Lewis & Clark Sustainability Council
Academic Subcommittee Report

Supporting the Journey Forward: Opportunities for Sustainability Scholarship at Lewis & Clark

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August 12, 2016

Lewis & Clark College

Supporting the Journey Forward: Opportunities for Sustainability Scholarship at Lewis & Clark

Executive Summary

The Lewis & Clark Sustainability Council commissioned its Academic Subcommittee to explore the next direction for fostering the study of sustainability across the Lewis & Clark College, Graduate School and Law School programs. Context for the report included interest in building on Lewis & Clark's Number One ranking in the 2015 Princeton Review "Green College Survey," a discrepancy between the institution's overall sustainability rankings and its academic rankings, and reflections based on the experience of creating the Sustainability Director position at Lewis & Clark in 2010.

The report and its recommendations were informed by the Lewis & Clark strategic plan; the sustainability mission statement; interviews with students, faculty and staff; examples of efforts at other institutions; and recommendations of organizations such as the Association for the Advancement of Sustainability in Higher Education.

Sustainability-in-academics at Lewis & Clark was examined from the perspective of strengths and achievements, weaknesses and gaps, culture and communication issues, and opportunities. There was a discussion of various concepts of environmental sustainability and their critiques (e.g., trade-offs between focusing on green campus infrastructure and addressing global-scale issues, or issues of power and privilege in setting the conversation about sustainability).

It was noted that a shared, institution-wide framework for sustainability scholarship or advising students regarding existing sustainability study opportunities across the Lewis & Clark curriculum had not been clarified.

The academic subcommittee recognized that investigations into sustainability would proceed differently based on the academic discipline, context, and outcome in question (e.g., basic research, entrepreneurship, policy and advocacy). The report recommended operationalizing sustainability study in a broad and reflective way as research and scholarship promoting an understanding of the relationships between human systems and natural systems across spatial and temporal scales, including systemic parameters and qualities, and value-based statements about systems and their inter-relationships.

The report also offered examples of sustainability competencies that cut across academic fields, such as systems thinking and interpersonal competencies, and suggestions for crafting theory and findings from academia into "real knowledge for sustainable development," for example, through integration of academic knowledge into societal systems of innovation and diffusion.

Strategic and culturally appropriate recommendations for the Lewis & Clark academic community include embracing and celebrating the tendency toward independent thinking, active debate, and skepticism about sustainability at Lewis & Clark; while also fostering a sense of safety and teamwork about exploring sustainability among students and faculty of different departments and experience levels. This frames internal differences regarding sustainability at Lewis & Clark as an asset and is a way to rally people without requiring them to "fit in" to one framing.

Specifically, the report recommends the establishment of a Sustainability Scholars and Professionals Advising Hub or structure to guide and support students, faculty and staff; and creating a Director of Sustainability Education position to be a point person to oversee the initiative.

A goal will be applying a flexible and shared conceptual framework for sustainability-in-academics, applicable across all Lewis & Clark schools and departments that highlights diversity and critical thinking. This includes a schema for tracking sustainability-focused and related course content and creating opportunities for cross-disciplinary collaborations. Finally, the report recommended clarifying a unique and compelling Lewis & Clark sustainability-in-academics marketing message and institutional brand.

Recommendations do not require the creation of new programs or content. The report did identify potential programs suitable for fast track development and longer term planning.

Echoing the Lewis & Clark strategic plan, the report concluded that the best "way forward" in terms of strategic planning and specific initiatives for promoting sustainability-in-academics at Lewis & Clark will be about “thinking for yourself” and “questioning the status quo.”

As the report notes, creating a sustainability scholarship hub or naming a sustainability-in-academics point person will not do away with academic silos. But, making the silos more transparent and easily accessed will free up an incredible amount of resources for Lewis & Clark students and faculty. It has the potential to move the Strategic Plan forward with relatively few new resources.

Supporting the Journey Forward:
Opportunities for Sustainability
Scholarship at Lewis & Clark

"There are two ways to slide easily through life: to believe everything or to doubt everything; both ways save us from thinking." A. Korzybski

The following report was commissioned by the Lewis & Clark Sustainability Council to explore next directions for fostering the academic study of sustainability and related subject matter and practices across the college, graduate school and law school's programs. The immediate context included increased interest in the institution's sustainability initiatives, prompted by the school's prominent "Number 1" ranking in the Princeton Review "Green College Survey" and the apparent discrepancy between Lewis & Clark's overall sustainability rankings and its academic rankings. The larger context included the Sustainability Council considerations of where to recommend next steps based on experience with the creation of Sustainability Director position at Lewis & Clark in 2010. The Academic Subcommittee of the council created the report, based on selected interviews with students, faculty and staff; the combined experiences of council members; and observation of other institutions and organizations. The full Sustainability Council approved the report.

Report Background and Purpose

To demonstrate its focus on sustainability as an institution, Lewis & Clark created a Sustainability Director position in 2010. Since then, Lewis & Clark has been active in a self-assessment of institutional sustainability using frameworks such as the Association for the Advancement of Sustainability and Higher Education (AASHE) STARS reporting system.

Based on this tracking, over a 5-year period, Lewis & Clark has had notable success and recognition due to favorable rankings from organizations like the Princeton Review and the Sierra Club, who use the STARS data. For example, Lewis & Clark's most recent ranking in the Princeton Review "Green College Survey" was #1 in the United States (2015) and the Sierra Club "Cool Schools" ranking was #9 in the US (2015).

But, the Lewis & Clark academic rankings for sustainability have been significantly weaker. In the Sierra Club Academic subcategory, Lewis & Clark received a ranking of 95th of 153 schools. This lower ranking resulted from factors such as the lack of dedicated sustainability-focused program(s) in the institution.

There is clearly a paradox here: At Lewis & Clark we talk about, debate, and act on sustainability in many aspects of our academics. Is there a way to strengthen our academic rankings and make them commensurate with other aspects of the institution's

activities and reputation regarding sustainability? Is there way to continue the progress that has been made possible by the establishment of a Sustainability Director position? These questions were the initial inspirations for this report.
The Sustainability Council Academic Subcommittee dialogues have also gone "beyond the STARS" to reflect on what Lewis & Clark as a 21st Century higher education institution really wants to do regarding sustainability, and how can we focus on sustainability in terms of Lewis & Clark's longstanding academic strengths and potential growth areas. It also became clear that this academic organizing role was not within the capacity of the Sustainability Director or the volunteer Sustainability Council.

The question of what persons or structures could best support the sustainability education journey became the mission of the report.

Sustainability, Rankings and the Lewis & Clark Strategic Plan

Our Sustainability Council recommendations are informed by the Lewis & Clark strategic plan: "The Journey Forward": http://www.lclark.edu/live/files/12738-strategic-plan. Key goals of the plan include:

1. Providing "distinctive quality in 21st-century higher education"
2. Including "Education for life and leadership in an interdependent global and environmental context" (e.g., international experiences and education),
3. And, making Lewis & Clark "known to an ever-growing circle" of prospective students and their families and supporters.

Sustainability rankings are *means* of meeting Lewis & Clark's strategic goals but not *an end in themselves*. It is obvious that favorable sustainability rankings and notoriety will help to make the college better known to the public and to a wider circle of prospective students and supporters. The potential for academic recognition in sustainability would contribute to the goal of highlighting the distinctive quality of education at Lewis & Clark. However, ensuring the rigorous and innovative *content* of these academic offerings will ultimately provide the best evidence that we are indeed educating students for leadership in an interdependent global and environmental context

What are Other Schools and Organizations Doing?

"Sustainability" agendas can look different on campuses. For example, Thomashow (2014) identifies nine elements of a campus sustainability agenda: energy, food, and materials (aspects of infrastructure); governance, investment, and wellness (aspects of community); and curriculum, interpretation, and aesthetics (aspects of learning). Entwined concerns for sustainability, environmental conservation and social justice involve issues of campus governance and planning, endowments and investments, and the activities of multiple academic fields (e.g., see Council of Environmental Deans and Directors, Chandler, 2016; Disciplinary Associations Network for Sustainability, etc.). Campuses themselves also serve as environmental refuges of a sort, and living laboratories to study ecology, given their green spaces (Jones et al, 2015).

