accomplish this by converging academics, research, engagement and operations into an implementation platform that catalyzes student success, research innovation, community benefit, and operational excellence."*

Goals

CU-Boulder's integrated sustainability elements have three primary goals:

- ***Create a "Living Sustainability Laboratory" –*** Embed a structure that links campus teaching and research to operations and engagement. By synergizing our collective assets hands-on learning opportunities for students will be created that realize gains in operational efficiency, increase student retention and graduation rates, inure new revenues and solidified fiscal position, and strengthen CU-Boulder's overall reputation.

- ***"Raising our game" –*** Further the vision, mission, and priorities identified in *Flagship 2030* of serving Colorado and its communities by providing sustainable best practices that have been proven across campus and community applications.

- ***Elevate campus mission and global standing –*** Leverage CU-Boulder's legacy of sustainability leadership and the evolution of SES and the Sustainability, Energy and Environment Complex (SEEC) to fully realize a vision of sustainability as fundamental and beneficial to campus mission and goals via its multiplier effect that boosts efficiencies, its unique inter-disciplinary connections, innate creativity, and criticality to society.

Objectives

This proposal was developed to meet campus goals of increasing student retention and graduation rates, creating new revenue opportunities and improving fiscal strength, and bolstering CU-Boulder's overall reputation. Inclusion and integration of operations, academics, research, and student engagement spheres is also necessary to meet these goals.

These integrative synergies start with a strategic approach divined by an inclusive stakeholder process that engages all involved in a shared vision, plan, and commitment to outcomes.

Realize a vision of sustainability as fundamental and beneficial to campus mission and goals via its multiplier effect that boosts efficiencies, its unique inter-disciplinary connections, innate creativity, and criticality to society.

current status & challenges

Context

In just the last decade or so, higher education institutions across the globe have reoriented to better address sustainability challenges – both on-campus and off. These have frequently taken the form of shifts in operations to increase efficiency and utilize 'green' practices and materials. Similarly, academic elements have incorporated sustainability to better prepare students to comprehend and address environmental issues upon graduation.

Both of these separate initiatives have met with success. At CU-Boulder, considerable strides have been made in terms of transportation, energy efficiency, waste management as well as student engagement around sustainability. As a result of being an early implementer of student-led green practices and then supported by robust administrative initiatives, CU-Boulder was named by Sierra Club as the greenest school in the nation in 2009. On the academic front, the environmental studies program is one of the most popular undergraduate majors at the university, research and teaching incorporates material focusing on sustainability across the entire campus, and CU-Boulder's combined sustainability-related research acumen is unrivaled by any campus in the world.

Likewise, CU-Boulder is obviously a major part of a community and region that is devoutly principled and focused on resilience and excellence in the face of local and global sustainability challenges. Accordingly, CU-Boulder's sustainability strategy can be only as successful as its integration with concurrent community efforts aimed at a healthy environment, economic strength, and productive human relationships.

Current capacity & potential

Just a sample of CU-Boulder's sustainability assets as reflected in our most recent STARS Gold rating reflect considerable sustainability capacity already in place:

- Over 643 sustainability-related CU-Boulder courses are taught in 45 departments (about 24% of all courses); and over 330 faculty engaged in some aspect of sustainability research in over 36 academic departments.
- CU-Boulder is the nation's top NSF research university in geosciences & environmental sustainability in terms of numbers of papers published and second in terms of citations per paper.
- Nearly 2.4-million square feet of campus facilities are constructed and operated under advanced LEED guidelines, about 22 percent of the total campus.
- Ninety percent of students use some form of campus-supported sustainable transportation system to commute to campus.

- Over one in four meals prepared by Dining Services are local and community-based and/or third party verified.
- More than 15 professional staff FTE are completely focused on some aspect of sustainability programming, and countless other staff charged with some aspect of sustainability performance.
- At least another >120 student staff are employed part time on various sustainability efforts. And countless students participate in numerous clubs, campus volunteers, or community service efforts.

Likewise, the potential for enhanced student engagement is considerable given that their interest has ballooned in recent years as reflected in the annual sustainability survey of incoming students as required by STARS[1] that shows:

- 86% incoming CU-Boulder students say it's important for the campus to have a strong commitment to environmental sustainability. 60% of those who say it's important say it is very important.
- 89% try to make environmentally sustainable choices in the way they live.
- 81% are likely to encourage friends to do things like recycle, turn off lights, or save water in order to support the environment.
- 92% want to be environmentally sustainable (low carbon footprint).

Challenges going forward

Yet while CU-Boulder has considerable sustainability assets and has been a leader in sustainability initiatives, these have largely been confined to separate and largely uncoordinated spheres: academics; research, teaching, and student engagement. Discrete silos have approached sustainability differently and without coordination. Arguably as a result of this stove piping, CU-Boulder's Sierra Club green campus ranking fell from #1 in 2009 to 38th in 2014.

Likewise, at CU-Boulder, surveys show that students consistently proclaim that they come to CU-Boulder because they want to 'make a difference'. Indeed, >41% of incoming CU-Boulder students indicate that chose to come here, in part, based on its sustainability reputation[2]. Yet, once students arrive here, they consistently complain that existing silos prevent them from working on cross-disciplinary teams to address important issues. Fragmentation of socially and environmentally innovative efforts on campus is a primary source of student frustration that directly impacts retention, revenue and reputation.

At the same time, institutions such as Stanford, the University of British Columbia (UBC) and Penn State have launched new strategic sustainability efforts and developed global reputations as green leaders because they are integrating sustainability across and through their academic, operational, engagement and research enterprises. These universities are showing that this integration – in other words, through a leveraging and utilization of all of the university's assets

in concert – can drive truly significant change in academic effectiveness, sustainability, student engagement and operational efficiency.

Fundamental to these peer schools' success is the evolution of sustainability from a peripheral element to its full alignment and consistency with core campus mission of education, research and service. Indeed, Penn State has found that one of sustainability's unique strengths is it provides an inspiring space for its executive leaders who routinely focus on their own silos to also be empowered to ally their creativity around strategic sustainability efforts that advance campus mission broadly. At the University of British Columbia, that same integrative paradigm has led to a vision that "the entire campus and every unit is an experiment in sustainability.[3]"

Fundamental to these peer schools' success is the evolution of sustainability from a peripheral element to its full alignment and consistency with core campus mission of education, research and service.

Opportunity going forward

This proposal calls for CU-Boulder to connect the academic, research, student engagement and operational enterprises on campus across a foundation based in sustainability. The integration of these elements – via sustainability – will result in CU-Boulder reasserting itself as a global leader in sustainability – but, more importantly, will drive innovation in sustainability both on-campus, in research, teaching, engagement and operations, as well as in the community, through the dissemination of best practices and resultant reputational, fundraising, and partnership benefits.

This integration will result in the entire CU-Boulder campus serving as a living sustainability laboratory that will enhance campus-wide operational efficiencies and improvements, and significant experiential learning opportunities for students. Likewise, local officials have expressed enthusiasm in expanding partnerships with CU-Boulder to utilize university strengths and community resources to explore cutting edge sustainability practices. Happily, CU-Boulder is at a moment with its community partners where these mutually beneficial directions can be combined alongside a new campus synergy enabled by a sustainability-enhanced campus mission.

