

## Sustainability Literacy as a Bridge to Addressing 21<sup>st</sup> Century Problems

Theme: "From one to One"

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In a speech delivered on September 15<sup>th</sup> to the Faculty Senate, President McConnell gave our community the sobering news that we were not “fiscally sustainable.” From a sustainability perspective this is merely a limitation of our current system, and it means that we must innovate our way out of this constraint. While cost efficiency is a short-term measure that can be effective, it is limited in achieving sustainability, and usually we must expand our vision of the problem to enlarge the solution pie. This is a classic problem of sustainability, and the solution lies in understanding every aspect of our system, their interconnections, and how we can find ways to synergistically create value. We must embrace institutional resilience as a main goal, do more with less, and in doing so create new value. This QEP could not come at a more opportune time to demonstrate the power of sustainability thinking. Moreover, this is not simply a problem for CofC, but in many ways, it affects all of higher education, which is also not sustainable. We must learn to innovate our way beyond our current constraints and deliver greater value in all levels of higher ed. But first, we must learn to SEE beyond our current limits. It is the new vision, and the worldview developed from it, which represent the core of sustainability literacy.

The era of industrialization is ending, primarily because it has stretched the limits of our human and ecological systems beyond their carrying capacity. The “unsustainability” of everything we have built means that we cannot continue to live as we have been. Many scholars tell us that we must reinvent our systems or collapse (i.e. forced to a simpler form of civilization). Therefore, there is no problem for the 21<sup>st</sup> Century that is more complex and yet salient.

Sustainability suggests that this is a *design* problem; that is, our current industrial system no longer meets our ability to sustain life without deepened exploitation (of people, cultures, and ecology). Our focus the last twenty years in environmental studies, environmental operations, and sustainable development has been on greater efficiency and to incrementally add renewable energy. While both of those measures continue to be important, we cannot simply generate infinite efficiencies (we quickly reach points of diminishing returns on our investment) or simply add renewable energy especially to an aged energy delivery system(s). The solutions of tomorrow, therefore, require new thinking and new designs, and like CofC, we must innovate our way out of our current constraints.

Unfortunately, from that perspective, the powerful CofC mission statement, “*To pursue and share knowledge through study, inquiry, and creation in order to empower the individual and enrich society,*” is limited, in that pursuing and sharing knowledge cannot solve these complex problems. Deconstruction of problems, concomitant critical thinking skills, research, and disciplinary training are necessary to establish a foundation for understanding the problems, but to *solve* them requires an augmented approach. Solving these complex systems problems requires holistic thinking (synthesis of integrated knowledge); it requires *reconstructing* knowledge in specific ways and applied, tested and reformulated. It requires innovation and entrepreneurial spirit. Sustainability aligns with this augmented approach, which allows us to think strategically and creatively about generating solutions. It also is a pathway to generate new skills and competencies for engaging this emerging world, one that is increasingly uncertain, turbulent and fragmented. We must teach, no, we must *work with*, our students to build those skills and to adapt to these perturbations. Today, our students compete with less than 1 billion folks in a global marketplace, and yet within a generation,

our graduates will compete with 3 billion, all on equal footing. It is simply not enough for students to gain a degree, or even to get a job or enter a graduate program; we must teach them HOW to be successful at that next level and how to compete in an increasingly competitive market. How well we do that job will determine how successful our solutions will be in answering the grand challenges of our time.

## I. Establishing Need

Beyond these larger scale opportunities for sustainability thinking, there is extremely strong empirical **evidence of need** at CofC for sustainability literacy. First, sustainability is now part of ANY organization—corporation, non-profit, government, and it's equally applicable at any scale from the individual to the organization to community to global. It is not an option in the 21<sup>st</sup> Century not to equip students with a basic understanding of the systems that support all life, how those systems affect their daily life, their profession, the organization they work within and the community they live. Second, data from a campus wide survey in late 2011 (N=932) demonstrate that our community highly prioritizes sustainability, students believe in sustainability, make decisions based on sustainability and would like to see more courses, projects and opportunities on sustainability.

- The top 3 priorities for CofC (of 13 potential priorities) in the next three years were 1. Tuition/salaries (N=560), 2. Engaging in Sustainability (N=343), and 3. Enhancing Curriculum (N=270) (Total N=932).
- Of student respondents (N=483), 36% indicated that the "College's commitment to sustainability" was at least "somewhat important" to their decision to attend, with 17% indicating that it was "important" or "very important".
- Of student respondents (N=259), 66% specified that there were not a sufficient number of courses at CofC on sustainability, with a full one-quarter of all student respondents "strongly" indicating that preference.
- 88% of respondents (N=335) indicate that they have never engaged in the application of sustainability at CofC, either through research, independent study, projects or internships.
- 85% of all respondents (N=535) indicated that they would "like to have more opportunities to learn about sustainability and sustainable practices for my community". For student respondents, this rate jumps to 90% (N=316).
- 94% of student respondents indicated that they support "campus projects leading to a sustainable campus community" (N=185).

The *CofC 2013 CIRP Freshman Survey* also demonstrates clear and strong student support for protecting the environment and environmental sustainability as:

- 81% of freshman CofC students (N=1925) indicate that it is at least "somewhat important" to adopt "green practices" to protect the environment, with almost 40% of total saying that it's "very important" or "essential".
- 74% of freshman CofC students (N=1921) indicate that it is at least "somewhat important" to become involved in programs to clean up the environment, with 28% indicated that it is "very important" or "essential".

In both surveys, the data are comparable to data at other institutions and are representative of national data, indicating that environmental protection, environmental sustainability, and sustainability are strong priorities for the *Z generation* (generation of our current students). These strong priorities demonstrate not only a need for our campus, but a (necessary) pathway to attract new students and to higher student retention. What happens if students arrive on our campus with these priorities and discover there are few curricular and co-curricular options to explore and participate in sustainability?

