Workforce Sustainability Education and Training: an Assessment of Employers and Post-secondary Educational Institutions in Georgia

1. Project Leaders

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2. About the project

VIRTUES[6] is a collaboration of the Georgia Institute of Technology, Georgia Southern University, and the University System of Georgia. With support from the Ray C. Anderson Foundation, the objective of the project is to produce a "roadmap" that describes the needs of the state's public and private sector for a high functioning sustainability workforce, the current capabilities of Georgia's post-secondary educational institutions to provide it, an explicit identification of the gaps, and a plan for filling the gaps and integrating the education and training programs. The roadmap may serve as a single playbook from which all the universities and colleges in Georgia may develop their education and training curricula and ensure that their graduates are prepared to work with the graduates of other institutions on matters related to sustainability in general, and sustainable manufacturing in particular.

3. About this report

To date, VIRTUES has gathered preliminary information separately from two groups in Georgia, employers and higher education academics, through two surveys and two workshops. A reliable statistical surveying of these stakeholders was beyond the scope and resources of this project, however, and by themselves, these instruments are insufficient to describe wholly the challenges faced by Georgia located businesses, industries, and others in recruiting, retaining, training, and utilizing workers with knowledge in sustainability, and by Georgia universities and colleges in preparing students for such careers and opportunities. It is useful, however, to compare and contrast this gathered information with information from other published sustainable workforce and sustainable education surveys and studies. Altogether, we postulate that this provides a relatively complete understanding of the needs and capabilities of the targeted groups here in Georgia. Findings from this assessment are presented here.

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4. Executive Summary

Project Overview

In 2008, the Office of Economic Development of the Board of Regents, University System of Georgia commissioned a study on the *Energy and Environmental Workforce Educational Needs: Supply and Demand in Georgia.* The report concluded from an analysis of current job openings that "an array of educational backgrounds are needed, with the most common being business and engineering, followed by information technology, technicians, science, and policy." And while the authors went on to offer several recommendations for increasing the type, supply, and quality of workers graduating from Georgia's two-year, four-year, and graduate programs, the report did not address any education or training that involved students from different disciplines, departments, or schools learning how to work together as a coordinated workforce. In part, it is surmised that the authors framed their analysis within the tenets of the first industrial revolution, mainly the one where "division of labor" and/or "division of work" is a driving organizational force. The introduction of sustainability as a desirable attribute for the "next industrial revolution," however, surmises the need for a different kind of workforce that is more collaborative and more integrated to meet not just an organization's financial goals, but also to meet its environmental and social goals too (i.e. the so called "triple bottom line"). With support from the Ray C. Anderson Foundation, and a core team of researchers from the Georgia Institute of Technology, Georgia Southern University, and the Board of Regents of the University System of Georgia, Vertical Integration of Research, and Technical Undergraduate, and graduate Education for Sustainability (VIRTUES) is a step toward developing a proactive process to incorporate the practice of sustainability throughout the workforce, not in the workplace as is occurring now at great cost to employers, but at earlier stages of educational experiences and workforce development when minds and practices are still forming.

The VIRTUES team used a combination of published literature on the subject of sustainability education, recent surveys of employers and educators including two administered directly by VIRTUES, and roundtable workshops hosted with Georgia industry representatives and post-secondary educators to discern initial findings and reflections from each constituency. VIRTUES consists of four elements:

1. Characterize the workforce needs of employers, and in particular manufacturers, as it relates to sustainability.
2. Assess what colleges, universities, and technical colleges in Georgia are doing to educate and train students to contribute to the sustainability of the organizations that they may work with upon graduation.
3. To identify the "gaps" between #1 and #2 above.
4. To identify possible solutions that can be enacted in Georgia's higher education institutions to close the gaps identified in #3.

This report describes the process of discovery and findings from the first two elements and is intended for an audience of educators and employers to review in consideration of contributing insight that will help the investigators complete the final two tasks. Any deliberations, however, should be bound by the following conditions that define the scope of VIRTUES:

1. Educators have already adopted and integrated the most germane elements of sustainability into their specific disciplines. The corollary to this is that VIRTUES will not address intra-disciplinary sustainable education and training, but will focus instead on the interactions between persons of different educational backgrounds and how such interactions may enhance sustainability in organizations.

2. Extra-curricular activities are more amenable to change than is course curricula. With this in mind, VIRTUES intends to channel discussion in step #4 above to focus on ideas that can be rapidly implemented in the near term.
3. Sustainability education and training would be enhanced by better student proficiency in any or all of the basic "literacies" (e.g. reading, writing, math, computer, environment, ethics, etc…), but this is beyond the scope of VIRTUES to address. VIRTUES will meet students "where they are" and not "where we wish they were."

Participants discuss sustainability related needs of employers at May 10, 2013 VIRTUES Manufacturers Workshop, Gulfstream Aerospace Corporation, Savannah, GA.

Key Findings: Sustainability and the workforce needs of employers in Georgia

There were four strongly shared themes that emerged from VIRTUES' review of previous work and conduct of new research that are indicative of employer needs and desires for recent college graduates. The first was that **employers greatly value experiences and education activities that occur in "real world" settings**. These may be in the form of curricular and extra-curricular on campus activities, or off campus internships and employment. Other than "written and oral communication skills," organizations appeared to be satisfied with recent graduates' mastery of knowledge but were not as enthusiastic about their ability to apply that knowledge to address demands of the type found in the workplace. The ability of a graduate to show evidence that he or she was successful in applying knowledge gained in the classroom to an actual work or project experience was perceived to be more important than almost any other measure of academic success including choice of major, GPA, or reputation of school.

The second theme was the importance of **competency in a host of soft skills including the ability to manage multiple priorities, possessing creativity in solving complex problems, and demonstrating the ability to think critically, plan strategically, and act logically**. Skills obtained by rote learning (e.g. knowledge of rules and regulations), guided repetitive practice (e.g. basic welding) and even those more inquiry-based, critical thought skills (e.g. science, technology, engineering, and math) were not considered to be lacking in recent graduates. To the contrary, employers seemed to be quite satisfied with their new employees' hard skills (with the exception of writing and oral communication) and did not suggest that their preparation in this regard should change. While still recognizing the importance of professional and technical education (i.e. business, engineering, computer science, trades, etc.), survey respondents indicated that they also valued education in the liberal arts seeing it, perhaps, as a means to enhance the soft skills they desire in their employees.

A third theme is that **return on investment is of paramount importance**. Other than cost and ROI, there appeared to be few barriers to organizations adopting and implementing sustainable practices. A particularly expressed and repeated comment in the VIRTUES workshop, however, was that young employees do not seem to be cognizant of how their actions impact the financial bottom line.

The final theme was that **workplace sustainability initiatives were largely started and led by management**. They were not "bubbling up" from line employees or being injected into the organizations by consultants, suppliers, customers, or other outside forces. Once initiated, however, all levels of the organization were engaged, often in well defined, but ad hoc, teams to implement the directive.

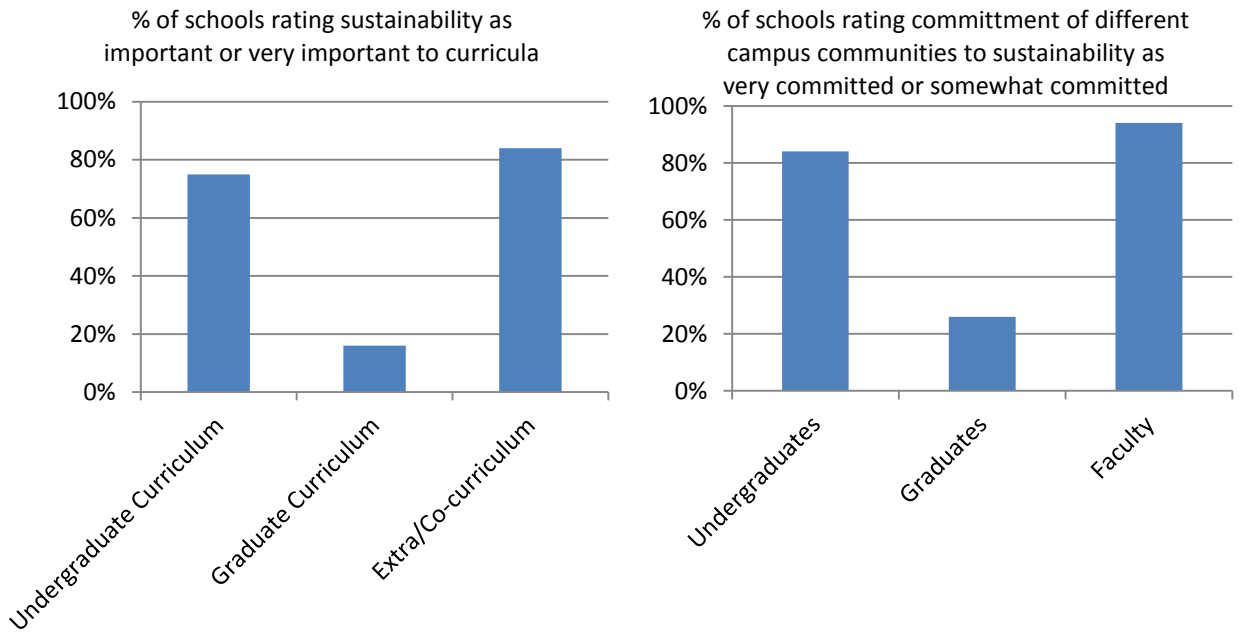
Key Findings: Sustainability and higher education in Georgia

Turning to higher education in Georgia, VIRTUES' researchers found seven recurring topics in the published literature, in surveys, and in discussions with educators. First, **there is wide variation in sustainability education at Georgia's colleges, universities, and technical colleges**. This runs counter to the widespread adoption of sustainability advances and practices on the facilities and operations side of many of Georgia's higher education institutions, and where the pervasive sense of a "culture of sustainability" felt to exist on most campuses seems to originate. When it comes to instilling sustainability concepts and principles in technical, undergraduate, graduate, and professional education, however, there are large disparities in commitment, content, and delivery from one school to the next.

The second finding is that **in terms of curriculum, it is at the undergraduate individual course level where offerings are most abundant and a large number of students are most engaged.** With the exception of two degree programs – a Sustainable Technology Diploma from Savannah Technical College, and a Master's of Science degree in Conservation Ecology and Sustainable Development from the University of Georgia – VIRTUES found scant evidence of the existence of the type of comprehensive and vertically integrated curricula that leads to certified two year Associate's, four year Bachelor's, or multi-year Master's or Doctorate's degrees in sustainability. There is considerably more – though still limited – structuring at the undergraduate minor, concentration, or certificate level in which a few sequences of sustainability relevant courses, labs, and research / internship experiences have been organized into a certifiably recognized program of study at several schools. But while these programs of study are available to most students, comments from those on campus indicate that they may have small participation rates, mostly attracting student learners and faculty instructors that are already predisposed to sustainability. Most student exposure to sustainability concepts within the formal curriculum then, occurs within individual courses that are either provided as electives or are requirements of the student's chosen major. Deriving from this is the third resultant finding that sustainability is being presented from many diverse perspectives (e.g. manufacturing, policy, ethics, business, engineering, biology, or health) and **there is no common core of knowledge or skills for which all students are expected to obtain, and by extrapolation, can find common ground over later in their**

careers. (The exception is at Georgia Southern University where every undergraduate student is required to take a 4-hour environmental science course with lab that includes content directly related to environmental sustainability.)

In spite of these shortcomings in undergraduate sustainability education, this still far exceeds the penetration of sustainability into the graduate education curriculum. With no general education requirements, more narrowly focused degree major mandates, and perhaps more single-minded students pursuing specific knowledge related to explicit career objectives, the graduate school experience seems to be largely impervious to the organic forays of sustainability that are infiltrating the undergraduate experience. Such structural barriers suggest a fourth general conclusion that **graduate education may be the most difficult segment of higher education for sustainability to gain traction.**



Results from VIRTUES survey of higher education in Georgia, Summer 2013.

In contrast to graduate education, and perhaps even further accepting of sustainability than undergraduate education, **extra-curricular and co-curricular activities present tremendous opportunities for introducing students to and engaging them in sustainability**. Absent most of the accreditation, degree, and other academic and bureaucratic constraints, higher education's extra / co – curriculum can be flexible and quick, adapting to the varying and changing interests of the transient student population. Further whether intentional or not, "active learning" – a more hands on pedagogical approach to learning that can include problem based learning, experiential learning, and service learning; and thought to be more conducive to the uptake of sustainability concepts is a natural byproduct of many extra / co –curricular activities occurring outside of the traditional classroom.

For any sustainability education effort – curricular, co-curricular, or extra-curricular – at any level – undergraduate, graduate, or professional – **there is very limited assessment by which to determine if any of the activity that is occurring is having any lasting effect**. The few objective assessments that have been completed suggest that sustainability education efforts tend to overemphasize the environmental aspects of sustainability and pay less attention to the economic and social elements.

The final finding is that **the clear return-on-investment that is pushing more funding for sustainability in campus capital projects and operations has not carried over to the education side.** A small minority of Georgia schools have been able to pass and implement a mandatory student "green fee," some of which may be used for sustainability education. But most schools have not considered it, and others that have, have determined that any increase in student fees at this time is not feasible.

Connections Emerging from these Findings

VIRTUES investigators will continue to collect and analyze data and information about the needs of employers and the teaching of sustainability by higher education institutions in Georgia. At this point in the project, however, the team is most interested in understanding where these two constituencies are, what the gaps are between them, and soliciting ideas about how Georgia's colleges, universities, and technical colleges can help close those gaps. In this regard and in an effort to seed discussion with employers and educators about the results presented thus far, the following three "connections" between employers and educators are presented for consideration. With this, the team is openly soliciting feedback and for more ideas.

1. Employers greatly value experiences and education activities that occur in "real world" settings. Likewise, educators believe that active learning – a more hands on pedagogical approach to learning that can include problem based learning, experiential learning, and service learning – is the most effective pedagogical method for teaching students about sustainability.
2. The business case for sustainability might be an important priority for education efforts, not to the exclusion of environmental and social issues, but to get the attention of employers, workers must be able to understand and articulate the economic, financial, organizational, and market implications of sustainability. In contrast, educators may be presently overly emphasizing the environmental implications.
3. Direct degree programs in sustainability are not a priority for either employers or educators, but both consider it important for students/employees to be competent in a host of soft skills that affect an organization's ability to be more sustainable. These include the ability to manage multiple priorities, possessing creativity in solving complex problems, and demonstrating the ability to think critically, plan strategically, and act logically. While still recognizing the importance of professional and technical education (i.e. business, engineering, computer science, trades, etc.), educators and employers alike indicated that they also valued education in the liberal arts seeing it, perhaps, as a means to enhance the soft skills they desire in their graduates / associates. Sustainability education should complement a person's abilities, and should not substitute for other hard skills.

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5. Background and Context

In regards to sustainability education, VIRTUES has taken a different tactic than most prior approaches. The objective is to equip students with the career skills that allow them to contribute to an *organization* that is successful in terms of sustainability. From this perspective, it is less important what the individual knows or can do compared to others, and more important how the individual learns and works in collaboration with others. That is, most workers in Georgia (and elsewhere) are employed in organizations on which they work together to achieve a result. Shown here for reference are manufacturing industries in Georgia (Table **1**), and all industries in the U.S. (Table **2**). Relatively few work alone or in isolation, which is especially true for manufacturers in Georgia (only ~1% of all workers are in a firm with 4 or less employees). Even for those that work alone or on very small teams, they are often part of a larger value chain that connects them with other organizations that at least require coordination, if not outright collaboration. Sustainability via employment then (as differentiated from sustainability at home) is a product of the collective and coordinated talents of many individuals imbued with varying qualities and quantities of knowledge, values, and skills combined in such a way to achieve an outcome. Even more simply expressed: all business, but especially manufacturing, is a "team sport." To increase sustainability, then, it is reasonable to expect that more deeply knowledgeable and trained employees will lead to better outcomes. And as more universities and colleges adopt sustainability into their missions and adapt their curriculum towards it, this result should be expected. This could be a very long transition, however.

Table 1. Georgia Manufacturing (NAICS 31) by Employment Size of Firm and % of all firms. (US Census Bureau, 2008)

Employment size	Firms	Paid employees	Annual payroll ($1,000)
Firms with 0 to 4 employees	2,814 (37%)	5,340 (1%)	202,779 (1%)
Firms with 5 to 9 employees	1,241 (16%)	8,320 (2%)	253,034 (2%)
Firms with 10 to 19 employees	1,048 (14%)	14,330 (4%)	477,486 (3%)
Firms with 20 to 99 employees	1,268 (17%)	51,212 (13%)	1,863,608 (12%)
Firms with 100 to 499 employees	522 (7%)	61,097 (15%)	2,285,728 (14%)
Firms with 500 employees or more	662 (9%)	257,631 (65%)	10,769,835 (68%)
All firms	7,555 (100%)	397,930 (100%)	15,852,470 (100%)

Table 2. U.S. All Industries by Employment Size of Firm and % of all firms (US Census Bureau 2008)

Employment size	Firms	Paid employees	Annual payroll ($1,000)
Firms with 0 to 4 employees	3,617,764 (61%)	6,086,291 (5%)	232,062,907 (5%)
Firms with 5 to 9 employees	1,044,065 (18%)	6,878,051 (6%)	222,504,912 (4%)
Firms with 10 to 19 employees	633,141 (11%)	8,497,391 (7%)	293,534,352 (6%)
Firms with 20 to 99 employees	526,307 (9%)	20,684,691 (17%)	774,589,335 (15%)
Firms with 100 to 499 employees	90,386 (2%)	17,547,567 (15%)	706,476,693 (14%)
Firms with 500 employees or more	18,469 (<1%)	61,209,560 (51%)	2,901,340,979 (57%)
All firms	5,930,132 (100%)	120,903,551 (100%)	5,130,509,178 (100%)

In 1999, Boyle identified at least five barriers in academia that were inhibiting the teaching of sustainability in higher education. These included:

1. For many academics, incorporation of sustainability concepts is a major paradigm shift;
2. The volume of material that must be covered in one class is already too high;
3. Lecturers have insufficient time to make changes to existing courses;
4. Research is a much higher priority than teaching; and
5. Training is not seen as a priority.

There is little to suggest that these pressures have been relieved in the last 15 years. Indeed, just by 2010 Lozano had expanded the list of barriers to 14. See Table **3**.

Table 3. Barriers to adoption & diffusion of Sustainable Development (SD) in curricula (Lozano, 2010).

1. Little or no motivation or realism;
2. Lack of SD awareness;
3. Changes in curricula translated into budget claims;
4. Insecurity and threat to academic credibility from teachers and professors;
5. Confusion about SD;
6. Broadness of SD;
7. Lack of financial resources;
8. Over-crowded curricula;
9. Lack of SD knowledge from administrators or support;
10. Some lecturers being unaware, or failing to see, the relevance of SD to their teachings;
11. Teachers who might prevent or fail to support the diffusion;
12. SD considered to be radical;
13. SD considered to have little or no relevance to the course or discipline; and
14. Uncertainty of the efforts required to engage and incorporate SD.

Most recently, a meta-analysis of the reports from universities and colleges to the Bulletin of the Association for the Advancement of Sustainability in Higher Education (AASHE) suggests that even as sustainability gains traction on campuses, universities and colleges are devoting only a small minority of attention to sustainability education. See Table 4. The implication here is that it is easier to change the campus than it is to change what is taught on campus[7].

Table 4. 2012 AASHE Bulletin at a Glance (AASHE, 2013).

1,777 unique stories were published. The majority (71%) were news stories in the following areas:

- 54% in campus operations
- 28% in administration, finance, or public engagement
- 18% in education, research, or student engagement

The remainder of stories (29%) included the following:

- 171 job announcements
- 145 events
- 136 opportunities
- 69 new resources

[7] Reminiscent of the often recited (but unfortunately indicative) academic joke that "it is easier to change the course of history than it is to change a history course."

Putting the preceding evidence about broader trends aside momentarily, there have been some concerted, coordinated, and concentrated efforts to introduce more sustainability concepts into higher education. Engineering is perhaps the most notable of the disciplines to attempt this as a result of strategic calls at the highest levels of the profession (e.g. NRC 2004). In several reports describing a national survey of degree granting engineering programs (Allen et al. 2008, Murphy et al. 2009, and Davidson et al. 2010), more than 80% of the respondents reported some level of sustainable engineering course activity with activity "most extensive" at the largest institutions. This high rate of self-reporting of activity, however, must be noted in the context that the survey did not provide a definition of "sustainability" or "sustainable engineering," leaving that instead to the discretion of the respondents and the conceding of the authors that this "increases the subjectivity of the findings" (Murphy et al. 2009). Attempting to use a standardized and uniform approach to determine the degree of penetration within a single degree program (Civil and Environmental Engineering [CEE] at Georgia Tech), Watson et al. (2013) "showed that most CEE courses contributed mainly to the environmental dimension of sustainability (62%), with lower contributions to the cross-cutting (24%), economic (12%) and social (3%) ones. The contribution of courses to sustainability was 1.36, which is classified as a 'medium' contribution. This was mainly due to the course overemphasis on the environmental dimension. The strength of the contribution was also 'medium' (1.39)." While not trying to overgeneralize from this study of one program, which is internally considered by its faculty to be further along the sustainable-engineering-curricula-adoption-path than other programs at the same institute (this authors' perspective) and at an institution that is widely recognized for its progress in adopting sustainability (e.g. Princeton Review, 2013), a broad conclusion that could be drawn is that much more work remains to be done before engineering education is fully infused with the principles and concepts of sustainability (e.g. including not only the emphasis on environmental sustainability).

As another local example of the deeper challenges that exist to comprehensively infuse / adopt sustainability into the curriculum, faculty at Georgia Tech – emphasizing again that this is an institution that is already widely perceived to be at the forefront of the academic sustainability movement – only recently (Fall semester 2013) launched an effort to develop a Quality Enhancement Plan (QEP) for sustainability. For any college or university that is accredited by the Southern Association of Colleges and Schools Commission on Colleges[8], the QEP is a major part of accreditation review and reaffirmation[9]. See Box 1 from the draft "Jackets for a Sustainable Future" and Appendix A for the full

[8] The Southern Association of Colleges and Schools Commission on Colleges is the recognized regional accrediting body in the eleven U.S. Southern states (Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia) and in Latin America for those institutions of higher education that award associate, baccalaureate, master's or doctoral degrees.

[9] "The concept of quality enhancement is at the heart of the Commission's philosophy of accreditation. Each institution seeking reaffirmation of Accreditation is required to develop a Quality Enhancement Plan (QEP). Engaging the wider academic community and addressing one or more issues that contribute to institutional improvement, the plan should be focused, succinct, and limited in length. The QEP describes a carefully designed and focused course of action that addresses a well-defined topic or issue(s) related to enhancing student learning." (SACSCOC, 2014)

draft QEP[10]. While not to diminish the educational accomplishments in sustainability already achieved at Georgia Tech, the proposed QEP clearly suggests that the needed and desired depth, breadth, and rigor of sustainability education has not yet been achieved. Further, the magnitude of the QEP and its critical importance to the Institute's accreditation, suggest that the deep changes that will allow sustainability to penetrate across and through the entire Institute affecting every student will be a long and challenging process that may take several years, if not a decade or more, to fully implement.

In recognizing these two mostly obvious facts that:

1) students entering their professions will be joining teams consisting of many individuals with diverse backgrounds, values, skills, and knowledge; and
2) education reform is proceeding in which sustainability is fully adapted and adopted into curricula but at a highly measured pace with many barriers yet to be overcome;

VIRTUES is focusing on opening new pathways to workforce sustainability education that may be more quickly implemented by post-secondary educators, and be more readily applicable to the needs of employers. That is, within the current reductionist framework of higher education, VIRTUES assumes that educators are already doing all they can within their classrooms, schools, departments, colleges, and universities to restructure their programs to include the most important elements of sustainability that are relevant to their respective disciplines. Slowly they are overcoming the barriers listed in Table **3** and developing the strategy and pedagogy to teach sustainability (e.g. Georgia Tech's QEP "Jackets for a Sustainable Future" and others[11]). University and College faculty and staff are the best arbiters of what and when material should be included given all the other needs, desires, and constraints they must balance in creating accredited major and minor degree and certificate programs. VIRTUES cannot and will not address any sustainability education efforts in this regard. We cannot begin to even imagine how sustainability might be taught to students across the 31 institutions of the University System of Georgia, the 25 units of the Technical College System of Georgia, the tens of additional private colleges and universities in Georgia, and the thousands of different programs of studies that they collectively

[10] The last Georgia Tech QEP was developed around the ideas of 1) undergraduate research and 2) international experiences for students. Both of these ideas ultimately were fully implemented and backed with significant institutional resources and resulted in a major (and successful) reform in student education. Early in the Fall of 2013, Georgia Tech's administration solicited ideas and recommendations from the faculty for the Institute's next QEP as part of its next accreditation reaffirmation. In the Spring of 2014, the administration recommended that the draft sustainability QEP be combined with another competing idea for service learning, and that this consolidated effort become the QEP under which Georgia Tech will pursue SACSCOC accreditation reaffirmation. As of the time of this report, this effort is underway and continuing.

[11] While not quite reaching the level of a QEP, other universities and colleges in Georgia are also pursuing sustainability directed, curricular reform. For example the University of Georgia, Office of Sustainability is planning to host the third annual faculty development workshop focused on integrating sustainability into the curriculum on May 13 and 14, 2014. See memo as Appendix B. And perhaps one of the longest and committed efforts in Georgia is at Emory University. Begun in 2001 by Peggy Barlett from Anthropology and Arri Eisen from Biology and the Science and Society Program, the Piedmont Project is "a summer faculty development program to infuse sustainability and environmental issues across the curriculum." The project has grown to offer workshops to help faculty leaders from other colleges and universities adapt the Piedmont Project for their own schools, including recently, Georgia State University (personal communication, Professor Dabney Dixon, 3/17/2014) (Emory, 2014).

provide at the undergraduate, graduate, and professional levels. We do have faith, however, that it is occurring. Instead, VIRTUES will focus more on extra-curricular opportunities where there are not as many barriers to implementation. It will also be resolved only to consider programs that engage students from multiple educational institutions, mimicking the diversity of knowledge, skill, and talent required in the workplace. It is in this spirit and context that the following analyses are presented.

Box 1. From "Jackets for a Sustainable Future," draft Georgia Tech Quality Enhancement Plan, 2013.

Rationale: Sustainability is the defining issue of our generation. Georgia Tech's strategic plan and our University leadership correctly call for Georgia Tech to be deeply invested in solving sustainability challenges in its quest to become an uncontested leader in "influencing major technological, social, and policy decisions that address critical global challenges" and "improving the human condition in Georgia, the United States, and around the globe." Unless and until all of our undergraduates leave Georgia Tech with the following knowledge, skills and opportunities, we will not have achieved this goal:

- A fundamental understanding of the scientific, economic, and social basis for sustainability challenges facing our planet;
- The strategic knowledge and skills to apply both domain-specific know-how and systems thinking to contribute to solving these challenges across a range of career paths;
- The ability to empathize, communicate, and lead across diverse geographies and demographics and in multi-stakeholder settings so characteristic of sustainability challenges;
- An opportunity to be part of a vibrant, green innovation and entrepreneurship program.