proposal

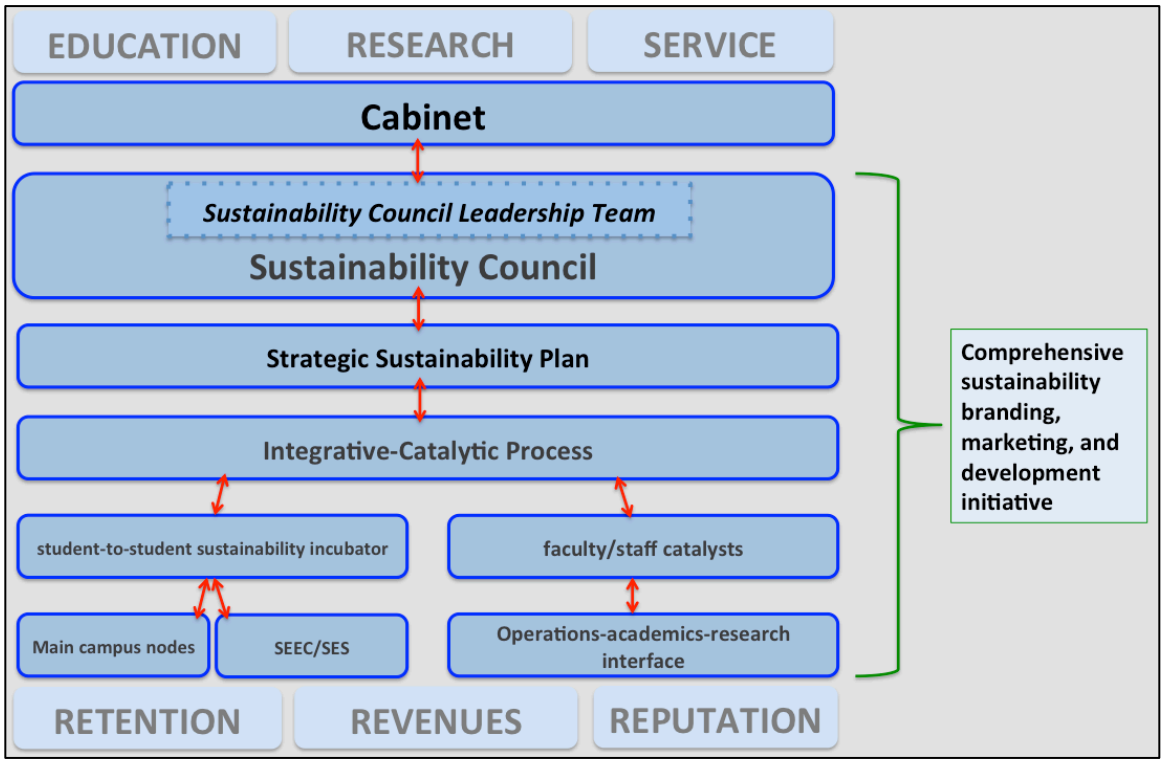

Figure 1: Integrated Sustainability Initiative graphic

proposal summary

What is Integration?

Integrating sustainability into CU-Boulder entails linking critical elements of the university in a common, coordinated, and structural set of relationships and sustainability practices. This applies to all facets of the university including academics, research, operations, university administration, and its interactions with partners (including governmental entities (e.g. Sustainability Alliance), businesses, and alumni.) Sustainability integration recognizes that a university campus is a single entity. As such, opportunities present themselves for linking campus units that have previously acted independently. Campus units, as traditionally conceived, have vertical functional identities. **An integrative sustainability approach fosters horizontal cross-linkages of these units so they become more mutually supportive and catalytic of sustainability innovation and coordination born out of their combined strengths.**

As a result, university operations would be supported by sustainable applications developed by research entities on campus. Students would have the opportunity to work with operations to

identify sustainability challenges, work with researchers to assess these challenges and determine solutions, and work with operations to implement solutions and then test their efficacy.

Necessary Elements for Successful Integration

Public universities are especially well suited to adopting and implementing an integrative sustainability approach.

1. A university campus is effectively a small community with the same type of infrastructure found in traditional municipalities.
2. It is a community, however, that is managed (on a day-to-day basis) by a single decision-maker or corporate structure. This makes decisions, assessments, and experimentation much easier than in a traditional municipality. In other words, it is an ideal entity in which to conduct controlled evaluations.
3. As a public and/or non-profit entity, the university has a public mandate to utilize its resources in a sustainable and cost-effective manner. As a result, short-term investment returns are not as pressing as they might be with a private sector entity.
4. Universities, by definition, have an educational role.
5. Universities can have research assets that can be utilized internally.

Proposal in brief

The ISI proposal has four distinct elements designed to enable the above integration and attendant benefits:

1. An integrative leadership structure,
2. A strategic sustainability plan,
3. A integrative-catalytic process, and
4. A coherent branding, marketing and development process

A living sustainability laboratory is CU-Boulder's integration of academics and research into operations with regards to sustainability. Through this lens, the university will provide new learning opportunities for students and researchers by bringing its research assets to focus on the many challenges faced by operations. In short, "the entire campus and every unit is an experiment in sustainability."

proposal detail

step 1: Create a Collaborative Leadership Structure

The first of the elements required to build out this vision is a collaborative leadership structure that includes executive campus leadership along with active campus sustainability faculty, staff, and students. This proposed "**Sustainability Council** (SC)" should not be attached to the SES or any other campus unit, but instead be a campus wide entity potentially comprised of the stakeholders listed below.

The SC is constituted and charged with first enabling a strategic sustainability planning process that will, among other things, hone and refine what will become an enduring SC collaborative leadership structure.

A Charge from the Chancellor to the SC should ask for:

- A comprehensive sustainability strategy and plan (see key elements below), and
- An organizational and governance processes to monitor, coordinate and align ongoing sustainability-related activities with campus mission and goals.

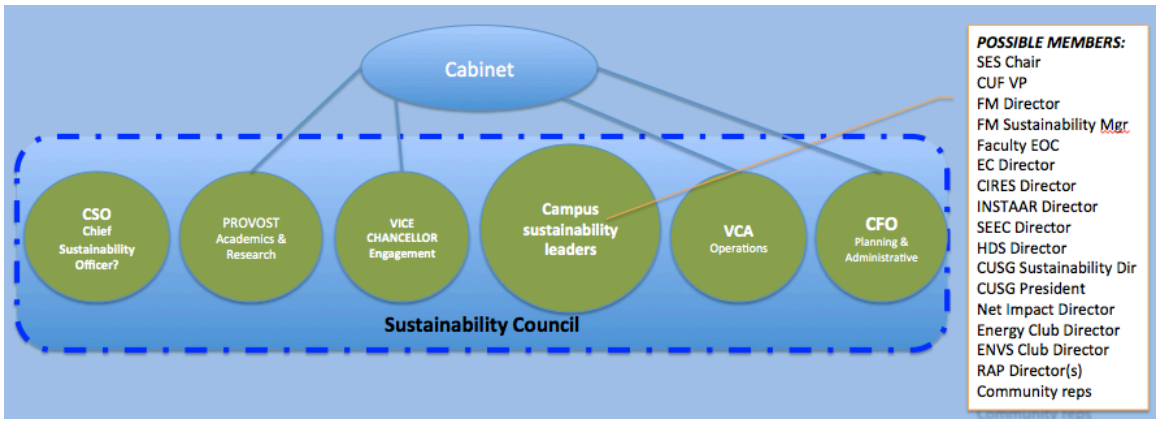

Figure 2: Draft proposed collaborative sustainability leadership structure

The SC's large size is intentional; it serves as a forum for all campus stakeholders to exchange ideas and forge consensus. This inclusive leadership principle is foundational to sustainable governance and noted in the literature[4] as among the most effective platforms by which campuses can comprehensively embed sustainability into the culture and practices of the university. Likewise, these broad stakeholder interactions promote the inter-unit catalysis that is central to the ISI vision.

The SC's size requires a leadership team comprised of a limited number of campus sustainability leaders. The final formation and roster of the leadership team should be determined as part of the strategic sustainability planning process.

The CSWG also recommends the eventual addition of a discrete Chief Sustainability Officer as a C-level position. Given the breadth of CU-Boulder's sustainability activities, the need for alignment with campus mission and strategy, and ongoing catalysis and coordination, it is imperative for a singular sustainability professional to insure expert sustainability context is present in leadership deliberations to better align with campus strategy and mission. As with the SC leadership team, the specifics of this position should emerge as part of the strategic sustainability-planning consensus.

Finally, the SC is proposed to align with STARS, the set of sustainability metrics used in higher education. This will allow for metrics and assessment to assay efforts going forward as compared to a baseline CU-Boulder has already established in its STARS reports.

step 2: Create a Strategic Planning Framework and Process

Upon convening the above-contemplated **Sustainability Council**, a sustainability strategic planning process should commence. That plan will integrate and leverage CU-Boulder's disparate sustainability assets and thereby broadly engage campus and community stakeholders in a shared vision and implementation process. The plan will lay out the framework for linking academic, research, operational, and engagement units on campus across a sustainability rubric. After review of peer schools' plans and mindful of the CSWG's desire to craft a ground breaking sustainability structure at CU-Boulder, the following key strategic planning elements should be included:

1. **A comprehensive charge from senior campus leadership informing a robust strategic sustainability planning.** This Charge should affirm that sustainability is foundational to campus mission and will be supported and responded to appropriately. It must infuse the planning process with high-level affirmation and urgency.
2. **Inclusive stakeholder engagement in planning process.**
   Insure that representatives from across STARS categories participate in the planning process. Insure robust communications, engagement, and public dialogue.
3. **Ownership of vision**
   CSWG vision is a starting point that must be refined by the planning group to promote shared vision and goals that align with University mission.
4. **Enhanced goal setting**
   Established campus goals (e.g. CAP, CMP) create the baseline for short, near, and long-term goals, public commitments and external review (e.g. STARS). These must be refined and

aligned with enhanced goals and opportunities for sustainability leadership that supports campus mission.

5. **Adopt inclusive/measurable plan framework**
   STARS provides established and comprehensive sustainability metrics; therefore, STARS categories can be used to inform plan architecture: 1) Education& Research, 2) Engagement & Outreach, 3) Operations, 4) Planning & Administration, 5) Innovation
6. **Refine a responsive organizational approach and dynamic plan iterations**
   Establish routine public progress monitoring (STARS etc). Make planning iterative by requiring 5-year updates.
7. **Identify resource needs and development process**
   Evaluate implementation needs, aggregate resource inputs, detail the development commitment needed to insure sufficient support to provide robust implementation.