Third, from this survey we built a quantitative regression model of student perceptions to understand the impact of coursework on the conceptions of sustainability at CofC. This is now a peer-reviewed publication, which demonstrates that the courses taught in different Schools at CofC (e.g. SSM, HSS, Bus, etc) produce varying conceptions of sustainability. That is, students are walking away from classes within a particularly school with a disciplinary-bound conception of sustainability belying its more holistic conception. We call this "disciplinary fragmentation" and the problem, as identified in the data, is not that disciplines emphasize or privilege certain aspects of sustainability but that *it comes at the exclusion of other aspects*. This not only demonstrates a need for sustainability literacy as a way to present holistic conceptions of sustainability, but also a way to enhance disciplinary perspectives on sustainability. As disciplines think about the holistic conception, they will naturally reinvent ways to frame and use their disciplinary knowledge, and from it, build new knowledge.

Fourth, in another empiric survey of Charleston Organizations, we asked companies what skills were desired for positions filled by recent college graduates and of those skills what level of proficiency did graduates possess. The deficient skills sets identified align extremely well with the skills developed through sustainability. For hard skills, deficiencies were in systems thinking, strategic planning, project management, risk assessment and for soft skills, change management, problem solving and innovation. Strengths were technical and disciplinary knowledge, and soft skills of communication and team building. Most of these data align extremely well with national data.

Fifth, the top two priorities in the College's strategic plan call for a sustainability major and for a deeper forms of applied and experiential learning. It is difficult to ignore this prioritization as glaring needs identified by the executive team. Further, the College's Sustainability Action Plan (SAP) explicitly calls for "sustainability literacy" as the primary strategy for building a sustainability culture at CofC (Goal 5). Also, the primary strategy for achieving Holistic, Integrated Learning (Goal 4) is through curriculum integration of sustainability.

The plan would be to generate sustainability literacy across the campus community, starting foremost with our students. The advantage of sustainability literacy as a QEP is that it not only meets identified needs for the College and the demands of students themselves, but it becomes a very important bridge to other larger forms of institutional value added. Sustainability opens the door to new forms of student applied learning, different forms of thinking (that are in demand), new knowledge building that is necessary to SOLVE today's complex problems, to marketing the college in a different light, and equipping students with unique opportunities that can aid in student retention. It can be an effective way to fundraise in today's increasingly competitive marketplace, and it can be the genesis of establishing CofC as an anchor for this region on Strategic Innovation.

## II. Defining Sustainability Literacy

The *traditional definition* of sustainability is the efficient use of resources today to protect future generations while considering interconnected dynamics of the three main sectors of society: **economic, social and environmental**. Sustainability is in its simplest terms the *capacity to perpetually endure*. For a system to be sustainable does not require that it endure forever, simply that at that given moment it can regenerate or perpetuate itself for the foreseeable future. So, it can be helpful to define sustainability as ***the ability to think in systems across economic, social and environmental in ways that can perpetually endure***. To this point in human history, we have never managed to be able to do this, and as many scholars point out, every civilization has collapsed (i.e. moved to a simpler organizational form of life) because to endure has always meant deepening forms of exploitation to survive. So, without changing that paradigm, collapse becomes inevitable. Think about that for a second. Now, that is why creating a society that is "sustainable" is so critical; because otherwise, we collapse like every civilization before us. From this perspective, it is difficult to imagine working on the critical issues of the 21<sup>st</sup> Century at the College (which the Strategic Plan calls for) without having sustainability front and center, especially when Z Generation is demanding it.

The power of sustainability is its scalability and different forms of thinking that allow both macro and micro perspectives to be conjoined, which becomes a very powerful way to "seeing the world". In this way, we seek to design systems that can perpetually endure, whether it's an area (e.g. financial or ecological sustainability), a sector (e.g. transportation, energy, food, etc.), an organization (e.g. government, corporation, or non-profit), or even at the individual level (e.g. what is your fit within a given system, and what is your responsibility?). By definition, this means human development requires, at a minimum, not diminishing ecological or cultural/social capital; that is, we want to build systems using regenerative thinking that allows us to develop without diminishing what supports us and makes who we are. To be sustainable, requires systems built on resilience, self-organization, diversity (of thought and expression) and built in forms of equity.

The second powerful area of sustainability is its diversity, contextuality, and need for constant expression. Sustainability touches on every discipline, and requires the contribution of every discipline to contribute to solving these complex problems. One important element of sustainability often left out is the need for cultural and artistic expression of the context in which it is embedded. At its simplest level, it offers a

different and unique worldview that highlights the systems we have created in historical and contextual perspective. The expression through this perspective, then offers us a new way of developing meaning and purpose, particularly collectively.

So, if we think about sustainability as the ability for various interconnected and nested systems to perpetually endure in ways that enhance our ability to prosper, we get closer to understanding the various dimensions of sustainability thinking. This certainly includes, for example, the typical dimensions of renewable energy and recycling waste, but it also includes human well-being, health, community development, social justice, ecosystem management, deeper forms of ecology, all that work together to help us understand how to build systems that perpetually endure and regenerate the most positive aspects of human life. This a multi-generational challenge, maybe more. Being literate in sustainability therefore requires understanding the current limitations our systems, how it affects decisions at different scales, and how we can begin to use sustainability thinking to develop the solutions of tomorrow.

I said to my students yesterday, you walk into McDonald's and buy a burger. What systems are implicated in making that simple decision? Food, obviously, but energy, water, labor, transportation, biosphere, land use, toxins and chemistry, animal rights, GMOs and lots of other social systems like values, politics, psychology, ethics, marketing/advertising, corporate organization and strategy, basic forms of justice, and *power*. All that to buy a simple burger. Our decisions today are complex, and if students cannot understand the basic framework for what is implicated in buying one piece of meat, how can they understand how to vest in that system, change that system, or defend their own choice to eat that McDonald's burger? How can they engage in even larger decisions? A sustainability literate person would be able to defend eating or not eating that burger, understand the "true" costs of that burger, and to identify ways to produce that burger—and eat it, with less harm to health, rights, ecology and their values. What we need is not just a student who only says, "I don't want to eat that burger" because it's against my values, but one who understands the system that produces that burger, wants to change it, and can identify and participate in ways to do so. Moreover, if you can understand the broader implications of eating that one simple burger, it changes your worldview to one of system interconnection and interdependency. From it, students can make more informed decisions that reflect their values and provide deeper meaning in one's life with the prospect to alter the system in which they are embedded.