Sustainability in the Curriculum. When highlighting sustainability in the area of curriculum (i.e., learning and academics) there are several approaches that institutions take:

1. Cataloging sustainability related offerings across the curriculum,
2. Assessing the actual sustainability behaviors or outcomes in the college or university,
3. Re-branding signature academic programs to highlight sustainability relevance,
4. Creating new programs,
5. Encouraging interdisciplinarity within and between programs to promote sustainability scholarship and outcomes, and
6. Partnering with other institutions, local governments, and the non-profit or private sectors.

For an example, see the Recommendations from the University of Washington's "Integrating Sustainability into the … Undergraduate Curriculum" Report that highlights several of these strategies:

> "the name of our Environmental Studies program should be changed to Environmental Studies & Sustainability to better reflect what the program offers to students, the university ought to set a goal of having every undergraduate take at least one sustainability-focused course in their career as a student, and interdisciplinarity should be embraced across the university in the form of more accessible sustainability-related, cross-disciplinary certificates, minors, and/or degrees."

In terms of functional, overarching goals for sustainability in the curriculum, AASHE (2010) focuses on increasing clarity, communications and public education regarding sustainability:

- Develop a better public understanding of sustainability. "Many discussions of [education for sustainability] entail protracted conversations about the meaning of sustainability. Although such discussions can be fruitful, they often lead discussants away from action. It will be important in moving forward to develop clearer messages regarding sustainability and reaching out to the public who are less familiar in order to move the conversation forward."
- Set clearer targets and goals. "It is critical for organizations to ask themselves what they expect to accomplish. As a community committed to sustainability, we need to establish clear goals that can be communicated to others."

AASHE (2010) also provides some concrete recommendations regarding sustainability in academics including:

1. Bringing faculty together with sustainability oriented staff, as resources, collaborators for service learning, and co-curricular connections;
2. Recognize sustainability curriculum efforts (provide continuing recognition to faculty developing sustainability curricula, embed efforts in a culture of recognition on campus reflected in promotion and tenure systems)

3. Provide mechanisms for recognizing and addressing barriers, provide leadership opportunities, share resources, bring together high-impact educational practices and sustainability education.

These three recommendations in particular guided the council in their consideration of a sustainability-in-academics hub and point person, as described below and in the report's recommendations.

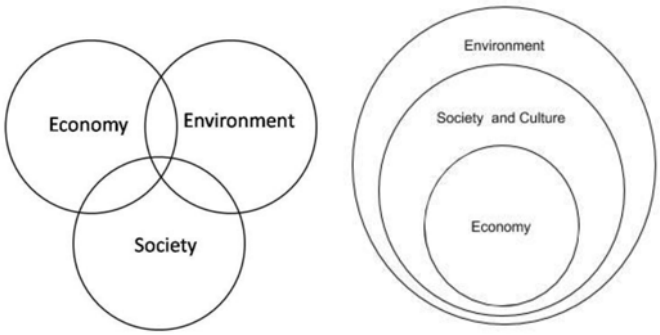
On the Concept of Sustainability

In the context of this report, the Sustainability Council has had to be vigilant in grounding sustainability discussions in a theoretical and practical basis. This entails critical thinking and a sense of historical context—the challenges being recognizing longstanding concepts and guidelines for sustainability without reifying these, and opening up sustainability as an emergent and ever-evolving idea without devolving into green marketing slogans and "hand waving" regarding the details of mechanisms and evidence.

To 'Sustain' comes from the Latin *sustenare,* meaning to keep or hold up, and modern use of the term in a natural environmental context can be traced to the German forestry science of the 1700s, a precursor to today's 'sustainable yield': a level of resource extraction that can be maintained over time. *The Oxford English Dictionary* dates the first usage of 'sustainable'—meaning "capable of being maintained at a certain level"—to 1965, when the *McGraw Hill Dictionary of Modern Economics* defined 'sustainable growth' as "a rise in per capita income or per capita real gross national product that is capable of continuing for a long time" (see Silverman, 2007).

Today, the most commonly cited definition for sustainability remains the 1987 United Nations report *Our Common Future* which builds on the ideals of sustainable growth and yield to include intergenerational social equity: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This in turn presents the classic three legged stool metaphor of environment, economy and society prevalent in sustainability thinking. This concept of sustainability has also shaped the development of STARS and is fundamental to its rating system.

"Our Common Future" -- Sustainability as Sustainable Economic Development



Debates Regarding Sustainability

Like all conceptions, the “Our Common Future” sustainability framework contains deeper questions, contradictions, and considerations of power. How can the needs of the global environment in all its manifestations, the myriad concerns of the human species, and the operations of a neoliberal economic system co-exist? Who determines the needs of “the present” and “the future”? These are the questions that animate the political and environmental discourse both nationally and on our Lewis & Clark campus.

Typically, differences between sustainability approaches hinge on how human-natural system relationships are construed (e.g., as controllable or amenable to measurement, in harmony or conflict, etc.). Examples include current debates about the relative risks or benefits of so-called “invasive species” to various ecosystems, or about adopting the concept of “The Anthropocene” to describe a current, human-species-dominant geologic era. Another area of difference are the regulatory processes involved in natural systems and in associated human behavior (e.g., privileging evolutionary processes and biodiversity, legislating “steady state” economics vs. “free market” policies, etc.).

Further, in terms of governance and social policy, sustainability typically encompasses an ethical dimension (e.g., to equitably meet the needs of current and future [human] generations, i.e., the “Our Common Future” framing). The rights and standing of various actors in sustainability is also hotly debated (e.g., from the perspectives of indigenous human rights, eco-feminism, multicultural diversity and social justice, animal rights, the legal standing of physical places, etc.).

Markers for the evolution of sustainability ideas over the past decades include various UN Reports and Millennium Development Goals, Intergovernmental Panel on Climate Change reports, the establishment of AASHE, contemporary debates and philosophical views about sustainability (e.g., market approaches, social and environmental justice approaches, deep ecology approaches, eco-modernist / technological approaches, and theological approaches such as Pope Francis' recent Encyclical, etc.).

Sustainability and the campus. Closer to campus sustainability and to our purposes at Lewis & Clark, there is an important distinction between local and global, between the operational goals of a facility seeking a lighter carbon footprint – a “green campus” — and a more cosmopolitan goal of promoting global ecological citizenship for students and the community. While AASHE does defines sustainability “in a pluralistic and inclusive way, encompassing human and ecological health, social justice, secure livelihoods, and a better world for all generations,” the STARS rating system translates this broad and inclusive view into objectives at the campus level –with credits based on the tripartite indicators of “social, environmental and economic performance” (STARS Technical Manual, 2015, p. 13). As Lewis & Clark ENVS faculty Proctor (2010) cautions, this, in turn, risks campuses being becoming isolated “islands” of sustainability and

having an “international scale political discourse narrowed itself to campus buildings and grounds” (see Proctor, 2010).

The late-20th century wisdom regarding the “wicked problems” of social policy (see Rittell & Webber, 1973) also hold true in a 21st century Anthropocene (e.g., see Bai, et al., 2015). There are no definitive definitions or solutions to the entwined problems of securing equity and social justice for all persons; addressing global climate and environmental change, mitigating risks from new technologies, and managing population pressures, poverty and hunger, and armed conflicts. These issues (to the extent they are seen as issues) are addressed in multiple, distinct and simultaneous ways in government, NGO’s and private enterprise and are interpreted through the lens of varied and radically diverse philosophical frameworks. To the extent that the academy can advance sustainability through academics and scholarship, this will require fostering a sustainability mandate throughout the disciplines and helping to ensure that practical competencies can be promoted in the creation of useful sustainability knowledge.

Operationalizing Sustainability in Lewis & Clark Academics

As will be seen, the council has taken a more basic, operational view of sustainability in this report --that renders the contextual and valued nature of the concept explicit without specifying context or value, these details being left to individual investigators and interventionists – our students, faculty, and staff.

At the most basic conceptual level, sustainability concerns various ways of ***understanding relationships between human systems and natural systems, across spatial and temporal scales*** [associated terms include ‘‘complex system’’ ‘‘coupled human-environment systems’’ ‘‘social-ecological systems’’ measured using qualitative data, quantitative data, narratives, etc.] This understanding includes considering the parameters and qualities of various systems, and evaluative statements about the systems and inter-relationships (e.g., regarding the stability, integrity, balance, health or rate of change within systems– in common terms “how sustainable is it?”).