Upon completion, the proposed strategic plan will be presented to the Chancellor for consideration.

step 3: Create an Integrative-Catalytic Process

Also offered as a concept to be reviewed and honed during the planning process, the heart of the ISI is a purposeful Integrative-Catalytic process. This process would create faculty, staff and student conditions that drive cross-linking interactions spawning creative student projects, faculty research, and operational innovations. Instead of relying on happenstance to incubate engagement and innovation, the Integrative-Catalytic process would virtually automate it.

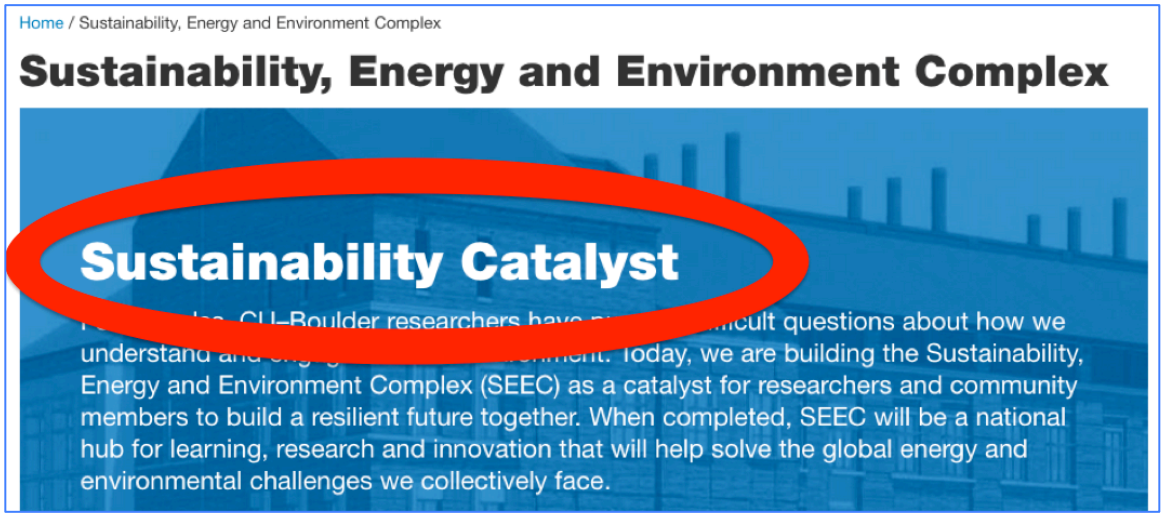

Figure 3: SEEC Sustainabillity Catalyst web portal

Two integrative catalytic systems that expand on successful existing campus efforts would drive this process. The first is the success of student-to-student sustainability-related entrepreneurial efforts pioneered by Leeds and the Environmental Center. The second is built

upon the success of the Sustainability Education Outreach Coordinator position supported by the Provost and the Environmental Center.

Summaries of these steps follow; details in the Appendix.

- **step 3a) A student-to-student sustainability incubator** that teams similarly interested students and then supports their sustainability-related entrepreneurial efforts with faculty and staff resources. The ISI vision is to establish main campus catalytic engagement nodes in several well-trafficked locations such as the UMC, Leeds, Engineering, Norlin, etc. ISI's outreach and communications activities would be used to drive students to these nodes where the mentoring process begins.

Details of this proposal are given in Appendix 2

- **step 3b) Trained, tasked, and enabled faculty/staff catalysts**. The second element of the Integrative Catalytic process is informed by the current success of the Sustainability Education Outreach Coordinator (SEOC) position jointly funded by the Provost and the Environmental Center. Building on that catalyst role, the ISI proposes that a number of other faculty and staff members be recruited, trained, and enabled to provide similar catalytic functions across all campus units. This team is a systematically expanding, organic group that makes connections and disseminates information about sustainability-related activities and opportunities to campus stakeholders thus boosting coordination, creating synergies and enhancing efficiencies.

Details of this proposal are given in Appendix 3

step 4: Comprehensive branding, marketing & development

Concurrent with the planning process, a review of approaches to a comprehensive branding, marketing & development effort should proceed. As noted above, CU-Boulder has considerable sustainability-related capacity across academics, operations, student engagement, athletics, and research. However, promotion and related development efforts remain siloed within respective units thus limiting leverage and synergy. While CU-Boulder has led national sustainability innovation in many of these areas, peer campuses have also mobilized and are now passing CU-Boulder in several important national rankings.

Details of this proposal are given in Appendix 4

benefits

campus planning benefits

The ISI vision directly benefits the entire campus and its planning processes by aligning our established guiding principles. The group researched and reviewed dozens of documents ranging from the Campus Master Plan and Flagship 2030, to department-level goals and initiatives. The basis of this exercise was to clearly discern campus sustainability goals and priorities while highlighting integration with the Chancellor's strategic priorities of reputation, revenue, and student retention.

The conclusion of this exercise was powerful; campus sustainability aligns perfectly with the "3 R's," [see "Support of Campus Goals" below] but sustainability goals and priorities are not consistently articulated or strategically integrated into the guiding documents of the University. With feedback from the broader CSWG and SES steering committee, the need for a campus-wide strategic sustainability plan was clear. Such a plan would be critical in further aligning efforts toward the Chancellor's priorities while clearly identifying ways in which to benchmark progress, increase effectiveness, and comprehensively guide our collective efforts.

operations benefits

Operational Sustainability Integration

Sustainable operations at CU-Boulder would utilize resources (students and knowledge) provided by other elements of the university. This would leverage the ability of operations staff and management to effectively realize CU-Boulder's sustainability goals (across a wide variety of areas). For this to be effective, operations staff must have the ability and means to communicate with research entities on campus to describe operation challenges in sustainability. Similarly, operations must be structured to consistently incorporate students into operations implementation and management (i.e., as an element of standard operating procedures). *Under the sustainable integration framework, operational activities can be coupled with either (or both) learning or research opportunities in sustainability.*

The ISI can significantly increase opportunities for students to gain practical career skills, while increasing operational cost savings and moving forward more quickly on multiple fronts of campus sustainability goals. The mechanism that ties these benefits together is practicum/service learning partnerships, where faculty who are committed to facilitating student learning through real life projects, look to operations units for projects, and campus operations staff seek the assistance of faculty and student teams. The types of projects that could benefit from these partnerships are as varied as the disciplinary and professional strengths of the faculty and staff of the CU-Boulder campus.

At present, there is no central hub where operations staff with potential class projects and faculty looking for on-campus projects can find each other. The ISI presents an ideal platform for establishing a central hub for matching course learning goals with expressed challenges proposed by Facilities Management, Housing & Dining Services, CUSG, the Environmental Center or other campus entities. Outcomes of this synergy include:

- ***Best Practices:*** CU-Boulder operations staff and researchers (as well as students) would test potential sustainability solutions, approaches, and technologies. This would ultimately provide the campus with high-performing technologies and approaches, and enable CU-Boulder to disseminate best practices in sustainability to partners and communities.
- ***More Sustainable Outcomes:*** Because CU-Boulder's research apparatus would be working in concert with operations – and testing various approaches - the university has a significantly enhanced ability to achieve its sustainability goals and become a more sustainable and efficient campus.
- ***Operations as Teachers:*** A not insignificant element of operational sustainability integration is that the relationship of operations to the academic mission of the campus instantly changes. That is, operations – in and of itself – becomes an important element of the academic enterprise.

Additional details of Operational Benefits are in Appendix 5

research benefits

The ISI will create new research opportunities among existing researchers, enable new areas of funding, help attract and retain new highly qualified researchers, and catalyze new university-business partnerships. These benefits flow from the symbiosis between a robust research presence and enhanced campus brand.

Sustainability-Research Integration

Researchers on campus would work in concert with operations management and staff to identify opportunities for, as well as obstacles to, the adoption of sustainability practices and technologies across campus. Researchers would also assess and develop solutions for more efficient and sustainable practices and technologies (including the built environment).

To continue CU-Boulder's research leadership in this arena, we must continue to successfully recruit top new faculty members in sustainability fields who have competing offers from private universities, despite the lower pay that state universities offer versus private universities. Numerous research units reports that these top-flight faculty are recruited to CU-Boulder and accept lower salaries, in part, because of our overall reputation as a sustainability leader.