### **III. The Office of Sustainability: Progress and Context**

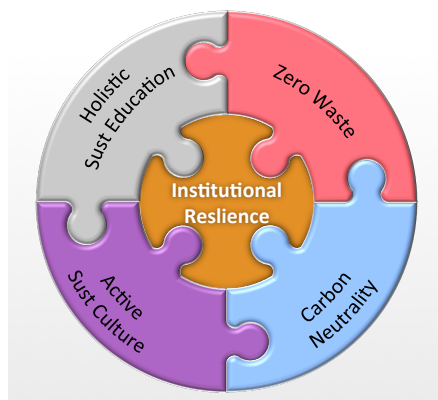
The Office of Sustainability was created four years ago, and in those years, we have made substantial progress on many fronts. We have increased our waste diversion rate from 6% to 30%, generate energy efficiency, contributed to making our capital projects more sustainable, won grants for our first Solar array (at Dixie Plantation), created events with some of the biggest names in the field, contributed to student "green" life in our cafeterias, transportation, and through projects like water refill stations, and we have a dynamic internship program that develops students into leaders on sustainability. As a result, we are now one of the top 150 schools in the country on sustainability (See Princeton Green Schools and Sierra Club's "Cool" Schools). One area where we have been deficient is in the academic sector and larger institutional visioning for integrating sustainability. This QEP is designed to address that deficiency.

The QEP would not start, however, from square one in these areas because we have consistently been developing approaches and including them in the campus strategic vision for sustainability. It must all start with vision and values. To this point, in line with the Campus Strategic Plan and CofC mission and values statements, I created *10 Visionary Values for Sustainability at CofC*. These values represent not only sustainability and its processes, but you can see how it also reflects quite naturally many of the aspects that make the College a unique and special place. It also provides students, faculty and staff a powerful way to feel connected; that is, we are bound by a vision and values that can guide our efforts today and tomorrow.

## 10 Visionary Values for CofC Sustainability

1	<b>Restore human and natural capital streams</b>	We seek to protect and restore human and natural capital by working to transform financial and economic models to holistically represent the multiplicity of interconnected systems upon which we depend and interact. We must strategically invest in multiple capital streams that enhance quality of life and prosperity while minimizing our negative impact on people, place and planet.
2	<b>Personalize education</b>	CofC's core mission is personalizing experience, learning, and practice. We take this a step further by developing meaning and purpose together as a symbiotic "hands-on" experience between and amongst students, staff and faculty.
3	<b>Synthesize disciplinary learning and practice</b>	We focus on integrated problem solving. It is a solutions framework that requires divergent thinking across multiple disciplines. Students learn within that space focused on addressing the grand challenges of the 21 <sup>st</sup> Century.
4	<b>Produce Situated Knowledge and Connected Understanding</b>	We engage in scholarship, practice and learning that generates knowledge particular to its place, but connects it to other spaces and places to generate connected understanding. It is vital to cultivate understanding through connection and practice to activate and reinforce our values.
5	<b>Leverage Place</b>	Understanding history, culture and tradition is critical to understand what our communities should "sustain". At CofC, developing a sense of place contextualizes our worldview and is embedded in our research and learning to leverage its value.
6	<b>Principled Praxis</b>	We practice diversity in ways that bridge theory and action to actuate social justice. We connect, in meaningful ways, people, businesses, organizations, communities, cultures, and societies based on fair practices, non-discrimination of people and species, and to act in ways that embody universal rights.
7	<b>Amplify Local to Connect Globally</b>	We operate through a deep sense of place and building local solutions where we can amplify local to deepen connections regionally and globally. We think and act locally as part of connecting globally.
8	<b>Embody Entrepreneurship</b>	CofC sustainability is built on a foundation of innovation. We seek this innovation in all endeavors including design, technology, organizations, social movements, and economic development.
9	<b>Be Socially Embedded</b>	We champion an inclusive rather than exclusive perspective, and embed students in systems they seek to change as practitioners and active citizens. Critical to this embeddedness is collaboration, which is essential to generating social capital that leads to system resilience.
10	<b>Engage in Socially-Necessary Action Research</b>	We seek to work both on campus and off as a "community of practice" to engage action-based research to improve our understanding of problems that lead to strategic, proactive solutions.

Building on this, we developed a rough draft of a *2015 Sustainability Action Plan (SAP)*. The SAP outlines primary goals, strategies, and tactics with specific targets and metrics for achieving campus sustainability. At this point, it is merely a draft and requires greater input and feedback from the community. Optimally, pairing the development of the SAP with that of the QEP would generate a comprehensive strategic plan on sustainability through 2050 (when we have pledged to be a carbon neutral campus). This provides significant depth to both the QEP and campus vision.