This QEP represents an immense and timely opportunity for coordinated and innovative educational leadership in sustainability. Given the breadth and depth of sustainability expertise and curricular innovation already existing on campus after 20 years of investment, we are well-positioned to leapfrog ahead of our competition with such concerted action. Georgia Tech has these resources already in place:

- Centers, institutes, programs, and faculty with research and educational investments in areas including sustainable systems, green chemistry, sustainable energy, sustainable business, sustainable infrastructure, sustainable development, sustainable urbanism, and poverty eradication;
- A multitude of courses organically developed by faculty in all Colleges (http://www.stewardship.gatech.edu/images/courses.pdf);
- A number of programs historically proposed, currently in development, or recently developed that have direct bearing or synergistic potential (e.g., BS degree in environmental systems, energy systems minor, international development minor, X-degree);
- A student body with a critical mass of committed and receptive students and student leaders to create a strong culture of collaborating for a sustainable future;
- A campus that has been recognized as one of the greenest campuses in the US;
- Civic leadership in the city and the region who are increasingly engaged in sustainability.

Box 1. Continued.

However, we are not there, yet:

- We have many students to reach/empower: The uninitiated, the unconvinced, the disaffected, the skeptical, the paralyzed.
- We have not used our full influence for regional impact: We are in a region that is not yet recognized as a national or international sustainability leader, and our students are poised to be its future business and civic leaders. Moreover, regional leadership in this space is ours for the taking, but we must take deliberate action to realize this.
- We can be much more purposeful: We need to turn the organic growth in sustainability education at Tech into a multi-dimensional, coordinated enterprise that collectively achieves a clear set of educational outcomes.
- We have not yet fully tapped into the diversity of lenses we possess to engage in sustainability: Our student experience will be richer and more relevant if we tap into all Georgia Tech assets we possess, including creative expression on the one hand and a strong business lens on the other.

The time is now. This QEP holds immense potential for transformative change in our students' experience and worldview, and will further solidify/accelerate Georgia Tech's leadership, influence and global impact. To achieve this, we propose the following ambitious but achievable goals:

Goals: The QEP goals focus on culture (C), guidance (G), knowledge (K) and skills (S):

- (C) Our students will be part of a campus culture where an integral part of their identification with Georgia Tech will be about working towards a sustainable future (this idea was strongly advocated by students).
- (K1) All our students will be knowledgeable about the scientific, economic, and social basis for sustainability challenges.
- (G1) All students will be provided with coordinated guidance on courses of study, experiential learning, and co-curricular activities aligned with potential career paths in their chosen domain.
- (K2,G2) Our students will be empowered to pursue innovation and entrepreneurship for positive environmental and social impact.
- (S) Our students will become better system thinkers and effective leaders in complex, interdisciplinary, multi-stakeholder settings.

6. Sustainability and Workforce: Needs of Georgia's Employers

Quite serendipitously and occurring right at the outset of VIRTUES, two major but separate surveys were conducted asking employers about their expectations of recent college graduates. The first, *The Role of Higher Education in Career Development: Employer Perceptions*, was reported by the Chronicle of Higher Education and American Public Media's Marketplace in December 2012 (referred to from here onward as "Chronicle survey"). The second, *It Takes More Than a Major: Employer Priorities for College Learning and Student Success, An Online Survey Among Employers* was conducted by Hart Research Associates on behalf of the Association Of American Colleges and Universities and released on April 10, 2013 (referred to from here onward as "AACU survey"). Both draw similar conclusions, and though neither mention sustainability explicitly, both are relevant to the questions that VIRTUES raised with smaller samples of Georgia based employers through an online survey conducted in the Spring of 2013, and a workshop in Savannah, GA on May 10, 2013. Additionally, there is another series of annual surveys of employers in Wisconsin by that state's Department of Natural Resources, with the support of the WI Sustainable Business Council and Cool Choices that also is relevant (Motl and Eggert, 2009; Dybdahl and Eggert, 2010; Huff and Eggert, 2012; and Walters and Eggert, 2013). The primary findings of the national surveys are summarized here contextualized with the results of the Georgia based VIRTUES survey and workshop, and the Wisconsin based surveys confirming, contrasting, or adding to the larger understanding of employer needs.

6.1 Chronicle Survey Results

Of relevance to VIRTUES, the Chronicle survey asked questions in the following topical areas: "How [do] employers balance academic and practical experience in evaluating recent college graduates who are job candidates? What skills should college graduates possess? What skills is higher education responsible for developing?" The results strongly suggested that for recent graduates, employers place the most value on internships, employment, and other experiential activity incurred during college. Much less emphasis was placed on factors such as college GPA, relevancy of coursework, and even college major. See Box 2 and Figure 1. The gap (deficit) between what skills employers say they need and what skills they assess recent graduates to have is most pronounced for written and oral communication, adaptability / managing multiple priorities, decision making / solving problems, and planning / organization. In four other skills categories, recent graduates appear to be meeting the expectations of employers, and in two, working with diverse groups and analytical / research, they are surpassing employers' needs. See Figure 2.

Box 2. Key Findings from the Chronicle of Higher Education's Survey on *The Role of Higher Education in Career Development: Employer Perceptions*

What are employers looking for?

- Employers place more weight on experience, particularly internships and employment during school vs. academic credentials including GPA and college major when evaluating a recent graduate for employment.
- All industries and hiring levels place slightly more weight on student work or internship experiences than on academic credentials.
- Science/Technology, Services/Retail, and Media/Communications segments tilt the scale toward experience more than other industries.
- Weighted results show that college major is the most important academic credential to employers; however, internships and employment during college are the top traits employers consider in evaluating recent graduates for a position.
- College major comes in third, overall, except at Health Care organizations where it is neck and neck with employment during college, and at organizations with fewer than 50 employees where employers value volunteer work and extracurricular activities more, dropping college major to fifth on the list of all traits examined in this study.
- Extracurricular activities, like professional clubs, athletics, and service, are valued more than GPA, relevance of coursework to position, and college reputation except by Executives who emphatically place more weight on coursework relevance and GPA, closely trailing college major.
- An internship is the single most important credential for recent college graduates to have on their resume in their job search among all industry segments with Media/Communications placing the highest value on internships in comparison to other industries.
- When it comes to the skills most needed by employers, job candidates are lacking most in written and oral communication skills, adaptability and managing multiple priorities, and making decisions and problem solving.
- Employers place the responsibility on colleges to prepare graduates in written and oral communications and decision-making skills. Results indicate that colleges need to work harder to produce these traits in their graduates.
- While the gap between employer need and graduate skills narrows in the Media/Communications industry for written and oral skills, colleges have more of a challenge developing decision-making and technical skills in students geared toward this industry.
- The need for recent graduates to adapt and to manage multiple priorities is greatest among employers from the Business, Health, Media/Communications, and Science/Technology segments; however, employers place less responsibility on colleges for training in these skill areas, perhaps putting the onus more on the individual to acquire these high-demand skills.

Five Top Implications for Colleges and Universities in Strengthening Outcomes for Recent Graduates

- Colleges and universities should seek to break down the false dichotomy of liberal arts and career development – they are intrinsically linked.
- Colleges and universities should support rich experiential opportunities that truly integrate the liberal arts with real-world learning as communication skills and problem solving skills. These are in high demand, seen as lacking, and seen as a colleges' responsibility to teach.
- Colleges and universities should view the working lives of their students not as a challenge, but as an opportunity, given the weight employers of all kinds place on experiential elements of a recent graduate's resume.
- For colleges and universities an "employment brand", a pillar of a larger "outcomes brand" matters. If an institution is not known to employers, graduates will suffer the consequences when seeking jobs.
- Colleges should go beyond a vision of majors articulating to specific careers. Majors matter to some extent, but in many cases, college major is not the determinant of career entry. A college should approach career development as career exploration for a great many of its students guiding and supporting students with the right mix of solid liberal arts skills and content knowledge.

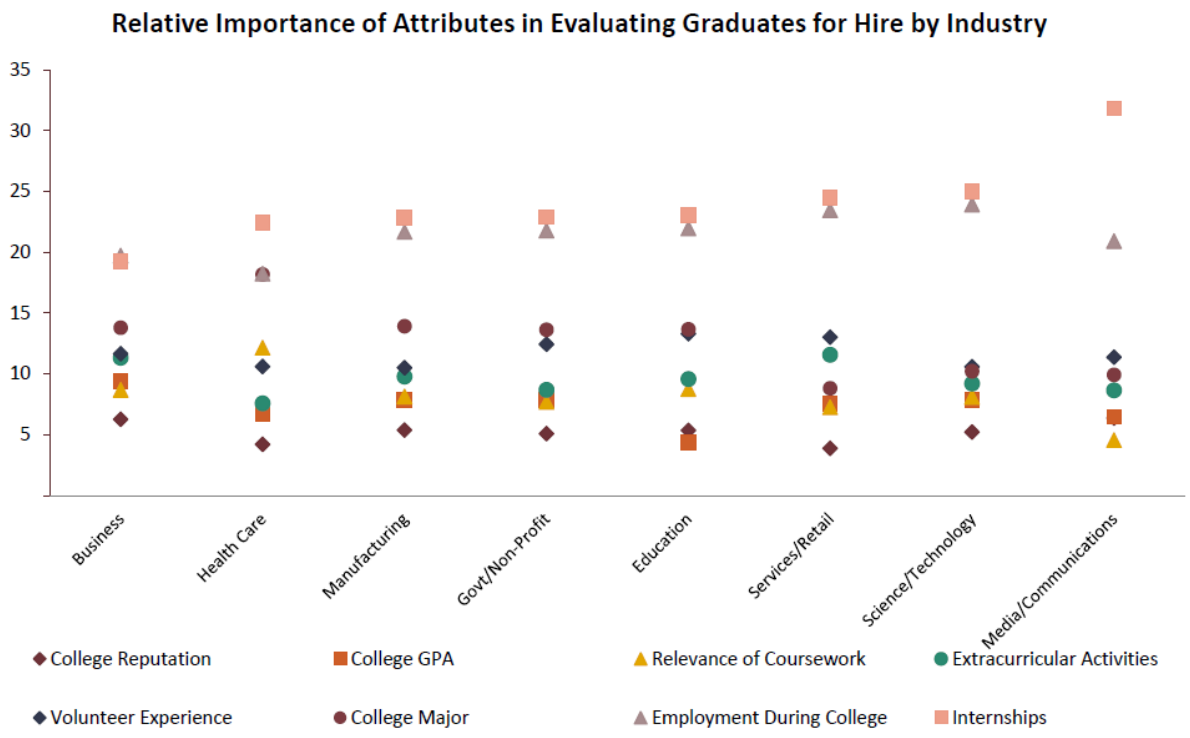


Figure 1. Relative importance of attributes in evaluating graduates for hire by industry (Chronicle of Higher Education, 2012)

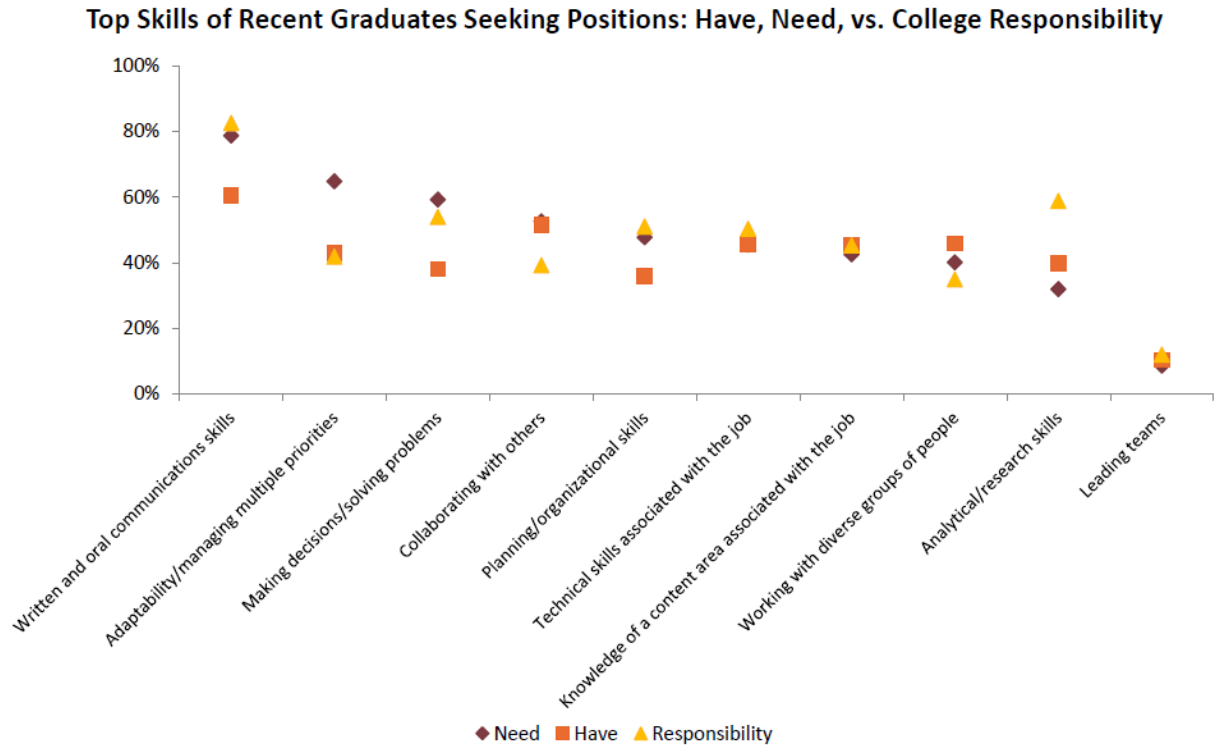


Figure 2. Top skills of recent graduates seeking positions: have, need, and college responsibility (Chronicle of Higher Education, 2012)

6.2 AACU Survey findings

This survey aimed to assess "employers' priorities for the kinds of learning today's college students need to succeed in today's economy …[and to identify] changes in educational and assessment practices." Through the survey, employers identified four learning outcomes that they would like colleges (2 and 4 year institutions) to emphasize: critical thinking, complex problem-solving, written and oral communication, and applied knowledge in real-world settings. These skills would contribute most to employers' current success and their desire to increase innovation in their workplaces. The educational approaches they suggested would be most effective would be to provide students with opportunities to "a) conduct research and use evidence-based analysis; b) gain in-depth knowledge in the major and analytic, problem solving, and communication skills; and c) apply their learning in real-world settings." Additionally employers endorsed learning that mixes both broad (liberal) and applied education. See Box 3.

6.3 Wisconsin Surveys of Employers (2009-2013)

Though these series of annual surveys were focused on the sustainable practices of employers located in Wisconsin, the content, context, and sample of the survey varied from year to year. Thus, this summary does not try to infer any trends, but instead will highlight only those themes that seem to be consistently expressed. Also unlike either the Chronicle or AACU surveys described above, or the VIRTUES survey and workshop described below, the Wisconsin surveys were not focused on the capabilities of employees or the traits of recent graduates. Instead, the surveys were aimed more at capturing the extent that organizations are engaged in sustainability related practices. Still, there appeared to be a few findings relevant to the VIRTUES project. Chief among them is that cost savings or productivity enhancement seems to be the motivation behind most sustainability practices. See Box 4.In this regard, energy efficiency and/or conservation programs led all others in every survey (not shown here). Questions in the surveys about education and training were limited in scope and only focused on hard skills. Interest in education and training matched the desire for energy efficiency. See Figure 3.

Box 3. Key Findings from *It Takes More Than a Major: Employer Priorities for College Learning and Student Success, An Online Survey Among Employers* (Association Of American Colleges and Universities, 2013)

Key Findings from 2013 Survey of Employers

- Innovation a Priority: 95% of employers say they give hiring preference to college graduates with skills that enable them to contribute to innovation in the workplace.
- It Takes More than a Major: 93% of employers say that a demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than a candidate's undergraduate major. More than 75% want higher education to place more emphasis on critical thinking, complex problem solving, written and oral communication, and applied knowledge.
- Broad Learning is Expected: 80% of employers agree that, regardless of their major, all college students should acquire broad knowledge in the liberal arts and sciences.
- Students Need Liberal and Applied Learning: Employers strongly endorse educational practices that involve students in active, effortful work—practices including collaborative problem solving, research, internships, senior projects, and community engagements.
- E-Portfolios Would Add Value: 83% of employers say an electronic portfolio would be useful to indicate that job applicants have the knowledge and skills they need to succeed.

Employer Priorities and Consensus on College Learning Outcomes Knowledge of Human Cultures and the Physical and Natural World

- Broad knowledge in the liberal arts and sciences 80%*
- Global issues and knowledge about societies and cultures outside the US 78%*
- Knowledge about science and technology 56%**

Intellectual and Practical Skills

- Critical thinking and analytic reasoning 82%**
- Complex problem solving 81%**
- Written and oral communication 80%**
- Information literacy 72%**
- Innovation and creativity 71%**
- Teamwork skills in diverse groups 67%**
- Quantitative reasoning 55%**

Personal and Social Responsibility

- Problem solving in diverse settings 91%*
- Ethical issues/public debates important in their field 87%*
- Civic knowledge, skills, and judgment essential for contributing to the community and to our democratic society 82%*
- Ethical decision making 64%**

Integrative and Applied Learning

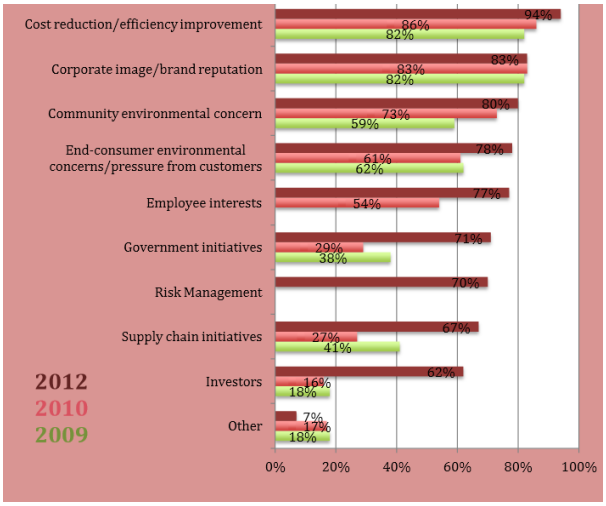
- Direct experiences with community problem solving 86%*
- Applied knowledge in real-world settings 78%**

* Indicates percentage of employers who "strongly agree" or "somewhat agree" that, "regardless of a student's chosen field of study," every student should attain this area of knowledge or skill.

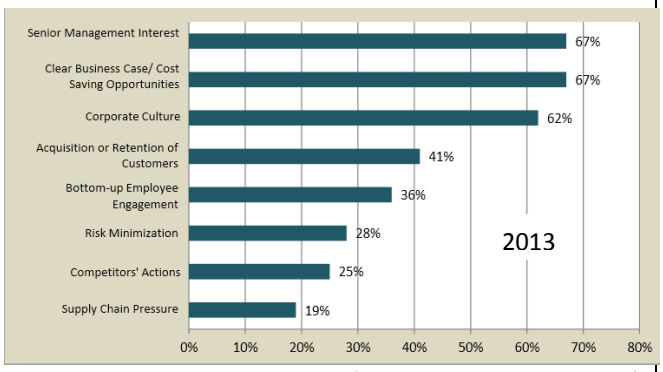
** Indicates percentage of employers who say they want colleges/universities to "place more emphasis" on this area of knowledge/skill.

Box 4. Driving factors for Sustainability Practices by Employers in Wisconsin, 2009-2013.

In the 2009, 2010, and 2012 surveys (there was no survey in 2011), the same question was asked: What conditions explain why your company adopts sustainability practices? In each year, cost reduction / efficiency was cited most often followed closely by corporate image / brand reputation. In 2013, the response choices were revised to include a new response of "Senior Management Interest" which subsequently rose to equal the financial drivers (though the surveys could not distinguish if senior management's interest was independent from the financial concerns).

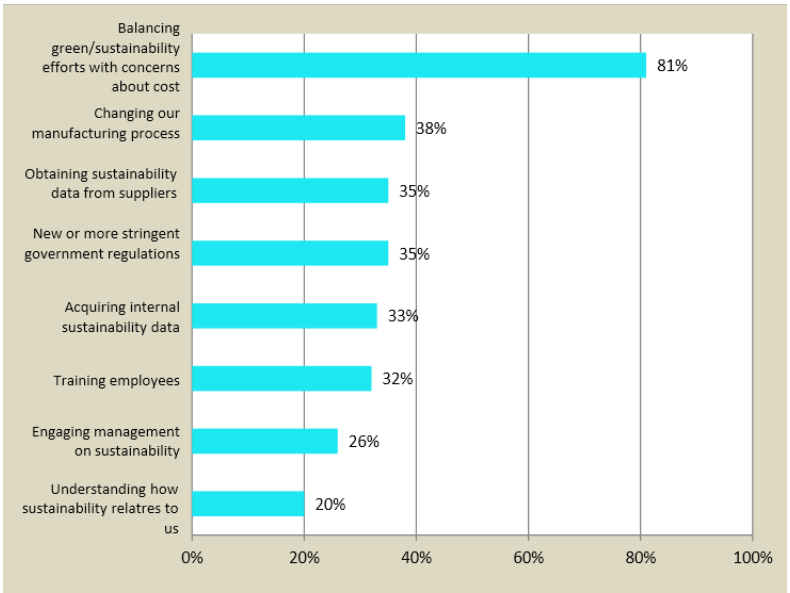


(Huff and Eggert, 2012)



(Walters and Eggert, 2013)

Another question asked in 2013 further emphasized the cost consciousness of organizations as it relates to sustainablility practices. "What are the 3 top challenges or issues your organization faces with respect to sustainability?"



(Walters and Eggert, 2013)

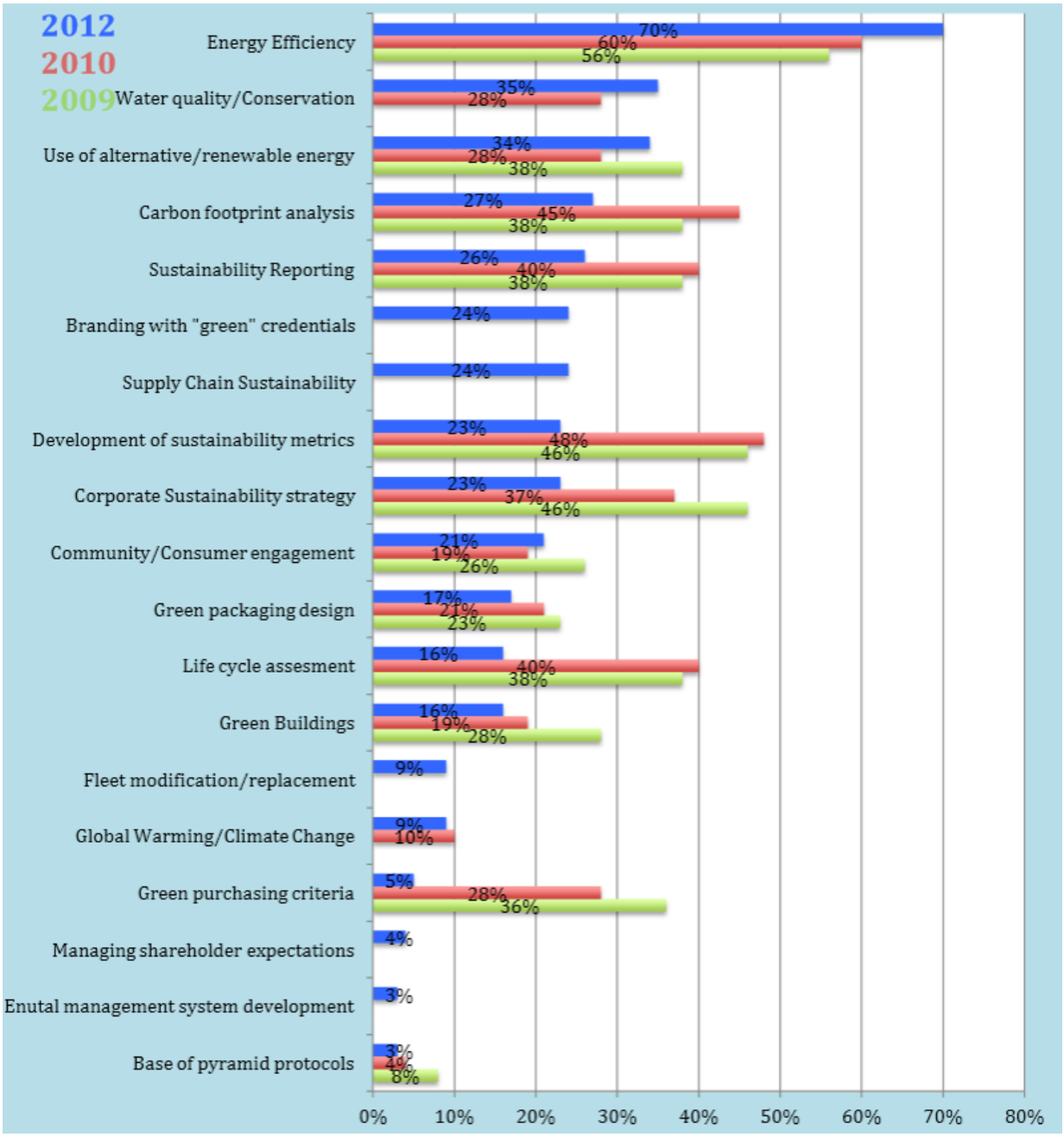


Figure 3. Results from the Wisconsin DNR Sustainability surveys asking " Which of the following is your company interested in education/training and technical assistance for?" (Huff and Eggert, 2012)

6.4 VIRTUES Survey and Workshop

Unlike the more general themes addressed in the Chronicle and AACU surveys, VIRTUES took a more direct tact in addressing sustainability needs through its survey and accompanying workshop. Email lists and newsletters of the Georgia Centers for Innovation, several of Georgia's regional economic development authorities, chambers of commerce, and other business and trade associations were used to send an open invitation to Georgia employers to take the survey. The survey was a mix of closed and open ended questions meant to uncover how employers are thinking about and implementing sustainability in their workplaces, and the workshop was conducted as a means to further elaborate. The survey was completed by 141 respondents[12] from across the state. See Appendix C. There were no less than 4 key and recurring messages that were expressed:

1. Return on investment and impact on business financial performance are the most important drivers for sustainability – even for organizations for which the term "sustainability" garners little or no interest. More sustainable practices are being implemented because they are recognized to save or earn the company more money. Few organizations appeared to be compelled by non-financial factors (e.g. environmental or social concerns other than regulatory).
2. Soft skills, such as creativity, leadership, and openness, and the more abstract of the hard skills, such as strategic and critical thinking, were said to be more important to sustainability and harder for organizations to find and fill in young employees. Quantifiable hard skills such as science, technology, engineering, and math, and knowledge of rules and regulations were less of a concern. Employers felt that either their employees' skills in these areas were adequate, or that they could easily train them to the level of proficiency required for their job. See Figure 4 and Figure 5.
3. Management largely originates and leads new sustainability initiatives, but it takes a team to implement them. See Box 5.
4. Employers expressed a desire for young employees to have more "real-world" experience, especially as it conditions them to be cognizant of their financial (with "financial" interpreted by participants here as being synonymous with "sustainability") impacts on an organization.

[12] The survey received 196 responses of which 141 were determined to be unique or complete. For example, the survey did not allow respondents to save partially complete surveys and so some responses were aborted at or near the beginning of the survey with the respondent initiating a new response if they chose to continue later. In these cases when the company and location name could be matched, the more complete response was selected as the response of record. In other cases, respondents entered their company name, but no other information. These responses were excluded. All other complete or partially completed responses were included in the analysis.