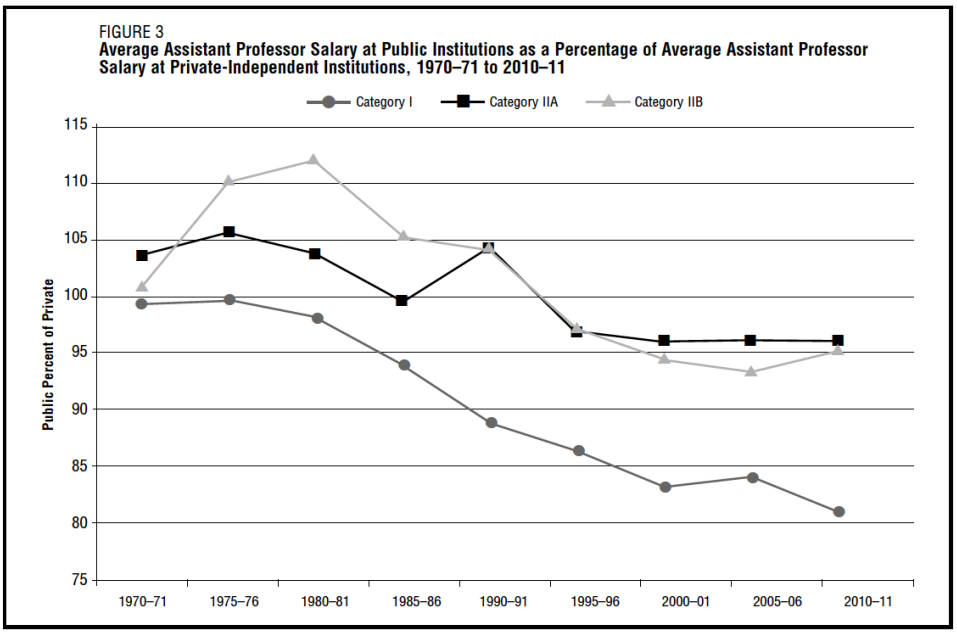

Figure 4: Category I are doctoral granting universities, which continue to lose ground to privates in Assistant Professor salaries (19% lower in 2010-11). Source: AAUP

academics benefits

Academic Sustainability Integration

Experiential sustainability opportunities would be incorporated into curricular programs in order for students to actively and directly engage in operational actions, assessment and implementation of sustainability efforts. Online and in-person sustainability programs would be actively incorporated into the curriculum in academics units across the campus.

Experiential sustainability opportunities would be incorporated into curricular programs in order for students to actively and directly engage in operational actions, assessment and implementation of sustainability efforts.

The integration of sustainability into academic, operational, and cultural visioning is central to the core mission of higher education. Integration depends, however, on collaborative, non-hierarchical modes of institutional governance in order adequately to address students' desire to solve complex problems.

'Living Learning Labs' are potential game changers on the horizon for higher ed. Learning Labs introduce systematic efforts to break through the current curricular and operational paradigms and form a new model for both education and sustainability action. A learning lab is a 'place' where problem-based teaching, research and applied work combine to assist students in developing solutions to complex problems.

If the linkage between academics and operations can be forged effectively, and supported over time, then facilities managers will have access to a new powerful set of resources for data analysis, awareness campaigns and planning, and students will be provided with the hands-on experience, skill development and knowledge necessary to truly face the many vexing issues of our time.

community benefits

Partnerships

Sustainability integration across campus units can also be leveraged for projects with community partners. For example, the City of Boulder might be interested in reducing the impacts of stormwater runoff, emanating from the CU-Boulder campus. CU-Boulder researchers, supported by CU-Boulder students and in concert with CU-Boulder operations staff, could test various types of stormwater mitigation technologies (like pervious pavements). The City could conceivably help to finance these assessments, and then apply best practices and successful technologies in other [non-CU-Boulder] parts of the City.

support of campus goals

New Revenues & Enhanced Fiscal Strength

The ISI proposal could derive several new or enhanced existing revenue-generating mechanisms:

- **Increased corporate funded research**. The ISI structure would enhance and promote a broader range of CU-Boulder's sustainability expertise thus marketing our sustainability acumen and research capacity.
    - For example: After learning of CU Athletics sustainability leadership via "Ralphies Green Stampede," Pepsico contacted CU Athletics for funded research aimed at improving recycling rates. After referral to the Office of Industry Collaboration, ENVS and the Environmental Center, a 2-year, 6-figure funded research effort is underway led by a faculty PI working with campus operations and engagement professionals.
- **Increased professional education products.** The Sustainable Practices Program (SPP) online certificate in Sustainability Management has fielded a national online marketing platform that has drawn mid-career professionals and others seeking professional-level skills training. With the transition of SPP to the SES, derivative products that leverage ISI's enhanced sustainability acumen will evolve.
    - Graduate certificate(s):
        - Already included in SES' Professional Education prospectus is a Sustainable Practices online graduate certificate built on the SPP curriculum.
        - Other certificates such as sustainable entrepreneurism and sports sustainability could easily evolve from CU-Boulder's leadership in that space.
    - MOOCs
        - With SPP's success at online marketing, MOOCs can be fielded that offer an array of entry-level sustainability content derived from SPP curriculum and emerging ISI generated experience.
- **Sponsorships.** CU-Boulder's sports marketing contractor, Learfield Sports, has just in the last 12 months signed new sponsors and renewed others for 6-figure, multi-year contracts. Enhanced campus sustainability leadership will inure more sponsorship in sports and other areas:
    - Environmental Center engagement programs such as the SCORE program receives sponsor funding from Xcel Energy, Boulder County, and the City of Boulder.
- **Development.** Like the above sports sustainability market, sustainability-related donors come from non-traditional enterprises and have different values. Fundraising for sustainability-related activities is currently led by whatever unit is seeking such funds.

The ISI structure would overlay a coordinated and branded effort as described in the Proposal section.

Reputational assets

Sustainability is a key component of overall campus reputation and delivers measurable reputational assets. As a former Sierra Club #1 Green Campus (2009), CU-Boulder is keenly aware of these benefits. This is important for many reasons including that over 41% of incoming CU-Boulder students report that they make their college attendance decision, in part, based on their sense of a campuses environmental reputation. These data fall in the range of several national studies of incoming freshmen's college selection criteria:

Summary of Studies of Sustainability's Influence on College Choice*	
Data Source	*Percent freshman indicating some level of preference for a sustainable campus*
Princeton Review (2009-2013)	62%
Aramark (2006)	23-34%
UCLA 2008	45%
UCLA 2012	26.5-40%
University of Michigan (2012)	27-64%
University of Colorado Boulder (2012)	41%
Tufts University (2012)	37%
** NOTE: This table is a summary of data but not a comparative analysis. Questions, sample size, and methodology vary from source to source*[5].	

Table 1: Sustainability's Influence on College Choice

Likewise, research shows[6] that prospective freshman research colleges online, look for academic interests, and then narrow the selection process to brand.

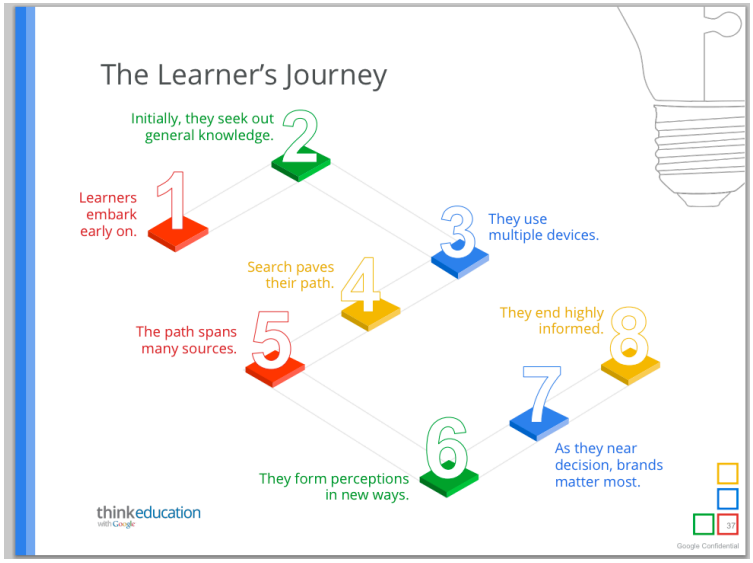

Figure 5: Prospective students decision making path

Research at the University of Chicago (Cohen, et al) modeled how enhanced reputation driven by sustainability and other factors returns value through alumni and donor support, yield, attracting and retaining talented researchers, staff, and faculty, and increased extramural funding.