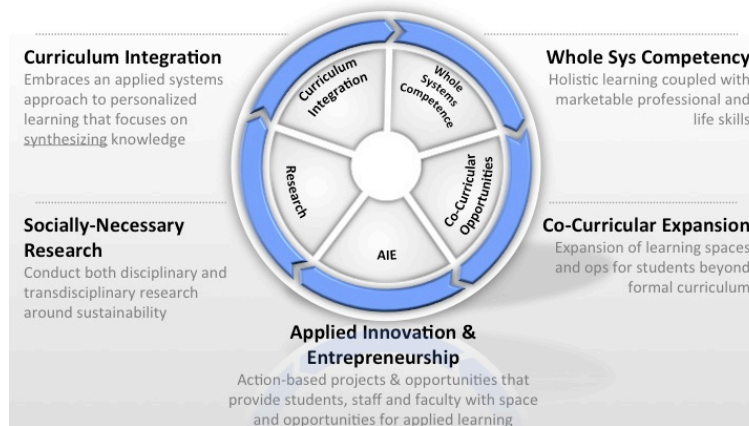
The SAP identifies **five primary goals** for sustainability at CofC: Carbon Neutrality, Zero Waste, Active Sustainability Culture, Holistic Sustainability Education and Institutional Resilience. **Institutional Resilience** is the primary objective for the campus. It can't be "campus sustainability" as one of the main principles of sustainability is that you can't be sustainable in isolation, and here, we rely on many outside systems that are and will remain unsustainable. At most, you can be resilient. So, we seek to build institutional resilience—the ability for our organization to constantly adapt (and learn) from the turbulence created from the various systems around us. The other four objectives all work together to help generate that resilience for a liberal arts higher educational organization.

A closer look at SAP Goal 4, *Holistic Sustainability Education*, provides clearer insight into the synergy between the SAP goals and a potential QEP on Sustainability Literacy. Again, these are all just suggested courses of action, and the point of the QEP on Sustainability Literacy is that it can be coordinated to provide a long-term strategic plan for CofC around sustainability as a pillar to the institution, not just an isolated program. As you will see in the next section, the core goal of the SAP becomes one of the QEP goals—to build institutional resilience. For Goal 4, on Holistic Sustainability Learning, there are 5 strategies all based on the process of

achieving them through **Principled Praxis** (which is also a visionary value). The five strategies are WSC (see my article on building Whole Systems Competency), but we can think simply “skills”; co-curricular expansion (learning opportunities beyond the classroom, like peer to peer learning); AIE (Applied Innovation and Entrepreneurship (we have several programs already); Socially-Necessary Research on sustainability; and Curriculum Integration. The QEP goals would then be aligned with these strategies, so they work in synergistic concert.

## GOAL 4: Holistic Sustainability Learning

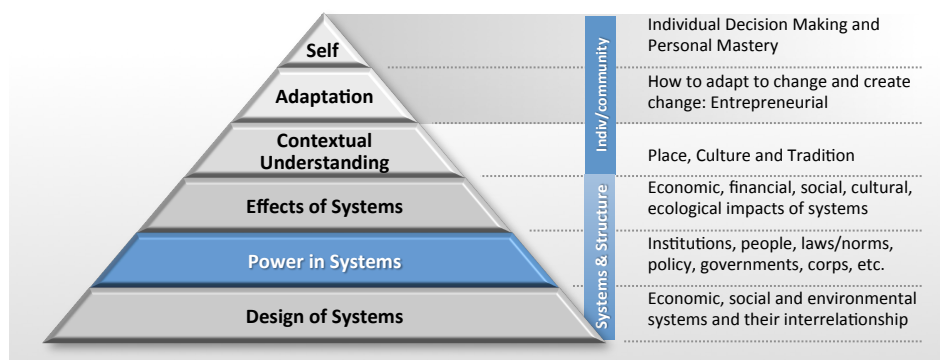
Process: Principled Praxis Pedagogy (applied holistic, systems learning)



Again, all of this is malleable and can (and should) change based on campus feedback as part of a greater **shared vision**. The main thrust is that the QEP can complement other strategies on sustainability, and with it, stretch the net of inclusion in both the process and outcome. Personally, I think this is the greatest strength of the QEP in sustainability literacy.

### IV. CofC Sustainability Literacy Model: Using the Literature to Build the QEP Model

In the last two decades, sustainability has become a highly visible component of campus life, with a more recent focus on integrating it into the curricula and the fuller breadth of campus life (Chase & Rowland, 2004; Creighton, 2001; Orr, 1994; M’Gonigle & Starke, 2006). It is highly contextual and layered requiring a more robust analytical approach that incorporates a sense of place, self, and community (Kagawa, 2007; Kyburz-Graber et al., 2006; Lundholm, 2005). The foundation for sustainability is in systems analysis (systems and resilience thinking) that requires holistic approaches that emphasize a synthesis of knowledge (Everett, 2008; Fisher 2014). It stresses a deeper understanding of interconnection and “fit and purpose” (Fisher, 2014) on many scales and understanding power and decision making within each level. It also emphasizes the development of self and how to generate flows of change through transformative thinking. Change is important to both the stability and sustainability of any system.



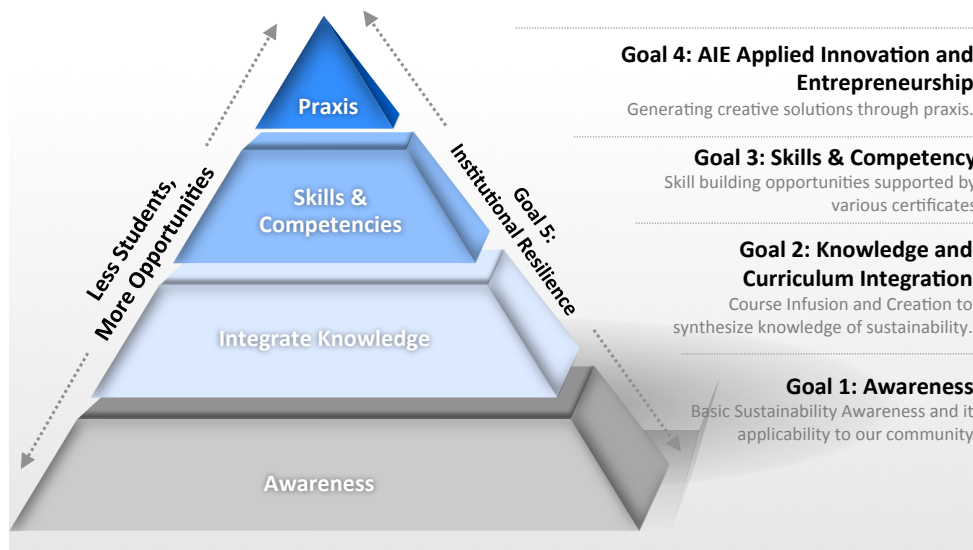
Understanding Sustainability through Systems. Fisher, 2015