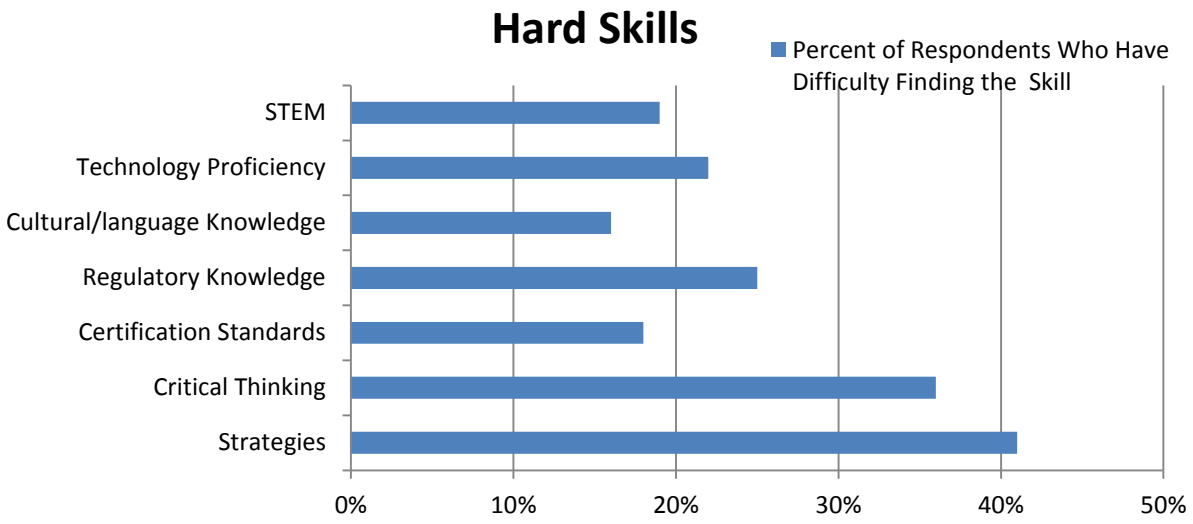


Figure 4. Survey responses to question: Thinking about your workforce as a whole, what are the hard skills related to sustainability that your organization finds the most challenging to fulfill?

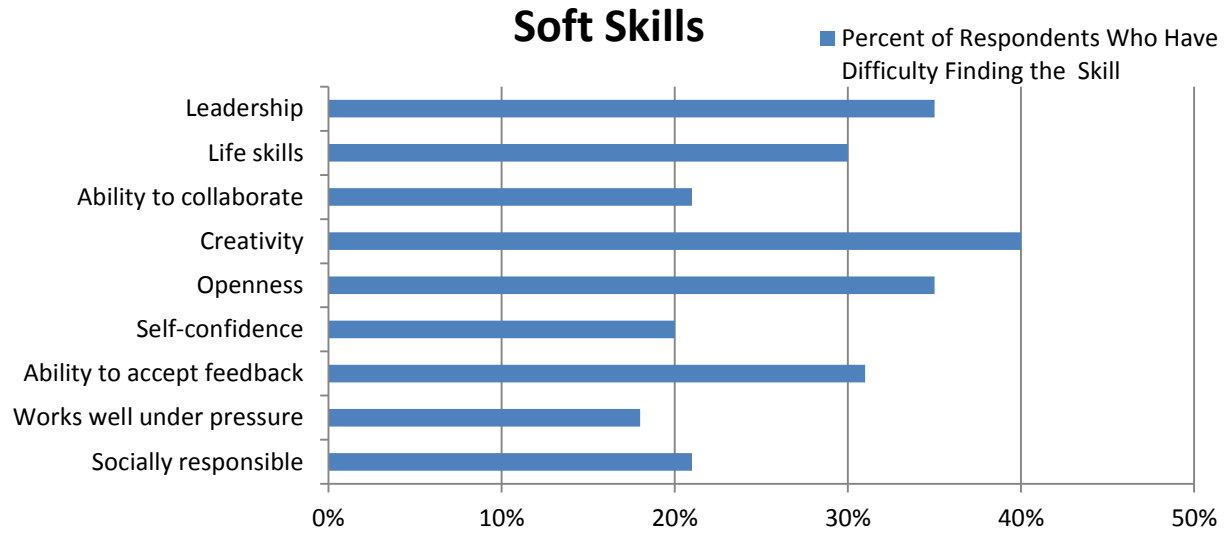
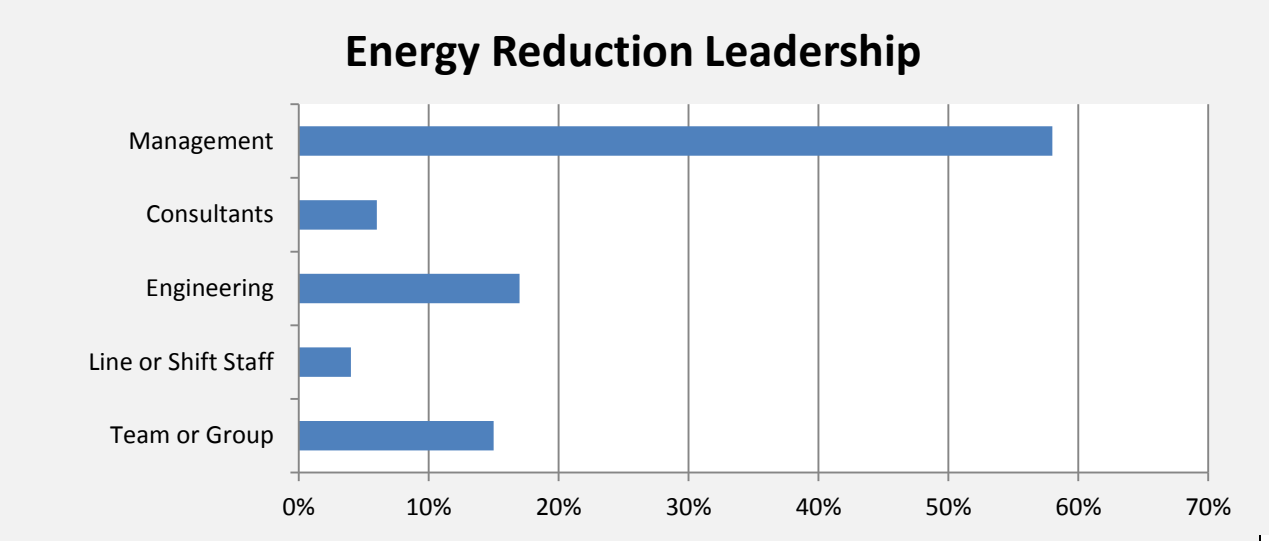


Figure 5. Survey responses to question: Thinking about your workforce as a whole, what are the soft skills related to sustainability that your organization finds the most challenging to fulfill?

Box 5. Synthesis from VIRTUES survey and workshop regarding role of management in sustainability initiatives.

Question 8 of the VIRTUES employer survey asked: Suppose your organization made a goal to reduce energy use at your facility by 25%. Who would most likely lead the effort? The initial response indicated that management largely leads.



In following up with workshop participants, however, a more nuanced role for management emerged. Representative comments were:

- Management represents a larger % [of sustainable initiatives] because line workers and others may see no "economic" or "social" incentive to participate.
- Plant managers need to engage workforce in initiatives.
- Plant manager does not "drive" initiatives – may lead them but execution is at a different level. Differentiate "lead" vs. "execute."
- Many factions involved
- No one faction or consideration is prevalent

This is confirmed by those who took the survey and replied "team or group" for this question, and in the follow-up question that asked respondents to describe a specific initiative. Given the opportunity to elaborate on their answer, respondents described a similar role of management leading, but a team executing. A few representative comments include:

- Management and shift workers
- Team composed of managers and technical staff
- Significant ideas leading to tangible improvement come from collaborative team efforts.
- It would be a collaborative team including Management, Operators/maintenance workers, and Engineering and technical staff.
- We would put together a process improvement team
- It is a team based initiative involving activities company-wide with top management team oversight.
- A team comprising of management, outside consultants, engineers, and line workers
- Considering and then becoming a certified B-Corp. We had an account manager, a client, an executive, a community liaison and an admin sit down and discuss pros-cons-concepts. When we decided to embark on the task, we had to commit time and financial resources to the lengthy assessment. Yes, there was a clear leader; the executive, (owner) of the company.
- I am COO/VP and was the leader. Shop manager and shift worker were involved in developing a new jig, to replace an existing jig that was presenting various problems. We all shared ideas/opinions... In the end, I left the shop manager with the critical instructions I knew must be in place. The rest was up to him and the jig came out successful, producing consistent parts.

6.5 Employer Needs – Synthesis of Findings

Among the Chronicle, AACU, and VIRTUES surveys, there were two strongly shared themes that emerged that are indicative of employer needs and desires for recent college graduates. The first was that employers greatly value experiences and education activities that occur in "real world" settings. These may be in the form of curricular and extra-curricular on campus activities, or off campus internships and employment. Other than "written and oral communication skills," organizations appeared to be satisfied with recent graduates' mastery of knowledge but were not as enthusiastic about their ability to apply that knowledge to address demands of the type found in the workplace. The ability of a graduate to show evidence that he or she was successful in applying knowledge gained in the classroom to an actual work or project experience was perceived to be more important than almost any other measure of academic success including choice of major, GPA, or reputation of school.

The second theme that was common to all three surveys was the importance of competency in a host of soft skills or abilities. These include the ability to manage multiple priorities, possessing creativity in solving complex problems, and demonstrating the ability to think critically, plan strategically, and act logically. Skills obtained by rote learning (e.g. knowledge of rules and regulations), guided repetitive practice (e.g. basic welding) and even those more inquiry-based, critical thought skills (e.g. science, technology, engineering, and math) were not considered to be lacking in recent graduates. To the contrary, employers seemed to be quite satisfied with their new employees' hard skills (with the exception of writing and oral communication) and did not suggest that their preparation in this regard should change. While still recognizing the importance of professional and technical education (i.e. business, engineering, computer science, trades, etc.), survey respondents indicated that they also valued education in the liberal arts seeing it, perhaps, as a means to enhance the soft skills they desire in their employees.

For the Wisconsin and VIRTUES surveys that were more directly focused on sustainability, two additional themes emerged. First, and above all other drivers of sustainability, is that return on investment is of paramount importance. Other than cost and ROI, there appeared to be few barriers to organizations adopting and implementing sustainable practices. A particularly expressed and repeated comment in the VIRTUES workshop, however, was that young employees do not seem to be cognizant of how their actions impact the financial bottom line. The second theme to emerge from these sustainability surveys was that workplace sustainability initiatives were largely started and led by management. They were not "bubbling up" from line employees or being injected into the organizations by consultants, suppliers, customers, or other outside forces. Once initiated, however, all levels of the organization were engaged, often in well defined, but ad hoc, teams to implement the directive.

A note about written and oral communication skills: It is without doubt that communication skills of all kinds are exceptionally important in today's workplace and broader connected world. Literacy of all kinds, not just reading and writing, but numerical, financial, computer, and environmental, among many others, would likely improve workplace productivity, sustainability, and culture. VIRTUES accepts this postulate as true. Failure of graduates to have these skills, however, is well beyond the scope of VIRTUES. The investigators rightly presume that there are many others striving to improve the

communication and other basic skills of students at the K-12, post-secondary, post-graduate, and adult education levels. The investigators also rightly presume that this is a mammoth challenge that VIRTUES cannot begin to address. Rather VIRTUES “meets students where they are” and is appealing to enhance their ability to produce sustainable outcomes later in their professional lives in spite of any other shortcomings in their educational attainment.

7. Sustainability and Education: Provisions of Georgia's Colleges and Universities

As sustainability becomes increasingly important to the mission, performance, and reputation of universities and colleges, there is a growing demand for information about what schools are doing in regards to sustainability. How "green" are the campus facilities and operations? Can students study sustainability or even major in it? Is there a culture of sustainability on campus? Schools are responding to this demand for more information by organizing and making it available on-line, while third parties are also trying to collect standardized (though still self-reported) information by which comparisons can be made. In this section, summaries are compiled for Georgia's colleges and universities from the Princeton Review, a popular purveyor of college "guides;" the American Association for Sustainability in Higher Education, an organization that has quickly become the leader in bringing together colleges and universities around the theme of sustainability; and VIRTUES own investigations including a survey and workshop of Georgia's colleges, universities, and technical colleges.

7.1 Princeton Review

Several universities and colleges in Georgia are known or have been recognized for their achievements related to sustainability. For example, Georgia Tech is one of 22 schools that was recognized on the Princeton Review's 2014 Green Honor Roll by receiving a score of 99 (the highest possible score, see Box 6) in its rating of 832 campuses. Further, Georgia Tech is one of only 2 schools nationwide that has made this list every year since its inception in 2009. (The other is College of the Atlantic, a small liberal arts college of less than 500 undergraduates in Bar Harbor, Maine.) Emory University was recognized for the Green Honor Roll in the 2009 inaugural year and the University of Georgia was included on the list in 2011, and both remain near the top of the ratings.

Box 6. Criteria used in Princeton Review Green Ratings of Colleges and Universities (Princeton Review, 2014a)

The Princeton Review tallies its Green Rating scores based on institutional data it obtains from the colleges in response to ten survey questions that ask:

1. The percentage of food expenditures that goes toward local, organic or otherwise environmentally preferable food.
2. Whether the school offers programs including mass transit programs, bike sharing, facilities for bicyclists, bicycle and pedestrian plans, car sharing, carpool discount, carpool/vanpool matching, cash-out of parking, prohibiting idling, local housing, telecommuting, and condensed work week.
3. Whether the school has a formal committee that is devoted to advancing sustainability on campus.
4. Whether school buildings that were constructed or underwent major renovations in the past three years are LEED-certified.
5. The school's overall waste-diversion rate.
6. Whether the school has at least one sustainability-focused undergraduate major, degree program, or equivalent.
7. Whether the school's students graduate from programs that include sustainability as a required learning outcome or include multiple sustainability learning outcomes.
8. Whether the school has a formal plan to mitigate its greenhouse gas emissions.
9. What percentage of the school's energy consumption is derived from renewable sources.
10. Whether the school employs a dedicated full-time (or full-time equivalent) sustainability officer.

Though the Princeton Review does not share its exact methodology for developing its green ratings, most of the Princeton Review's rating system appears to be heavily weighted to recognize "greening the campus" type of programs that include capital investments and continuing operations, as per Box 6. Questions 6 and 7 address curriculum, but do not reveal any significant details about the degree of depth, breadth, pedagogy, or effectiveness of the educational programs. For the seven Georgia schools that are included in the Green Rating Guide (i.e. of the 832 campuses for which the Princeton Review compiled enough information to produce a green rating, only those schools with ratings of 80 and above were included in the Green Rating Guide), the report noted the following educational highlights:

- Agnes Scott College "promotes student awareness of sustainability issues through presentations at its Spring Annual Research Conference, and the environmental and sustainability studies minor. Possible internships include on-campus environmental/sustainability efforts and local environmental organizations, such as Southface (an Atlanta organization promoting sustainable homes, workplaces, and communities) or the National Wildlife Federation. Students pursuing this minor may also complete a summer internship elsewhere in the United States, or abroad, to further develop the "think globally, act locally" philosophy that is so vital to the sustainability movement."
- Berry College "has hosted special events to highlight environmental careers, and administrators have recently established an environmental science major. In 2011, the Residence Life staff partnered with students to implement a small-scale pilot program called the Berry Environmental Living and Learning (BELL) house, an opportunity for a living project that could be beneficial from a big picture environmental perspective, emphasizing action on or near campus."
- Emory University's "Piedmont Project is an annual workshop for faculty and graduate students to foster cross-disciplinary discussion and develop sustainability curricula. Several new classes and modules have emerged from the workshop, and it is now a national model for teaching faculty how to incorporate sustainability into the classroom. Overall, sustainability-related courses are offered in forty-seven departments across campus. Emory's Career Center hosts panels on ecofriendly careers in its "Careers for the Common Good" series. In addition, the university holds an annual "Green Networking Night" for alumni and students to meet prospective "green" employers."
- Georgia Tech "offers more than 350 courses with a sustainability focus with the goal that every student take at least one sustainability focused course by graduation. In the school's own words, it wants students to experience sustainability so that they can 'take it with them throughout their careers and live it every day.'"
- Georgia Southern "hosts student-led sustainability action projects such as participating in 'No Impact Week,' every day of which was dedicated to a different way students could take on ecoresponsible habits, such as reducing consumption, trash, and alternative transportation. Other student organizations on campus doing green work include: Green Ambassadors, Geo

Club, and Student Alliance for a Green Earth (SAGE). Everyone gets involved; a four-credit environmental course is a requirement for all graduates."

- Kennesaw State "has an undergraduate degree program with emphasis in environmental science or environmental policy within KSU's existing interdisciplinary studies program."
- The University of Georgia "is home to the Eugene Odum School of Ecology, 'the world's first stand-alone school devoted to teaching, research, and public service in the areas of ecology and environmental studies' and the top-ranked College of Environment and Design for sustainable design practices in landscape architecture."

In addition to these seven that were singled out for the Green Rating guide, the Princeton Review provided green ratings for 15 additional post-secondary institutions in Georgia. These scores, along with those for the other seven, are included in a different publication, *The Best 378 Colleges: 2014 Edition* (Princeton Review, 2014b), and shown here in Table 5.

Table 5. Completed Princeton Review Green Rating for colleges and universities in Georgia (Princeton Review, 2014b).

School	Green Rating
Agnes Scott College	90
Albany State University	66
Berry College	84
Clark Atlanta University	74
Columbus State University	71
Emory University	98
Georgia College & State University	72
Georgia Institute of Technology	99
Georgia Southern University	85
Kennesaw State University	94
Lagrange College	76
Mercer University	77
Oglethorpe University	67
Reinhardt College	69
Savannah College of Art & Design	61
Shorter University	61
Southern Polytechnic State University	78
Spelman College	74
University of Georgia	98
University of West Georgia	61
Valdosta State University	68
Wesleyan College	78

7.2 AASHE STARS

While less than ideal for the purposes of VIRTUES, the Princeton Review's rating system and others like it[13] provide a starting point for identifying the colleges and universities in Georgia that may be actively developing sustainability curricular and co-curricular programs. A more comprehensive and transparent rating system – but less popularly known outside of academia –is the American Association for Sustainability in Higher Education's (AASHE) Sustainability Tracking, Assessment & Rating System (STARS). STARS launched in January 2010 and now serves as the method of data collection and database for its own AASHE rating system as well as the Princeton Review's Green Rating and the Sierra Club's Cool Schools reports.

As of May 21, 2014, only four schools in Georgia (Georgia Tech, Emory University, Agnes Scott College, and the University of Georgia) have submitted data to the STARS rating system though 14 are dues paying members of AASHE[14]. Part of the reason for lower participation may be that STARS is a much more comprehensive survey that requires substantial time and ability to complete. Though participation is low, the comprehensiveness affords a higher degree of insight into the sustainability related curricular and co-curricular activities occurring on these campuses, and separated from other non-curricular related sustainability initiatives. STARS is a self-reporting framework under which participants pursue credits and may earn points in order to achieve a Bronze, Silver, Gold or Platinum rating (Emory, Georgia Tech, and UGA are rated as Gold, and Agnes Scott is rated as Silver). The credits are organized into four categories: Academics, Engagement, Operations, and Planning & Administration. For the purpose of VIRTUES, only the responses related to academics are of interest, and the STARS topical areas in co-curricular and curricular education are shown in Table 6, along with the scores for the 4 schools in GA.

[13] For example, the Sierra Club sponsors a "Cool Schools" rating system that relies on many of the same data sources used by the Princeton Review, but the data are evaluated using a rubric developed by the Sierra Club which emphasizes its own environmental priorities, and rewards schools that do a good job of measuring and mitigating their impact. Emory and Georgia Tech were the only two schools in Georgia to participate in the Cool Schools rating program in 2013.

[14] Georgia based AASHE member schools (2014) are: Agnes Scott College, Berry College, Emory University, Georgia College & State University, Georgia Institute of Technology, Georgia Southern University, Georgia State University, Kennesaw State University, Life University, Morehouse College, Southern Polytechnic State University, Spelman College, University of Georgia, and Wesleyan College. Additionally, GCSU, GA State, and Spelman have registered to use STARS, but have not yet submitted data for a rating.

Table 6. STARS co-curricular and curricular survey topics.

	ASC	Emory	GT	UGA
Co-Curricular Education (18.00 points)	**17.50**	**18.00**	**17.75**	**17.75**
Student Sustainability Educators Program (5.00)	5.00	5.00	5.00	5.00
Student Sustainability Outreach Campaign (5.00)	5.00	5.00	5.00	5.00
Sustainability in New Student Orientation (2.00)	2.00	2.00	2.00	2.00
Sustainability Outreach and Publications (4.00)	4.00	4.00	4.00	4.00
Student Group (0.25)	0.25	0.25	0.25	0.25
Organic Garden (0.25)	0.25	0.25	0.25	0.25
Model Room in a Residence Hall (0.25)	0.00	0.25	0.00	0.25
Themed Housing (0.25)	0.25	0.25	0.25	0.25
Sustainable Enterprise (0.25)	0.00	0.25	0.25	0.25
Sustainability Events (0.25)	0.25	0.25	0.25	0.25
Outdoors Program (0.25)	0.25	0.25	0.25	0.25
Themed Semester or Year (0.25)	0.25	0.25	0.25	0.00
Curriculum (55.00 points)	**14.52**	**30.26**	**54.00**	**29.78**
Sustainability Course Identification (3.00)	3.00	3.00	3.00	3.00
Sustainability-Focused Courses (10.00)	1.29	2.96	10.00	3.55
Sustainability-Related Courses (10.00)	0.00	3.14	10.00	5.42
Sustainability Courses by Department (7.00)	1.23	4.38	7.00	3.62
Sustainability Learning Outcomes (10.00)	0.00	1.78	10.00	1.19
Undergraduate Program in Sustainability (4.00)	4.00	4.00	4.00	4.00
Graduate Program in Sustainability (4.00)	NA	4.00	4.00	4.00
Sustainability Immersive Experience (2.00)	2.00	2.00	2.00	2.00
Sustainability Literacy Assessment (2.00)	0.00	2.00	1.00	0.00
Incentives for Developing Sustainability Courses (3.00)	3.00	3.00	3.00	3.00

Detailed STARS data for Agnes Scott College (ASC), Emory University, Georgia Tech (GT) and the University of Georgia (UGA) are compiled in Appendix D. Common among the four schools is the complete or nearly complete attainment of all available STARS credits for co-curricular education (see Table 6). What might this imply? In assigning credits according to the STARS technical manual, "the focus in allocating points was on the impact, not the difficulty, of earning the credit. Some sustainability initiatives may be very difficult to implement but yield negligible impacts. Conversely, some generally easier projects have significant impacts. Assigning points based on the difficulty of earning a credit would create a perverse incentive for institutions to focus on the difficult projects or initiatives, which may not have the most meaningful impact." If schools are attempting to maximize their scores – a rational assumption as STARS assigns a reputational award of bronze, silver, gold, and platinum rating for the attainment of higher levels of credit accumulations – then it is reasonable to assume that schools are engaging in a form of benefit / cost ratio calculus in which they pursue first the highest impact / lowest difficulty actions followed in order by other actions with marginally decreasing impact / difficulty ratios. Thus, while more points may be available to be earned in the curricular category, it appears that co-curricular education, as a whole, may have a higher immediate "return-on-investment" in regards to sustainability education. Agnes Scott College actually earns more STARS credits from its co-curricular programs than from its curricular offerings.

Results are more varied for the curricular category. Most of the variability arises from the credits assigned to the identification of sustainability related courses and learning objectives. This may be due to the methodology used to identify "sustainability related" courses and "sustainability focused" courses. Each school was permitted to create its own determinants for counting or excluding a course from its lists. This subjectivity was further compounded by the schools' self-reporting of course lists using the methodology that they themselves developed. With such varied criteria, it is difficult to draw any conclusions comparing or contrasting sustainability curricula among the schools from the STARS reports. What is apparent, however, is the tremendous breadth of course offerings that are (subjectively) considered to be related or focused on sustainability. Table 7 shows the lists of departments on each of the four campuses that purportedly offer at least one sustainability related or focused course. It is encouraging then that sustainability concepts are being introduced across a wide swath of disciplines. Less certain are the understanding of the learning outcomes resulting from those courses. Agnes Scott, Emory, and UGA provided very low self-evaluated ratings for "sustainability learning outcomes." Georgia Tech's self-rating was perfect (10.00 / 10.00), but this seemed to be based more on a visionary statement that "Georgia Tech has a goal that every student will take at least one course in sustainability" than an actual evaluation of each student achieving that goal in practice or trying to assess the level of comprehension. Using a somewhat more objective approach, Watson et al. (2013) "showed that most [Civil and Environmental Engineering] courses [at Georgia Tech] contributed mainly to the environmental dimension of sustainability (62%), with lower contributions to the cross-cutting (24%), economic (12%) and social (3%) ones. The contribution of courses to sustainability was 1.36, which is classified as a 'medium' contribution. This was mainly due to the course overemphasis on the environmental dimension. The strength of the contribution was also 'medium' (1.39)." In this context then, sustainability learning outcomes at Georgia Tech may not be as far ahead of the other schools as STARS might suggest. What is encouraging though is that all the schools report that incentives exist for faculty to develop sustainability courses. Where there is a will (and resources), there is a way.

Table 7. Departments identified in STARS as offering at least one sustainability-related or sustainability-focused course.

Agnes Scott College (3 of 19)	Emory University (40 of 71)	Georgia Tech (29 of 30)	University of Georgia (47 of 101)
Biology	African Am. Studies	Building Construction	Ag. & Applied Economics
Sociology/Anthropology	Anthropology	City Planning	Ag. Lead., Edu. & Comm.
Public Health	Art History	Industrial Design	Animal & Dairy Science
	Biology	Aerospace Engineering	Biological & Ag. Engineering
	Chemistry	Chemical Engineering	Crop & Soil Sciences
	Economics	Civil & Environmental Eng.	Entomology
	Educational Studies	Elect. & Computer Eng.	Food Science & Technology
	English	Polymer, Textile, & Fiber Eng.	Horticulture
	Environmental Studies	Indus. & Sys. Eng.	Global Programs
	Film Studies	Material Sci. Eng.	Center for Food Safety
	French & Italian Studies	Mechanical Engineering	Environmental Planning
	German Studies	Nuclear & Radiological Eng.	Landscape Architecture
	Global Health, Culture & Soc.	Economics	Historic Preservation
	Health, Physical Education	History, Technology & Sci.	Environmental Ethics
	History	International Affairs	Environmental Health Sci.
	ILA	Literature, Comm. & Culture	Health Policy & Management
	Journalism	Modern Languages	Disaster Management
	Latin Am. & Caribbean Stud.	Philosophy, Sci. & Tech.	Global Health
	Music	Public Policy	Anthropology
	Philosophy	Computational Sci. & Eng.	Art
	Physics	Computer Science	Biochem. & Molecular Biol.
	Political Science	Interactive Computing	Biological Sciences
	Psychology	Management	Cellular Biology
	REALC	Biology	Chemistry
	REES	Chemistry & Biochemistry	Communication Studies
	Religion	Earth & Atmospheric Sci.	Comparative Literature
	Sociology	Mathematics	Computer Science
	Spanish & Portuguese	Physics	English
	Theater & Dance	Psychology	Genetics
	Women's Studies		Geography
	Biological & Biomedical Sci.		Geology
	Business		Marine Sciences
	Law		Microbiology
	Nursing		Plant Biology
	Theology		Religion
	Hematology Med Oncology		Sociology
	Pulmonary Med		Engineering
	Biostatistics & Bioinformatics		Ecology
	Environmental Health		Law
	Global Health		Social Work
			Environmental Systems Analysis
			Fisheries & Aquaculture
			Forest Biology
			Biotechnology
			Biometrics
			Bus. & Management
			Natural Resources
			Recreation & Tourism
			Water & Soil Resources
			Wildlife Ecology & Mngmt.