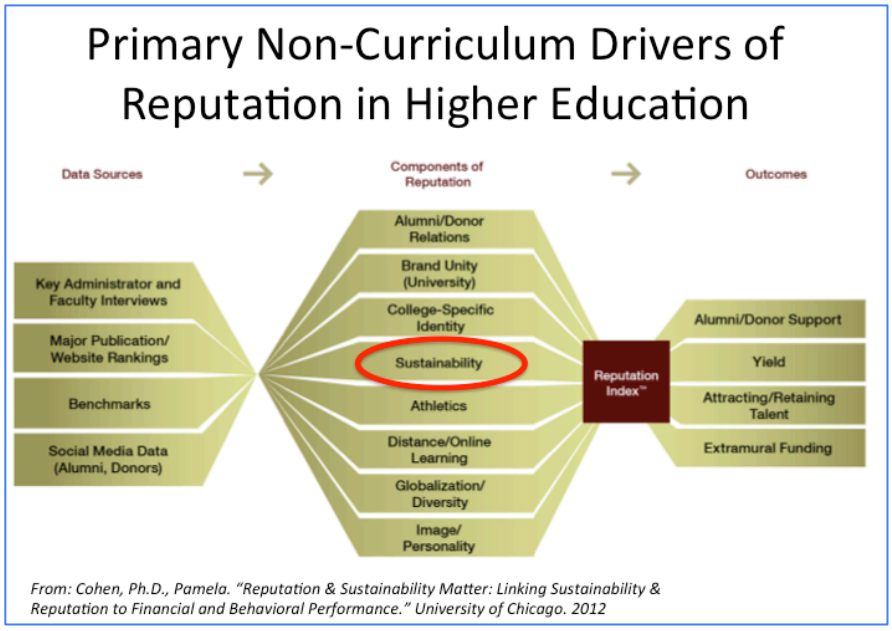

Figure 6: Primary components of campus reputation[7].

Retention and graduation rates

The ISI proposal improves CU-Boulder's sustainability presence in the two areas crucial to improving retention and graduation rates: academics and engagement.

As discussed in the Integrative-Catalytic process section above, upgrading our existing system of Mentors, Events, Resources, and Outreach will enlist more students in formative, faculty supported idea development. Classroom learning is leveraged accordingly. Likewise, the proposed ISI communications liaison and project clearinghouse function detailed in this report (Operations section-Appendix) gives faculty ready access to operational challenges that can be explored with students. This living lab structure will also serve to engage more students in and out of classrooms thus driving retention.

Likewise, as seen in the data from incoming CU-Boulder students who reported a very high personal commitment to reducing their personal environmental impacts, a highly visible and functional sustainability presence would better engage students through Residential Life programming, Environmental Center programming, student clubs, and other Student Affairs initiatives. Providing and promoting these engagement opportunities could greatly impact the

number one sentiments reported from students who drop out of college: “the campus didn’t care about me and/or I received poor service or treatment.”

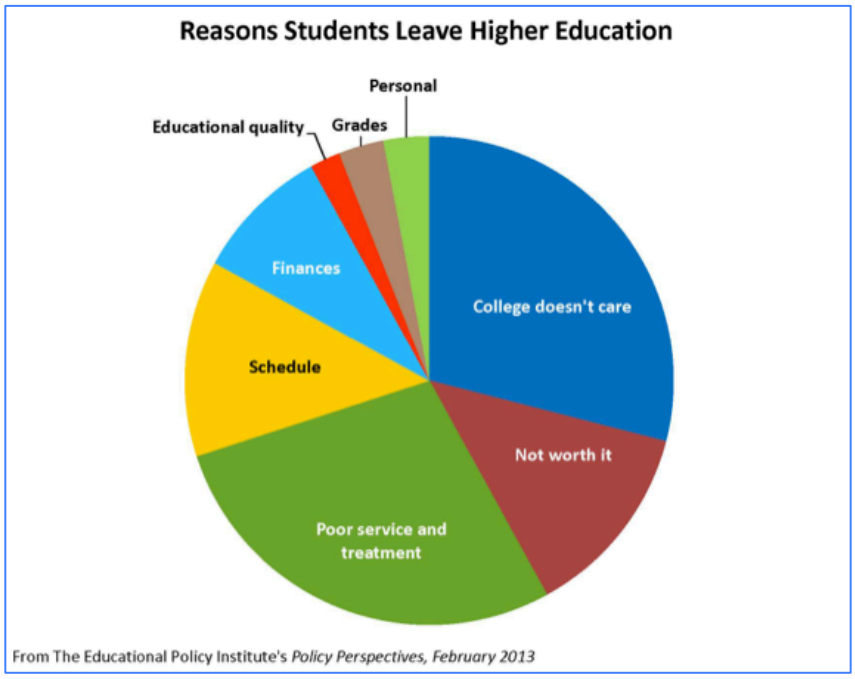

Figure 7: Reasons students leave college

Additionally, in an analysis of 234 US campuses’ STARS reports each spanning the 70 STARS credits employed to assay a university’s overall sustainability performance (Adkins, Spurlock, et al[8]), three STARS credits showed significant correlation with increased retention and graduation rates. These data speak favorably of the retention/graduation efficacy of the proposed ISI efforts as follows:

- **STARS Credit AC-5: Immersive sustainability experiences**: “A sustainability-focused educational study program one week or more in length and may take place off-campus, overseas, or on-campus.”
    - CU-Boulder has a few of these; however, given their retention effectiveness and the sustainability resources the ISI proposal would elevate, more such programs could be initiated.
- **STARS Credit EN-5: Sustainability outreach campaigns**: “Sustainability-related outreach campaigns directed at students that yields measurable, positive results in advancing sustainability.”
    - CU-Boulder has many of these offered by HDS, the E-Center, FM, etc.; however, these campaigns have limited shelf lives given evolving student interests and evolving topical issues so they must be refocused accordingly. The ISI proposal would enable more such efforts that are better coordinated and broadly cast.

- **STARS Credit EN-1: Sustainability educators programs**: "Formal, ongoing peer-to-peer sustainability outreach and education program for degree-seeking students."
    - The E-Center and Residence Life have several of these programs that directly expose the majority of students to some sort of student-led sustainability-related program. The ISI proposal directly speaks to more of these types of catalytic efforts and would enable more such efforts that are better coordinated and broadly cast.

As seen below, across all STARS credits, the level of a campuses STARS award shows a slight trend towards enhanced retention and graduation rates as the campuses attain higher STARS rankings.

STARS Rating	*Retention rate*	*Graduation rate*
Gold (n = 50)	**86%**	**70%**
Silver (n = 128)	**85%**	**68%**
Bronze (n = 56)	**77%**	**57%**

Figure 8: Comparison of average retention and graduation rates vs. STARS rating[9]

resource impacts

Overall proposal impacts

Resources impacts for the implementation of this proposal would hinge on the strategy and implementation details contained in the sustainability plan. Nonetheless, we have shown positive impacts as follows:

- **New revenues**. As described under the Benefits section, implementation of this proposal will invariably lead to enhanced new revenue opportunities.
- **Student retention and graduation rates.** Additional student retention is both measurable and very likely to improve as a result of the elements detailed in this proposal.
    - As retention improves, we know that each 1% of increased retention per semester over 6 years grosses an estimated ~$4.5 million in unrealized tuition and fees from students who started as freshmen. While there are presumably costs associated with accruing these increases, there are doubtless costs associated with recruiting and fulfilling 'replacement' students also.[10]
- **Reputation**. As described in the research, there are several ways sustainability helps improve reputation; hence, it helps deliver resources through alumni and donor support, yield, attracting and retaining talented researchers, staff, students (recruitment) and faculty, and increased extramural funding.
    - **Branding, marketing, and development**. The proposed branding structure detailed herein likewise would help boost reputation and its derivative benefits as enumerated above.

Short-term resource needs

- **Empaneling an interim leadership and coordination structure:** resource impacts are minimal, limited to staff time and administrative efforts.
- **Empowering a strategic sustainability planning process**. Engaging stakeholders into the process requires minimal resources. However, facilitation of the process can only be done internally if appropriate expertise with sufficient bandwidth can be sourced. Perhaps preferably, an external consultant should be retained to facilitate and support the planning effort. In that case, appropriate consulting costs can be negotiated.

Potential implementation costs

- Presuming the strategic plan delivers recommendations similar to those in this proposal, resources sufficient to enable several prospective campus processes need to be contemplated more fully when details are delivered.
    - **Catalysis systems**.
        - **Student to student.** The envisioned student-to-student catalytic process should be embedded into various academic units ongoing efforts. This will require evaluation by appropriate academic leaders. Upon development of an accepted approach, resources can be detailed.
        - **Faculty-staff.** The envisioned faculty-staff catalysis structure, if affirmed in the strategic plan, would likely detail some FTE cost impacts. Again, this is difficult to predict before the process is fully detailed.

implementation and recommendations

Recommendations
In order to move forward briskly to seize the opportunity embodied in this proposal, the working group asks for the following recommendations to be affirmed by campus leadership:

1. Establish a cross-campus Sustainability Council to collaboratively engage all stakeholders in planning how to deliver the vision of "embedding sustainability into the foundation of contemporary higher education."
2. Produce a strategic plan and implementation analysis outlining how CU-Boulder would adopt an integrative sustainability framework that cuts through and links academic, research, engagement, and operational units on campus while expanding on the existing Sustainability Alliance between CU-Boulder, the City of Boulder, Boulder County, and the Boulder Valley School District. This proposal would be delivered by Earth Day, April 22, 2016.
3. Empower the development of a comprehensive branding, marketing and development campaign to capitalize on the strategic symbiosis of CU-Boulder's sustainability assets and thus boost reputation, recruitment/retention, and fundraising success.