This approach to higher education helps to bridge some of the gaps we find from purely disciplinary approaches to knowledge building. Sustainability education requires the inculcation of “lateral rigor” across the disciplines to complement the vertical rigor within them (Cortese, 2003; Orr, 2004; Everett, 2008). Sustainability emphasizes higher orders of learning and knowledge building around trans-disciplinary problem solving, collaborative learning, creative application and knowledge synthesizing (Fisher, 2015; Barth & Timm, 2011; Sterling, 2004). Another advantage is that sustainability is based on praxis (theory and practice) where the campus and community can operate as a living laboratory to connect and apply knowledge in ways that are highly interactive, experiential, and transformational (Steinemann, 2003; Rowe 2007; Sipos et al., 2008; Brundiars, 2010).

CofC must offer students a more flexible curriculum, greater opportunity for generating marketable skills, and to engage in more pragmatic, applied learning opportunities. This was demonstrated as an empirical demand from students, and as such, will clearly have a role in attracting new students and in retaining those on campus. The literature review suggests that the demand from our students is in line with national demand, and that sustainability learning is an ideal platform for meeting both student demand and our needs as an institution. It provides short-term benefits with long-term vision and guidance. Using the Holistic Sustainability Goal in the SAP as a template, sustainability literacy would be envisioned as a four-tiered approach.

## 4 Levels of Sustainability Learning

Establishing the 5 QEP Goals

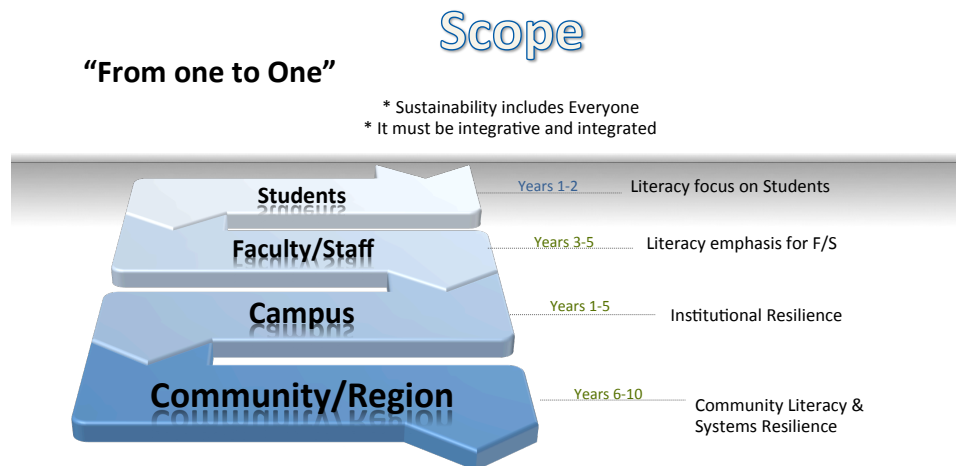


The idea is to maximize the number of students who are exposed to sustainability through events, orientation “bootcamp” and a FYE mini-module where, after 5 years, every student at CofC would be exposed to sustainability principles. Deeper forms of sustainability learning would be to infuse “sustainability-related” courses across the campus with CofC sustainability principles, to empower and encourage departments to take a stronger role in developing campus sustainability. The third level would be to expand student opportunities for skill building and generating critically market-demanded competencies that align with sustainability. While we would not expect all students to move up the pyramid to engage sustainability on a deeper level, the opportunities would be more diverse and complementary for those who do. The idea then is to expand the options available to students as they do more in sustainability by offering various topical and skill based certificates. The top of the pyramid would represent experiential and applied opportunities for those students who wish to explore sustainability at the deepest level.



## V. Sustainability Literacy Programming

The scope and timeline of the SL program would emphasize student sustainability literacy through the five years of its implementation, with indirect benefits of educating our faculty and staff in building a more resilient institution.



A huge advantage of this QEP is that after the first five years, not only will this continue in the form of generating Holistic, Integrated Knowledge as problem solving platform, but the sustainability literacy campaign can be extended into the community. This anchors CofC in our larger community as a Sustainability Center, but it also offers our students myriad opportunities for internships, applied projects, and demonstrating critical skills like leadership and teambuilding.

As discussed in the model section, the proposal consists of five (5) specific QEP Goals: Build awareness, Synthesize and Integrate Knowledge, Build Critical Skills and Competencies, Experiential Learning, and institutional alignment to build Institutional Resilience. Beyond the initial exposure to all freshman students, there will be an expanding diverse pool of options to deepen student’s learning, building critical skills, learning to synthesize knowledge for solutions, and to apply that knowledge. We propose an array of certificates that students can pursue to deepen their learning experience and to build their resumes.

### **QEP Goal 1: Build Awareness**

**Process: Develop Greater Awareness of Sustainability Issues and its Applicability on our Campus.** This goal would be to expose all freshman students (and eventually all students) to issues of sustainability, what sustainability thinking entails, and how it is applicable to them on a personal level, to our campus, and to our community.