7.3 Green Fees

In the Spring of 2014, VIRTUES investigators conducted a check of universities and colleges in Georgia that are or are planning to assess students a green or sustainability fee. None of the 25 units of the Technical College System required or requested that students pay a green fee (Adkins, 2014). Within the 31 unit University System, 4 schools require green fees (Neuse, 2014):

- University of Georgia: $3/semester
- Georgia Southern University: $10/semester
- Georgia College & State University: $5/semester (allocated from within the activity fee)
- Georgia State University: $3/semester, beginning Fall 2014

Among the private schools in Georgia, only Agnes Scott College mandates that students pay a green fee. At ASC, $10 of the students' activity fee is allocated to the Student Green Fee Fund (Kidd, 2014). Emory has an optional green fund that appears on tuition bills but students are not required to pay, and since 2007 it has raised "only a few thousand dollars" (Howett, 2014).

At the University of Georgia, the $3 Green Fee helps to fund UGA's Office of Sustainability and its role in both coordinating existing programs that reduce the University's environmental impact on each of its campuses as well as establishing new or more comprehensive programs with the same objective. The Green Fee also supports student internships in the Office of Sustainability, student research/service grants, and environmental education initiatives.

At Georgia Southern University, the $10 per semester green fee was initiated in Fall 2013. Half is used to support the Center for Sustainability and its activities and half is used for sustainability initiatives and improvements on campus.

At Georgia College and State University, the $5 per student per semester fee is used to support student research grants that promote sustainable initiatives on campus. 80% of revenues from the fee are allocated to fund projects through a competitive grant process. Priority is given to proposals that align with target areas established annually by the Sustainability Council. The remaining 20% of the funds are used to maintain a contingency fund, pay for administrative expenses, and fund the Annual Sustainability Symposium. No more than 9% of the annual budget can be spent on administrative costs.

At Georgia State University, the sunsetting of another fee provided an opportunity to establish the $3 green fee as a replacement. Effective Fall 2014, the fee can be used for any sustainability proposal approved by the Sustainability Fee Committee except for payroll. No hires can be made with the money, which was a specific stipulation put in by the students on the Mandatory Fee Committee. The Sustainability Fee Committee will be composed of 4 faculty/staff and 4 students (Black, 2014).

At Agnes Scott College, the green fee is part of an overall increase in the student activity fee, but specified as an extra part of the increase dedicated to sustainability. It was started in the 2013-2014 school year. The Dean of Students office is working to create a small grant program for student sustainability projects that will be supported by the fund. The first grants are expected to be made in 2014-2015 (Kidd, 2014)

7.4 VIRTUES Survey and Workshop

VRITUES investigators developed a survey that requested information about sustainability education on Georgia's campuses. Requests to complete the survey were then sent to the chief academic officer (usually the Vice-Provost for Academic Affairs) at 70 public and private universities, colleges, and technical colleges in Georgia. Responses were received from 41 institutions, including 10 of the 24 Technical College System schools surveyed, 21 of the 31 University System units, and 10 of the 15 private schools surveyed. See Table 8. A report describing in detail the survey and responses is included as Appendix E.

Table 8. VIRTUES Sustainability and Academics survey recipients and respondents.

Responded?	University / College	Responded?	University / College
✓	Abraham Baldwin Agricultural College	✓	Georgia State University
✓	Agnes Scott College	✓	Gordon State College
	Albany State University	✓	Gwinnett Technical College
	Albany Technical College	✓	Kennesaw State University
✓	Altamaha Technical College		Lagrange College
	Armstrong Atlantic State University		Lanier Technical College
✓	Athens Technical College	✓	Mercer University
✓	Atlanta Metropolitan State College	✓	Middle Georgia State College
✓	Atlanta Technical College	✓	Morehouse College
	Augusta Technical College		Moultrie Technical College
	Bainbridge State College		North Georgia Technical College
✓	Berry College	✓	Oconee Fall Line Technical College
✓	Brenau University	✓	Ogeechee Technical College
	Central Georgia Technical College	✓	Oglethorpe University
✓	Chattahoochee Technical College		Okefenokee Technical College
✓	Clark Atlanta University		Paine College
	Clayton State University	✓	Piedmont College
	College of Coastal Georgia		Savannah State University
✓	Columbus State University	✓	Savannah Technical College
	Columbus Technical College	✓	South Georgia State College
✓	Dalton State College		South Georgia Technical College
	Darton State College	✓	Southeastern Technical College
✓	East Georgia State College		Southern Crescent Technical College
✓	Emory University		Southern Polytechnic State University
	Fort Valley State University		Southwest Georgia Technical College
✓	Georgia College & State University		Spelman College
✓	Georgia Gwinnett College		Toccoa Falls College
✓	Georgia Highlands College	✓	University of Georgia
✓	Georgia Institute of Technology	✓	University of North Georgia
	Georgia Northwestern Technical College	✓	University of West Georgia
✓	Georgia Perimeter College	✓	Valdosta State University
	Georgia Piedmont Technical College	✓	Wesleyan College
✓	Georgia Regents University		West Georgia Technical College
✓	Georgia Southern University		Wiregrass Georgia Technical College
✓	Georgia Southwestern State University		Young Harris College

Within the survey, more than ¾ of the responding schools reported that sustainability is part of their campuses' culture. This may be largely due to the universal (i.e. 100% of responding schools) importance of sustainability to facilities and operations. Within the academic mission, and more specifically undergraduate, graduate, and extra/co –curricula, however, the importance of sustainability is more mixed. This is also reflected in the commitment of the different constituencies too. The clear implication of these responses is that sustainability does not appear to be a priority in graduate education. See Figure 6. Perhaps this is due to the highly specific and focused nature of graduate education, as opposed to the more general educational objectives that accompany undergraduate education. It is, however, important to undergraduate education, and even more so to the extra-curricular and co-curricular activities that undergraduate (and presumptively graduate) students participate in during their academic careers.

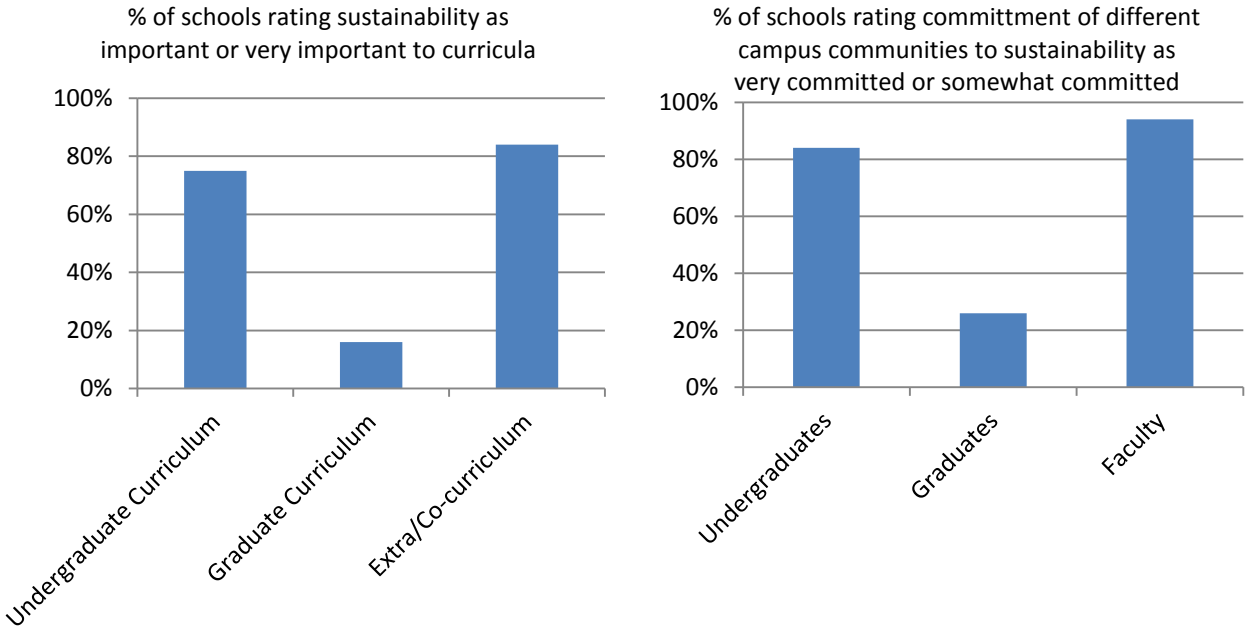


Figure 6. Importance in curricula and commitment to sustainability by different campus communities by public and private universities, colleges, and technical colleges in Georgia.

More than 1/5th of the schools responded that they offered a degree in sustainability. On closer inspection, however, most degree programs identified were "sustainability relevant" but did not appear to be directly conceived and organized around sustainability (e.g. BS in Environmental Science – a degree that has certainly evolved to include many concepts in sustainability, but is not originally derived from or dependent on them). 1/5th then is perhaps an overestimation of the proportion of Georgia's higher education institutions that offer sustainability degree programs, though a couple of exceptions stand out:

1. Savanah Technical College offers a Sustainable Technology Diploma. "This program introduces students to the various fields of sustainable technologies. Topics include energy efficient [sic],

energy measures and management, sustainable energy production, green building construction and historic preservation (Savannah Technical College, 2014a)."

2. The University of Georgia offers an M.S. degree in Conservation Ecology and Sustainable Development. This program "offers students an opportunity to combine interdisciplinary course work in conservation ecology and sustainable development with field experience and thesis research. The program is intended to provide the training necessary to handle the unique, multidisciplinary problems in the area of conservation and sustainable development and to teach students to function independently as both researchers and decision-makers to address environmental issues (UGA, 2014a)."

A few more schools (more than 1/4th) report minors, concentrations, and certificates in sustainability. On closer inspection and unlike the degree programs, this proportion appears to be representative of the actual fraction that do in fact offer minor and certificate programs specific to sustainability. Programs include:

1. Agnes Scott College offers a minor in environmental and sustainability studies. "The ESS program provides students with an interdisciplinary curriculum that equips them to understand the environmental, intellectual and social challenges of sustainability and trains them to think deeply about these problems from a variety of liberal arts perspectives, including natural and social sciences, humanities, and fine arts. The program encourages students to gain experiential learning through internships and engagement in sustainability efforts on campus (Agnes Scott, 2014)."
2. Emory University offers a minor in Sustainability. This program "offers students an integrated exploration of sustainability issues across diverse fields in the humanities, social sciences, and natural sciences, including environmental, social, and economic dimensions. …Students minoring in Sustainability will be required to demonstrate their developing body of knowledge and integration across fields with an electronic portfolio, written across the semesters of the minor and reviewed by a faculty steering committee. An approved Capstone Project that integrates classroom work with experiential learning through research, internship, or sustainability-related activity will strengthen social and technical skills and offer experience with a hands-on activity, collective action or workplace initiative. The capstone project can be fulfilled through an elective course, in the Capstone Seminar, or independently.
3. Gwinnett Technical College offers a certificate in Sustainable Urban Agriculture. "The program prepares the student for a career in sustainable, small scale food production that integrates economic profitability and environmental stewardship. Courses provide hands-on experience in the fundamentals of plant production and marketing, giving the student a complete knowledge of the sustainable farmer's market system (Gwinnett Technical College, 2014)."
4. Savannah Technical College offers students an opportunity to earn a certificate as a Green Building Technician. "The Green Building Technician program introduces students to the tenets and practices behind the sustainable construction movement. Students are introduced to the methods and philosophies behind green building, energy efficient mechanical systems, energy

measures and monitoring, as well as green building construction techniques (Savannah Technical College, 2014b)."

5. Georgia Southern University provides students an opportunity to earn an 18 credit hour interdisciplinary concentration in environmental sustainability. "Students enrolled in the concentration area will better understand how sustainability links to every part of their lives on a daily basis and learn about the necessary resources to promote sustainability practices on a global scale. Participants have already come from a variety of disciplines, including business, advertising, marketing and education, but the concentration area is open to students from any degree program. … After completing the introductory course, students are required to take 12 credit hours worth of upper level classes followed by the final three-hour Practicum in Environmental Sustainability. During the capstone course, each student chooses a mentor from his or her home department and under the mentor's supervision, develops and implements a project to improve sustainability on campus or in the community (Georgia Southern University, 2014."
6. The University of Georgia offers a Certificate in Conservation Ecology and Sustainable Development. "Students enrolled in any graduate degree program in the University of Georgia may apply to the Graduate Certificate Program in Conservation Ecology and Sustainable Development. This program is designed for students who wish to develop an area of specialty that complements their primary degree program. Some recent recipients of the certificate include students from anthropology, forestry, landscape design, education, and law. Students who earn this certificate will receive interdisciplinary preparation to handle the unique, multi-disciplinary problems associated with working in the area of conservation and sustainable development. Students in the natural sciences will gain a social science perspective in their understanding of the ecology of development, and students in the social sciences will learn ecological principles so that their decisions can be grounded in biological fact (UGA, 2014b)."

As might be expected, the responding schools report the most development of curricula pertaining to sustainability at the course level. About 1/3 of the TCSG and USG schools, and 2/3 of the private schools offer courses for credit that directly address sustainability. See Figure 7. The courses that were identified are widely varied and span across many departments and disciplines. While many focused on the environmental aspects of sustainability, the social and economic dimensions were also represented.

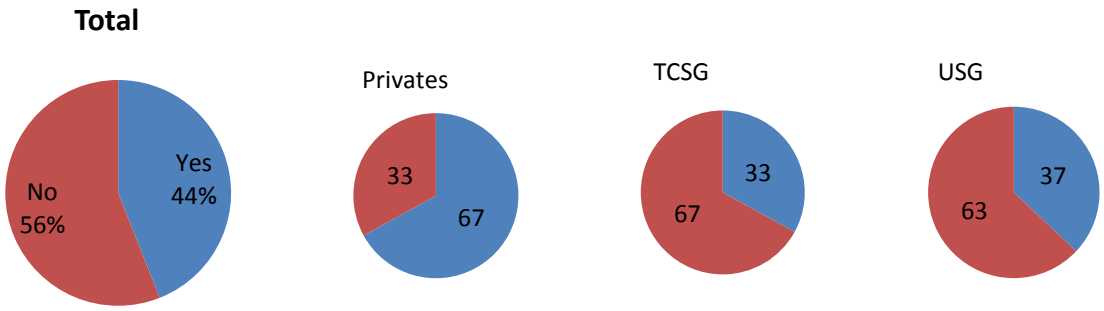


Figure 7. Survey responses in reply to the question: Does your campus offer courses for credit that DIRECTLY address sustainability?

Pedagogically, the survey did not reveal at any of the postsecondary schools any significant barriers to methods that might be employed to best effect in the teaching of sustainability.[15] Indeed, it seems that general pedagogy at all the educational institutions has largely evolved to include all the methods and techniques (teamwork, experiential and service learning, empathy / diversity, communications and leadership) that are conducive to teaching sustainability. To the extent that these methods are employed and employed effectively was beyond the scope of the survey to determine. The survey does seem to indicate, however, a level of availability, familiarity, and acceptance that could be a useful starting point for sustainability education.

[15] A few studies have tried to isolate and identify the pedagogical methods that lead to the highest rate of uptake and comprehension of sustainability concepts. For example, Segalas, Ferrer-Balas, and Mulder (2010) advocate that "the more active the learning, the more focused on community and the more constructive, the higher the cognitive learning achieved by students. It is important to note that **active learning education** (ALE) is not only useful for teaching [sustainable development] competences, but also for teaching all kinds of competences, for example, training engineering students to apply knowledge in practical situations, teaching communication skills or preparing them for a career of 'life-long learning.'" Dieleman and Huisingh (2006) "underscore that **experiential learning** is a good model for education for sustainability." Steinemann (2003) contended that "**problem-based learning** provided a motivating context for learning and for acquiring practical problem-solving skills. Moreover, implementing sustainability through PBL allowed students to create projects that helped the campus community, and that bridged education and practice." Finally, and taking a somewhat broader approach, Eilam and Trop (2011) studied multiple programs that provide education for sustainable development and distilled them down to four effective main elements: 1) **traditional academic style learning**; 2) **multidisciplinary learning** (i.e. inter or cross disciplinary); 3) **multidimensional learning** (e.g. across time, space, or cultures); and 4) **emotional learning**.

TEAM = Work on teams
EXP = Learn by doing (experiential learning)
HELP = Learn by helping others (service learning)
EMP = Consider other viewpoints (empathy)
COMM = Communicate in class
LEAD = Lead
OFF = Have meaningful off campus experiences (e.g. internships)

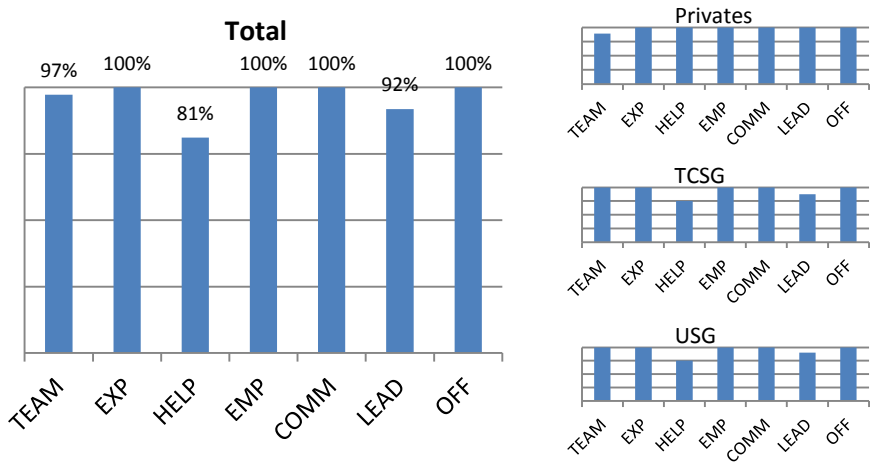


Figure 8. VIRTUES Survey responses in reply questions about student educational experiences (% responding often or sometimes).

On September 20, 2013, the VIRTUES investigators held a workshop in conjunction with the Georgia Campus Sustainability Network annual meeting that was held on the campus of Georgia College and State University in Macon. The purpose of the workshop was to share information about the VIRTUES academic survey and to provide the educators a follow-up opportunity to clarify, amend, and append comments, criticisms, and concerns about how Georgia's universities, colleges, and technical colleges are providing sustainability related education and training. Written and oral comments were solicited and collected from the workshop participants, and compiled, reviewed, and summarized by Ryan Day (Graduate Student, Biology, Georgia Southern University).

In responding to a presentation that described the prior survey and its findings, workshop participants suggested the survey instrument was remiss in two ways: 1) it did not survey students directly, and so their perspective was wholly absent; and 2) the survey did not define "sustainability" and so the respondents were free to choose which programs and activities to include or reference as being relevant to sustainability without any standard among them. Regarding the former, with more than 500,000 students enrolled in the state's USG, TCSG, and private colleges and universities, VIRTUES does not have the means to sample this large and very diverse population. For the latter, because there is no single definition of sustainability in theory or in practice, VIRTUES investigators did not provide a definition so as to not limit the information that the survey respondents determined was relevant – and in retrospect, the investigators are satisfied with the breadth and diversity of the responses provided in the survey as this provides a much more complete picture of sustainability education occurring in Georgia higher education.

In clarifying remarks by the workshop participants, the effectiveness of sustainability education efforts fluctuated amongst responses, but those that claimed theirs' to be extremely effective implied that it was experienced by only a select or inclusive group of individuals. That is, although some students were being reached by a permanent influence, this group was small in relation to the larger population of students. Typically, these were students that already had a general interest in sustainability. Likewise, the effective programs were more likely to be led by faculty that were already personally interested in

or dedicated to sustainability. Workshop participants also reaffirmed other studies' findings (e.g. Eilam and Trop, 2011) that effective teaching of sustainability includes classroom lectures and hands-on experiences. Some did speak of extracurricular activities as having educational importance outside of the classroom.

7.5 Sustainability and Georgia Higher Education: Synthesis of Findings

Based on the Princeton Review's Green Ratings, the AASHE STARS rating system, and VIRTUES own investigations, it is apparent that there is wide variation in sustainability education at Georgia's colleges, universities, and technical colleges. This runs counter to the widespread adoption of sustainability advances and practices on the facilities and operations side of many of Georgia's higher education institutions, and where the pervasive sense of a "culture of sustainability" felt to exist on most campuses seems to originate. When it comes to instilling sustainability concepts and principles in technical, undergraduate, graduate, and professional education, there is variation in commitment, content, and delivery. Further, there is very limited assessment by which to determine if any of the activity that is occurring is having any lasting effect.

With the exception of two degree programs – a Sustainable Technology Diploma from Savannah Technical College, and a Master's of Science degree in Conservation Ecology and Sustainable Development from the University of Georgia – VIRTUES found scant evidence of the existence of the type of comprehensive and vertically integrated curricula that leads to certified two year Associate's, four year Bachelor's, or multi-year Master's or Doctorate's degrees in sustainability. There is considerably more – though still limited – structuring at the undergraduate "minor, concentration, or certificate" level in which a few sequences of sustainability relevant courses, labs, and research / internship experiences have been organized into a certifiably recognized program of study at several schools. But while these programs of study are available to most students, comments from those on campus indicate that they may have small participation rates, mostly attracting student learners and faculty instructors that are already predisposed to sustainability. In terms of curriculum, it is at the undergraduate individual course level where offerings are most abundant and a large number of students are most engaged. With the exception of Georgia Southern University, where every undergraduate student is required to take a 4-hour environmental science course with lab that includes content directly related to environmental sustainability, most courses are either provided as electives or are requirements of the student's chosen major. Thus while a large fraction of students may take one of these courses at some point during their academic career (e.g. Georgia Tech has a "goal that every student take at least one sustainability focused course by graduation," even as there is no academic requirement that mandates that they do like at Georgia Southern University), as an elective or major specific course, sustainability is being presented from many diverse perspectives (e.g. manufacturing, policy, ethics, business, engineering, biology, or health). As such, there is no common core of knowledge or skills for which all students are expected to obtain (and by extrapolation, can find common ground over later in their careers). In spite of these shortcomings in undergraduate sustainability education, this still far exceeds the penetration of sustainability into the graduate education curriculum. With no general education requirements, more narrowly focused degree major mandates, and perhaps more single-minded students pursuing specific knowledge related to explicit career objectives, the graduate

school experience seems to be largely impervious to the organic forays of sustainability that are infiltrating the undergraduate experience. Such structural barriers suggest that graduate education may be the most difficult segment of higher education for sustainability to gain traction.

In contrast to graduate education, and perhaps even further accepting of sustainability than undergraduate education, extra-curricular and co-curricular activities present tremendous opportunities for introducing students to and engaging them in sustainability. Absent most of the accreditation, degree, and other academic and bureaucratic constraints, higher education's extra / co –curriculum can be flexible and quick, adapting to the varying and changing interests of the transient student population. Further whether intentional or not, "active learning" – a more hands on pedagogical approach to learning that can include problem based learning, experiential learning, and service learning; and thought to be more conducive to the uptake of sustainability concepts is a natural byproduct of many extra / co –curricular activities occurring outside of the traditional classroom.

As might be expected, especially following several years of very challenging financial budgets, resources for sustainability education are difficult to find. The clear return-on-investment that is pushing more funding for sustainability in campus capital projects and operations does not carry over to the education side. A small minority of schools have been able to pass and implement a mandatory student "green fee," some of which may be used for sustainability education. But most schools have not considered it, and others that have, have determined that any increase in student fees at this time is not feasible.

8. Connecting the dots: Georgia, sustainability, workforce, what employers need and want, and what higher education provides

Distilling the section on employers' needs together with the section on sustainability in higher education, what are some of the common themes that emerge that may inform a vertically integrated education program for sustainability? First, employers greatly value experiences and education activities that occur in "real world" settings. Likewise, educators believe that active learning – a more hands on pedagogical approach to learning that can include problem based learning, experiential learning, and service learning – is the most effective pedagogical method for teaching students about sustainability. Further, it seems that schools may have more flexibility and more ability to include sustainability, and to reach more students, in extra / co –curricular activities than they do through the formal undergraduate or graduate curricula. This happy confluence of employers and educators suggests that non-traditional educational experiences, perhaps in the extra / co –curricular space, could be the most effective and employer valued way to begin transforming Georgia's workforce into one that is more directly ready and able to implement and execute sustainable practices in the workplace.

In their current sustainability education efforts, however, Georgia's higher education institutions may be placing too much emphasis on "environmental sustainability" to the exclusion of "social sustainability" and "economic sustainability." And while the employers are supportive of the first two, it is the last they insist their workers understand. Also it was found that workplace sustainability initiatives were largely started and led by management. They were not "bubbling up" from line employees or being injected into the organizations by consultants, suppliers, customers, or other outside forces. Once initiated, however, all levels of the organization were engaged, often in well defined, but ad hoc, teams to implement the directive. This seems to raise implications within organizations about how these ad hoc teams get created and are managed for success. A second conclusion then is that the business case for sustainability might be an important priority for education efforts, not to the exclusion of environmental and social issues, but to get the attention of employers, workers must be able to understand and articulate the economic, financial, organizational, and market implications of sustainability.

Finally, a third common theme to emerge from employers and educators was the importance of competency in a host of soft skills or abilities. These include the ability to manage multiple priorities, possessing creativity in solving complex problems, and demonstrating the ability to think critically, plan strategically, and act logically. While still recognizing the importance of professional and technical education (i.e. business, engineering, computer science, trades, etc.), employers and educators alike indicated that they also valued education in the liberal arts seeing it, perhaps, as a means to enhance the soft skills they desire in their employees / graduates. (Interestingly, though not to be implied as causative, all five schools in Georgia that have passed a green fee have a strong heritage of liberal arts education.) Schools seem to be finding it difficult to squeeze additional requirements into already crowded curricular degree programs. Actual sustainability degree programs are scant, and minors, concentrations, and certificates, while more available, are pursued by only a small fraction of students. This may be a demand that can be, at least partially, satiated also through extra-curricular activities, especially ones with real stakes involved that require students to fully develop and practice their soft

skills. It raises questions, though, about what exactly should be included as part of a proper "sustainability education." With the exception of Georgia Southern University, where every undergraduate student is required to take a 4-hour environmental science course with lab that includes content directly related to environmental sustainability, most sustainability related courses are either provided as electives or are requirements of the student's chosen major with no common consensus on learning objectives. Assessment of sustainability learning objectives, or rather the lack of it, is also a concern.

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10. Appendices

This report relies on many sources of data published in both the open literature and in unpublished reports and analyses. While every attempt has been made to document the sources of information used in this report, included here in these appendices are reports, memos, and data that are not readily accessible in the normal research practice or are only accessible via university membership (e.g. AASHE).

A. Jackets for a Sustainable Future – a Proposal for Georgia Tech's next Quality Enhancement Plan (QEP) in preparation for reaccreditation by the Southern Association of Colleges and Schools Commission on Colleges
B. University of Georgia Memorandum, FACULTY WORKSHOP: INTEGRATING SUSTAINABILITY INTO CURRICULA – CALL FOR APPLICATIONS
C. Summary of VIRTUES Survey of Georgia Employers
D. Data retrieved for: Agnes Scott College, Emory University, the Georgia Institute of Technology, and the University of Georgia from the American Association for Sustainability in Higher Education's (AASHE) Sustainability Tracking, Assessment & Rating System (STARS) database; May 2014.
E. Summary of VIRTUES Survey of Georgia's Colleges, Universities, and Technical Colleges

Jackets for a Sustainable Future

A collaborative product of all individuals listed in Appendix A

Steering Committee

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The intensity and rate of population growth in various regions of the world, along with the demand for energy, materials, food, and water in urban areas, warrants top priority as the world seeks solutions to population growth, climate change, and energy and resource scarcity. That's why Georgia Tech is working to position itself as the global leader in education, research, and service in the area of sustainability and resilient urban infrastructure.