Sustainability scholarship ideally includes mindfulness of how the concept itself is construed, and on what underlying discourse, value set and epistemology it is it based. This meta-level thinking allows for synthesis and evaluation of differing sustainability approaches and translation of the study of human-natural systems into the languages of varied disciplines.

Honoring the Unique Needs of Lewis & Clark Schools and Departments

Efforts to conceptualize sustainability prompt many questions that are relevant for Lewis & Clark's academic departments. Is sustainability best construed as a noun, a verb or an adjective; a state, an action, or descriptor? Is it possible for students or faculty to study sustainability in a value or context-free way? If not how does the study of relationships between human systems and natural systems relate to the discipline or profession’s mandate?

This meta-level level thinking is essential, as each department or program is likely to have a unique and emergent approach. For example, the Lewis & Clark Environmental Studies program introduces students to the history of sustainability and sustainable development and treats sustainability as one of a suite of relevant concepts in environmental studies, each with its own strengths and weaknesses. Given their missions, programs in the Graduate School of Education and Counseling are likely to situate sustainability thinking in the context of social justice, diversity and equity, and to highlight an anti-oppressive focus. The law school will consider sustainability as it has been enshrined in legal precedents and is contested in policy arena.

Clarifying the Sustainability Mission at Lewis & Clark

It is a creative challenge for any large institution to select an overarching strategic plan and framing for sustainability that is suitable for the scale and urgency of the global environmental situation--and that also acknowledges conceptual and practical shortcomings inherent in various framings. Further, given the diversity of the Lewis & Clark campus community, it is unlikely that all faculty, staff and students will embrace any one model, however broadly conceived. Thus, the key becomes how to create a pragmatic framing for academic sustainability that spurs creativity, collaboration and innovation while also allowing for counter voices and alternative pathways.

At Lewis & Clark, the content of academic sustainability offerings has been left to individual programs. The college's overall Sustainability mission is in keeping with the strategic plan and is summed up as:

> Lewis & Clark is committed to learning, innovation, and principled action on matters related to sustainability. Our research and actions extend beyond our campus into the wider world, we build on the best available scholarship and practice in our endeavors, and we recognize the importance and interrelatedness of ecology, economy, and equity. http://www.lclark.edu/about/sustainability/

Outside of these aspirational goals, a shared, institution-wide working definition or general framing of sustainability has not been clarified -- one that meets the differing scholarly needs of the natural sciences, humanities and arts, social sciences, graduate professional programs in education and counseling, and law programs, as well as the varied needs of athletics, student groups, the administration, admissions and recruiting, and facilities and operations.

In the STARS points system, for academic programs or courses to to be classified as sustainability-related offerings, "sustainability" must be represented in the title or the description of the programs or course content. There is also a stricter, S-focused category that denotes courses "in which the primary and explicit focus is on sustainability and/or on understanding or solving one or more major sustainability challenges." It is notable that the STARS framework foregoes a specific definition of sustainability, leaving this to a particular institution. This signals the need and the

opportunity for Lewis & Clark to take responsibility for the content of its own sustainability scholarship.

Sustainability at Lewis & Clark: Strengths and Achievements

It is important to celebrate the historic resources, and current strengths and achievements in sustainability at Lewis & Clark that provide a context for academic initiatives:

- A remarkable campus setting featuring world class landscape architecture that offers a living laboratory to explore many aspects of sustainability
- Location in a region noted for innovation in environmental conservation
- Broad support for sustainability policies across the student body, faculty and staff
- Several high profile academic programs and initiatives that support scholarship, critical thinking, and training in skills and practices related to sustainability (e.g., Earthrise Law Center, a range of international studies options, ENVS Department, Graduate Ecopsychology Certificate)
- Solid community partnerships (e.g., Salmon Safe Certification, Ivy Removal and Habitat Revitalization Programs)
- In Operations and Facilities, Lewis & Clark has shown leadership in developing green infrastructure and closely tracking outcomes in areas such as energy efficiency, water use, capital projects, materials sourcing, and waste management.
- As noted, Lewis & Clark is leading in national sustainability rankings (in some areas)

Sustainability at Lewis & Clark: Weaknesses and Gaps

In our discussions, the Sustainability Council has been sensitive to a potential for resting on our laurels. We do talk about sustainability in campus discourse and marketing but not to the same level as other schools who are focusing on sustainability scholarship in a big and concerted way. Specifically, Lewis & Clark has some relative weaknesses:

- Lack of signature academic program(s) that explicitly embrace and focus on the study of *sustainability* concepts and practices
- Absence of an institution-wide consensus on conceptualizing and addressing sustainability in and across academic programs and departments
- An implicit and anachronistic assumption that sustainability will be addressed by certain specialists or departments and is not an institution-wide concern
- No point person(s) dedicated to cataloging and coordinating institution-wide sustainability-related academic efforts and advising students and faculty in this regard
- Lack of clear and compelling branding re. sustainability strengths and goals in and across our collective academic programs

Sustainability at Lewis & Clark: Culture and Communication Issues

In addition to weaknesses or gaps that would be expected in any university setting, Lewis & Clark has its own culture and communications style regarding sustainability. Anyone who is experienced in outreach on sustainability has learned that cultural norms, both explicit and unspoken, influence the uptake of sustainability practices.

- Lewis & Clark has the traditional disciplinary and departmental silos common to higher education, with associated organizational history and dynamics, and amplified by unique campus personalities with differing interests in collaboration
- A campus discourse often focused on theoretical and practical differences and separation / opting out of sustainability initiatives and tracking rather than consensus and collaboration
- A resultant sense of inhibition and lack of safety regarding open discussion of sustainability concepts and initiatives among students, faculty and staff
- Lack of compensation, and potential risks, for students, faculty or staff who seek to experiment with sustainability initiatives
- Overall, there is a lack of formal structures for nurturing and promoting the potential "collective-intelligence" at Lewis & Clark regarding sustainability in academics

Sustainability at Lewis & Clark: Opportunities

An inventory of the local Lewis & Clark context and a survey of what other schools and organizations are doing suggests Lewis & Clark-specific strategies for developing our collective intelligence regarding sustainability. As will be discussed in the recommendations of this report, the council advises that Lewis & Clark, as an institution:

1. Embrace and celebrate our tendency toward independent thinking, active debate, and skepticism about sustainability. This will be the best way to honor our unique community. This celebration can begin from the top down in the institution, highlighting the example of President Glassner's free-thinking and stereotype-defying sociology work.

2. Take the opportunity to foster generativity and teamwork about sustainability at Lewis & Clark. In this case, the term generativity is used in its basic sense as having the ability to originate and produce. It is also used to connote a system's capacity to produce unanticipated change through unfiltered contributions from broad and varied contributors. Finally, it is used in a psychosocial sense as the concern for others and society that arises with maturity and the desire to serve and mentor the next generation.

3. Create "turning point initiatives and structures" to move the academic process forward. (An exemplar would be the previous establishment of the Sustainability Director Position.) These turning points would include establishing a Sustainability Scholars and Professionals program or structure to guide and support students, faculty and staff and host outside experts, with a Director of

Sustainability Education as a point person; adopting a flexible, cross-cutting framework for sustainability studies in academics in and across Lewis & Clark programs; and clarifying sustainability-in-academics marketing and brand.

Part II: Report Recommendations

A Next Step: Toward Sustainability Competencies and Crafting "Real Knowledge for Sustainable Development"

As noted, AASHE (2010) has provided some very useful recommendations for promoting sustainability academics including:

1. Bringing faculty together with sustainability oriented staff, as resources, collaborators for service learning, and co-curricular connections;
2. Recognizing sustainability curriculum efforts (provide continuing recognition to faculty developing sustainability curricula, embed efforts in a culture of recognition on campus reflected in promotion and tenure systems)
3. Providing mechanisms for recognizing and addressing barriers, providing leadership opportunities, sharing resources, bringing together high-impact educational practices and sustainability education.

The expectation is that, once practices and structures like these are implemented, the intellectual resources of the institution will be freed up and directed toward sustainability researches and outcomes. This is a reasonable strategy for Lewis & Clark.

A survey of the current literature also suggests some other factors to consider including the broad competencies that are required to address sustainability and related social problems and ways to ensure that knowledge generated within the ivory tower can be translated into useful knowledge for the public. These provide examples of the additional specialized thinking that a Sustainability Scholars program would foster.