#### Strategies:

1. **Events** (4 events per year)
2. **Orientation Sustainability “Boot Camp”** (optional; 100 students)
3. **FYE Sustainability program** (30-minute program in each FYE course; all Freshman students)
4. **Sustainability Visionary Values** “From one to One” Campaign (Marketing; Pres Office)
5. **Greater support for sustainability student organizations** (3 Student Orgs supported by QEP)
6. **Sustainability Magazine/Newsletter** to update and expand understanding of sustainability (Synergies; see <http://synergies.cofc.edu>)

SLO 1: Students are aware of QEP and opportunities for greater engagement

SLO 2: Students Comprehend the Holistic Nature of Sustainability and its Importance

SLO 3: Can identify key ways to be more eco-efficient in personal life and on campus (e.g. recycling, energy and water efficiency)

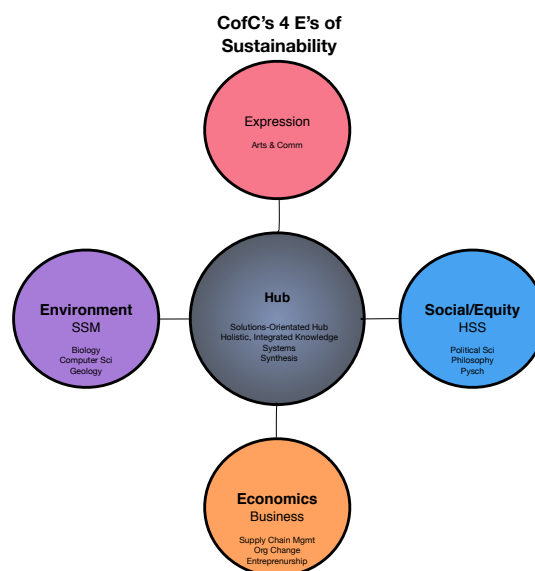


## **QEP Goal 2: Synthesize and Integrate Knowledge**

**Process: Infusion and Integration of Curriculum.** The initial step would be to infuse sustainability principles into existing courses that are already “sustainability-related”; that is, infusing sustainability into a course where one or two aspects of sustainability are emphasized (e.g. economics, social, or environment) from a disciplinary angle. We want to reward departments for facilitating this integration. This first step strengthens existing courses, while the second step in FY3 would be to generate more “sustainability-centered” courses-- solution-oriented, applied experiences that synthesize knowledge from all three areas of sustainability. A trans-disciplinary space, i.e. the sustainability hub, would be required to house and develop that holistic, integrated knowledge for the campus to constantly tap into and to build.

### Strategies:

- 1. Course Infusion** of Sustainability Principles (faculty workshops) - Piedmont Project (years 1-5)
  - Start with *sustainability-related* courses (~75 (u) and 28 (g) courses already at CofC)
  - Several Faculty attend Piedmont Conference and assist in teaching workshops
  - Faculty workshops to help infuse sustainability principles into syllabi and courses
  - \$500 incentive to each faculty member to participate in workshop
  - Courses and resources all stay WITHIN host department
- 2. Create new Courses** (co-teach or incentives to teach) (2/year)
  - \$500 to each faculty member and \$500 to each department
  - Includes new courses sustainability-related courses and sustainability-centered courses
- 3. Creation of trans-disciplinary HUB.** A trans-disciplinary space that seeks to generate holistic, integrated knowledge to solve complex, wicked problems. Also, a center for developing certificates and student-based skills and competencies.
- 4. Creation of Sustainability network** that ties disciplinary nodes (courses and programming) into trans-disciplinary hub. 3E's of Sustainability (equity, environment and economics) are expanded to include expression → CofC's 4 E's of Sustainability.



SLO 4: Students can identify the socio-historical patterns that have led to unsustainability.

SLO 5: Students can identify various elements of sustainability and the relationships between them (social, economic and environmental).

SLO 6: Students can identify basic support systems (e.g. energy, transportation, food, water) and their inputs and outputs that affect their daily life.

SLO 7: Students can analyze decision-making processes and the impact of choices on various actors and

constituencies at various scales (from individual to planetary).

SLO 8: Students can synthesize knowledge from two or more disciplinary areas to address a sustainability problem.

### **QEP Goal 3: Skill Building and Competency Learning**

**Process: Competency-Based Learning** that builds critical skills for sustainability, which are in demand from the marketplace. We do this through “sustainability thinking” and the skills needed to operationalize it.

- i. Various forms of Sustainability thinking that build HIK (holistic, integrated knowledge)
- ii. Examples: Futures, Holistic, Transformative, Normative/Ethical, Strategic/Entrepreneurial, and Regenerative thinking
  - E.g. See Arizona State’s 4 forms of [Sustainability Thinking & Competencies](#)
- iii. Build competencies around these forms of thinking concomitant with skills

#### Strategies:

1. **Development of Certificates** (skill-based, topic based, and/or competency based)—Certificates can be for-credit or non-credit but will provide opportunities for students to enhance their resumes, gain critical competence, and to augment their major/minor program in unique ways to enhance their marketability. It also helps build flexibility into the curriculum, and to attract and retain students.
  - Skill Based: Leadership, Systems Thinking, Project Management, Collaboration
  - Topic Based: Sustainable Development, Ecosystem Management, Organizational Change
  - Competency Based: Holistic/Systems, Transformative, Normative, etc (see above)
  - NOTE: Selection of certificates will be dependent on available resources and courses
2. **Development of Skill-Building Workshops** (1cr or non-credit). Campus-wide workshops in developing sustainability skills that enhance practice and application of sustainability. The OOS already conducts 2-3 applied workshops per semester.
3. **Sustainability Scholars Program**: allows students flexibility in piecing together various opportunities toward something meaningful, recognizable, and marketable. It would be designed similarly to the “Global Scholars Program” with various elements required for completion, but they would be elements that any student interested in sustainability would find complementary to their coursework.
4. **Build a “SUST” Labeling scheme** throughout campus curriculum and co-curriculum that allows for efficient and effective organization of student portfolio. Also, facilitates measurement and tracking metrics for QEP.

SLO 9: Students demonstrate skills to apply integrated knowledge

SLO 10: Students demonstrate clear competency in defined area (futures, holistic, etc.)