Technology that works well, but isn't green, will be no more acceptable than technology that is green, but doesn't work well.

- ***President Bud Peterson, Responsible Technologies Summit, Nov. 10, 2009***

Today, American institutions of higher learning are expected to...ensure that graduates are both employable and prepared to adapt and lead in an ever-changing world that many times requires an interdisciplinary approach to developing solutions to grand challenges.

- ***President Bud Peterson, Institute Address, Aug. 29, 2013***

Rationale: Sustainability is the defining issue of our generation. Georgia Tech's strategic plan and our University leadership correctly call for Georgia Tech to be deeply invested in solving sustainability challenges in its quest to become an uncontested leader in "influencing major technological, social, and policy decisions that address critical global challenges" and "improving the human condition in Georgia, the United States, and around the globe." Unless and until all of our undergraduates leave Georgia Tech with the following knowledge, skills and opportunities, we will not have achieved this goal:

- A fundamental understanding of the scientific, economic, and social basis for sustainability challenges facing our planet;
- The strategic knowledge and skills to apply both domain-specific know-how and systems thinking to contribute to solving these challenges across a range of career paths;
- The ability to empathize, communicate, and lead across diverse geographies and demographics and in multi-stakeholder settings so characteristic of sustainability challenges;
- An opportunity to be part of a vibrant, green innovation and entrepreneurship program.

This QEP represents an immense and timely opportunity for coordinated and innovative educational leadership in sustainability. Given the breadth and depth of sustainability expertise and curricular innovation already existing on campus after 20 years of investment, we are well-positioned to leapfrog ahead of our competition with such concerted action. Georgia Tech has these resources already in place:

- Centers, institutes, programs, and faculty with research and educational investments in areas including sustainable systems, green chemistry, sustainable energy, sustainable business, sustainable infrastructure, sustainable development, sustainable urbanism, and poverty eradication;
- A multitude of courses organically developed by faculty in all Colleges (http://www.stewardship.gatech.edu/images/courses.pdf);
- A number of programs historically proposed, currently in development, or recently developed that have direct bearing or synergistic potential (e.g., BS degree in environmental systems, energy systems minor, international development minor, X-degree);
- A student body with a critical mass of committed and receptive students and student leaders to create a strong culture of collaborating for a sustainable future;
- A campus that has been recognized as one of the greenest campuses in the US;
- Civic leadership in the city and the region who are increasingly engaged in sustainability.

However, we are not there, yet:

- We have many students to reach/empower: The uninitiated, the unconvinced, the disaffected, the skeptical, the paralyzed.
- We have not used our full influence for regional impact: We are in a region that is not yet recognized as a national or international sustainability leader, and our students are poised to be its future business and civic leaders. Moreover, regional leadership in this space is ours for the taking, but we must take deliberate action to realize this.
- We can be much more purposeful: We need to turn the organic growth in sustainability education at Tech into a multi-dimensional, coordinated enterprise that collectively achieves a clear set of educational outcomes.
- We have not yet fully tapped into the diversity of lenses we possess to engage in sustainability: Our student experience will be richer and more relevant if we tap into all Georgia Tech assets we possess, including creative expression on the one hand and a strong business lens on the other.

The time is now. This QEP holds immense potential for transformative change in our students' experience and worldview, and will further solidify/accelerate Georgia Tech's leadership, influence and global impact. To achieve this, we propose the following ambitious but achievable goals:

Goals: The QEP goals focus on culture (C), guidance (G), knowledge (K) and skills (S):

- ✓ (C) Our students will be part of a campus culture where an integral part of their identification with Georgia Tech will be about working towards a sustainable future (this idea was strongly advocated by students).
- ✓ (K1) All our students will be knowledgeable about the scientific, economic, and social basis for sustainability challenges.
- ✓ (G1) All students will be provided with coordinated guidance on courses of study, experiential learning, and co-curricular activities aligned with potential career paths in their chosen domain.
- ✓ (K2,G2) Our students will be empowered to pursue innovation and entrepreneurship for positive environmental and social impact.
- ✓ (S) Our students will become better system thinkers and effective leaders in complex, interdisciplinary, multi-stakeholder settings.

Alignment with Georgia Tech's Strategic Plan: Our strategic plan states "Sustainable development, social and economic progress, and solutions to global problems rely on an educated workforce, which in turn requires both classroom instruction and experiential learning" (p.15). This QEP operationalizes this vision in a way that touches the fabric of undergraduate education at Georgia Tech. It will strongly contribute to the major strategic plan themes: (i) promoting student design and innovation, (ii) educating service-oriented and globally engaged citizens, and (iii) revitalizing undergraduate education. It will be carried out in collaboration with the GT Innovation and Design Collaborative and the Tech Arts Initiative, and will leverage the X-degree. It is supported by the Brook Byers Institute for Sustainable Systems, the Strategic Energy Institute, the Institute for Leadership and Entrepreneurship and the Center for Business Strategies for Sustainability. It is developed in the one-GT spirit, with elements that will reach all students and Sustainability Pathways for all majors.

Structure: This QEP will develop the following five interconnected pillars to achieve these goals.

1. **Sustain-a-Thon**: The *objective* is to create a campus tradition akin to Homecoming in participation, where students bring their creativity and skills to bear, that is a strong bonding experience and that becomes part of the students' identification with Tech. The *reach objective* is multi-generational. *Approach:* Quoting from student input: "Every year, we'd have a new 'sustainability challenge' to solve, and do a 24-hour event where everyone competing camps out on Tech Green or in the CULC or in the sustainability hub (see below) to come up with the best solution they can. This could be case-study style (written product), hack-a-thon style (code a product), or invention-style (where we give them a bunch of materials and ask them to physically build something). On this day, we could have the Clough Undergraduate Learning Center completely 'blacked out' or require the people competing to rely only on sustainable technology. For example, once daylight diminishes, competitors might have to rely on candlelight! Depending on the competition style, products will be judged by professionals from the work force. This black-out competition could become an ongoing tradition, and winners would be more and more incentivized to compete for the prestige." This concept will be expanded to tap into student diversity in creative expression by collaborating with the Tech Arts Initiative (see Appendix B for details).

Benefits: This tradition will create a strong campus culture and its "homecoming" nature will create a life-long *Jackets for a Sustainable Future* community with all its attendant benefits (future mentorship of students, stronger community and industry connections, and long-term philanthropy). Through the robust communication effort we propose, this effort will be highly visible in the press and bolster the branding of Georgia Tech as an innovative educational leader. Finally, it will create an environment where more students are intrigued about sustainability and are more receptive to learning and contributing.

2. **Foundational integrative course**: The *pedagogical objective* is to give students frameworks and strategies for managing complexity and for developing a systems perspective. The *reach objective* is to reach all students. We are aware that this is bold, but it is essential transforming our approach to teaching sustainability, to the key learning objectives (K1, S) of this QEP, and the foundation upon which the Sustainability Pathways (pillars 3 and 4 below) will be built.
   Approach: If we were designing our curriculum from scratch, this would be a course that has 3-credit content on Planet (EaS), People (IAC) and Profit (COB). It would then have a 1-credit integrative component that analyzes the intersections and trade-offs among those elements, and guides students through analyzing 2-3 sustainability problems from a systems perspective. We have a number of ideas about ways to achieve our objectives within current constraints, and they will need further refinement and consultation with the curriculum committee: (i) Develop off-line required content for the 3P elements, and have a 1-credit "lab" co-facilitated by instructors and TAs drawn from seniors at the end of a Sustainability Thread (see below). (ii) Create an S-section for the Introduction to Planetary Sciences course and have students co-register for an integrative course. (iii) Offer off-line content followed by a 3-day sustainability camp/teach-in before the start of each fall semester, culminating in the Sustain-a-Thon. (iv) Use core LLC classes for critical thinking about sustainability issues. Similar to the ethics requirement, a number of such carefully chosen integrative elements could be tracked in DegreeWorks to satisfy this foundational sustainability requirement.
   Benefits: This requirement will be the foundation for sustainability to truly become a substrate for every student's learning experience. It will serve as the key course that imparts basic knowledge (K1) and integrative systems analysis (S). It will sensitize and prepare the students to be more purposeful in integrating sustainability into their course of study.

3. **Sustainability Pathways**: The *objective* of this pillar is to leverage the multitude of existing courses for more coherent and purposeful student career preparation.
   Approach: We will review the 350+ courses compiled by the Office of Environmental Stewardship for subject content and skills outcomes, and filter them through criteria we develop for an S designation in Banner. We will then develop "Sustainability Pathways" that identify courses, work experiences, and student leadership opportunities aligned with different majors/career choices. We will make this information available to the students via a web portal built on an interactive database (integrated with Banner and the Career Database) and inform career advisors. This will not be a formal pathway showing on the transcript: The logic here is that a formal designation (certificate/minor) is not necessarily needed to develop a "personal brand" that enhances marketability. In addition, formal pathways such as the Energy Systems minor will be prominently featured on this web portal.
   Benefits: This approach will empower our students: For example, ISyE students aiming for a supply chain job but wanting to position themselves as fluent in "greening the supply chain" may take the Energy and Environmental Analysis elective in ISyE, the Sustainable Business Consulting Project course in COB as a free elective, and an S-internship and an ISyE S-capstone sourced from UPS. This

approach will also reveal places to strategically add courses and/or to undertake deep infusion into existing courses to bolster the most important Pathways. These particular pathways could then be turned into certificates or minors culminating in an integrative capstone/project. Finally, this infrastructure will make it easier for interested students to utilize the X-degree as an S-degree.

4. **Pathway to Innovating for a Sustainable Future**: This pillar proposes to leverage Georgia Tech's extensive investments in undergraduate innovation and create a flagship Innovation Pathway for positive environmental and social impact (G2). A *pedagogical objective* specific to students in this pathway will be to equip them to do a high-quality triple-bottom line, multi-stakeholder analysis (K2).
   Approach: We will not reinvent the wheel, but rather tap into complementary assets at Georgia Tech (in particular, the GT Innovation and Design Collaborative and the new Strategy/Consulting concentration in COB that focuses on strategic entrepreneurship, complementary assets theory, etc.). The course of study will consist of three touchpoints: user research, a design class, an implementation class. It will leverage existing courses in different Colleges that support each category, with some additional investment where warranted. We will focus on rotating grand challenges such as water reclamation, solar power, renewable energy, extreme affordability, etc., that define an S-section in the design and implementation classes. We will supplement the instruction with context knowledge connected to those themes and emerging paradigms in social impact investing. We will promote involvement from IAC, ISyE, and COB with an increased focus on policy innovation and business model innovation, and promote co-teaching between IDC-affiliated faculty and these Colleges.
   Benefits: This initiative draws on and repurposes Georgia Tech's strengths into broader environmental and societal impact potential via student venture creation. Each year, the Ideas2Serve competition attracts many students interested in making a difference. This pathway will concentrate those students in S-sections organized around a given theme that has the potential to be funded by industry sponsors (e.g. Coca Cola for water) and richer, more cohesive user discovery, design and implementation experiences that increase the chance of successful venture creation.

5. **Integration into the Co-Curricular Space, experiential courses and research experiences**: The *objective* of this pillar is to make sustainability relevant and contextual for our students.
   Approach: Capstone projects, the VIP program, design studios, co-ops, internships, service learning courses, and international experiences have a lot of potential in this regard. We will develop a network of industry, NGO and government contacts to identify sustainability-related opportunities adapted to different majors and career paths. We will attempt to create opportunities at every scale so students can come in where they are comfortable (a Smart Campus initiative project at one end of the scale and an international internship with a sustainable development goal at the other). We will log these S-opportunities into data management structures already in place (e.g., Center for Career Discovery and Development) and under development (e.g., design and capstone portals overseen by Wayne Li and Amit Jariwala). We will coordinate with Student Organizations so they are key partners in development and implementation.
   Benefits: Hands-on experiences cement concepts learned in class, help students develop communication, problem solving, stakeholder management skills, and make them more marketable.

We note the success of this QEP relies on the mutually reinforcing dynamics among these pillars.

Supporting Infrastructure/Partnerships

1. The Writing and Communication Program and the School of Literature, Media, and Communication propose innovative involvement (please see Appendix C for program elements; these are either

directly aligned with or support the above five pillars). Noteworthy is the proposal to partner with OIT and the Library's Digital Curation Department to create an Institute-wide encyclopedia and archive of student projects to codify a common "lingua franca" on our campus about sustainability, in direct support of the culture objective.

2. A consortium of industry, NGOs, government entities and foundations that support specific sustainability themes and educational elements via expertise, articulation of problems they face, internship & co-op opportunities, and funding.
3. A physical Sustainability Space or "hub" that is cool/hip (student wording), potentially student run, used for collaborative student work, and the location for sustainability-focused job fairs, case competitions, poster competitions, sustainability-focused student organization kiosks, etc. Ideally, this location would also function as the sustainability living and learning housing.
4. An interactive database feeding a web portal for operationalizing Sustainability Pathways.
5. A robust dissemination and communications effort to ensure this initiative has broader educational impact and enhances Georgia Tech's visibility.

Appendix D illustrates how these pillars and supporting infrastructure collectively support QEP goals.

How will this QEP enhance undergraduate learning outcomes? Understanding sustainability is important in its own right. Innovating for sustainability positions our graduates to compete in the green economy. Sustainability is also a uniquely suitable vehicle to cultivate skills that make our students better people and more marketable graduates: Sustainability problems are interconnected and complex, require a long view, and are interdisciplinary. They are relative: sustainability in Buckhead means something different from sustainability in Bolivia. They are multi-stakeholder: resolving sustainability issues often requires mediation, compromise, consensus building, and nuanced communication abilities. Therefore, an education in sustainability-related problems is an opportunity for our students to be critical thinkers, good communicators, effective team members, and capable leaders. For our Engineering students, this QEP will directly support the ABET criteria (c) , (d) and (h) focusing on designing with respect to social, environmental, and sustainability constraints, the ability to function on multidisciplinary teams, and the broad education necessary to understand the global, economic, environmental, and societal context.

Program Evaluation and Student Assessment. The different programmatic elements and the evolution of the campus culture lend themselves to various evaluation mechanisms in how we are progressing towards our culture and guidance goals. The student assessment will focus primarily on fundamental knowledge, multi-stakeholder and systems analysis skills measuring our progress towards Knowledge and Skills goals articulated above. Please see Appendix E for more details.

Is this white paper the result of a broad-based faculty consultation process? Yes. We reached out to faculty from all colleges, administrators, program coordinators, and students. Eighty individuals indicated an interest; 40 attended four brainstorming sessions (one for student input). We aggregated the ideas generated and created an editable, shared GoogleDoc. Approximately 30 individuals participated in a distributed, collaborative, and iterative refinement phase via the shared GoogleDoc, which coalesced into the five pillars presented here. The process yielded a series of **Jackets for Sustainability QEP Principles (Appendix F)** to which we will adhere. In addition to the Academic Advisory Board and the Educational Advisory Board, we will constitute an External Advisory Board (Fortune 500 CSOs, local and regional civic leaders, and NGOs). We are confident of being able to form a strong External Board; we will reach out to them only if this proposal goes forward. Thanks for your consideration.

Appendix A: Contributors

Faculty

College of Architecture

Nancey Green Leigh, Professor, School of City and Regional Planning
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Luis Valles, Undergraduate Student, Mechanical Engineering

Appendix B: Partnering with the Tech Arts Initiative

TechArts is an initiative designed to enhance the experience of the Georgia Tech community by surrounding it with a culture of creativity and innovation across all the disciplines on campus and by providing opportunities for active engagement in artistic, creative and expressive processes. The goals of the initiative include (1) exposing GT undergraduate and graduate students to the possible deep interactions between art and technology, (2) enhancing the creative elements of all curricula through engagement in expressive and artistic activity, (3) expanding Georgia Tech's research opportunities in expressive and media technologies, and (4) strengthening the connections between GT and the arts community.

TechArts is aimed to connect the Georgia Tech community to the world of arts, music, design and creativity. This is done not only in pursuit of producing a deeper, more intellectually enriched, and creatively experienced student body but also in an effort to engage students in current cultural and societal challenges, such as sustainability, commonly addressed by artistic endeavors. Embedding TechArts initiatives into the Jackets for a Sustainable Future QEP would allow students to bring their artistic creativity and innovation to address sustainability challenges in a manner that would complement and enhance pure technical approaches.

As part of the Sustainability QEP, we propose to start a "Create-o-thon" tradition, where students and the community would get engaged in immersive, hands-on event addressing sustainability. Participants could, for example, be challenged to use only sustainable resources in a limited time to create sculptures that would be judged by leading artists and installed around campus, or work on the visual design of technical innovations addressing sustainability. Similarly to the Guthman Musical Instrument competition, which helped position Georgia Tech as an international leader in combining music, design, engineering, we propose that the Sustainability Create-o-thon could help position Georgia Tech as a leader in sustainable practices in the arts, an emerging movement (see, for example http://www.sustainablepractice.org/ and a recent public performance piece in Miami highlighting the potential impact of sea-level rise http://www.sustainablepractice.org/2013/12/01/highwaterline-miami/).

Appendix C: Sustainability and Communication

The Writing and Communication Program and the School of Literature, Media, and Communication propose innovative involvement with follow up that includes the scholarship of teaching and learning (SOTL) or mixed methodology research. We propose five distinct categories of work: (1) Partner with Georgia Tech's Academic Transition Programs to incorporate sustainability into GT1000 and the First-Year Reading Program. (2) Incorporate sustainability into our GenEd courses as well as selected upper-level courses using three models, as appropriate: special topics, service-leaning/client-based courses, and linked courses using an academic learning community model. (3) Share Writing and Communication Program's common rubric to ease assessment/ evaluation for student, faculty, and community communication related to sustainability across campus. (4) Share common resources across campus, including *WOVENText* (the Writing and Communication Program's revisable and sustainable communication reference and handbook with sections about written, oral, visual, electronic, and nonverbal communication). Partner with OIT and the library to create a new resource to codify discussions across campus about sustainability and archive excellent work. Use the Institute's Communication Center to provide support for students working on sustainability projects involving written, oral, visual, electronic, and nonverbal communication. (5) Conduct a study about communication practices related to one aspect of the sustainability project.

These categories are explored in more detail in the following table.

Communication Category	Program or Partnership	Reach
1.0 Transition Projects		
Academic Transition	Partner with Georgia Tech's Academic Transition Programs to incorporate sustainability into GT1000 and the First-Year Reading Program.	Engage ~4,000 first-year students every year.
2.0 Classroom Projects		
Core GenEd courses	Focus special topics sections of English 1101 and English 1102 on various aspects of sustainability (e.g., food, technology, ecosystems, natural systems, transportation, etc.); follow up with student exhibitions of their work as well as faculty presentations and publications.	Engage 32 sections a year, ~800 under-graduate students every year.
Service-learning and/or client-based courses	Create service-learning or client-based sections of English 1101, English 1102, LCC 3401, LCC, 3402, and/or LCC 3403 that focus on campus or community sustainability projects; follow up with student exhibitions of their work as well as faculty presentations and publications.	Engage 6 sections a year, ~150 undergraduate students every year.
Linked courses (using academic learning community model)	Link sections of English 1101, English 1102, LCC 3401, LCC, 3402, and/or LCC 3403 with other disciplinary sections, using common sustainability projects and common assessment; link at least two and up to four disciplinary areas (using an academic learning community model); follow up with student exhibitions of their work as well as faculty presentations and publications.	Engage up to 6 sections a year, with up to 150 undergraduate students every year.
3.0 Common Assessment Project		
Common communication assessment	Share Writing and Communication Program's rubric to ease assessment/ evaluation for student, faculty, and community communication related to sustainability.	Engage entire Georgia Tech community needing to assess written, oral, and visual projects.

4.0 Common Resources Projects		
Common communication reference and handbook	Use Writing and Communication Program's extending ebook, *WOVENText*, with sections about written, oral, visual, electronic, and nonverbal communication to provide a revisable and sustainable communication reference and handbook.	Engage ~4,000 first-year students every year. All first-year students have 5-year access to *WOVENText*.
Common encyclopedia, and/or archive	Partner with OIT and the Library to create Institute-wide encyclopedia and archive to codify a common lingua franca on our campus about sustainability. Include a repository that allows for crowdsourcing as well as more conventional information. Link each entry to specific projects on campus (and beyond). Storify selected projects in social media and link them back to the "encyclopedia." Encourage faculty and students to use the "encyclopedia" and enhance it via their own projects and classes. Follow up with faculty presentations and publications.	Engage entire Georgia Tech community.
Communication Center	Use the Institute's Communication Center to provide support for students working on sustainability projects involving written, oral, visual, electronic, and nonverbal communication. The Communication Center can provide tutorial services specifically geared to this project, with tutors who have specialized knowledge and dedicated availability.	Engage entire Georgia Tech student community.
5.0 Communication Research Projects		
Communication research projects	Conduct study of communication practices of one aspect of the sustainability project and follow up with professional presentations and publications.	Engage one sustainability project for in-depth analysis.

Appendix D: Relationship of QEP Goals to Pillars and Supporting Infrastructure

QEP Goals	QEP Pillars					Supporting Infrastructure				
	Sustain-a-Thon	Foundational integrative courses	Sustainability pathways	Innovating for a Sustainable Future	Integration	LMC collaboration	Physical hub	Industry consortium	Interactive database and web portal	Communications effort
1. Campus Culture (C)	X				X	X	X			X
2. Foundational knowledge (K1)		X			X		X			
3. Coordinated guidance (G1)			X	X					X	
4. Innovating for a sustainable future (K2, G2)				X			X	X		
5. Become better systems thinkers and leaders in multi-stakeholder situations (S)	X	X	X	X	X	X		X		

Appendix E: Program Evaluation and Student Assessment

Program Evaluation

Pillar: Sustain-a-thon

The effectiveness of this pillar can be measured by the number of current students participating, the number of alumni returning to campus, and the number of collaborating community partners.

Pillar: Foundational integrative courses

This pillar will be measured according to how many students are enrolling in the core sustainability class.

Pillar: Sustainability pathways

Many tools have been developed to evaluate the integration of sustainability into higher education curriculum. For example, we could consider adapting the "Sustainability Tool for Assessing UNiversities' Curricula Holistically (STAUNCH)." See Watson, Lozano et al. (2013) for an application of the STAUNCH assessment tool to the CEE curriculum at Georgia Tech.

The accessibility of the pathways will be measured by tracking the number of students expressing formal interest in the pathways, as well as site traffic on the interactive database site. The number of students pursuing a sustainability pathway will be one measure of the success of the program, as well as the number of courses and sections offered to construct a sustainability pathway.

Pillar: Flagship Pathway "Innovating for Sustainability"

The effectiveness of this specific pathway can be measured according to the number of startups generated by students affiliated with the pathway, as well as the number of pathway projects commissioned by companies, NGOs, civic organizations, etc.

*Pillar***: *Integration***

In the curricular space, we can apply the STAUNCH tool identified above. In addition, we can consider using surveys to assess stakeholder perceptions of sustainability education. Again, see Watson, Lozano et al. (2013) for an example in which two different surveys were used to assess student perceptions of how effectively sustainability is integrated into Georgia Tech's CEE curriculum.

In the co-curricular space, we can track the number of students working in sustainability-related co-op and internship positions, the number of students engaging in sustainability-related service learning opportunities, and the number of undergraduate research projects relating to sustainability in the UROP and VIP programs.

Additional QEP program evaluation categories

Culture: The extent to which our collective initiatives have enhanced Georgia Tech's culture of sustainability will be measured by counting the number of sustainability-related student organizations and events and the number of student members participating in those organizations and events. Furthermore, we can measure the effectiveness of the organizations and events: Are more students entering competitions or participating in workshops? Is there more exposure in traditional or social sources of

media? Are organizations attracting more funding? It is also appropriate to consider an ethnographic study to evaluate campus culture.

Student marketability: The effectiveness of our collective pillars in creating value toward students' future careers will be measured by partnering with the Center for Career Discovery and Development to administer surveys to multiple stakeholder groups including current students, recruiters, and alumni.

Student Assessment.

Student assessment will focus on the following knowledge and skill objectives:

- (K1) All our students will be knowledgeable about the scientific, economic and social basis for sustainability challenges.
- (K2) Our students will be empowered to pursue innovation and entrepreneurship for positive environmental and social impact.
- (S) Our students will become better system thinkers and effective leaders in complex, interdisciplinary, multi-stakeholder settings.

Key guiding questions in developing the assessment will be:

- Have students acquired fundamental knowledge regarding the social, environmental, and economic aspects of sustainability?
- Are students able to choose or create an appropriate framework to evaluate a complex, integrated system?
- Are students able to perform a high quality triple bottom line and multi-stakeholder analysis?
- Are students able to identify complementary assets necessary to mobilize in bringing their product or business innovation to market?

References

Watson, M. K., et al. (2013). Assessing curricula contribution to sustainability more holistically: Experiences from the integration of curricula assessment and students' perceptions at the Georgia Institute of Technology. Journal of Cleaner Production **61**(0): 106-116.

Appendix F: Jackets for a Sustainable Future QEP Principles

- Keep it simple (clear leadership, accountability & responsibility).
- Maximize reach (30-50% of the student body as base target, growing over time).
- Do it early (e.g. immersion activity for all students, core course exposure).
- Create a common language, a campus tradition ("lingua franca", "blackout conditions").
- Emphasize communication/creativity ("sustain-a-thon")
- Make it pervasive ("my fraternity sister/brother, roommate, classmate, teammate is involved").
- Broaden perspective/increase empathy ("sustainability in Buckhead vs. sustainability in Bolivia").
- Create shared experiences and a campus tradition ("2014 cohort is the water cohort". "Wonderful Wednesdays/Sustainable Sundays").
- Empower the student ("Sustainability Pathways").
- Make it cool/desirable (prizes, visibility)
- Make it real/relevant/contextual (internships, co-ops, capstones)
- Build in different scales (campus-to-global scale opportunities, where the student comes in where they are comfortable).
- Create growth paths (simple to complex, small-scale to large scale, invention-to-realization).

TO: ALL UGA FACULTY
FROM: OFFICE OF SUSTAINABILITY
SUBJECT: FACULTY WORKSHOP: INTEGRATING SUSTAINABILITY INTO CURRICULA – CALL FOR APPLICATIONS

UGA faculty from all disciplines are invited to participate in the third annual faculty development workshop focused on integrating sustainability into the curriculum on May 13 and 14, 2014.

The workshop will provide inspiration, strategies, and examples for engaging students to prepare them to address the challenges of sustainability in their professional, civic, and personal lives regardless of discipline.

Workshop sessions include cross-disciplinary interactions, definitions and examples of sustainability, large and small group discussions, development of learning outcomes, ideas for student engagement, and tours of on-campus sustainability sites.

$500 faculty development awards are available for up to 20 participants who attend the workshop and submit a revised or new syllabus to incorporate sustainability. Proposals are accepted from all current UGA faculty. Applications and additional details are available on the Workshops page of the Office of Sustainability website.

Key Dates & Deadlines:

Application Deadline – March 28, 2014
Notification of Selection – April 11, 2014
Faculty Workshop – May 13 – 14, 2014, UGA Founders House and Garden
Revised Syllabus Submission – August 15, 2014

This workshop is coordinated and run by the Committee for the Integration of Sustainability across the Curriculum administered by the UGA Office of Sustainability with support from the Odum School of Ecology, the Center for Teaching and Learning and the Office of the Vice President for Instruction.

Need more information? Contact the Office of Sustainability at sustain@uga.edu or 706-542-1301.