A Sustainability Research Framework and Associated Competencies

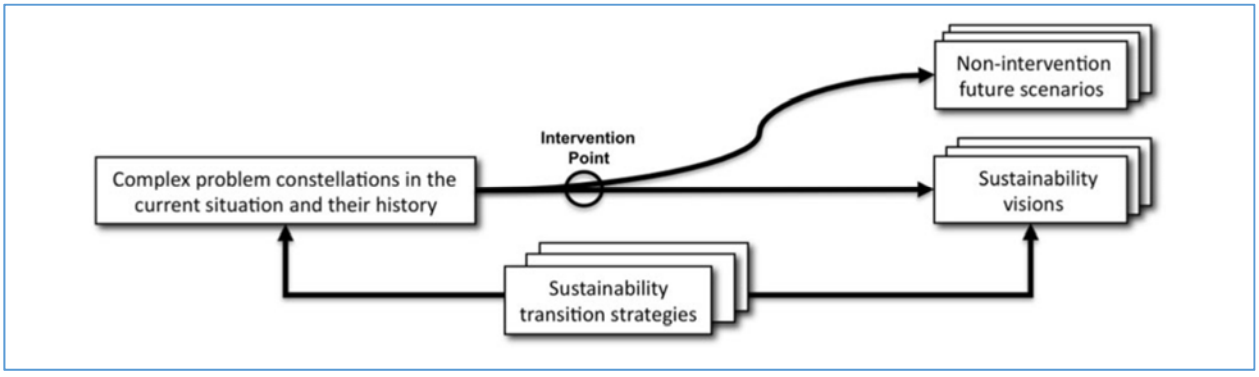


Fig. 1 Integrated sustainability research and problem-solving framework. The framework is structured in four modules: analyzing the current problem constellation(s); creating and crafting sustainability visions ("problem solved"); exploring less desirable future scenarios that might become reality without interventions towards sustainability; developing and testing strategies to transition from the current state to sustainable states without getting deflected towards undesirable pathways (critical intervention points) (adapted from: Wiek 2010)

Wiek, Withycombe & Redman (2011) identify five key competencies helpful for sustainability research and problem-solving including systems thinking, and interpersonal, anticipatory, strategic and normative competence. These are briefly outlined below. Again, anyone who has intervened in a sustainability initiative will find these familiar.

- Systems-thinking competence: The ability to collectively analyze complex systems across different domains (society, environment, economy, etc.) and across different scales (local to global), thereby considering cascading effects, inertia, feedback loops and other systemic features related to sustainability issues and sustainability problem-solving frameworks.

- Anticipatory competence: The ability to collectively analyze, evaluate, and craft rich ''pictures'' of the future related to sustainability issues and sustainability problem-solving frameworks.

- Normative competence: The ability to collectively map, specify, apply, reconcile, and negotiate sustainability values, principles, goals, and targets. This includes the ability to assess the (un-)sustainability of current and/or future states of social-ecological systems and to collectively create and craft sustainability visions for these systems. This capacity is based on acquired normative knowledge including concepts of justice, equity, social-ecological integrity, and ethics.

- Strategic competence: The ability to collectively design and implement interventions, transitions, and transformative governance strategies toward sustainability; requires an intimate understanding of strategic concepts such as intentionality, systemic inertia, path dependencies, barriers, carriers, alliances etc. In simple terms, this competence is about being able to ''get things done'' and involves familiarity with real-world relationships, political understanding, challenging positions at the right time, being able to solve logistical problems, using language that non-academics are comfortable with, working with deadlines that governments insist on, etc.

- Interpersonal competence: The ability to motivate, enable, and facilitate collaborative and participatory sustainability research and problem solving; includes advanced skills in communicating, negotiating, leadership and pluralistic and trans-cultural thinking. This would also include the ability to access and apply emotional intelligence and multicultural competency, and maintain motivation and creativity.

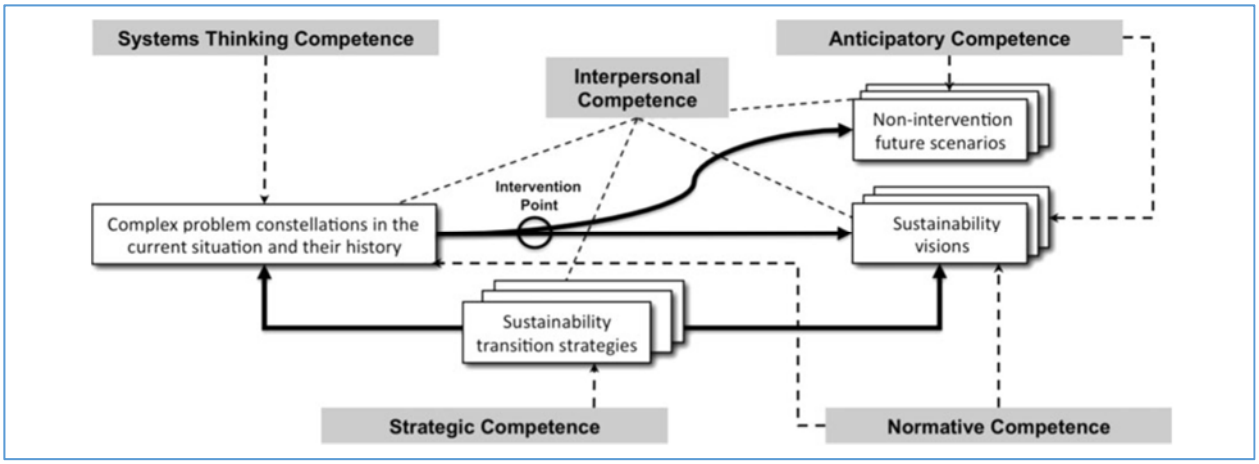


Fig. 2 The five key competencies in sustainability (*shaded in grey*) as they are linked to a sustainability research and problem-solving framework (see Fig. 1). The *dashed arrows* indicate the relevance of individual competencies for one or more components of the research and problem-solving framework (e.g., normative competence is relevant for the sustainability assessment of the current situation as well as for the crafting of sustainability visions)

Along with general sustainability *competencies* there is a challenge to create *usable sustainability knowledge* (i.e., findings from the laboratory or academia that also have concrete impacts on decision-making and the actions of political systems; see Clark et al., 2016). This requires experience in how knowledge-making and decision-making in social–environmental systems are continually reshaping one another (e.g., see Jasanoff, 2004; Reyers, et al., 2015).

Crafting usable knowledge requires (1) integration of academic knowledge into societal systems of innovation and diffusion; (2) recognition that knowledge products will have multiple and potentially contradictory impacts at different levels of complex, evolving systems; and (3) further recognition that academic knowledge has differing potential to be seen as useful, beneficial or just within the contexts of politics and power. This, in turn, calls on researchers and academics to (4) develop skills and capacity for stakeholder collaboration, to (5) understand the formal and informal norms in which knowledge is governed in systems, and (6) to integrate this into their training routines (Clark et al., 2016).

General Recommendations

1. Create a flexible and shared conceptual framework for Sustainability-in-Academics for the Sustainability Council and the Institution

Sustainability is a diverse concept that can be studied from numerous perspectives including those of the natural or social sciences, the humanities and the arts, governance, theology and spirituality; professions such as law and health care; and from indigenous / cross-cultural perspectives.

Most broadly, scholarship in sustainability includes various ways of ***understanding relationships between human systems and natural systems, across spatial and***

temporal scales. Scholarly activities regarding sustainability include investigation of how the concept is construed, the parameters and qualities of sustainability in various systems, and evaluative statements (e.g., regarding stability, balance, rate of change) and translation of the study of human-natural systems into various disciplinary languages.

The Council recommends that sustainability be seen as a contextual, culturally embedded, and process oriented concept. It is not static, and is usefully viewed through the lens of larger cultural discourses (e.g., "environmentalism," "ecomodernism," etc.). A goal will be using a *flexible and shared conceptual Lewis & Clark framework*, applicable across all campuses, that promotes generativity and innovation in terms of academic programs and outcomes that explore sustainability, ***highlighting critical thinking about sustainability***.

There are many academic roles to play in the study and practice of sustainability at Lewis & Clark. These cut across the "three cultures" of academia (i.e., natural sciences, social sciences, and humanities, see Kagan, 2009 for a study of this distinction). Moreover, each of these cultures will have unique sub-cultural framings and languages for sustainability. For example, contributions will range from those of writers and poets (e.g., Slovic & Moore, 2014) to sociologists, anthropologists and psychologists (e.g., Opotow & Clayton, 2003) to conservation biologists (Visconti, et al., 2016) and feminist human geographers (Carey et al, 2016), to geophysicists (Turco et a l 2015) and public health experts (Dodgen, 2016).