SLO 11: Students can communicate effectively with diverse audiences on sustainability

### **QEP Goal 4: Experiential Learning and Practice**

**Process: Principled Praxis (connect theory and practice) on Sustainability.** This process employs *AIE or Applied Innovation and Entrepreneurship* (see Goal 4 of the Sustainability Action Plan) as a way to connect the theory and practice of sustainability. Simply, it is creatively applying sustainability and the practice of it in ethically and pragmatically driven ways.

#### Strategies:

1. **Service and Experience component integration** (intro coursework) around sustainability
2. **Sustainability Abroad**: Create a sustainability abroad experience as either a semester based program and/or alternative spring break. It could expand a current program or create a new one. This program would subsidize some of the expenses for students.

3. **Co-curricular Programs and Experiences:** Creating greater opportunities for peer to peer learning and leadership is critical, especially in generating responsibility to future generations of students. A good example is the “garden apprenticeship” program started and run by the OOS.
4. **Expand internship and service opportunities:** The OOS has a strong internship program, but this would expand that program by providing those opportunities for more students. Also, the need to expand those opportunities into the community. The administrative assistant would be a key facilitator in this area.

SLO 12: Students can design and generate a pragmatic solution to a given sustainability problem (at scale)

SLO 13: Students can evaluate contextual and cultural implications to a given sustainability problem/solution

SLO 14: Students can apply skills effectively to describe problem and/or advance solution

### **QEP Goal 5: Institutional Resilience**

**Process: To Build a Learning Organization for greater Institutional Resilience.** This requires institutional alignment of structure, resources, and people (behavior) and to develop clear pathways for communication, knowledge sharing, and collaboration. This produces critical indirect benefits to student learning.

#### Strategies:

1. **Sustainability Umbrella and Hub:** See QEP Goal #2 above but also to provide a common thread among our leading centers on campus (center for hazards, livable communities, entrepreneurship).
2. **Sustainability Action Plan:** The campus-wide sustainability action plan that represents a strategic and operation plan for sustainability through 2050.
3. **Sustainability Practice Network:** Develop a network of working groups on various sustainability sectors to integrate and operationalize sustainability across the breadth of the institution.
4. **Research & Grants:** The hub and OOS will represent new opportunities for concentrating our collective research efforts around sustainability that aligns our campus centers.
5. **OOS:** The Office of Sustainability will need to be restructured in some ways to initiate the QEP and to reduce costs by generating organizational efficiencies.

### **VI. Assessment: Measurement and Metrics**

The power of the sustainability QEP is the ability to generate longitudinal data and to evaluate how student’s perceptions of sustainability (e.g. CofC Campus Survey and/or Exit Survey Qs) and their worldview change (e.g. BEVI) over time. There are quite a few survey instruments that could be used to measure students perceptions, attitudes and knowledge acquisition on sustainability. Because of previous research and publication (coursework on sustainability), we are UNIQUELY positioned in higher education to measure the impact of our QEP on “disciplinary fragmentation” in developing holistic approaches and knowledge to sustainability. Because of this research, we already have a pathway to measure the impact of our QEP and its effectiveness in establishing literacy in sustainability, holistic learning, and altering the worldviews of our students. In addition, there is a lot of movement at the international level on sustainability in higher education, and specifically in measuring sustainability by establishing a “Platform for Sustainability Performance in Education” through the UNEP (United Nations Environmental Program). This could be accomplished through a combination of the previous surveys:

- NSSE Student Survey – The first international survey of sustainability literacy administered through AASHE (Assoc for the Advancement of Sustainability in Higher Ed).
- BEVI Worldviews Survey – National Survey that provides a way to test how worldviews change over a given population.
- CofC Sustainability Global Survey – Fisher Survey in 2011
- CofC Entrance/Exit Surveys – All Freshman and Graduating Seniors surveyed with QEP questions.

In addition to this empirical capture of shifting perceptions and attitudes on sustainability, we will want to establish clear assessment methods for each of the QEP Goals. They are identified below.

	SLOs	Assessment Measures
Goal 1: Awareness	QEP Awareness	-Attendance in Events & Orientation -Mini-survey in each FYE -Sending Magazine link to ALL students
	Comprehend Holistic Nature & Importance	
	Identify Ways to be Eco-Efficient on campus	
Goal 2: Integrating Knowledge	Can Identify socio-historical patterns	-Rubric review of student work from sustainability-related courses -Direct measures of student performance -Course evaluations -Global (campus) Surveys on Sustainability Knowledge (BEVI) or Exit Surveys
	Can Identify elements and relationships	
	Can Identify basic supports systems	
	Can Analyze decision-making processes	
	Can Synthesize knowledge	
Goal 3: Building Skills & Competencies	Demonstrate skills to apply knowledge	-Empirical Participation Data in Workshops, Scholars program & Certs -Surveys upon completion of programs -Direct measures of student performance
	Demonstrate competency in a defined area	
	Communicate Effectively	
Goal 4: Experiential Learning	Design pragmatic solution	-Empirical Participation Data -Employer/Internship Feedback -Reflective Reviews of experience -Focus Groups of Interns at Year End
	Evaluate context & cultural implications	
	Can apply sust skills effectively to describe problem and/or advance solution	
Goal 5: Institutional Resilience	N/A SLOs	N/A
	Operational Outcomes: Collaboration, Hub, Execution of Marketing Plan, Restructuring of offices and departments.	N/A

## VII. Sustainability Generates Value Across the Institution

Sustainability offers a platform to help innovate our way out of our current fiscal constraints. These constraints won't simply disappear as this is the "new normal" and therefore some form of innovation is an imperative. Sustainability offers a new way of learning and practice that, when combined with a liberal arts institution, can be a powerful opportunity for a more resilient institution. Some of the ways in which the sustainability QEP would generate additional value:

**A. Physical Location for Sustainability and QEP:** One of the most underappreciated aspects of this proposal is that Sustainability is in the process of renovating a historic house on the Greenway to serve as a center for students, faculty and staff. It will have a *student floor* (of the three floors) that will seek to serve sustainability students needs. It is a very important groundbreaking structure because it will be designed to represent *historic sustainability* and offer a visual depiction of what sustainability can look like in a historic structure in Charleston. It will also be the first building on our historic campus to have a PV (photovoltaic or solar energy) array, as well has high-efficiency HVAC, toilets and faucets, LED lighting, and among many other elements, it will have bike stations, gardens, water harvesting, along with sustainable art, all in a single location. For this purpose, it provides a distinctive home for the QEP program, one that will be recognized by students but also the larger community. This could be the home for not only OOS but also for the Hub, as there will be space for faculty associates with the QEP and future scholars and professors as the program matures.