Brook Byers Institute for Sustainable Systems

Vertical Integration of Research, and Technical, Undergraduate and graduate Education for Sustainability (VIRTUES)

2/24/2014

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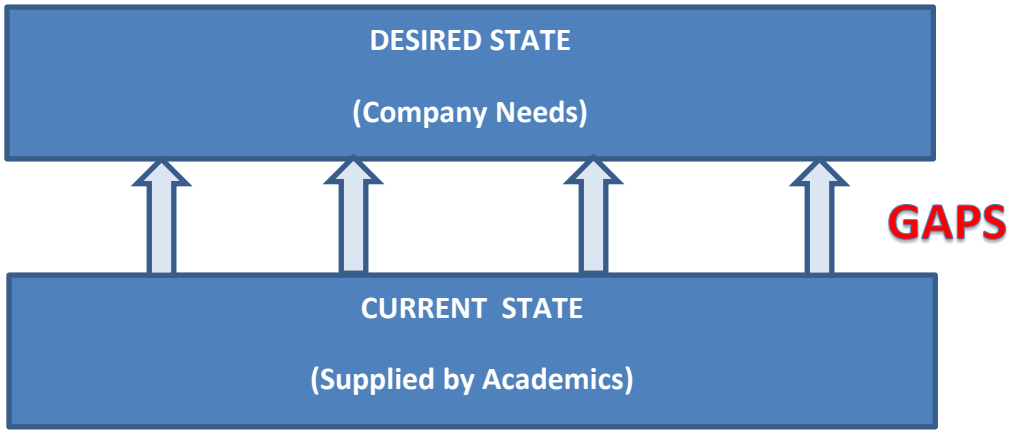
Vertical Integration of Research, and Technical, Undergraduate and graduate Education for Sustainability (VIRTUES)

VIRTUES Project

The VIRTUES project is composed of two focuses: (1) a focus on the skill sets needed by Georgia companies to better foster sustainability collaboration and (2) a focus on what Georgia education systems are providing. Upon collection of this data, a gap analysis will reveal the areas for which solutions need to be defined.



Company Needs

To assess company needs the team conducted an initial survey of companies and upon completion of the surveys, they conducted a follow-up workshop with roughly 30 attendees.

Company Survey Demographics

The survey was randomly sent to 196 companies across the state. Valid responses were received from 141 of the respondents, and these 141 responses are the basis for the analysis included in this paper.

The responses were evaluated for size of company, urban or rural, and whether they were a public or privately-owned company. This breakdown provides a perspective of the makeup of the companies who participated in the survey, and may be used to further refine survey responses.

Public vs. Private:	26% public; 74% private
Rural vs. Urban:	48% rural; 50% metro

Size of company: 45% “less than 10 employees”; 52% “10 to 99 employees”; 38% “100 to 999 employees”, 4% “1000+ employees”

Company Survey Results and Conclusions

The following sections will take each survey question and draw conclusions from the results. Workshop feedback will also be included, as applicable.

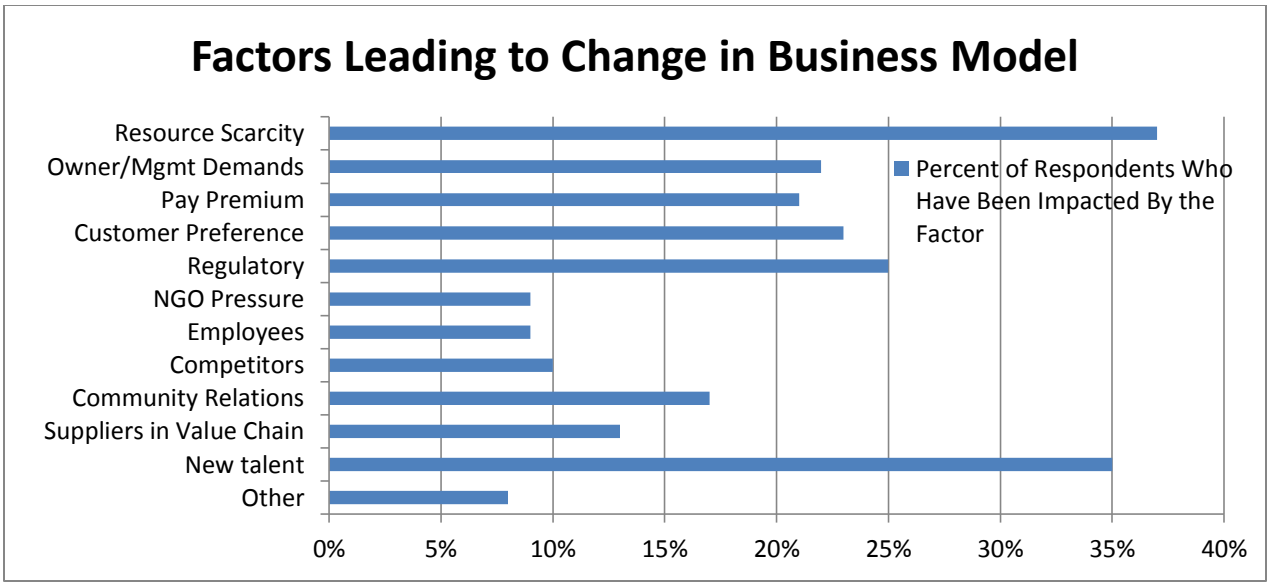
Questions 1 & 2:

The first two questions dealt with the demographics of the companies responding and have been discussed previously in this paper.

Question 3: Have any of the following factors led to changes in your business model? (Select all that apply)

Possible Responses:

- **Resource scarcity** (other than human resources - examples may include increased commodity prices and/or price volatility; restrictions on water use; or spikes in energy costs)
- **Owners’ / Management’s demands** for broader value creation (that is, more than profits)
- Customers willing (or unwilling) to **pay a premium** for “sustainable” or “green” products and services
- **Customers preferring** sustainable products, services, or practices
- **Legislative, regulatory, or political pressure** for more sustainable products, services, or practices (may be local, state, federal, or international)
- **Pressure from non-governmental organizations (NGOs)** to reduce the environmental or social costs of current business practices.
- Meeting demands or suggestions of **existing employees** for more sustainable products, services, or practices
- Increased pressure from **competitors** to “go green” or to reduce waste
- Maintaining **community relations** and a “license to operate”
- Stricter requirements from partners along **the value chain** (for example, meeting a retailer’s requirements for sustainability reporting)
- Competing for **new talent** and/or lack of skilled workforce
- Other



Q3 Conclusions:

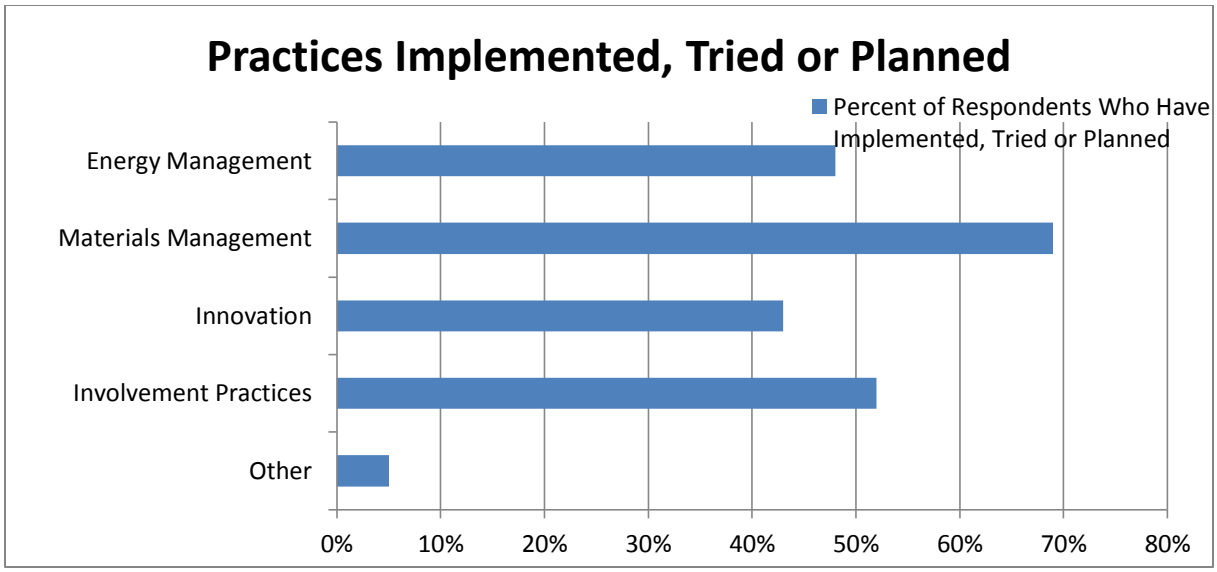
The two primary factors leading to changes in a company's business model are the scarcity of resources and the need to attract or retain talent. [It should be noted that among the few respondents with a company size greater than 1000, resource scarcity was generally not a factor.] However, no single factor impacted more than 38% of the respondents.

In the workshop, confirming comments were received around most of the driving factors listed in the survey. An additional economic factor was brought up in the workshop – cost savings and return on investment play a significant role in sustainability decisions.

Question 4: Which of the following practices has your organization implemented, tried to implement, or plans to implement in the near future? (Select all that apply)

Possible Responses:

- **Energy management** (for example, increasing energy efficiency, reducing greenhouse gas emissions, purchasing fuel efficient or alternative-fueled vehicles, or leasing green buildings)
- **Materials management** (for example, recycling, composting, reducing use of paper, reducing use of water, implementing green purchasing, or reducing packaging and material content, and reducing toxics)
- Sustainability related **innovation**, product development, or process design practices (for example, applying lean practices, focusing on sustainability inspired new product innovations, or green engineering and chemistry applications)
- Employee, stakeholder, or community **involvement practices** (includes supporting employees in community volunteering, involving employees in decision making, or reaching out to external stakeholders around sustainability issues)
- Other



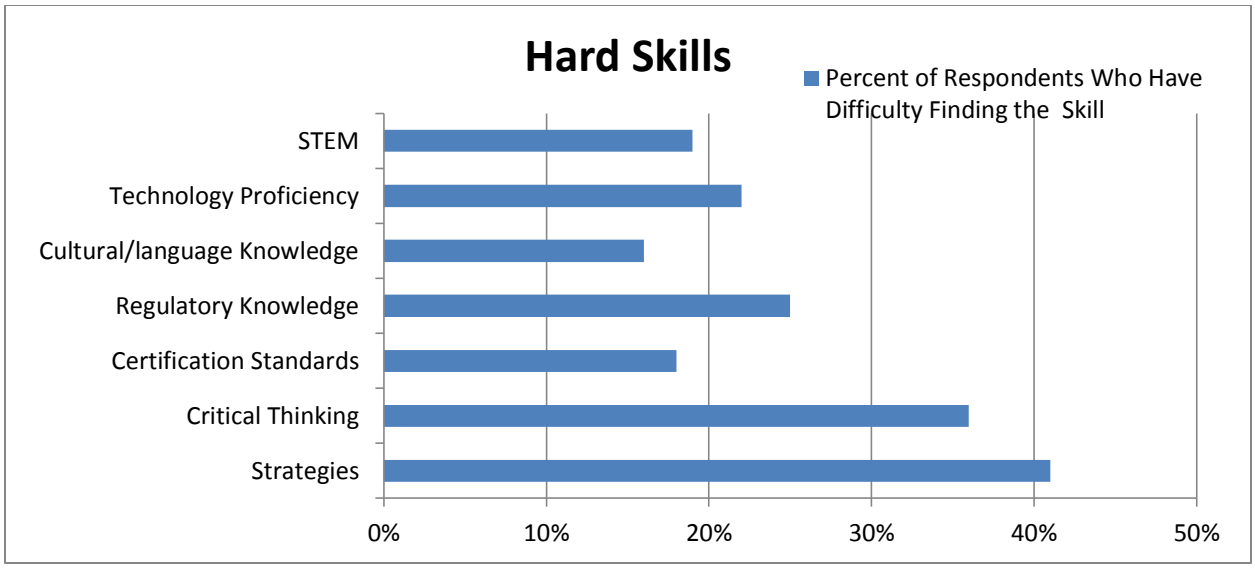
Q4 Conclusions:

There have been significant implementations, or at least attempted implementations, of all of the practices identified in the survey. However, materials management takes the lead with 69% of respondents having implemented a materials management process.

Question 5: Thinking about your workforce as a whole (for example, from top management to entry-level associate), what are the hard skills related to sustainability that your organization finds the most challenging to fulfill? Select all that apply and elaborate in the space provided.

Possible Responses:

- **Science, technology, engineering and math [STEM]** (for example, experience in conducting Life Cycle Assessments or energy audits; or knowledge about material toxicities)
- **Technological proficiency** (including skills like maintaining alternative fueled or hybrid vehicle fleets, green building practices, or operating computer aided design and manufacturing equipment)
- **Knowledge** about other **cultures**, customs, values, and languages
- **Knowledge** about **regulatory** rules and laws
- **Certification standards** (like ISO14001, LEED, Energy Star, GreenGuard, or many others)
- **Critical thinking** (including concepts like systems thinking, cradle-to-cradle, or lean manufacturing)
- Business and organizational **strategies** for sustainability



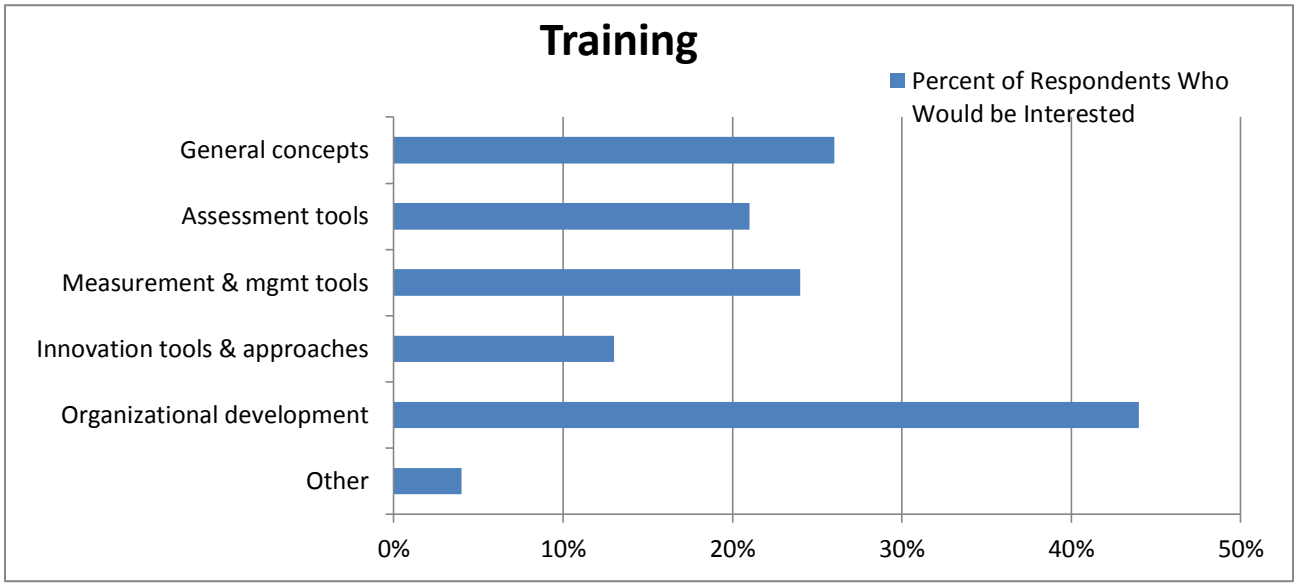
Q5 Conclusions:

The majority of listed hard skills garnered 25% or less in response to whether they were difficult to find. However, critical thinking and the ability to define/understand sustainability strategy were both deemed difficult skills to find.

Question 6: If it were available, my organization would be interested in training / advice / further information on (check all that apply).

Possible Responses:

- **General** sustainability **concepts**
- Sustainability **assessment tools** (for example, assessing environmental impacts, health risks, life-cycle impacts, environmental footprints, or social impacts)
- **Measurement and management tools** and software (for example, sustainability indicators, metrics, and indices, environmental or chemical management systems, or supply chain management)
- **Innovation and clean tech development tools and approaches** (for example, green chemistry, green engineering, design for sustainability, or biomimicry)
- **Organizational development** (for example, collaborative problem solving, ideation platforms, or creating a learning organization)
- Other



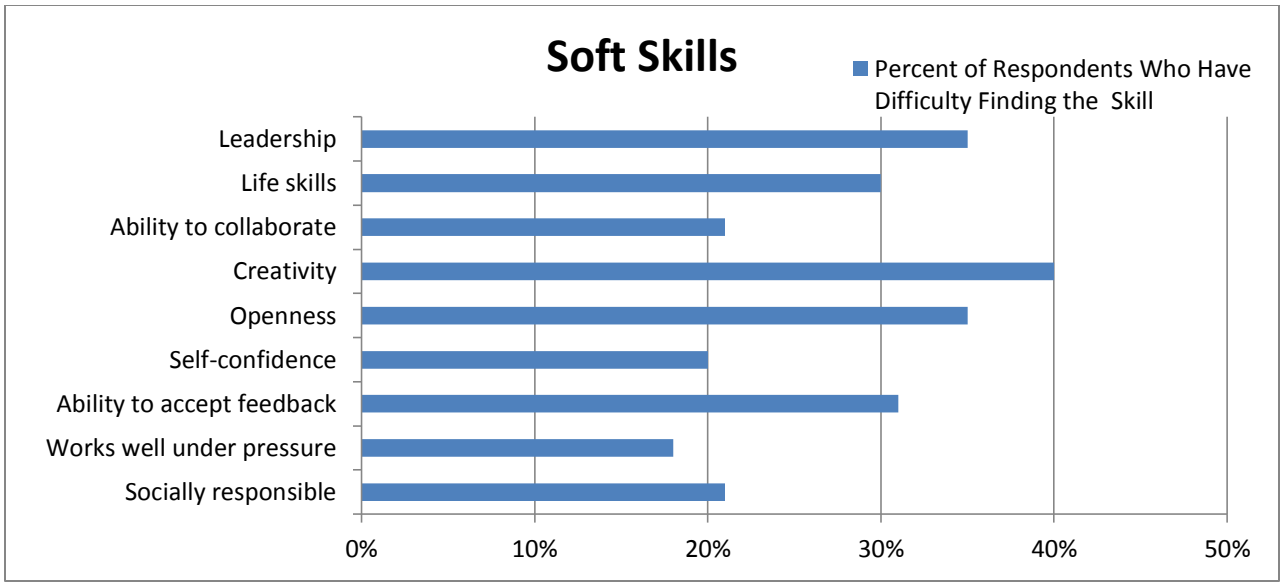
Q6 Conclusions:

The respondents were not generally interested in receiving training, other than in the area of organizational development.

Question 7: Thinking about your workforce as a whole again, what are the soft skills related to sustainability that your organization finds the most challenging to fulfill? Select all that apply.

Possible Responses:

- **Leadership** and team building; facilitation
- **Life skills**, such as negotiation, networking, collaboration, working with cultural diversity, and balancing work / life issues
- **Ability to collaborate** and co-create plans with multi-disciplinary experts in the organization
- **Creativity** in problem solving, inventiveness, and entrepreneurial spirit; "seeing the big picture"
- Positive attitude, **embracive of change**, and **openness** to experimentation
- **Self-confidence** and empowerment
- **Ability to accept** and process **constructive feedback** and adapt
- **Works well under pressure** or in times of uncertainty
- Sense of **social responsibility** and accountability; engages the community



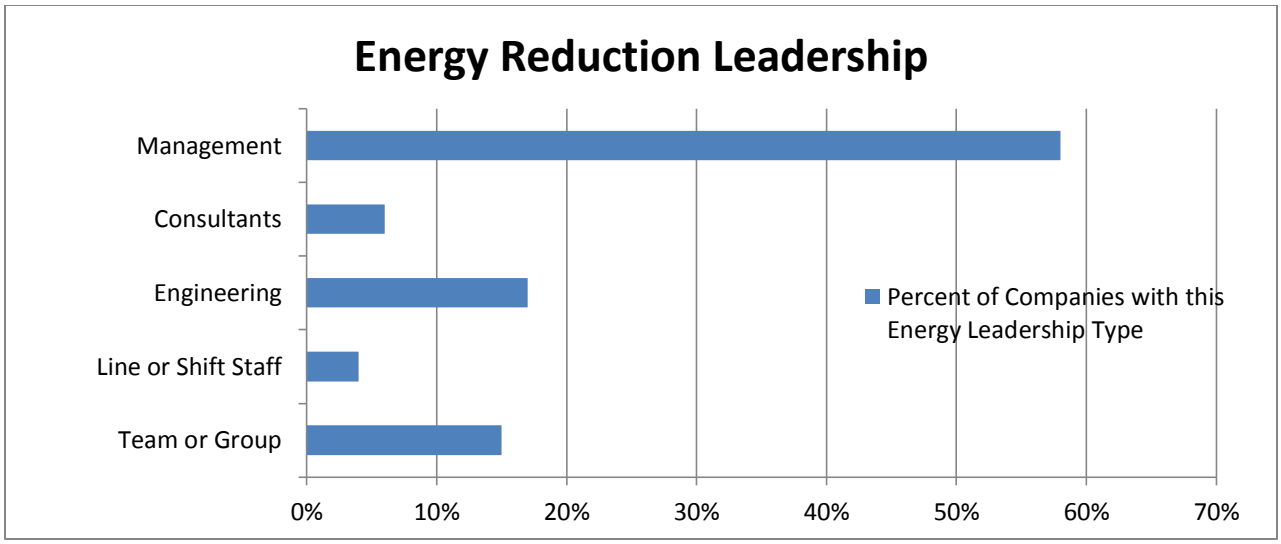
Q7 Conclusions:

From the workshop, we gathered that the "soft" skills are deemed more important than the "hard" skills. From the survey, we see that all of the soft skills received a respectable response. The highest rated needs (with respect to having difficulty finding the skill) among all of the soft skills were creativity (40%), openness (35%) and leadership (35%).

Question 8: Suppose your organization made a goal to reduce energy use at your facility by 25%. Who would most likely lead the effort?

Possible Responses:

- **Management** – they know the whole of the organization best and where the most cost effective opportunities are located
- Outside **consultants** – as a party without a vested interest, they can make the most fair and honest judgment
- **Engineering** and other technical staff – they have the scientific training and expertise needed to conduct the assessment
- **Line and shift** workers – they most closely work in the processes and activities that use energy and therefore, they are in the best position to understand where savings can be gained
- **Team, group**, or other



Q8 Conclusions:

Of the 106 companies who responded to this question, the overwhelming majority (58%) indicated that management would take the lead on energy reduction efforts. This seems to indicate a lack of capability or empowerment of the non-management employees. Additionally, only 4% of respondents would use outside consultants.

In the workshop session, one of the participants posed this explanation for the lack of leadership beyond management; "Management represents a larger percentage of sustainable initiatives because line workers and others may see no "economic" or "social" incentive to participate."

Question 9: This was an open-ended question, "Can you describe a real problem that was addressed by a team or group in your organization? What kinds of employees were members of the group? How was the group formed? Was there a clear leader? Was the outcome considered to be successful?"

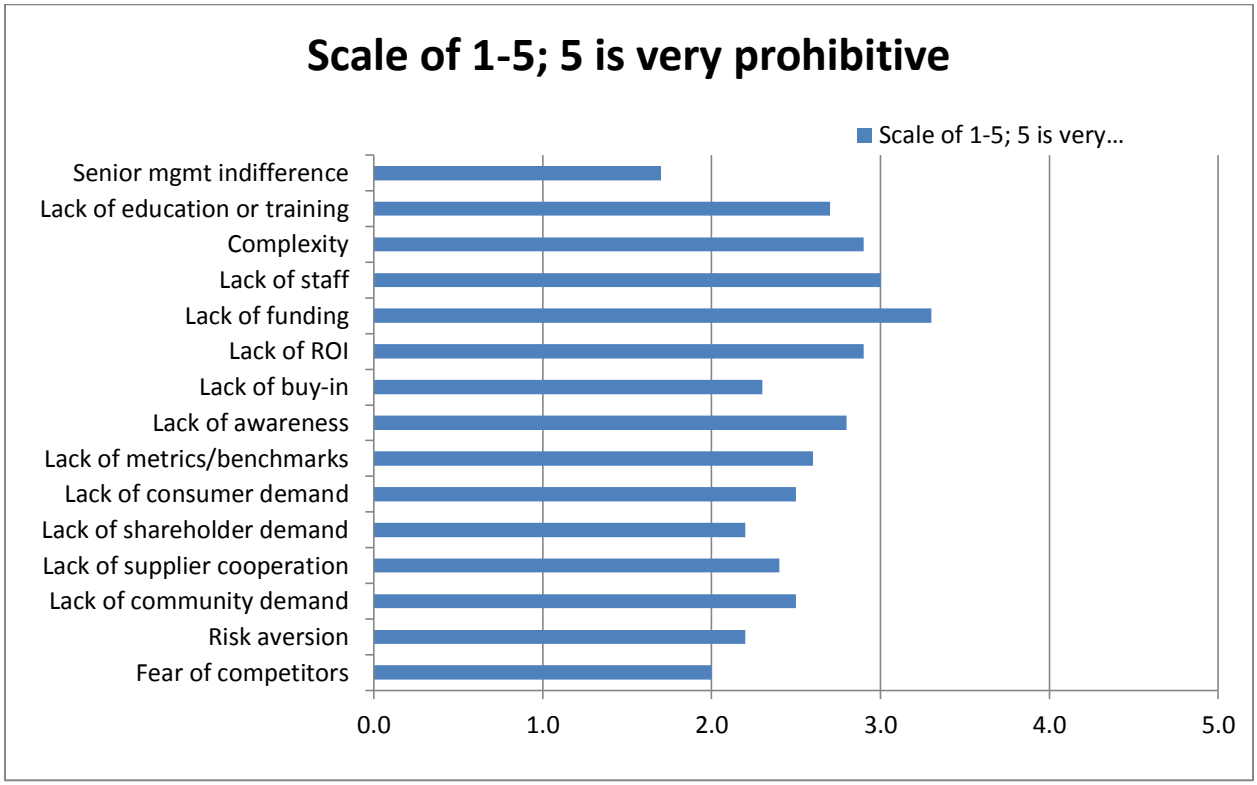
Thirty-one of the participants responded to this question. Responses can be found in Appendix A. The responses indicate that most sustainable projects were management-initiated, but involved members from many internal teams. There was a small subset of projects that were initiated for sustainability itself, but most were driven by other company needs (efficiency, savings, etc.).