The challenge is to create a large enough umbrella to support faculty and students to meet society's practical, technological needs such as more efficient and less impactful waste and recycling supply chain (see Richtel, 2016, March 25) while also understanding that efforts to "share the earth" in an equitable manner have rich and diverse intellectual history (Ammons & Roy, 2015). Consciousness-raising tutorials about "going green" in the quotidian details of our daily lives (e.g., Morgan, 2009), while necessary to establish a baseline familiarity with sustainable living choices, risk being superficial unless they are supported by a more comprehensive applications of ecological literacy (e.g., The Oberlin Project http://www.oberlinproject.org/) and knowledge of how these initiatives echo enduring philosophical debates regarding humanity's place in the global commons (e.g., the oft-cited Erlich-Simon debate, see Sabin, 2013).

2. **At Lewis & Clark, the way forward for Sustainability means "Thinking for yourself" and "Questioning the Status Quo"**

It will be key to work from Lewis & Clark's academic strengths as a leader in **critical / post-conventional views on human-environment relationships** (e.g., citing the examples of the Energy Law and Animal Law initiatives, the ENVS department, the graduate Ecopsychology Certificate, and international social justice-related work at Graduate School of Education and Counseling). This frames internal differences

regarding sustainability at Lewis & Clark as an **asset** and is a way to rally people without requiring them to "fit in" to one framing.

In terms of sustainability and society, it is the job of the academy to lead through innovation and also to problematize through deep, critical thinking. In this sense, the "way forward" in terms of strategic academic planning for sustainability at Lewis & Clark will be about *"thinking for yourself"* and *"questioning the status quo."* This framing is predicted to play well across the institution. As noted, an example would be President Barry Glassner's sociology texts that tend to take a contrarian view on issues like food and public opinion (e.g., Glassner 1999, 2007). This "thinking for yourself" and "questioning the status quo" approach would contextualize the Lewis & Clark position on strategic investment versus divestment in terms of endowment. This would also honor undergraduate activism regarding perceptions of institutional racism on campus.

This position is also in keeping with the ENVS Departments recent commentary on the use of STARS-style rankings:

> We would be known as an institution that struggles with the hard questions and avoids the common easy answers. We would attract students who desire a greater creative space for their scholarly and practical environmental work than what they typically see around them. We would be known for a more genuine, reflective, and honest commitment to our green values.

3. Avoiding Co-option and Polarization regarding Sustainability Initiatives

The council has also kept in mind that the term "sustainability" has no universally accepted definition and is subject to being co-opted for various purposes (e.g., misleading marketing slogans). A more forthright approach toward sustainability as the study of relationships between human systems and natural systems, across spatial and temporal scales, will allow for a more rigorous examination and less potential for superficial "green washing."

Also, as Lewis & Clark moves toward a coherent but flexible framing of sustainability suitable for the Council and the larger institution, it will be key to present a descriptive, reflective framing of sustainability as a socio-physical concept and process that is inherently pulled toward ontological and epistemological assumptions. As we language sustainability, it will be important to name the tensions with sociocultural and economic ideologies, and, more locally, the pull toward alignment with specific departments and disciplines at Lewis & Clark.

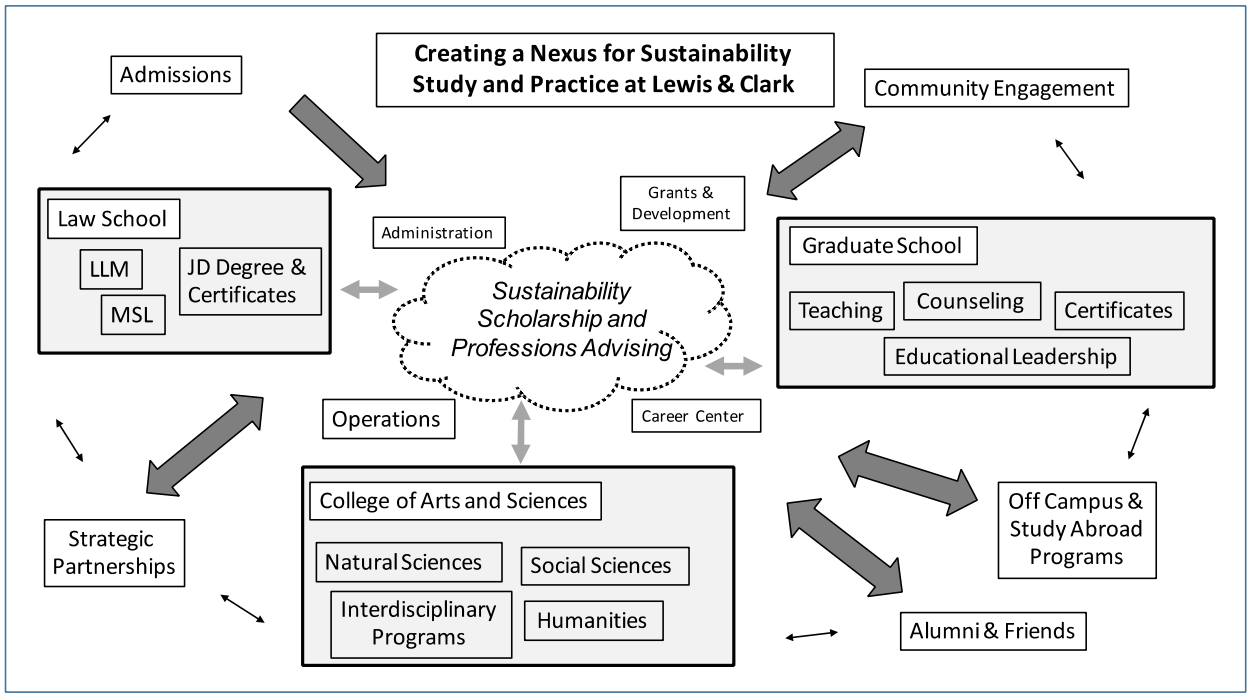
The Council clearly recognizes that sustainability can be a polarizing concept, especially when it is argued in the language of contemporary conservative and progressive political discourse in the United States. Thus, in defining sustainability, the Academic Subcommittee sought to avoid polarizing "ends and means" arguments regarding achieving hypothetically sustainable systems or societies (utopias) and to focus on the core or essential activities of sustainability scholarship (i.e., understanding and

evaluating relationships between human systems and natural systems, across spatial and temporal scales).

Specific Recommendations

1. **Create a Sustainability Scholars and Professionals program**

The Council recommends the creation of a Sustainability Scholars and Professionals program or hub. The mission will include fostering collaboration and synergy by rewarding critical thinking and innovation, and respecting difference in values and methods, while operating in a way that ensures open discourse that does not inhibit university-wide initiatives. The will coordinate with the Sustainability Director to link operations, co-curricular activities (i.e., student groups and campus jobs) and academics.



A sustainability hub may not create new programs or do away with academic silos. But, by making the silos more transparent and easily accessed, will free up an incredible amount of resources for our faculty and student body. It has the potential to move the Strategic Plan forward with relatively few new resources.