**B. Grants and Research:** The ability to align various elements across our campus through a trans-disciplinary umbrella could provide tremendous value to the institution. It signals to our campus and community that we are a place developing innovative solutions. This can heavily influence research and grant opportunities and longer term establish CofC as both a place for sustainability research and for assisting in the sustainable development of our region.

**C. Branding and Marketing:** Branding sustainability is critical and based on survey data sustainability is **highly** marketable. The ability to develop certificates, expand curricular flexibility, to provide unique applied opportunities will attract students but also help in retaining students. As our data demonstrates, the Z Generation believes in sustainability and they desire more opportunities to understand it and participate. This provides a clear and cutting edge way to brand the College and when you combine it with our distinctive history and culture, it becomes a very unique place that seeks to blend the 21<sup>st</sup> Century with the past.

**D. Fundraising:** Sustainability is a cutting edge topic that provides opportunities to enhance fundraising in all the major schools on campus and at the Presidential level. The newly renovated historic home that will be the sustainability center of our historic campus along with Dixie Plantation provide two very unique and powerful ways to demonstrate sustainability.

**E. Student Retention and Attracting New Students:** The ability to attract new students and increase student retention is a critical need. Sustainability, while not a panacea, can make a difference not just because of the courses, increased flexibility to building skills and competencies, but also in helping students to see the world differently. We are preparing students not just for a degree, but also for their professional and personal life. We are preparing students not just to get into graduate school or their first job, but also to be successful in them. The programming around sustainability allows us to provide ALL students with opportunities to be more marketable and sustainable, and given our data, this provides a clear opportunity for enhancing student enrollment.

**F. Linkages with BPS and Other Satellite Campuses' programs:** The ability to link non-credit, 1cr courses with certificates or workshops that could be located in both the downtown campus and other satellites becomes an efficient way to align resources while providing greater value in all locations and their programs. The certificates don't have to have the same requirements, but aligning the resources can provide multiple opportunities and value added.

**G. Thinking Multidimensionally, but Anchoring Regionally:** Higher Education is moving in a direction to have more input in economic development, and in some ways, this is demanded FROM higher ed. Notwithstanding some legitimate questions about how this influences objective research and teaching, it does present an opportunity for the education sector to participate in how a region develops. From a sustainability perspective we want to think regionally (where most of our support systems are) and we want to develop sustainably—thinking, again, in regenerative ways. This QEP and in building a Sustainability Hub provides critical traction for situating CofC as an anchor for innovative solution-making as part of regional sustainable development.

**H. BEING Global:** We must internationalize our campus. Sustainability is a cutting edge issue and topic that most throughout the world are seeking to embrace, and many do not know a lot about. There are opportunities for leaders therefore to not only operate global but to be global—to connect and influence globally. We can generate scholar and student exchange programs, new degree programs that attract students, and market our distance education globally. As the UNEP and other global institutions seek to embed sustainability as a foundational principle of global relations, we are now seeing a revolution of thought sustainability education and establishing sustainability development goals. This puts CofC among the leaders advancing and participating in this global evolution.

## VIII. Budget

To reduce the budget while maximizing the opportunities within the QEP, we will need some organizational restructuring—particularly within the OOS. It will be necessary to generate efficiencies to be more programmatically effective and cost efficient. This will require using the “academic coordinator” position in a more traditional operations role (particularly one with an energy expertise to reduce our operational costs) while shifting some responsibilities to a more academic mission (in keeping with the QEP). For some of the budget items that directly impact students, one significant advantage is that we can use the Ecollective (e.g. student green fee) to match some of these items (e.g. events, orientation, and possibly travel abroad). The advantage of the sustainability proposal is that with some restructuring, we can pool resources very effectively. With this in mind, below represents a proposed budget including two new faculty hires in FY3 and another in FY4 to help develop and participate in “sustainability-centered” courses. Those two lines represent 1/3 of the entire proposed budget.

	FY 1	FY 2	FY 3	FY 4	FY 5
<b>Organizational Administrative Assistant</b>	40k	40k	40k	40k	40k
<b>Faculty Buyouts</b>	30k	30k	30k	30k	30k
<b>Events</b>	15k	15k	15k	15k	15k
<b>Orientation Camp/Workshops</b>	5k	5k	5k	5k	5k
<b>Sustainability Hub (startup)</b>	5k	--	--	--	--
<b>Certificates</b>	--	5k	5k	5k	5k
<b>Faculty Training (incentives)</b>	35k	45k	30k	--	--
<b>New Course Development &amp; Integration</b>	--	--	30k	30k	30k
<b>Student Internship/GA for QEP</b>	15k	15k	15k	15k	15k
<b>Seed Funding Student Groups</b>	5k	5k	5k	5k	5k
<b>Sustainability Abroad (subsidize students \$500)</b>	10k	10k	10k	10k	10k
<b>Travel (Admin and Faculty)</b>	10k	10k	10k	10k	10k
<b>Tenure Track Faculty Hires (new courses in hub)</b>	--	--	80k	160k	160k
<b>Incremental Change (from FY1)</b>	--	+10k	+95	+50	+0
<b>Total Cost/FY</b>	<b>170k</b>	<b>180k</b>	<b>275k</b>	<b>325k</b>	<b>325k</b>
<b>TOTAL 5 Year Budget</b>					<b>\$1.275m</b>

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