Question 10: On a scale of 1 to 5, how significant are the following barriers as they relate to your organization developing and implementing sustainable strategies and practices? (1=not a barrier, 5=very prohibitive)

Barriers to be Rated:

- Senior management **indifference**
- **Lack of** adequate sustainability-related **education/training**

- **Complexity** of implementation
- **Lack of staff** to develop and implement
- Availability of **funds**/prioritization of funds
- **Lack of return** on investment (ROI)
- **Lack of buy-in** by managers and employees
- **Lack of awareness** and understanding
- **Lack of standardized metrics** or performance benchmarks
- **Lack of demand by consumers** and customers
- **Lack of demand from shareholders** and investors
- **Lack of cooperation** from suppliers
- **Lack of demand from the community**
- General **risk aversion**
- **Fear of competitors** taking advantage of us



Q10 Conclusions:

On the positive side, our respondents did not identify any "very prohibitive" barriers. And more than half (53%) of the barriers were rated 2.5 (moderately prohibitive) or less. The sustainability barriers that were rated more than 2.5 are:

- Lack of funds to develop and implement (3.3)
- Lack of staff to develop and implement (3.0)
- Complexity of implementation (2.9)

- Lack of identified return on investment (2.9)
- Lack of awareness and understanding (2.8)
- Lack of education or training (2.7)
- Lack of standardized metrics or performance benchmarks (2.6)

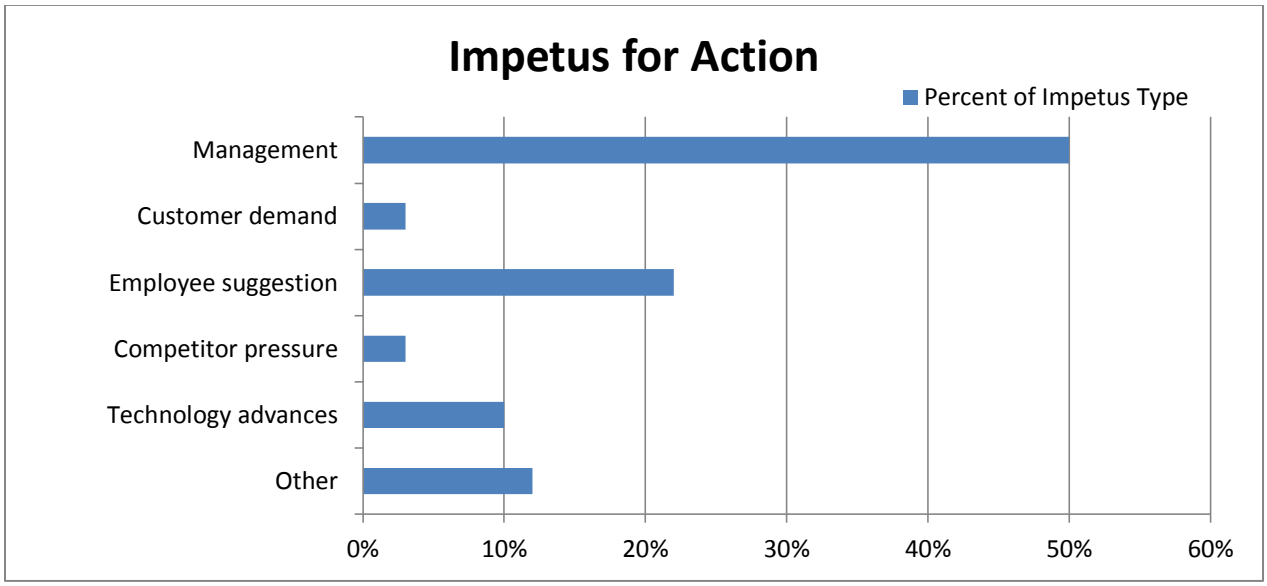
Question 11: This was an open-ended question, "No matter big or small, describe an action that someone took in your organization that resulted in a lasting and more sustainable outcome?"

Sixty participants responded to this question. Responses can be found in Appendix B. Quite a few of the responses were centered on recycling. There was also a significant focus on resource (energy, water) reduction and waste reduction. Only a couple of the responses were in the area of social sustainability.

Question 12: This question ties back to Question 11. Question 12 asks the respondent to identify the impetus for the action identified in Question 11. The possible choices were:

- Management directive
- Customer demand
- Employee suggestion
- Competitor or broader market pressure
- Advancements in technology
- Other

Seventy-two of the participants responded to this question, but we are only considering the responses from the 60 participants who also answered question 11.



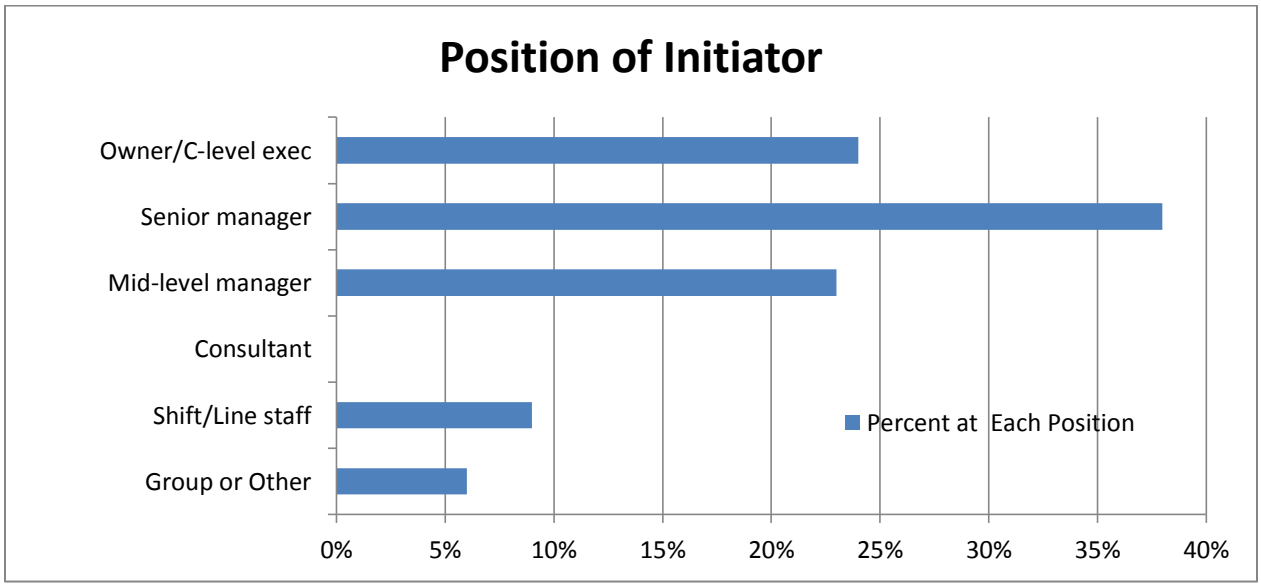
Q12 Conclusions:

The impetus for most action towards sustainability is management directive (50%). Employee suggestions account for the next most significant motivator towards sustainability at 22%.

Question 13: This question ties back to Question 11. Question 13 asks the respondent to identify the position of the employee or manager that initiated the action identified in Question 11. The possible choices were:

- Owner or C-level executive
- Senior manager
- Mid-level manager
- Consultant
- Shift / line employee
- Group of employees or other

Sixty-two of the participants responded to this question, but we are only considering the responses from the 60 participants who also answered question 11.



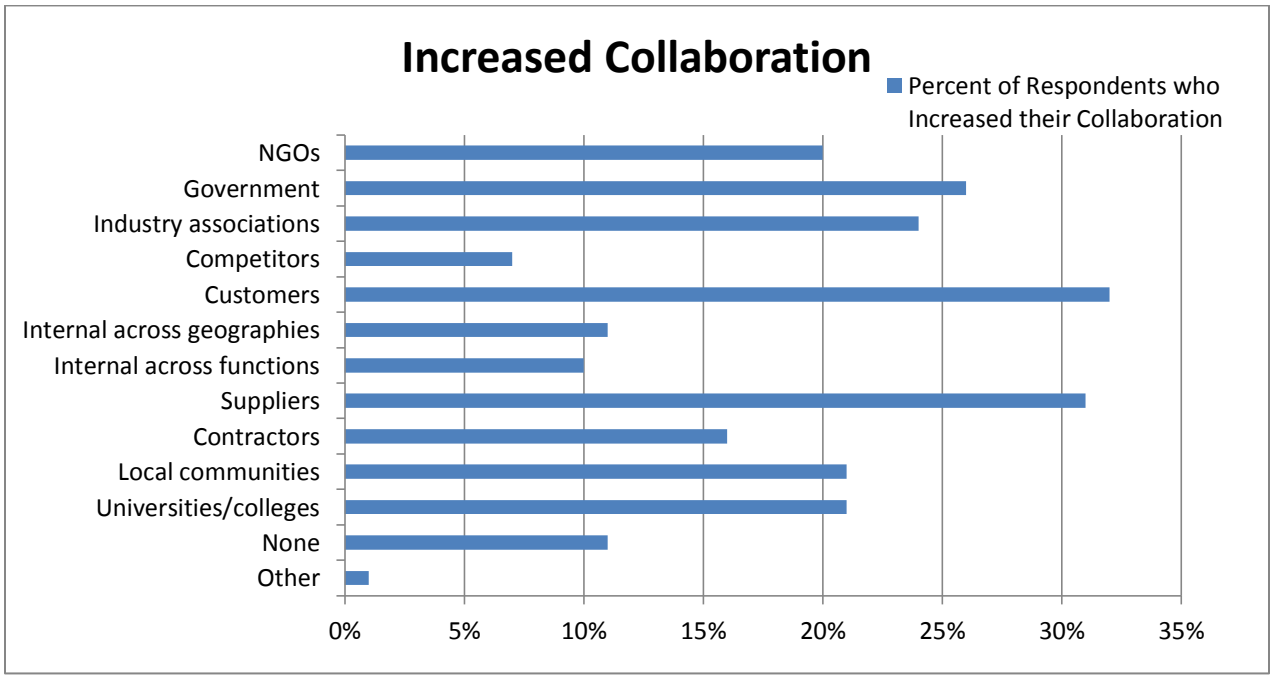
Q13 Conclusions:

Consistent with the responses to Question 12, the majority of initiators of sustainability-related change were those in management. This trended towards senior management resources, followed by a roughly equal number of owners (or c-level execs) and mid-level managers. Only 15% of initiators were staff below the management tiers.

Question 14: Has sustainability in any context caused your organization to increase its collaboration with any of the following? (Choose all that apply)

Possible Responses:

- Nongovernmental organizations **(NGOs)**, non-profits, and advocacy groups
- **Government** officials and policy makers
- Industry **associations**
- **Competitors**
- **Customers**
- **Internal** business units **across geographies**
- **Internal** business units **across functions**
- **Suppliers**
- **Contractors**
- Local **communities** and community groups
- **Universities**, colleges, technical colleges, or high schools
- No / none
- Other



Q14 Conclusions:

Sustainability has caused increased collaboration with external groups, predominately customers, suppliers and government agencies. These group collaborations are followed closely by company collaborations with NGOs, industry associations, local communities and other universities or colleges.

Workshop Conclusions

The VIRTUES workshop for employers and manufacturers was held in Savannah, GA on May 20, 2013. The workshop participants were presented the Company Survey results, followed by an open discussion session. There were forty organizations represented in the workshop.

The workshop feedback had several common themes:

- Soft skills are lacking in new hires coming into the work force directly upon graduation. Soft skills include, along with other things, the ability to communicate well, the ability to collaborate with others and openness to change.
- Colleges, universities and technical colleges should educate students on the *financial* value of sustainability, as well as the social and environmental values.
- Projects across different disciplines would better prepare pre-graduates to collaborate in the work force.

Appendix A: Responses to Question 9

Question: "Can you describe a real problem that was addressed by a team or group in your organization? What kinds of employees were members of the group? How was the group formed? Was there a clear leader? Was the outcome considered to be successful?"

Responses:

All groups are lead by the plant manager. Would perfer to see groups start on their own to solve problems. Most employees live with the problem and do not work to eliminate the problem.
Alternate fuel use requirements - Chief Engineer plus Administrative Services. Was a sub-group of our Environment of Care Committee. Cief Engineer was leader, venture was successful. We now have E85 fueling station.
As a start up operation we are doing this at the grass roots level but with strong facilitation.
Considering and then becoming a certified B-Corp. We had an account manager, a client, an executive, a community liaison and an admin sit down and discuss pros-cons-concepts. When we decided to embark on the task, we had to commit time and financial resources to the lengthy assessment. Yes, there was a clear leader; the executive, (owner) of the company.
Curriculum changes...specialized groups... curriculum leaders... Yes. Yes.
Dificult production issue. Management. Called upon. Me. Very the problem was thought thru, discussed and policy started.
Economic development projects for the City of Washington.
Energy efficiency on lighting was our problem. Through a group which included Management, Maintenance, Houseman, and Housekeeping, we were able to assertain what is needed to reduce energy in lighting and implement quickly through Team work and efficiency.
Finding outlets for wood waste that are sustainable. Addressed by engineering.
Food safety issues such as FDA compliance paperwork and audits. Affected management and general labor. CEO was the leader and delegated tasks but upper management ended up doing all the work. However, it was successful because it had to be for us to stay in business.
Graduation Rate
I am COO/VP and was the leader. Shop manager and shift worker were involved in developing a new jig, to replace an existing jig that was presenting various problems. We all shared ideas/opinions... In the end, I left the shop manager with the critical instructions I knew must be in place. The rest was up to him and the jig came out successful, producing consistent parts.
In our goal to divert materials resulting from production from the waste bin (hence landfill), we found no resources to take certain materials locally. We searched and partnered with local non-profits and community groups to take these items and repurpose them into community-benefit projects. This was a team effort inside & outside the company and is ongoing in development but successful already.
Just me and family members
Kaizen Events-we had over 50 this past year. The groups are led by Production Supervisors or Production operators.
Losing a very critical capital equipment and learning to adapt existing operational equipment, not necessarily designed to perform the same function, and start producing again. Team members included, management, lead operators, and experienced personnel in the factory.

Our energy teams are a good example. Employees at all levels of the company are challenged to participate. Divisional teams were chartered under the oversight of an operations/engineering/thechnical VP level team. All are fully acountable to Senior Management for progress. Results have been excellent and we believe they will continue to be.
Our products and services are all related to recycling, sustainability, and social responsibility. We integrated this stragtegy in the late 1990's. We are pulling our potential customers and investors in this direction with common sense and profitability in mind. As owner and CEO, I formulated the vision and strategy which has been borderline profitable.
Problem: Inefficient material (process) flow Team: Hourly associates, coordinators, assistant managers, managers, vice president Group was formed at the direction of senior management Manager was identified as leader, but senior managment took lead Overall project has not been successful
Procurement of energy efficient earth-moving equipment. Technical leadership worked long and hard with suppliers to consider and test options.
Quality issue with production process Quality , sales, operations manager, production staff Not enough informatin to determine clear leader - outcome was successful
Re. energy - production manager and CEO looked into reducing HVAC use without investing in leased building upgrades. We modified workday and rotate workstations to reduce heat buildup, and increased dust collection and filtration to improve airflow.
Reduction in water and, particularly, hot water consumption. Team effort involving operations and maintenance but led by maintenance.. Outcom was successful
Review of the production system for waste elimination - team consisted of engineering, quality, production, and sales personnel. The group was asked to participate by management, the meetings resulted in specific targeted actions, follow up is still ongoing.
safety, plant workers + supervisors + mgmt
upgrades/expansion in equipment capability The survey team was comprised by the President, an Operations Mgr, Lead Design Engineer, and a Production Mgr.
We had to produce 1000 full color programs for a local church. We had two color copiers, neither of which were capable of doing the job individually. The staff and I conferred and determined how to successfully produce the copies in the most efficient manner. We finished the job 36 hours ahead of deadline.
We have several standing teams that solve problems each week- maintenacne planning and EHS are two examples. EHS team is led by EHS manager, Maintenance planning is led by Maintenance planner.
We installed an HVAC complete building monitor. Employees involved were maintenance workers, EHS management, Controller, Ops Managment and Plant Management
We recently refreshed our vision statement and reviewed our game plan in light of the changed economic reality that is 2013. Our board was lead by a member who acted as facilitator. Staff was fully engaged and participated throughout the process. The result was a stellar success that should guide us for years into the future.
We will execute over 100 kaizen or lean events in 2013 ..... list YTD is very large. No Leader, but Facilitators trained to guide the process. Extremely successful outcomes .....

Appendix B: Responses to Question 11

Question: "No matter big or small, describe an action that someone took in your organization that resulted in a lasting and more sustainable outcome?"

Responses:

An employee took the initiative to launch a mixed recycling program at our site
Applying for ISO 9001 Certification in May.
Arranged for outlet to recycle PE strapping instead of land filling-- generated a small net positive cash flow.
began simple recycling effort by providing containers to collect recyclable material.
Budget Reconciliation
-Build/tested component parts from sustainable materials (ebony substitutes) -Modified work-schedule to 4x10hour to reduce energy use 5 days per week -Added filtration and increased air filter rotation to improved HVAC efficiency
building energy audits conducted
Company-wide recycling bins (in each office).
Creation of reuse producs for shipping effeciences & waste reduction (into our facilty and outgoing)
Curriculum changes
Cycle counting (key performance indicator) KPI
Development of mine plan to avoid offsite wastewater discharges and no mining in wetlands.
Diversification into industries that demand more sustainable products and services...pay us a premium for being green.
Economic sustainability was advanced when a board member took it upon himself to research new social networking opportunities. His ideas have had a positive impact and will shape our communications in the near term.
Educating our customer is our greatest challenge. By letting them know up front what we can or cannot do, we always channel their expectations into being reasonable.
Energy audits for the City of Washington.
Energy effecient lighting
Expansion to the East coast
Fundraising, community awareness
gained knowledge of new uses for products
Getting recycling bins placed in all break rooms on each floor in every city building and enuring that plastic, aluminum, and paper are properly recycled once placed in the bin.
greater use of technology as a teaching tool
I made a "drop pc" list for all the shortest sizes we use for each size of material. We reduced a huge amount of waste, and turned it into profit.
Implementation of more efficient lighting.
Implementation of Wellness Initiatives
Implementing an aggressive PM plan to prevent downtime.
Implementing recycling with all clients.
Intergovernmental water agreements to utilize sources of water and allow funding for new development.
Meeting are handle with a "environmentally conscious" manner...no paper.
no example
None
Not enough information due to time with the company

One very simple way we improved our efficiency was beginning to use our G-Force in our waste oil burner to help heat our products instead of burning diesel purchased from a third party. We instantly had a huge cost savings by using our own fuels!
Our recycling efforts
Recycling cardboard, plastic and metal
Recycling efforts at the office level
Recycling of both paper and metal - particularly from the machine shop
recycling of paper, more efficent lighting
Recycling of stainless steel, cardboard, pallets, used oil, etc
recycling scrap
Recycling start up product (sell the start up product to a recycling company instead of sending it to landfill. Pinch technology to reduce steam consumption. General energy saving study over 4 months time with involvement of all the workforce.
RECYLING PLASTIC CARDBOARD PAPER AND SCRAP METALS
Reducing water consumption.
reduction of cardboard use by convering to reusable plastic intermediate containers
Reduction of water waste by changing thaw process
Replacement of lighting system to improve output and save $.
Requiring all Chemical Operators to take the Georgia WorkReady Accessment. This has provided a more qualified candidate.
Reuse of junk paper for memo pad
Re-using the back of printed forms for scrap paper.
Safety manager acquired "Cactus" device to dispose of liquid hazardous waste.
setting target on use of recycled product across global business
Since we are still in a start up mode we have several actions taking place but they are all currently driven by Senior Staff. We are building the skills and abilities to have this trickle down to all levels of employees.
Sorting material that would go to landfill and finding recyclables.
Switching cleaning chemicals to green-certified brands.
Technological advances have been developed to create additional raw material supply for our processes.
Transfered production of a product directly to a customer site by building a plant on the customer's property
Upgrading our logistics methodology to reduce time, motion and expense.
Water kaizen event. Studied how much water was flowing and analyzed how much water was actually needed. Then dialed back the water flowing to the new standard. 50% savings was achieved.
We changed lighting in our warehouse and coolers to LED/reflective enhanced lighting to lower energy costs.
We recycle single stream materials in Dawson County at both places, and also only use ecofriendly to-go products (although both are costly to do).
Workmanscomp Safety Program

Data retrieved for:

Agnes Scott College,
Emory University,
the Georgia Institute of Technology, and
the University of Georgia

from the American Association for Sustainability in Higher Education's (AASHE) Sustainability Tracking, Assessment & Rating System (STARS) database.

May 2014

Curricular and Co-Curricular Information Reported to STARS by the University of Georgia

Characteristics	
Full-time Equivalent Enrollment	34,536
Number of Undergraduate Students	26,278
Number of Graduate Students	6,631
Full-time Equivalent Employees	9,385
Institution type	Doctorate
Institutional control	Public
Endowment size	580,000,000
Percentage of students that are Residential	28.0
Percentage of students that are Full-time commuter	72.0
Percentage of students that are Part-time commuter	100.0
Percentage of students that are On-line only	Not Available
Gross square feet of building space	16,200,848.0
Gross square feet of laboratory space	2,157,059.0
Acres of cultivated grounds	759.0
Acres of undeveloped land	Not Available
Climate region	Mixed-Humid

Campus Features

Feature	Is Present?	Is Included in Report
Agricultural School	Yes	Yes
Medical School	No	No
Pharmacy School	Yes	Yes
Public Health	Yes	Yes
Veterinary School	Yes	Yes
Satellite	Yes	No
Hospital	No	No
Farm	Yes (11,137.0 acres)	No
Agricultural experiment station	Yes (10,666 acres)	No

Co-Curricular Education 17.75 / 18.00

Credit	Status	Points
Student Sustainability Educators Program	Complete	5.00 / 5.00
Student Sustainability Outreach Campaign	Complete	5.00 / 5.00
Sustainability in New Student Orientation	Complete	2.00 / 2.00
Sustainability Outreach and Publications	Complete	4.00 / 4.00
Student Group	Complete	0.25 / 0.25
Organic Garden	Complete	0.25 / 0.25
Model Room in a Residence Hall	Complete	0.25 / 0.25
Themed Housing	Complete	0.25 / 0.25
Sustainable Enterprise	Complete	0.25 / 0.25
Sustainability Events	Complete	0.25 / 0.25
Outdoors Program	Complete	0.25 / 0.25
Themed Semester or Year	Not Pursuing	0.00 / 0.25

Curriculum 29.78 / 55.00

Credit	Status	Points
Sustainability Course Identification	Complete	3.00 / 3.00
Sustainability-Focused Courses	Complete	3.55 / 10.00
Sustainability-Related Courses	Complete	5.42 / 10.00
Sustainability Courses by Department	Complete	3.62 / 7.00
Sustainability Learning Outcomes	Complete	1.19 / 10.00
Undergraduate Program in Sustainability	Complete	4.00 / 4.00
Graduate Program in Sustainability	Complete	4.00 / 4.00
Sustainability Immersive Experience	Complete	2.00 / 2.00
Sustainability Literacy Assessment	Not Pursuing	0.00 / 2.00
Incentives for Developing Sustainability Courses	Complete	3.00 / 3.00

Detail Description of Programs (Co-curricular)

ER-1: Student Sustainability Educators Program
Complete 5.00 / 5.00 Kevin Kirsche, Director of Sustainability, Office of Sustainability
Total number of degree-seeking students enrolled at the institution: 34,536

Program name (1st program): UGA Housing Community Council EcoReps

Number of students served by the program to whom peer-to-peer sustainability outreach and education is offered (1st program): 7,562

A brief description of the program, including examples of peer-to-peer outreach activities (1st program): The EcoRep position is an addition to each building's community council executive board. The EcoReps are responsible for learning about current issues in sustainability and the environment, then educating those in their residence halls about those issues through active and passive programming and bulletin boards. The EcoReps also assist the rest of the community council executive board and general body in efforts to increase sustainability within their buildings.

A brief description of how the student educators are selected (1st program): Serves on the community council (council may choose how the position is filled):

- Elected: through general election process in the fall
- Appointed: by community council executive board/general body
- Volunteer: email sent out from RHD asking for volunteers from the community

A brief description of the formal training that the student educators receive (1st program): Benefits and Special Opportunities:

- Trip to Athens-Clarke County Recycling
- Opportunities to speak at classes/meetings
- Special guest speakers at bi-weekly meetings
- Trip to UGArden to help with harvesting
- Documentary viewing
- Leadership development

A brief description of the staff and/or other financial support the institution provides to the program (1st program): EcoReps meet monthly with the Doctoral Intern for Sustainability. These meetings include presentations from experts UGA faculty & staff as well as others in the community. Funding for EcoRep-planned activities are incorporated into Community Council budgets.

The website URL for 1st Program: http://housing.uga.edu/about/sustainability

Program name (2nd program): Office of Sustainability Student Internship Program

Number of students to whom peer-to-peer sustainability outreach and education is offered (2nd program): 34,536

A brief description of the program, including examples of peer-to-peer outreach activities (2nd program): The Office of Sustainability Student Internship Program (OSSIP) provides UGA students with opportunities for hands-on learning and professional development through meaningful engagement with the University of Georgia community. Prospective interns should be committed to practicing sustainability in their personal and professional lives and advancing a more Sustainable UGA. Opportunities are offered each semester in the form of unpaid, credit and paid internships. Specific and intentional peer-to-peer education and outreach occurs through most internship positions, as well as a requirement that each intern participate in a campus-wide sustainability event. Some of these activities include engaging with UGA freshmen in the Green Cup Challenge to reduce energy, water and waste; planning and participation in waste reduction activities through Recyclemania; organizing and educating peers through

multiple themed events during UGA Earth Week; engaging other students in hands-on watershed improvement efforts; etc.

A brief description of how the student educators are selected (2nd program): Internship positions are selected through an application and interview process. Selections are made by Office of Sustainability and other supervisory staff based on specific projects and skillsets needed.

A brief description of the formal training that the student educators receive (2nd program): Interns work closely with staff in the UGA Office of Sustainability and other relevant faculty and staff based on individual projects. The program involves a kick-off event, bi-weekly all-intern meetings, Semester in Review presentations, other relevant activities for each project and campus-wide events led by interns for broad peer engagement.

A brief description of the staff and/or other financial support the institution provides to the program (2nd program): Interns work closely with staff in the UGA Ofice of Sustainability and other relevant faculty and staff based on individual projects. The Office of Sustianability budgets for internship personnel costs (for paid interns; typically 3-5 paid students per semester), program costs to provide supplies and training for interns, and individual project budgets.

The website URL for 2nd program: http://sustainability.uga.edu/get-involved/students/internships/

ER-2: Student Sustainability Outreach Campaign
Complete 5.00 / 5.00 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution hold a campaign that meets the criteria for this credit?: Yes

The name of the campaign(s): Green Cup; Take Back the Tap; Every Watt Counts; Every Drop Counts; Recyclemania

A brief description of the campaign(s): "Green Cup": An energy, water, and waste reduction competition between the Hill Community Residence Halls, sponsored by the the UGA Parents and Families Foundation, UGA Office of Sustainability, UGA Housing, and the EcoFocus Film Festival. Residence halls receive points once per week for four weeks. These points reflect energy and water use as well as waste production compared to the three prior years' totals during the same time period and for the same residence hall. Points were assigned based on 1) most electricity saved, 2) least water used, 3) lowest recyclable content in waste percent 4) largest weight of recycled content and 5) most participation in contest events including the kickoff party, an ice cream pool party with eco-trivia, an outdoor film, and a final celebration.

"Take Back the Tap": A subsidiary of UGA's Go Green Alliance, "Take Back the Tap" is a student-run campaign focused on increasing consumer awareness of the consequences associated with disposable bottled water and changing the habits.

"Every Watt Counts": A campaign started in 2011 to encourage responsible energy use on the UGA campus. Signage around buildings and outreach campaigns help remind students to turn off lights, monitors, and other sources of electricity use while not in use and to unplug electrical appliances while not in use.

"Every Drop Counts": In 2007, UGA launched the "Every Drop Counts!" educational campaign to encourage the campus community to reduce its water use. This campaign was extremely effective in reducing water use through educational messages, signs and other outreach.

"RecycleMania" is a friendly competition and benchmarking tool for college and university recycling programs to promote waste reduction activities to their campus communities. Over an 8-week period each spring, colleges across the United States and Canada report the amount of recycling and trash collected each week and are in turn ranked in various categories based on who recycles the most on a per capita

basis, as well as which schools have the best recycling rate as a percentage of total waste and which schools generate the least amount of combined trash and recycling. With each week's updated ranking, participating schools follow their performance against other colleges and use the results to rally their campus to reduce and recycle more.