Key functions:

- Provide student advising and course mapping
- Highlight cross campus educational opportunities

- Coordinate with technology and data systems to better audit degree tracks and credits, and make cross-school pathways more evident in course registration process
- Link with campus career centers and other professional programs
- Provide mentoring and support for students and faculty
- Seek grants for scholarship, leadership, collaboration and innovation
- Host internships, and develop an abundant intern program
- Provide faculty networking opportunities
- Promote cross-school faculty collaboration and innovation
- Facilitate cross-department review and vetting of sustainability courses
- Nexus for study abroad connections and partner institution connections
- Support Watson and Fulbright Scholarship Applicants
- Appealing resource for recruitment and admissions
- Invite visiting students and Scholars in Residence
- Highlight programmatic redundancies / suggest redirections in resources

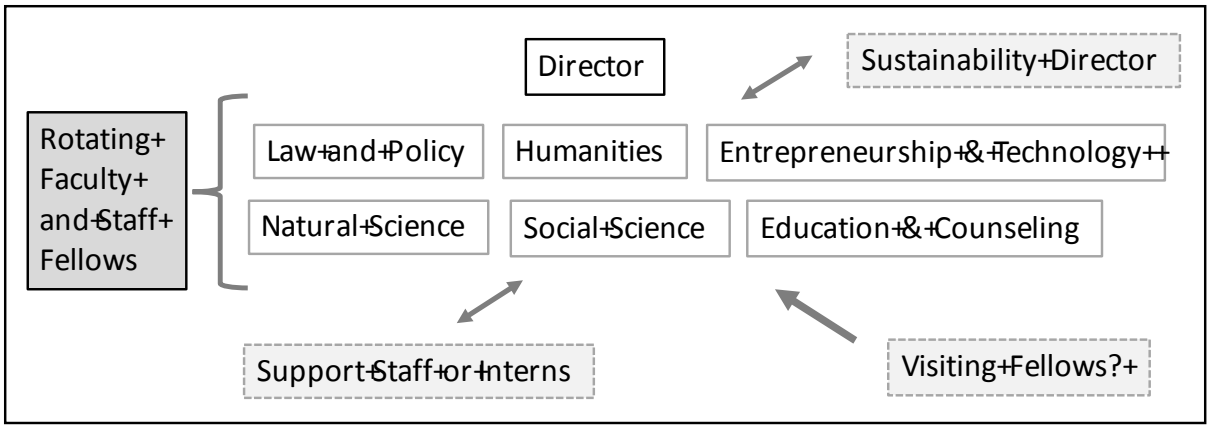
Approach and Assessment:

- Begin with time-limited pilot (e.g., three – four years, student duration)
- Develop Assessment Rubric Questions (explored by director and faculty advisors, and compatible with other Lewis & Clark initiatives)
    - Are achieving established goals? Are students actively participating, and if so, how many should be?
    - Would it have faculty or departmental buy-in, and if so, what would that look like?

2. Appoint a Sustainability-in-Academics Point Person

- *Director of Sustainability Education and Advising*
- Non-volunteer, dedicated professional role to advance academic exploration of sustainability across Lewis & Clark schools and departments
- An individual with experience in academic leadership, collaboration and innovation
- A resource and mentor for students, faculty, staff, applicants to find their paths regarding sustainability scholarship
- Supported by rotating Advising Committee drawn from faculty and staff from the three schools, with possibility for visiting scholars (Advising committee to provide cross-department review of sustainability course offerings)
- Align Director of Sustainability Education and the Advising role with that of the Sustainability Director

Sustainability Advising Center Staffing



3. Ratify a Cross-Cutting Framework for Sustainability Studies in Academics in and across Lewis & Clark programs

Sustainability entails the study and evaluation of the ***relationships between human systems and natural systems, across spatial and temporal scales.*** This enterprise will be construed in various ways within and among Lewis & Clark academic departments and disciplines.

In tracking sustainability content for student and faculty advising and for other uses, the council recommends a focus on academic content, rather than course titles or labels: (i.e., does the offering include scholarship, critical thinking, or training in skills and practices related to the study of the relationships between human systems and natural systems?).

The goal is to create a fertile ground and not a "procrustean bed." Critiques and counter views of sustainability as an overarching concept or of assumptions about the nature or study of human-natural systems are as much or more important in the Lewis & Clark academic vision.

A Lewis & Clark sustainability course tracking schema:

- Identify and/or create "S" level sustainability-focused courses and programs that feature direct and explicit study of the relationships between human-natural systems, often featuring the term "sustainability."
- Identify and/or create foundational "s" level sustainability-related courses and programs that provide conceptual and technical skills necessary for the effective study and practice of sustainability. These may range from conservation biology, to GIS expertise, to literary criticism, to international research, to climate change law, to post-carbon entrepreneurship, to place-based education, to nature-based counseling techniques, etc.).

4. Clarify the Lewis & Clark Sustainability Marketing and Brand:

- Playing up Lewis & Clark's academic strengths as a ***leader in critical thinking / post-conventional views on sustainability*** as an asset.
- This is a way to rally people without requiring them to "fit in" to one framing.
- In this sense, the "way forward" in terms of strategic academic planning for sustainability at Lewis & Clark will be about ***"thinking for yourself"*** and ***"questioning the status quo."***

5. Approach to Sustainability Points and Rankings

- Clarify the Lewis & Clark approach to sustainability in academics and how this links with our internal and external outcomes tracking (e.g., make this information prominent on Lewis & Clark Sustainability webpage)
- Be explicit about critiques and limitations of sustainability ideas
- Go "beyond the STARS" in the sense of utilizing outside rankings to leverage and advance our own strategic and academic goals
- Explore other outcome and ranking frameworks such as those of the Global Reporting Initiative
- Be willing to question and provide counter-points to ranking systems while respecting difference in values and methods, and operating in a way that ensures open discourse that does not inhibit university-wide initiatives.

6. New or Revisioned Programs

1. Fast track
    - Brief cross-campus winter or summer programs
    - Creating a Lewis & Clark Sustainability Scholar Certificate or Minor option for existing students (e.g., a self-designed curriculum drawn form existing academic offerings, with advising and oversight from the Sustainability Scholars and Professionals program)
    - Enhance connectedness between Lewis & Clark academic programs and entities outside of Lewis & Clark (including partnering with other institutions)
2. Longer Term
    - New or enhanced freestanding Certificate Programs
    - New Master's level initiatives (e.g., a Lewis & Clark Energy & Sustainability Hub Program in the Law School with access to faculty of the three schools)
    - Directly engage multicultural diversity and social-environmental issues with communities off-campus

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Addendum I

STARS 2.1 Technical Manual Curriculum: Sustainability Course Offerings

Sustainability course offerings include "sustainability courses" and "courses that include sustainability":

Sustainability Courses. Sustainability courses are courses in which the primary and explicit focus is on sustainability and/or on understanding or solving one or more major sustainability challenge (e.g. the course contributes toward achieving principles outlined in the Earth Charter). This includes:

A. Foundational courses in which the primary and explicit focus is on sustainability as an integrated concept having social, economic, and environmental dimensions. Obvious examples include Introduction to Sustainability, Sustainable Development, and Sustainability Science, however courses may also count if their course descriptions indicate a primary and explicit focus on sustainability.

B. Courses in which the primary and explicit focus is on the application of sustainability within a field. As sustainability is an interdisciplinary topic, such courses generally incorporate insights from multiple disciplines. Obvious examples include Sustainable Agriculture, Architecture for Sustainability, and Sustainable Business, however courses may also count if their course descriptions indicate a primary and explicit focus on sustainability within a field.

C. Courses in which the primary focus is on providing skills and/or knowledge directly connected to understanding or solving one or more major sustainability challenges. A course might provide knowledge and understanding of the problem or tools for solving it, for example Climate Change Science, Renewable Energy Policy, Environmental Justice, or Green Chemistry. Such courses do not necessarily cover “sustainability” as a concept, but should address more than one of the three dimensions of sustainability (i.e. social wellbeing, economic prosperity, and environmental health).

While a foundational course such as chemistry or sociology might provide knowledge that is useful to practitioners of sustainability, it would not be considered a sustainability course. Likewise, although specific tools or practices such as GIS (Geographical Information Systems) or engineering can be applied towards sustainability, such courses would not count as sustainability courses unless their primary and explicit focus is on sustainable applications. If there is a sustainability unit, module or activity within one of these courses, but it is not the main focus, the course may be counted as a “course that includes sustainability”:

Courses That Include Sustainability. A course that includes sustainability is primarily

focused on a topic other than sustainability, but incorporates a unit or module on sustainability or a sustainability challenge, includes one or more sustainability-focused activities, or integrates sustainability issues throughout the course.

While a foundational course such as chemistry or sociology might provide knowledge that is useful to practitioners of sustainability, it would not be considered to be inclusive of sustainability unless the concept of sustainability or a sustainability challenge is specifically integrated into the course. Likewise, although specific tools or practices such as GIS (Geographical Information Systems) or engineering can be applied towards sustainability, such courses would not count unless they incorporated a unit on sustainability or a sustainability challenge, included a sustainability-focused activity, or incorporated sustainability issues throughout the course.

STARS 2.1 Technical Manual Curriculum Cont.