Implementation Timeline

- **Summer 2015:** Establish interim governance and coordination
- **July 2015-April 2016**: Launch/conclude strategic sustainability planning process.
- **April-June 2016**: Identify and detail process and resource impacts for implementation.
- **July 2016**: Launch

appendices

appendix 1

CSWG process and timeline

The CSWG met as a group five times from November 2014 to March 2015.
Small teams met at various times along the way.

Process criteria

Proposed structures and processes were evaluated according to criteria developed by the group at its first meeting. These include:

- Leverage of SES goals
- Linkage to campus goals
    a. Retention
    b. Revenues
    c. Reputation
- Resources required
- Sustainability goals leverage
- Implementation feasibility
    a. Cultural transition
    b. Functionality
    c. Timelines
- Assessment mechanisms
- Appropriate inclusiveness
    a. Integration of relevant benchmarked best practices & lesson learned
    b. Alignment with mapped CU assets
- Enhances crosscutting research and teaching
- Improves coordination

appendix 2

Details of step 3a: student-to-student catalytic

Modeled after a pilot Leeds-Environmental Center project named nLab that has grown into a more robust iLaunch, this student engagement system would feature highly visible student recruiting and an informed support network across many academic disciplines. The inter-disciplinary cross-linking of students with similar ideas will breed innovation—and retention.

This platform works. During a one-year nLab mini pilot, about 130 students utilized this cross-campus idea incubator, with about half attending events and half using the coworking and mentoring services. Students came from a dozen different departments, including information systems, communications, business, engineering, music, environmental studies, English, geography, and digital arts, as well as several alumni. Of the students using mentors nearly 25%, had sustainability-related projects.

Students and faculty responded well to the experience and saw new opportunity.

> *"I'm beginning to use nLab as an additional tool to give my students a safe, welcoming and helpful place to apply course material to ideas of their own and others," said Eben Johnson, a CU-Boulder lecturer in the Lockheed Martin Engineering Management Program. "The value of nLab is that it's for the whole campus. From music to biology, history and finance, great ideas for new products and services are found everywhere."*

Accordingly, the ISI student-to-student matchmaking process would expand on existing support systems with an expanded and focused system that includes:

a) **Mentors.** Actively recruited mentors with experience in sustainability across a range of disciplines.
b) **Events.** Hosting events in all colleges and departments.
c) **Online resources.** Online user concept development checklists incorporate questions about sustainability so that students from all majors come in contact with the issue, and the resources section of our website includes topics in sustainability.
d) Outreach. Adapt nLab's mobile approach to expand opportunities for students to learn more about sustainability. This was a successful experiment aimed at reaching non-traditional entrepreneurial majors and engaging these students into supported idea development process with other students and faculty.

The ISI vision is to establish main campus catalytic engagement nodes in several well-trafficked locations such as the UMC, Leeds, Engineering, Norlin, etc. ISI's outreach and communications activities would be used to drive students to these nodes where the mentoring process begins.

As students are aggregated and teams emerge, SEEC is the flagship location for more robust catalytic development processes and SES is the natural host of these activities. Here, ISI assembled student teams can be exposed to an array of sustainability-related resources and concepts. Indeed, SEEC's mission and design is to help forge this creative environment and the SES can partner with allied campus units to facilitate this process.

appendix 3

Details of step 3b: Trained, tasked, and enabled faculty/staff catalysts.

The second element of the Integrative Catalytic process is informed by the current success of the Sustainability Education Outreach Coordinator (SEOC) position jointly funded by the Provost and the Environmental Center. That position retained a 0.1FTE tenured faculty member (Prof. Kevin Krizek, then Prof Bruce Goldstein) who effectively serves as liaison and catalyst between campus academic, research, and operational units. He has helped cross-connect programs, seed enhanced sustainability knowledge among faculty, and provide high-level strategic assistance with ongoing sustainability issues. The mission of the SEOC is instructive of ISI's intended approach:

> *"Foster broader sustainability-education across the campus community, enhance coordination of sustainability education and operational efforts, and better communicate all of CU's sustainability initiatives to internal and external stakeholders."*

Building on that catalyst role, the ISI proposes that a number of other faculty and staff members be recruited, trained, and enabled to provide similar catalytic functions across all campus units. This team is a systematically expanding, organic group that makes connections and disseminates information about sustainability-related activities and opportunities to campus stakeholders thus boosting coordination, creating synergies and enhancing efficiencies.

The Catalysts are recruited from existing faculty and staff drawn from all campus areas. The catalysts should be given an additional X% FTE appointment, with funding, to legitimize this role and create accountability. Over time, the Catalyst ranks should be increased. However, at the outset Catalysts may be drawn from:

- Operations (FM & HDS)
- Engagement (EC & SA)
- Academic (SES et al)
- Research (SEEC, et al)
- Development (OIC, Foundation, et al)
- Community (Sustainability Alliance: COB, BC, BVSD)

The Catalysts could be organized & facilitated by the existing SEOC but continue to report through their existing administrative channels. Alternatively, the CUSC would serve as the Catalysts coordination and facilitation body.

Likewise, these Catalysts must be trained in change management, entrepreneurial support, and strategic sustainability competencies. Such training may be available through Leeds, the

Unreasonable Institute or similar, and the International Society of Sustainability Professionals (ISSP), among others.

appendix 4

details of step 4: Comprehensive branding, marketing & development

Concurrent with the planning process, a review of approaches to a comprehensive branding, marketing & development effort should proceed. As noted above, CU has considerable sustainability-related capacity across academics, operations, student engagement, athletics, and research. However, promotion and related development efforts remain siloed within respective units thus limiting leverage and synergy. While CU has led national sustainability innovation in many of these areas, peer campuses have also mobilized and are now passing CU in several important national rankings.

Likewise, the need for a unified CU sustainability position was also recently cited in the "Sustainability Visioning" report from a faculty task force to the Provost:

- *"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."*

Accordingly, the ISI proposal visualizes the integration of CU's sustainability capacity under a discrete brand, common vocabulary, and shared marketing and development. Likewise, this concept includes leveraging CU's continuing leadership in sports sustainability and recycling to provide a high visibility platform for additional sustainability innovation for all related campus activities.

In short, the development, branding, and marketing proposal:

- Unifies disparate CU sustainability activities under a discrete brand
- Languages them via a consistent vocabulary and communications plan
- Coordinates and synergizes fundraising activities for all sustainability functions
- Markets the unified brand via a central comprehensive web portal and innovative fan and stakeholder engagement strategies in athletics, among other pathways
- Enhances CU's national reputation as a sustainability leader.

Branding Consistency

The need for a consolidated CU sustainability brand and marketing plan is analogous to the recent rebranding of CU's overall brand position. That effort jettisoned the many disparate logos and brands propagated over the years by CU's many units in favor of the single CU logo with consistent unit naming protocols.

Branding Efficacy

It is fairly intuitive that unifying CU's sustainability marketing and development efforts will enhance their overall effectiveness. The present disjointed structure is necessarily ineffective and inefficient—and is actually undercutting ongoing activities, as noted in the College of Sustainability visioning report previously cited.

- *"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."*

With respect to development, a coordinated effort across all units and organized under one brand would enable better matching of prospective donors interests with compelling opportunities. In the past, we have seen instances where a donor is being approached, say, for a capital project when in fact the donor is more inclined to support a programmatic activity. By organizing the marketing collateral and coordinating sustainability-related development activities, donors with certain interests can be engaged more appropriately. Overall donor interest was also noted in the Visioning report:

- *"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."*

CU could realign around a consolidated sustainability branding, marketing, and development effort without significant investment. Most of the assets are already in place. Implementation would require:

- Minor organizational realignment among fundraisers in support of a multi-unit sustainability development effort.
- Brand development. UCOMM, SEEC, E- Center, ENVS, Leeds, Engineering, etc involved.
- Fundraising collateral developed.
- A unified development approach across all units' development liaisons developed.

appendix 5

Details of Operations Benefits

A number of departments and courses already solicit project partnerships with operations units for practicum requirements, such as CVEN 4434, ENVS 3001, ENVD 4340, ENVD 4363, and RESI 4150. These partnerships have already produced results in areas as varied as:

- Generating a waste-to-energy feasibility study for CU Recycling;
- Designing an energy and water learning interface for Williams Village North;
- Eliminating take-out plastic bag use from at all Dining Services Grab-n-Go operations;
- Establishing the C4C herb garden;
- Assisting Facilities Management in assessing custodial acceptance of Green Seal certified cleaning products;
- Evaluating desk-side printer use among academic and administrative units in association with the introduction of multifunction devices on the Boulder campus;
- Researching food provenance to help revise purchasing guidelines for Dining Services;
- Creating a 3-D campus model for Facilities Management; and
- Designing campus landscaping with CU-Boulder's landscape architect.
- A recent ENVD 3100 course consulted for GoBoulder on crosswalks on Folsom St.

Students can advance projects that operations units do not have the staff nor the budget to undertake. Students appreciate the opportunity to be involved with a project that requires them to develop expertise and present to stakeholders.

In order to maximize the potential of academic/operational partnerships, a coordinating communications function is recommended. The current situation provides no means of communication of current or past projects happening across the campus and also relies heavily on the development of personal ties between specific faculty and operations staff. The coordinating communications FTE is a single location for:

- Operations staff looking for help with projects;
- Faculty looking for projects for classes; on-line documentation of past and current projects;
- Potential partnerships between research labs and operations units for testing new ideas,
- Meeting the need for an outreach component in research projects, or developing honors or master's thesis projects;
- Potential features for University Communications; and
- Assistance for faculty and students in contacting responsible parties in operational and administrative units.

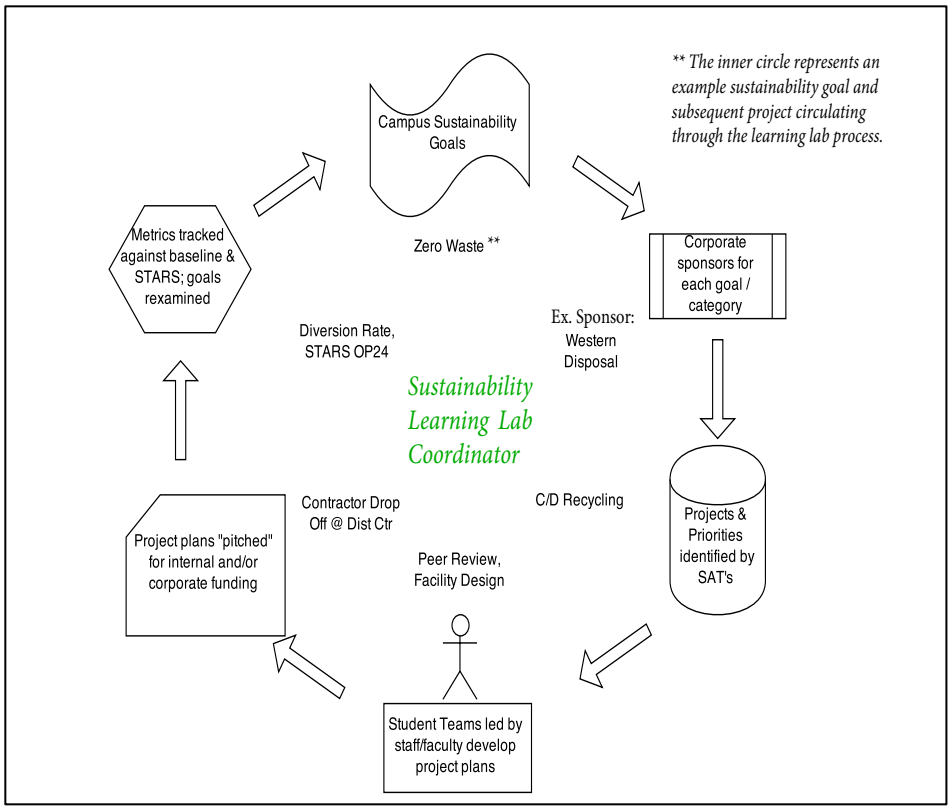

Figure 9: Sustainability learning-lab coordinator interface and process

In addition, the communications position should benefit from a discretionary fund for various project-related expenses. The cost of materials necessary for some projects are not covered by departmental funds, such as pilot studies to introduce new energy, water or materials conservation hardware, or rewards for student participation in surveys.

appendix 6: peer campus examples

Penn State University Sustainability Institute

Penn State University created a Sustainability Institute in 2011 that has integrated and synergized disparate campus sustainability assets through an innovative organizational structure that enables streamlined inter-silo creativity in service of a jointly developed strategic sustainability vision and plan. Their mission:

> *"The comprehensive integration of sustainability into the University's research, teaching, outreach and operations that will prepare students, faculty, and staff to be tomorrow's sustainability leaders."*

PSU's Sustainability Institute does not control PSU's sustainability efforts. It is instead a fulcrum for the campus wide strategic sustainability plan that seeks to **Link** related initiatives, **Leverage**

their success, and **Elevate** their findings through systematic inter-disciplinary and inter-portfolio assets.

Figure 10: Penn State Sustainability Strategic Plan web portal

Accordingly, the Institute provides a unique platform for a collegial strategic sustainability leadership and governance system that focuses on interdisciplinary outcomes that directly serve campus mission. A leadership executive team is comprised of an array of campus leaders that includes five Cabinet members that provide inter-silo collaboration and a strategic focus that aligns vision, structure, resources, and indicators (STARS).

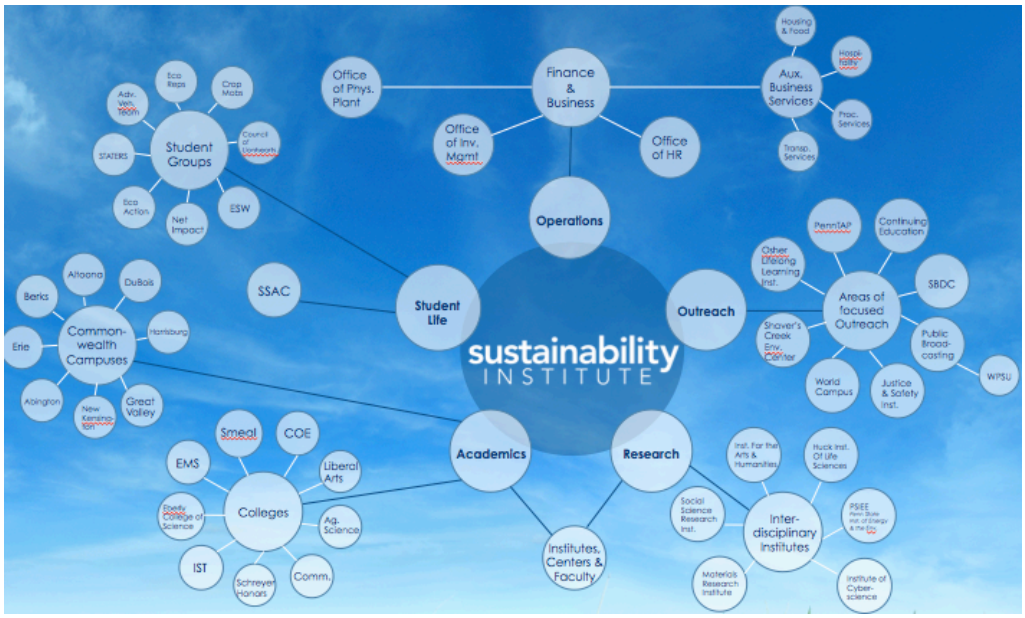

Figure 11: Penn State Sustainability Institute Organizational Approach

In an interview with CU-Boulder, PSU Sustainability Institute's Executive Director, Denise Wardrop, Ph.D., indicated that these executives "like having a discussion environment that is not a zero sum game, that adds value to the university mission. This environment is more collegial than a Cabinet discussion because there is no competition for resources. They just focus on strategy and mission."

At the same time, Wardrop indicates she and other campus leaders on the executive team, "need to hear from the execs what is on their mind, what their challenges are, so that we can understand and try to align with it and help."

Figure 12: Penn State Sustainability web portal

Also notable in the Institute's role as sustainability fulcrum is the integrated web platform that integrates all campus sustainability assets. Wardrop said that "while we are a web portal, it's not all ours. Of all the stories on our site, we wrote maybe 10 of them. When we see others' work published, we call them and ask if we could tag it and put it on our portal. We want to elevate them, be their champions."

Stanford D School, et al

CU-Boulder is not alone in hearing student complaints about existing silos that prevent them from working on cross-disciplinary teams to address important social and environmental issues. The problem of fragmentation on campus as a primary source of student frustration is ubiquitous to institutions of higher learning.

Lessons from the following examples inform the intent and design of the ISI proposal: cross-link students through structured catalytic efforts.

For example, **Stanford**, **UIUC** and **MIT** have developed innovative ways of engaging students and faculty through Human Centered Design programing. Generally speaking, Human-Centered Design is an interdisciplinary process of generating solutions to complex social and environmental problems.