Credit Example: Inventory of Sustainability Course Offerings

Example College asked faculty members representing all of its academic departments to identify sustainability course offerings using the definitions outlined in *G. Standards and Terms*. Following is an excerpt of the completed inventory:

Sustainability Courses

Title	Department	Level	Description
Introduction to Sustainability	Interdisciplinary Studies	UG	*[Description is optional; sustainability focus of the course is apparent from its title.]*
Sustainable Development	Geography	UG	*[Description is optional; sustainability focus of the course is apparent from its title.]*
Sustainability Science	Ecology and Evolutionary Biology	UG	*[Description is optional; sustainability focus of the course is apparent from its title.]*
Introduction to Environmental Studies	Environmental Studies	UG	This course provides an overview of environmental studies as an interdisciplinary academic field centered upon interdependent society – nature relationships. It provides an introduction to the concept of sustainability, critical thinking, the interdependency of social and ecological systems, interdisciplinary approaches, and related social engagement.
Systems Thinking and Analysis	Engineering	UG	Introduction to the systems thinking process, systems of systems, and the fundamental considerations associated with engineering and sustainable development.
Society and the Environment	Sociology	UG	This course will enable students to devise their own set of principles for understanding sustainability issues which should be of value in decision-making in their future careers.
Resilient Societies	Interdisciplinary Studies	UG	Provides an overview of the study of social and economic development in the context of ecological limits. Studies pathways and processes that lead to positive adjustment and sustainable societies.
Ecological Economics	Economics	UG	This course studies the role of environmental amenities such as clean air and clear water in economic systems. The course analyzes the problems of market outcomes when such amenities are not priced, examines the challenges associated with estimating economic costs and benefits, and emphasizes the connection between economic understanding and improved public policy.
International Development	International Studies	UG	An interdisciplinary course based on real world problems, direct field experience and current research on the causes of global poverty, environmental degradation, and preventable disease.
Environmental Ethics	Philosophy	UG	Course examines concepts such as animal rights, the land ethic and environmental justice within the larger context of environmental philosophy.
Corporate Social Responsibility	Business	G	This course explores how corporations design, manage and measure social strategies to generate business value. Students will learn frameworks, methodologies

STARS 2.1 Technical Manual Curriculum Cont.

			and tools and use these to develop CSR strategies for real-world corporations.
Global Environmental Health	Public Health	G	The public health implications, positive and negative, of society's efforts to mitigate and adapt to climate change will be elaborated, including discussions of ethical, political, economic aspects.
Environmental Journalism	Journalism	UG	In this course, students will learn the gathering and presentation of stories about environmental issues. We will also study the effect of mass media on the environmental movement and public policy debates.
Urban Planning	Planning	UG	Examination of current urban planning and policy issues and debates, such as normative theories of good urban form, metropolitan organization and governance, economic development and growth management, edge cities, spatial mismatch hypothesis, urban poverty, racial/ethnic inequality, gender and urban structure, sustainability, and the future of cities.
Organic Agriculture	Plant, Soil and Agricultural Systems	UG	This course asks students to use critical thinking skills to compare organic and industrial agricultural practices and explore food production issues including antibiotics, herbicides, hormones, GMOs, animal welfare, crop yields, nutrients, and pollution.
National Environmental Policy Act	Public Policy	UG	Learn about the philosophy and practice of ecological theory and policy and discuss contemporary challenges associated with implementation of the National Environmental Policy Act (NEPA).
Photovoltaic and Wind Turbine Installation	Electrical and Electronics	UG	The course will discuss the fundamentals of photovoltaic and wind power generation, installation and maintenance practices.
Conservation Biology	Biology	G	The focus of this course is on the science of conservation biology in the context of environmental policy, socioeconomic demands, and environmental ethics. Topics will include population biology, extinction, wildlife management, the role of science in making environmental policy, wetlands conservation, sustainable agriculture and forestry, integrated land-use management, and vegetation analysis.
Health Disparities	Public Health	UG	Students learn the nature of socioeconomic, racial and ethnic disparities in health status, and become familiar with the research literature on disparities in health care.
Infill Development	Public Policy	G	This course provides students with a comprehensive understanding of urban infill development, including the economic development thrust of urban infill and the political, environmental and community dimensions of projects.
Integrated Pest Management	Plant, Soil and Agricultural Systems	UG	Course is designed to provide an overview of IPM in agricultural situations. The course covers the fundamentals of pest management; safe use of and alternatives to pesticides; and the development, classification, and identification of insects.
Peace Studies	Peace Studies	UG	This course provides an overview of the field of peace studies and examines theories related to peace, conflict studies and non-violence. Students gain an understanding of the various tools and processes that are used internationally in working towards a more equitable, just and peaceful world.

Addendum II
Academic Sustainability Evaluation of Peer Liberal Arts Institutions
Based on Sierra Club Rankings & STARS Reports Linked from Sierra Club

Prepared by Frances Swanson

Colleges in Order of their Academic Rank

1. College of the Atlantic
2. Colorado State University
3. Green Mountain College
4. Appalachian State
5. University of Connecticut
6. University of South Florida
7. Unity college
8. Cornell University
9. Emory University
10. University of Washington
11. State University of NY College of Environmental Science and Forestry
12. Albion college
13. CA State University: Chico
14. Iowa State University
15. Sterling college
16. Wartburg college
17. Chatham university
18. Duke University
19. Bard College
20. UC Irvine
21. Babson College
22. Cal State Channel Islands
23. U of Illinois at Urbana-Champaign
24. Colby College
25. George Washington University
26. MIT
27. U Missouri: Kansas city
28. Santa Clara Univ.
29. OR State Univ.
30. Univ. of the Pacific
31. Univ. of San Diego
32. Stanford
33. U Arizona
34. U Minnesota, Morris
35. Columbia
36. Dickinson
37. U Maryland
38. U Colorado, Colorado Springs
39. Furman University
40. UNC Chapel Hill
41. Harvard
42. Bucknell
43. PSU
44. Rice
45. UMass Amherst
46. Vanderbilt
47. U Wisconsin Stevens point
48. Middlebury
49. Penn state U
50. Mizzou
51. U Wisconsin- River Falls
52. Purdue
53. Worcester Polytechnic institute
54. Arizona state
55. Bently Univ.
56. U Colorado, Boulder
57. UC Davis
58. Pomona
59. Carnegie Mellon
60. Hampshire
61. UC Santa Barbara
62. Villanova
63. Saint Johns
64. Mills
65. Smith
66. Hobart & William Smith
67. Western Mich. u
68. Tufts
69. Elon
70. Dartmouth
71. Grand Valley State
72. Randolph
73. Brandeis
74. Macalester
75. U Minnesota, Duluth
76. UC Berkeley
77. U Florida
78. U Pittsburgh
79. Boston Univ.
80. UCSC
81. Univ. of Vermont
82. Univ. of Illinois at Chicago
83. UCSD
84. Oklahoma State
85. Aquinas
86. Univ. Mount Union
87. U. North Dakota
88. Univ. Wisconsin, Oshkosh
89. Earlham
90. Allegheny
91. U. Louisville
92. U. north Carolina
93. Carlton
94. Lewis & Clark

(153 schools total)

Cross School Comparison Example:
Lewis & Clark (Rank #95 in Academics) & Bard College (Rank #19)

Lewis & Clark: Preliminary findings: A number of classes potentially related to sustainability, but behind in immersive experiences, and sustainability focused degrees, & minors/certificates

Scores	➢ score: in academics ➢ rank: 95 in academics, 9 overall
Peers institution?	➢ students ~2,000 undergrad / ~1,000 grad ➢ endowment: 233.7 million
Course statistics	Undergrad ➢ 42/1324 (~3%) courses offered are focused on sustainability ➢ 79/1324 (~6%) courses offered include sustainability ➢ 22/50 (~50%) of departments offer at least one sustainability course ➢ ~70% of students graduated from a program with at least one sustainability learning outcome Grad ➢ 39/488 (~8%) courses offered are focused on sustainability ➢ 163/488 (~35%) courses offered include sustainability ➢ of departments offer at least one sustainability course
Designation of sust.	➢ in course catalog: no ➢ on student transcripts: no
undergraduate minor, concentration or certificate	➢ no
Undergrad *Sustainability-focused degree* program	➢ Environmental Studies
Grad programs with sust. learning outcomes	➢ no
Grad minor, concentration or certificate	➢ Ecopsychology

Immersive studies	➢ Sustainability: Spin to Substance course

Bard College: Review summary: Strengths = 2 grad school degrees, 1 undergrad degree, immersive programs in form of January-terms