The **Stanford D School** began as a result of student dissatisfaction with the lack of coordination and collaboration among diverse disciplines in the areas of social innovation and sustainability. Students became so frustrated with the 'siloed' approach to education on campus, that they went off campus to create a 'place' where students from different disciplines could gather to work together on multidisciplinary teams in addressing complex social and environmental issues (This has also happened at CU-Boulder. A year ago, the off campus "SPARK" incubator became "a student designed and created coworking meets incubator space, designed to foster creativity, progress talent, and accelerate innovative ideas" in a collaborative context not fully present on campus.) In working together to solve complex problems, the teams developed a method which has become known as Human Centered Design thinking. The off-campus site became so popular that it attracted funding and then became subsumed by the university. Now, Stanford's three-day executive "boot camp" in HCD, run in partnership with the **Stanford Graduate School of Business**, costs $9,500 per person.

The **University of Illinois at Urbana-Champaign** has recently implemented a similar program called, **Social Innovation @ Illinois**. The multidisciplinary initiative promotes social innovation and sustainability by linking students, faculty research, operations, and community partners. At the center of the initiative, the **Community Learning Lab** is intended to enhance the relationship between student and faculty engagement and community outreach. For example, the Learning Lab utilizes internal and external campus engagement maps to link campus resources with student consulting groups and the greater community.

The above examples provide a framework of a system that enables students to work with faculty across disciplines in moving along the continuum of stages from cognitive empathy and wanting to 'make difference' to prototyping and implementation of an idea to solve a community-based social or environmental problem. The programs inspired campus-wide cultural transformation, with students/faculty/staff/ and community leaders as catalysts, bringing to bear academic rigor and study to test and track meaningful collective impact.

University of British Columbia - UBC Sustainability Initiative

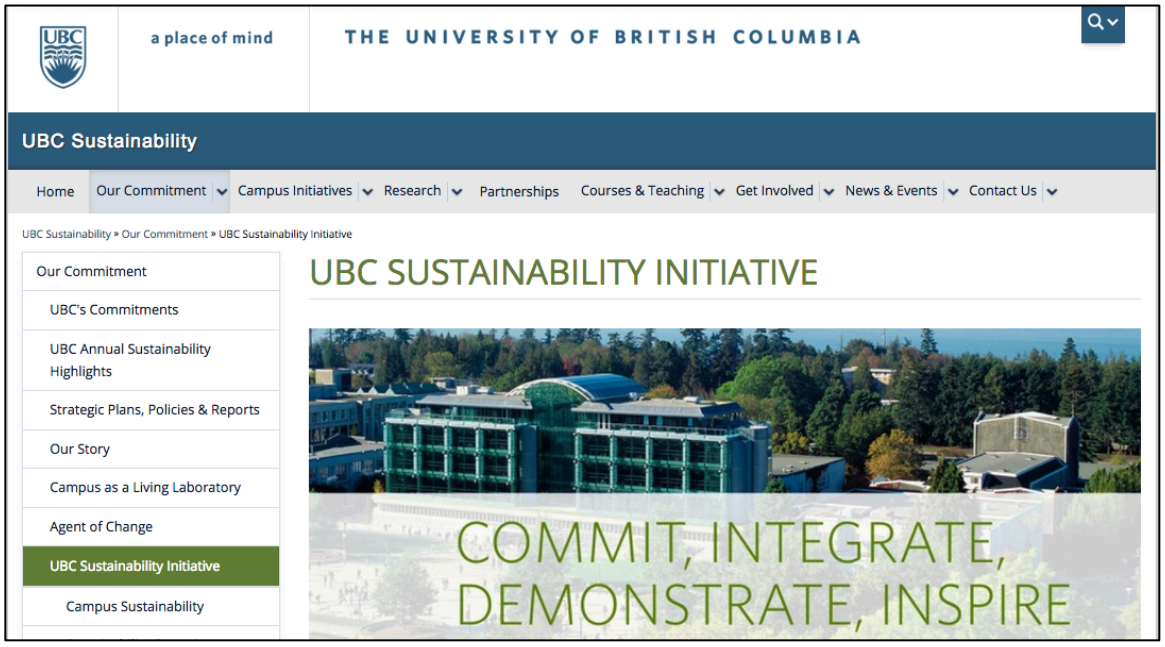

Figure 13: UBC Sustainability Initiative home page

Overview

The University of British Columbia's (UBC) UBC Sustainability Initiative (USI) is the framework for integrating sustainability directly into the university's teaching, research and operations units, and into the UBC community. The USI is the central operational feature that implements UBC's 2009 Sustainability Academic Strategy.

The USI was implemented in 2010. The integration that sits at the center of the USI transforms UBC into a "living laboratory." That is, the university's academic and research enterprises are matched with external partners (private, public, and non-profit) to test the efficacy of sustainable operations (institutional, behavioral, technical) by taking advantage of the complex but coordinated context of a campus environment.

UBC defines sustainability as "simultaneous improvements in human and environmental wellbeing, not just reductions in damage or harm."[11] The university believes that it has a societal role in helping to facilitate that sustainability vision. A university campus is one that it is effectively a large community with heterogeneous infrastructure and landscapes – but with a centralized operations system. As such, given the academic functions and research resources, the very nature of a campus lends itself to testing various sustainability initiatives. And, similar to the university's traditional roles of educating students and producing research and technology for the wider community, UBC works with partners to disseminate best practices in

sustainability and green technologies off campus. These elements – the 'living laboratory' and being an 'agent of change' are at the core of UBC's USI.

UBC's Sustainability Academic Strategy includes four elements: teaching, learning, and research; operations and infrastructure; the UBC community. The integrative function of the USI is the central mechanism for achieving the university's overarching sustainability goals.

- *Teaching, Learning, and Research*: UBC's curriculum is being structured to allow for every undergraduate student – no matter her or his major – to choose a sustainability "pathway." Through a series of sustainability faculty fellows and curricular innovation grants, sustainability themes and materials are being added to the curriculum across the entire campus. UBC researchers are encouraged to pursue fundamental and applied research agendas that touch on sustainability issues. This includes facilitating engagement between operations staff and UBC researchers to test and improve various elements of campus operations and practices, with sustainability and efficiency in mind.[12]

- *Operations and Infrastructure:* UBC has formally internalized sustainability considerations into all planning and implementation activities across campus operations and infrastructure. All elements of the university recognize the university as a 'living laboratory' and engage in operational activities with this as a central function. UBC's built environment and landscapes are viewed as test beds by which sustainability practices and operations can be studied, iteratively applied across other parts of the campus, and disseminated to external partners.[13]

- *UBC Community:* UBC's sustainability strategy explicitly acknowledges the university's role in the wider community, and that social well-being sits at the core of sustainability. Campus policies promote affordable housing options for faculty, staff and students to create a compact and complete "live-work-learn" community; reducing auto usage and facilitating transportation alternatives; an integrative food system that improves environmental, personal, and community health.[14]

More about UBC's sustainability enterprise and USI can be found at: http://sustain.ubc.ca.

Governance

The USI is a horizontal governance initiative that cuts through and links the traditional vertical structures that are endemic to university organizations: academic departments, administrative and operational organizations. Sustainability governance at UBC, through USI, explicitly acknowledges it has not substantive operational control or resources. Rather, it recognizes its primary role and utility lies in supporting, facilitating and mobilizing sustainability behaviors, programs and initiatives in the formal and existing units.[15]

The director of the USI is the Associate Provost, Sustainability. This position represents the USI and promotes sustainability at senior levels of the university. A Steering Committee and a Working Committee guide sustainability integration. The membership of these two groups consists of diverse stakeholders from campus operations, academics and research. The Steering Committee is charged with overall USI governance, decision-making and strategic direction. The Working Group is charged with project development and evaluation. From a 'ground-level' perspective sustainability initiatives are guided by two additional sets of individuals. Sustainability Fellows act as interfaces with the academic community to integrate sustainability into the curriculum. Sustainability Coordinators (consisting of approximately 80 individuals) guide sustainability initiatives across various departments (operational, administrative, student life, academic) on campus.

Projects: The following are a sample of various and ongoing USI-driven projects at UBC.[16]

- The 'Tall Woods Student Residence' project: A student residential building that will be a green building and that will have laboratory space built into the structure. UBC researchers, students, and local industry will be able to test building performance and sustainability behaviors at the site.

- The UBC Sustainability Revolving Fund pilot: Provides financing for implementing energy efficiency and other sustainability projects to allow for ongoing cost savings.

- Bioenergy Research and Demonstration Facility: Operational optimization through applied UBC research and corporate partnerships to achieve 2015 greenhouse gas (GHG) reduction targets.

- Academic District Energy System: Continue conversion of current steam to hot water. Research and external stakeholder partnerships facilitating process.

- Campus Sustainability Engagement Strategy: Includes zero waste recycling competition in offices; behavioral change approaches in student residences; and, establishing Sustainability Coordinator Program in labs.

- Ongoing academic and research activities:
    - Faculty grant and award programs to incentivize the development and implementation of sustainability 'learning pathways' and the integration of sustainability material into large first-year courses.
    - Provide students with an expanding range of experiential learning opportunities through partnership programs with UBC operations and external organizations.

references

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