Scores	➢ score: 59.9 in academics ➢ rank: 19 in academics, 48 overall
Peers institution?	➢ students: 2,051 ➢ endowment: 267 million
Course statistics	Undergrad ➢ 33/873 (~4%) courses offered are focused on sustainability ➢ 41/873 (~5%) courses offered include sustainability ➢ 15/44 (~35%) of departments offer at least one sustainability course ➢ 80% of students graduated from a program with at least one sustainability learning outcome Grad ➢ 16/43 (~37%) focused on sust ➢ 26/43 (~60%) include sust
Designation of sust.	➢ in course catalog: ➢ on student transcripts:
undergraduate minor, concentration or certificate	➢ no
Undergrad *Sustainability-focused degree* program	➢ Environmental & Urban Studies
Grad programs with sust. learning outcomes	➢ M.S. in Environmental Policy ➢ M.S. in Climate Science and Policy
Immersive studies	➢ J-terms (January courses) ○ Land Trusts: A Primer and the Role of Climate Change ○ Carbon Finance: An overview and Current Markets ○ Slow Water for Sustainable Development: Oaxaca ➢ Farm Internship

Addendum III: Example of a Sustainability-focused Course Inventory

Department	Faculty	Environmental	Economic	Social	Global	Local	Long-Term	Related	Focused
Undergraduate College									
History									
History 112: Making Modern Japan	Bernstein			x		x		1	
History 336: Wilderness and the American West	History Faculty	x?					x?	1	
HIST 239 Constructing the American Landscape	Hillyer		x	x?			x	1	
HIST 261: Global Environmental History	Bernstein					x	x	1	
Philosophy									
Biology									
Bio 100: Perspectives in Biology	Biology Faculty	x				x	x	1	
Bio 107: Field Paleontology of Oregon	Biology Faculty	x					x	1	
Bio 114: Origin of Life in the Universe	Biology Faculty	x					x	1	
Bio 115: Explorations in Regional Biology	Biology Faculty	x				x		1	
Bio 141: Investigations in Ecology and Environmental Science	Bierzychudek, Clifton	x		x				1	
Bio 151: Investigate Genetics/Evolution	Binford	x		x				1	
Bio 211: Land Vertebrates	Clifton	x					x	1	
Bio 221: Marine Biology	Clifton	x					x	1	
Bio 223: Plant Biology	Kennedy	x		x				1	
Bio 335: Ecology	Bierzychudek	x		x				1	
Bio 320 Human Genetics and Disease	Lycan	x		x				1	
Bio 390: Evolution	Binford	x				x		1	
Bio 199: Independent Research Caribbean Biogeography	Binford	x				x		1	
Chemistry									
Chem 100: Perspectives in Environmental Chemistry	Balko, Bentley, Chemistry Faculty	x		x				1	
Chem 415 Nanomaterials Chemistry	Bentley	x		x				1	
Geological Sceinces									
Geo 150: Environmental Geology	Safran	x					x	1	
Geo 170: Climate Science	Kleiss	x			x			1	
GEOL 280: The Fundamentals of Hydrology	Safran							1	
International Affairs									
IA 211 International Organization	Petersen		x	x				1	
IA 232: Southeast Asian Politics	Coe	x	x					1	
IA 257: Global Resource Dilemmas	Mandel	x		x				1	
IA 330: Global Security	Mandel	x	x	x		x			1
IA 244 Practicum: IA Symposium	Mandel	x		x					1
Environmental Studies									
ENVS 160: Introduction to Environmental Studies	Environmental Studies Faculty	x		x		x			1
ENVS 220: Environmental Analysis	Proctor	x				x		1	
ENVS 330: Situating Environmental Problems and Solutions	Kleiss	x		x		x			1
ENVS 160 Topics in Environmental Law and Policy	Law Faculty	x		x				1	
ENVS 190 (Un)Natural Disasters	Safran	x		x			x		1
ENVS 199_01: Indp. Study Climate Change Law	Kleiss	x	x	x			x		1
ENVS 199_01: Indp. Study Climate Changing in the Developing Century	Kleiss	x	x	x		x	x		1
ENVS 244_01: Symposium Co_Chair	Proctor	x	x	x		x	x		1
ENVS 244_02: Bicycle Transit Analysis	Safran	x		x			x		1
Sociology and Anthropology									
SOAN 214: Social Change	Mechlinski, Podobnik			x			x	1	
SOAN 234: Anthropology of Tourism	SOAN Faculty			x		x		1	
SOAN 249 The Political Economy of Food	Goldman			x		x		1	
SOAN 266: Social Change in Latin America		x		x				1	
SOAN 305 Environmental Sociology	Podobnik.	x		x		x			1
SOAN 306 Social Permaculture	Podobnik.	x	x	x					1
SOAN 350 Global Inequality	Mechlinski, Podobnik	x		x				1	
Economics									
ECON 260 Environmental and Natural Resource Economics	Bostian	x	x	x				1	
ECON 444: Internship Green Energy Institute	O'Sullivan	x							
Education									
ED 450 Philosophy and Practice of Environmental / Ecological Education		x		x			x		1
Psychology									
PSY 460 Community Psychology	Faculty	x		x				1	
PSY 398 Psychology and the Natural Environment	(offered infrequently, not offered spring 2014	x		x			x		1

Example of a Sustainability-focused Course Inventory Cont.

Physical Education/Athletics											
PE/A: 141 Wilderness First Responder	Yuska		x			x				1	
PE/A: 142 Wilderness Leadership	Yuska		x			x			x	1	
Art											
ART 499_01: Indp. Study Civic Ware	Parque		x			x					1
ART 499_02: Indp. Study Civic Ware 2	Parque		x			x					1
TOTAL RELATED		36									
TOTAL FOCUSED		16									
Graduate School											
Total Courses: 261											
Ecopsychology											
CPSY 519 Pre_Practicum In Community Engagement						x		x		1	
CPSY 528 Introduction to Ecopsychology In Counseling		x				x		x	x		1
CPSY 596 Wilderness & Adventure Therapy Intensive		x				x				1	
CPSY 597 Ecotherapy		x				x		x	x		1
CPSY 902 Culture and Community						x		x		1	
Teacher Education											
SS 548 Teaching the Geography of Inequality		x				x		x	x		1
ED 635 Earth Crisis Curriculum		x		x		x					1
Writing and Creative Media Courses											
WCM 513 Field Notes: Observation and Reflection In the Natural World		x				x				1	
Core											
CORE 537 Seminar In Moral Development, Ethics, and Imagination		x				x				1	
CORE 540 Envisioning a Sustainable Society		x		x		x		x	x		1
CORE 620 Reading the Landscape		x				x			x		1
CORE 621 Ecoscapes		x		x		x					1
CORE 921 Ecoscapes International		x		x		x					1
Total Related:		5									
Total Focused:		8									
Law School											
American Legal History	Blumm	x							x	1	
Animal Law Fundamentals	Sullivan	x				x				1	
Animal Law Graduate LLM Seminar	Hessler, Frasch	x							x	1	
Clean Air Act Seminar	Wood, Tichenor	x				x			x		1
Climate Change	Powers	x		x		x		x			1
Public Lands and Resource Law	Blumm	x				x		x			1
Energy Law	Powers			x					x	1	
Environmental Justice Seminar	Johnston, Funk	x		x		x					1
Environmental Litigation	Buchele	x				x				1	
Enivronmental Law	Fromherz	x		x		x		x			1
Environmental Law Advanced Topic Seminar	Fromherz	x		x		x					1
Environmental Law Graduate LLM Seminar I & II	Rohlf	x		x		x					1
Forest and Law Policy	Brown	x		x		x		x			1
Hazardous Waste Law	Johnston	x		x		x				1	
International Environmental Law	Fromherz	x		x		x		x			1
Wildlife Law	Rohlf	x							x	1	
Clean Water Act	Johnston	x				x				1	
Internship Seminar: Natural Resources Law	Grenham	x				x				1	
Renewable Energy Law and Policy Seminar	Powers	x		x						1	
Sustainable Food and Agriculture Seminar	Kimbrell	x		x		x					1
Sustainability Law and Business Seminar	Rohlf	x		x		x			x		1
International Trade Law and the Environment	Wold	x		x				x			1
Water Policy Seminar	Ryan	x						x		1	
Total Related:		11									
Totaly Focused:		12									
CAS + GRAD + LAW											
Total Related:		52									
Total Focusded:		36									