A brief description of the measured positive impact(s) of the campaign(s): Green Cup:
In 2010, Hill Hall was the winner, conserving 5.2% of its electricity compared to three prior years' usages, using only 28.91 gallons of water per student per day, and including only 26.43% recyclable content in their average waste.

In 2011, the Green Cup went to Hill Hall who saw a 19% reduction in energy use, 29 gallons of water per student per day, and only 14% of the items in their waste stream that could have been recycled.

In 2012, Lipscomb Hall saved the most electricity (13.26%), Mell Hall saved the most water (average 27.47 gallons used per student), and Hill participated the most (159 sign-ins at Green Cup events). Lipscomb also won the recycling competition, (.28 pounds of recycling per student). However, in the end, Mell Hall won with the greatest amount of points overall.

Every Drop Counts:
UGA has maintained a nearly 30% reduction in water use since 2007. Operational upgrades and behavioral modification programs have contributed to a culture of water conservation on campus. Fifteen cisterns on campus collect and store over 530,000 gallons of rain and condensate for reuse in campus bulidings and landscapes, including a gray water reuse system installed in the new LEED-certified residence hall Building 1516. Over fifty rain gardens have been installed to improve storm water and watershed health at UGA.

Recyclemania:

- Week 1: Feb 25 – Mar 1 – PSYCHOLOGY v. JOURNALISM
- Week 2: Mar 4 – 8 – CHEMISTRY v. BIO SCEINCE
- Week 3: Mar 18 – 22 – PLANT SCIENCE v. ADERHOLD
- Week 4: Mar 25 – 29 – ART v. MUSIC

Total Collected (lbs)
Psychology 798
Journalism 3395.3
Chemistry 2057.7
Bio Science 2012.5
Plant Science 1305.4
Aderhold 1596.5
Art 1.2
Music 288

TOTAL: 11454.6

TOTAL PERCENTAGE 2013: 24% (increased from 2012 from 21.77%, therefore, the Building Competition helped increase our total percent recycled by ~2%).

RECYCLEMANIA CUMULATIVE GHG REDUCTIONS: 536 Metric Tons of CO2 Equivalent, or 105 cars off the road, or the energy consumption of 46 households (numbers derived from the US EPA's Waste Reduction Model (WARM)).

The website URL where information about the sustainability outreach campaign(s) is available:
http://www.sustainability.uga.edu/index.php?/site/whatweredoing/green_cup_competition/

ER-3: Sustainability in New Student Orientation
Complete 2.00 / 2.00 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution include sustainability prominently in new student orientation?: Yes

A brief description of how sustainability is included prominently in new student orientation: The UGA New Student Orientation is required for all students entering the University for the first time. Sustainability topics have been included in Orientation Fairs for years through various organizations with related interests. The Office of Sustainability has been promoting sustainability activities and opportunities at UGA at New Student Orientation since 2010.

The UGA Office of Sustainability participates in the campus-wide First-year and Transfer Orientations. Since the Office was established in 2010 in response to the campus-wide recommendations and student-led initiatives, the primary responsibilities of the Office include coordination, communication and advancement of sustainability initiatives at the University of Georgia. With communication as one of the key foundations of the Office, it is natural to be present to answer questions and raise awareness about initiatives on campus and the many opportunities to work with and for the Office to incoming students. Office of Sustianability staff &/or interns represent the Office at New & Transfer Student Orientations.

The website URL where information about sustainability in new student orientation is available: https://www.admissions.uga.edu/article/orientation-home-page.html

ER-4: Sustainability Outreach and Publications
Complete 4.00 / 4.00 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution have a central sustainability website that consolidates information about the institution's sustainability efforts?: Yes

A brief description of the central sustainability website that consolidates information about the institution's sustainability efforts: The UGA Office of Sustainability's website provides information for students, faculty, staff, and the greater UGA community about all-things-sustainable at or around UGA. It is a nexus of links to news, events and information about what individuals can do on their own, how they can get involved with initiatives and projects around campus, and sustainable-related events in the community. The website includes contact information for the Office and is a great resource for anyone who is interested in sustainability at UGA.

The website URL for the central sustainability website that consolidates information about the institution's sustainability efforts: http://sustainability.uga.edu/

Does the institution have a sustainability newsletter?: Yes

A brief description of the sustainability newsletter: The UGA Office of Sustainability distributes a "Sustainable UGA Weekly Update" on the "SustainableUGA" listserv. This weekly email provides information about events & upcoming opportunities for community participation, as well as general announcements about everything related to sustainability in the community.

Additionally the UGA Office of Sustainability also has a "News Room" on its website that compiles all of the university's sustainability news in one location.

The website URL for the sustainability newsletter: http://uga.us5.list-manage.com/subscribe?u=0c5a2a59c53a5fcb1f21a54ad&id=f782d0f74e

Does the institution have a vehicle to publish and disseminate student research on sustainability?: Yes

A brief description of the vehicle to publish and disseminate student research on sustainability: The Center for Undergraduate Research (CURO) provides a vehicle for all students to disseminate research findings and publications on which they have participated. The CURO Symposium, an annual research symposium at the University of Georgia, provides an opportunity for all undergraduate researchers at

various stages of the research process to present their research to the university's academic community. The CURO symposium highlights excellence in research by undergraduate students, provides a forum for undergraduates to disseminate their research findings and creative works, and allows undergraduate researchers at UGA to engage, cooperate and communicate with their peers and university faculty and administrators. While this symposium includes all research by undergraduate students, many students choose to focus their research on sustainability, and thus, this symposium is a way for them to announce and communicate their research.

The website URL for the vehicle to publish and disseminate student research on sustainability: http://www.curo.uga.edu/

Does the institution have building signage that highlights green building features?: Yes

A brief description of building signage that highlights green building features: Those who visit the Office of Sustainability will notice the # of 6x3 inch aluminum placards that describe various attributes of the space. For example, some read: "The tables in this room are reused from historic Chicopee Mill.", "The carpet in this room was salvaged from another campus construction project.", "This accent wall is made from locally harvested and salvaged wood materials."

The website URL for building signage that highlights green building features: ---

Does the institution have food service area signage and/or brochures that include information about sustainable food systems?: Yes

A brief description of food service area signage and/or brochures that include information about sustainable food systems: Every dining hall menu indicates what the vegan options are. Menu hardcopies/brochures are available to be picked up at the front of each dining hall and are also available on the following website.

The website URL for food service area signage and/or brochures that include information about sustainable food systems: http://foodservice.uga.edu/nutrition/vegan

Does the institution have signage on the grounds about sustainable grounds-keeping strategies employed?: Yes

A brief description of signage on the grounds about sustainable grounds-keeping strategies employed: Several signs on campus indicate that landscpae fountains are either a) replenished through harvested non-potable water or b) turned off in drought periods to conserve water. Note: a more comprehensive collaborative signage project is underway and the first phase will likely be installed in FY15 or before.

The website URL for signage on the grounds about sustainable grounds-keeping strategies employed: ---

Does the institution have a sustainability walking map or tour?: Yes

A brief description of the sustainability walking map or tour: The University of Georgia campus is one of the most beautiful in the United States. Stately, noble trees provide human scale, a sense of place, cooling shade, and tranquility to students, faculty, staff and visitors. To walk this hallowed campus is to sense the pride in its heritage and hope for the future. The designation of the campus as an arboretum not only insures sustained, energetic tree planting and maintenance, but also presents opportunities for studying trees. This "Tree Walk" is the first project of the University of Georgia Campus Arboretum initiative.

The Tree Tour Brochure arranges campus into three sections: North, Central and South. A tree identification plaque is attached either directly to the tree or on a stake near the tree. Each plaque identifies the tree by name and has a number to correspond to the map. Those who are not familiar with campus may want to obtain a map from the Georgia Visitor's Center or UGA Tate Center.

This UGA Campus Arboretum Walking Tour of Trees is provided by the College of Agriculture & Environmental Science.

The website URL of the sustainability walking map or tour: http://www.hort.uga.edu/Research/arboretum/index.htm

Does the institution have a guide for commuters about how to use alternative methods of transportation?: Yes

A brief description of the guide for commuters about how to use alternative methods of transportation: The UGA Office of Sustainability website provides a number of different resources for commuters traveling both to and from campus, as well as around the internal campus.

It provides links to "UGA Parking Services Alternative Transportation Program," "Athens Transit" services, and "Used Bike Programs" which provides discounts for students. The webpage also includes links to campus transit maps and information, "Bike Athens," a biking organization in Athens, and "The Clean Air Campaign," which provides incentives for carpooling in the state.

The website URL for the guide for commuters about how to use alternative methods of transportation: http://sustainability.uga.edu/get-involved/when-you-commute/

Does the institution have a guide for green living and incorporating sustainability into the residential experience?: Yes

A brief description of the guide for green living and incorporating sustainability into the residential experience: UGA Housing and the Office of Sustainability have teamed up on a series of publications we have called "Living Green". The purpose of Living Green is to provide housing residents with information regarding "green" department initiatives, projects and updates as a means to increase environmental awareness and promote a sustainable community. Living Green is published twice each semester.

The UGA Office of Sustainability website provides Seven Simple Steps for students to take toward a more sustianable UGA, as well as other resources for commuting, volunteering, and eating well.

The website URL for the guide for green living and incorporating sustainability into the residential experience: http://housing.uga.edu/about/publications/living-green

Does the institution have regular coverage of sustainability in the main student newspaper (either through a regular column or a reporter assigned to the sustainability beat)?: No

A brief description of regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: The Red & Black student newspaper often has reporters assigned to a sustainability beat but there is not a routine column or article.

The website URL for regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: ---

Does the institution produce another sustainability publication or outreach material not covered above? (1st material): Yes

A brief description of this material: Georgia Magazine, a quarterly newsmagazine that covers the University of Georgia and the people who make up the UGA community. Each issue highlights sustainability activities at UGA.

The website URL for this material: http://uga.edu/gm/ee/index.php?issue/2013/12/

Does the institution produce another sustainability publication or outreach material not covered above? (2nd material): Yes

A brief description of this material: UGA Costa Rica publishes an annual Sustainability Report.

The website URL for this material:
http://www.externalaffairs.uga.edu/costa_rica/index.php/site/sustainability_initiatives/-/campus

Does the institution produce another sustainability publication or outreach material not covered above? (3rd material): Yes

A brief description of this material:The Georgia Initiative for Climate and Society maintains a Listserv that students and faculty can sign up for and receive updates on new research, available positions, upcoming speaker series and events, and more.

The website URL for this material: https://climateandsociety.ovpr.uga.edu/

ER-T2-1: Student Group
Complete 0.25 / 0.25 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution have an active student group focused on sustainability?: Yes

The name and a brief description of each student group:

- Sierra Student Coalition / UGA Beyond Coal – The Beyond Coal Campaign with UGA's Sierra Student Coalition is calling for the transition of University of Georgia away from coal to 100% clean energy. Our mission is to develop leaders for the environmental movement by training, empowering, and organizing youth to run effective campaigns that result in tangible environmental victories.
- Heifer International at UGA – UGA for Heifer International is a grassroots volunteer group with a common goal of fulfilling Heifer's basic mission: "To end hunger and poverty while caring for the Earth." We are an extension of Heifer International and together we are improving our world and the lives of resource-poor families while building the foundation for a peaceful world in practical, down-to-earth ways.
- Go Green Alliance – The purpose of the Go Green Alliance is to encourage the UGA community to conserve energy and resources, promote recycling, and educate its community members on campus and within the Athens area, with an overarching goal of long-term sustainability. We also act as a liaison for student organizations and the student body as a whole to communicate ideas and opinions on sustainability and other environmental issues pertaining to the University of Georgia to faculty, administrators, and staff. Our final objective is to disseminate information about sustainability practices and environmental literacy to the community at UGA and the surrounding Athens Area.
- HERO at UGA – UGA HEROs strives to improve the quality of life for the 12,000 children in Georgia by raising money to support the programs offered by H.E.R.O. for Children, Inc., spreading awareness about the growing problem of pediatric AIDS, and participating in service initiatives aimed at improving the lives of affected children.
- Campus Kitchen at UGA – Campus Kitchen at UGA is part of a growing network of universities called The Campus Kitchens Project. Each school affiliated with CKP operates a little differently, but they all have the common goal of reducing food waste in their university and community and combating food-insecurity by addressing its root causes.
- IMPACT UGA – The mission of the IMPACT program is to engage University of Georgia students in an affordable, week-long, substance-free, experiential service learning project that encourages an understanding of pressing social issues in a significant way. It is the goal of the organization to address community needs through direct and indirect service as well as provide students the knowledge of social justice issues in our own country.
- Students for Environmental Action – The University of Georgia Students for Environmental Action (SEA) strives to create a more sustainable campus through pragmatic environmental initiatives. We

work to promote recycling, reduce energy consumption, and enhance environmental citizenship on campus.

- UGArden Club – The student organization dedicated to the protection, upkeep, and production of the only student-run garden on the University of Georgia campus, which provides a unique outdoor learning environment and offers students the opportunity to engage with the natural world.
- USGBC Students at UGA - U.S. Green Building Council Students (USGBC) at UGA seek to provide education and service to the University of Georgia and surrounding Athens community to create an economically feasible, socially just, and environmentally friendly built environment.
- Animal Advocates at UGA - Animal Advocates is a UGA organization dedicated to helping abandoned pets and those in need of adoption.
- Environmental Law Association - The Environmental Law Association (ELA) is an organization of the University of Georgia School of Law students who seek to further the development and advancement of environmental law through activities designed to increase environmental awareness among members of the community at large and the student bodies of the University of Georgia and the Georgia School of Law.
- UGA Net Impact - The University of Georgia Terry College MBA chapter of this national organization works with the UGA Office of Sustainability, participates in national conferences and case competitions, and hosts panels and networking events with career professionals in corporate social responsibility and sustainability sectors.
- Speak Out for Species - S.O.S promotes the protection of all animals. Through education and advocacy, we work to defend animals from cruelty and exploitation, to reduce animal suffering, and to encourage compassion for all living beings.
- Environmentally Concerned Christians
- Outdoor Adventure Club - The purpose of this organization is to promote affordable outdoor recreational activities. These activities will comprise of, but are not limited to, camping, hiking, canoeing, rafting, and rock climbing/bouldering.
- Ecology Club & Graduate Student Organization - The Ecology Club connects undergraduate ecology majors to one another and to opportunities in research and service, and is always ready to get its hands dirty with outreach in the local community or with campus sustainability initiatives. Part social (trips, retreats, parties, meetings), part educational (local tours, speakers, research connections), and part activism (environmental advocacy on campus), the club welcomes all students from all majors to make friends, make memories, and make positive change.
- Engineers Without Borders, UGA Chapter – Engineers without Borders is a student-lead organization with a mission to help provide water, power, sanitation, and education both locally and globally.
- Environmental Health Sciences Club - The Environmental Health Science (EHS) Club is designed to foster mutual interest and enthusiasm amongst the students and faculty at the University of Georgia who are interested in Environmental Health Science. We provide an informal forum for networking with environmental professionals through monthly meetings and workshops.
- Public Health Association at UGA - The Public Health Association at UGA endeavors to encourage the exploration of public health issues through discussions, service activities, and meaningful interactions between students within the college. Our goals are: to make the graduate experience more meaningful for our members, foster a relationship between the CPH students, faculty, and administration, help students explore their career goal and interests, foster the relationship between the College of Public Health and the Athens community through service projects.
- Agricultural and Environmental Economics Club - The Agricultural and Environmental Economics Club exists to encourage fellowship, communication and knowledge for its members within the field of agricultural and environmental economics. We accomplish this task by: - hosting speakers that present on current industry issues - holding bi-monthly meetings that promote friendship with fellow students - fostering communication with our department faculty.
- Society of American Foresters / Forestry Club - The Society of American Foresters (SAF) is the national scientific and educational organization representing the forestry profession in the United States. The mission of SAF is to advance the science, education, technology, and practice of forestry; to enhance the competency of its members; and to use the knowledge, skills, and conservation ethic of the profession to ensure the continued health and use of forest ecosystems and the present and future availability of forest resources to benefit society.

- Student Environmental Planning Association at UGA - The Student Environmental Planning Association (SEPA) began in Fall 2011 as an opportunity for students interested in planning to pursue projects outside of the day-to-day curriculum. Through networking events, learning opportunities, and volunteer work, students will engage with the university and larger Athens community. Though currently an organization through the University of Georgia Center for Student Organizations, the organization hopes to become associated with the American Planning Association in the near future to promote relationships on a local, national, and international level. We welcome opportunities to become involved in planning projects through the University and through Athens-Clarke County and to partner with other like-minded organizations.
- Student Historic Preservation Organization - The Student Historic Preservation Organization (SHPO) is dedicated to increasing awareness of historic preservation throughout The University of Georgia and Athens communities and to providing preservation advocacy opportunities for its members. SHPO is a membership organization that serves students of the Master of Historic Preservation (MHP) program.
- Georgia Students of Landscape Architecture - The College of Environment and Design is the home of the state student chapter of the American Society of Landscape Architects (ASLA). Georgia Students of Architecture (GSLA) aspires to bring landscape architecture students from the BLA and MLA programs together for social purposes.
- Residence Hall Association (RHA) Sustainability Committee – works to educate RHA and residents on the methods and importance of sustainability throughout the year; serves as a forum for residents' thoughts and ideas on reducing ecological impact; hosts the annual Sustainability event; and seeks to support conservation within the Residence Halls. It will also support the efforts of other organizations and of the Department of Housing in Sustainability Initiatives.
- UGA Fisheries Society - The UGA Fisheries Society was formed in 1994 as a student organization of the Daniel B. Warnell School of Forestry and Natural Resources and the University of Georgia. The Club is composed of University students, staff, and faculty members with an interest in fisheries, ecology, limnology, and other disciplines involving aquatic resources. The Club has an active schedule that includes informative seminars, community service projects, and fun activities.
- Geology Club at UGA - The Geology Club's mission includes educating the public about geology, promoting the Geology Department, and supporting undergraduate student research. The club strives to bridge the gap between students and faculty, between academia and industry, in order to create a community of geoscientists. The club strongly emphasizes helping students join the geoscience workforce through networking and career preparation. The club promotes the Atlanta Geological Society, the Georgia Geological Society, the Georgia Museum of Natural History, and the Geological Society of America. The Geology Club also serves as the UGA student chapter of the American Institute of Professional Geologists.
- Real Food UGA - Real Food UGA is focused on promoting awareness and advocacy for real food: food that truly nourishes producers, consumers, communities, and the earth. Food that is produced under fair and humane conditions for farmworkers; food that does what it's supposed to do—keep us healthy and well; food that is derived from and strengthens our local economy; food that is grown under responsible agricultural practices, keeping our soil, water, and air clean. However, colleges and universities in the US spend $4 billion every year on dining hall food. Real Food UGA partners with the national nonprofit Real Food Challenge to help achieve the goal of redirecting 20% of that $4 billion towards real food by 2020. We can therefore redirect food dollars towards a more sustainable, cleaner economy based on liberation and justice.
- Volunteer UGA - Volunteer UGA is a collaborative group of organizations which strive to identify, understand, and meet community needs through awareness, education, and service. As part of the Board of Directors (VUGABOD), you will be part of the executive committee that supports our member organizations by providing them with financial resources, the opportunity to collaborate with other organizations, and coordinating events that connect UGA students with the Athens-Clarke county community. We are looking for dedicated individuals who have a passion for service.
- American Water Resources Association UGA Student Chapter (AWRA) – UGA student chapter of the American Water Resources Association, a non-profit professional association dedicated to the advancement of men and women in water resources management, research, and education. AWRA's membership is multidisciplinary; its diversity is its hallmark. It is the professional home of a wide

variety of water resources experts including engineers, educators, foresters, biologists, ecologists, geographers, managers, regulators, hydrologists and attorneys.
- Service Ambassadors at UGA - The Service Ambassadors act as a resource for the University of Georgia and Athens-Clarke County, empowering students to engage in their communities through service, education, and advocacy

List up to 4 notable recent activities or accomplishments of student group(s):
1. Go Green Alliance: Instituted the Green Fee, thereby creating the Office of Sustainability in 2010. Held Sustainability Socials in 2011, 2012.

2. Student for Environmental Action: Initiated Bulldawg Bikes bike share program through a Campus Sustianability Grant in 2011. Initiated Light Switch Replacement program in 2012. Planned UGA Earth Week, 2009 - 2013.

3. UGArden student organization: Helped start the UGArden campus community garden in 2010 and continues to grow the garden in scope and volunteers.

4. UGA Campus Kitchen: Helps fight senior hunger through serving meals through the Athens Area Council on Aging Garandparents-Raising-Grandchildren program.

List other student groups that address sustainability: ---

The website URL where information about student group(s) is available: ---

ER-T2-2: Organic Garden
Complete 0.25 / 0.25 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution have an on-campus garden where students are able to gain organic farming and/or gardening experience?: Yes

A brief description of the garden: UGArden Learning & Demonstration Farm seeks to promote the social, environmental, and nutritional benefits of sustainable gardening through the creation of a student-run community garden. Such a unique outdoor learning experience encourages engagement with the natural world, fosters interdisciplinary pursuits at UGA, and offers a meaningful sense of place to a largely transitory student body.

This student organization is dedicated to the management of a 4-acre garden. It began as a simple idea- to provide a place for students to learn to raise food and promote sustainable gardening. With this in mind, a group of dedicated students developed a plan and sought approval for a place to garden. After a year-long process, and a lot of hard work by many students and faculty advisor, David Berle, the garden found a home. The garden is located on South Milledge Avenue, on university land formerly dedicated to sheep and hog farming. The first planting was in May of 2010. Professor Berle has led an enthusiastic group of UGArden members and student volunteers to establish a garden that now includes fruit plantings, bee hives, green walls, medicinal herbs, a high tunnel and a woodland mushroom demonstration area.

The website URL where information about the garden is available:
http://ugarden.uga.edu/ugarden3/Welcome.html

ER-T2-3: Model Room in a Residence Hall
Complete 0.25 / 0.25 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution have an occupied, formally designated model room in a residence hall that is open to students during regular hours and demonstrates sustainable living principles?: Yes

A brief description of the model room: Building 1516, the newest residence hall on the UGA campus that opened in the Fall of 2010, provides double and single rooms with private bath accommodations geared toward non-first-year, undergraduate students. Building 1516 is a signature space that supports the academics and personal growth of residents, provides a place where programs, classes and events are hosted, and most importantly, provides a home-away-from-home for 555 students. In addition, Building 1516 provides easy access to residential parking as well as multiple bus routes, and is a short distance to the Joe Frank Harris Dining Commons.

Buildings significantly impact the natural environment and resources. However, with some forethought and planning, these environmental impacts and the associated economic costs can be reduced. Throughout the construction planning process, opportunities for sustainable development, the green design, improved indoor air quality, and water and energy efficiency have been implemented. By adopting green building strategies that save money and minimize impact on the environment, the Department of University Housing demonstrates its desire to be a good steward of the present and a builder for the future. Building 1516 was awarded a LEED - Gold Certification for its green building features.

Building 1516 utilizes a single room out of its residence spaces to "model" a sustainable room and what items should and should not be in the room.

The website URL where information about the model room in the residence hall is available:
http://housing.uga.edu/residence/tour/reed/building-1516

ER-T2-4: Themed Housing
Complete 0.25 / 0.25 Mark Grafton, Intern, Office of Sustainability

Does the institution have sustainability-themed housing (residential floor or hall, or theme house) where residents learn about sustainability together and to which residents must apply?: Yes

A brief description of the themed housing, including name(s) and descriptions of theme(s): The Global Engagement Learning Community. First year students apply to this program and if accepted, live together in Creswell Hall. A component of the class' Fall 2013 seminar will be Food Security issues and they will be composting in their individual rooms and working together on a larger composting project.

The group meets weekly to explore cultural issues, the meaning of global citizenship, and the fundamentals of service learning. The seminar focuses on these issues by encouraging participation in local events, exhibits and lectures on campus, along with volunteer experiences. The process of discovery is framed by an understanding of urban spaces and how people use them. Concentration is placed on local and global heritage preservation and resource conservation programs and initiatives.

The website URL where information about the themed housing is available:
http://learningcommunities.uga.edu/communities/themes/global-engagement/

The total number of residents in themed housing:15

ER-T2-5: Sustainable Enterprise
Complete 0.25 / 0.25 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution have a student-run enterprise, such as a cafe, through which students gain sustainable business skills?: Yes

A brief description of the enterprise: The UGArden Produce Stand sits at the edge of the club's garden and welcomes the public to come purchase freshly picked produce. Proceeds from produce sales go back into running the club. In addition to typical plant produce, fresh herbs, mushrooms and tilapia are

produced and sold at select times throughout the year. UGArden also offers a Mobile Farmers Market to bring fresh, healthy foods to urban residents at discounted prices.

The website URL where information about the sustainable enterprise is available:
http://ugarden.uga.edu/ugarden3/Community_Outreach.html

ER-T2-6: Sustainability Events

Status	Score	Responsible Party
Complete	0.25 / 0.25	Kevin Kirsche, Director of Sustainability, Office of Sustainability

Does the institution hold major events related to sustainability, such as conferences, speaker series, or symposia, that have students as the intended audience?: Yes

A brief description of the event(s): UGA is host to a several major events related to sustainability each year:

- Gameday Recycling: Students cheer on the Dawgs and encourage fans to tailgate sustainably.

- Green Cup Challenge: The UGA Green Cup Challenge is a competition among the residents of the Hill community to reduce their energy, water, and waste over a one month period.

- Campus Sustainability Day: CSD is a day of focus – on what has been accomplished and what is needed to maintain momentum. Emphasis is on connecting to new groups and allies on campus, highlighting student stories, planning for the future, and reaching out to external partners. CSD is devoted to the achievements of, and challenges for, the students, faculty, and staff who are instilling sustainability principles and practices into their institutions and surrounding communities.

- America Recycles Day: More than a celebration, America Recycles Day is the only nationally recognized day dedicated to the promotion of recycling in the United States. One day to educate and motivate. One day to get our neighbors, friends and community leaders excited about what can be accomplished when we all work together. One day to make recycling bigger and better 365 days a year.

- Semester in Review: Creating a Culture of Sustainability at UGA. At the end of fall semester, Office of Sustainability interns and students from sustainability-focused courses present their efforts to members of the UGA and Athens community.

- Red Clay Conference: The Red Clay Conference is an annual Environmental Law Conference that is entirely student organized by members of the Environmental Law Association at the University of Georgia School of Law. ELA's continuing mission is to advance sound environmental policy, encourage discussion and raise awareness among attorneys and law-makers here in Georgia and throughout the Southeast. The goal of the conference is to increase public awareness of environmental issues of regional, national, and international significance through a series of educational presentations and open forum discussions.

- Recyclemania: RecycleMania is a friendly competition and benchmarking tool for college and university recycling programs to promote waste reduction activities to their campus communities. UGA mixes up the theme each year and incorporates internal events and competitions.

- EcoFocus Film Festival: The mission of EcoFocus is to inform and inspire audiences about environmental issues through film. Our primary activity is the annual film festival, which features engaging and often award-winning films from around the world presented with dynamic speakers, panel discussions and events. Films selected for EcoFocus reveal the planet’s beauty and the

environmental challenges facing this and future generations, and highlight inspirational stories about people working to protect the environment and its inhabitants.

- UGA Earth Week: UGA Earth Week is a week-long celebration of sustainability with multiple events each day focused on various topics or themes from food and waste to transportation and careers in sustainability. Events are designed to engage and inspire action.

- Recycling Happy Hour: The University of Georgia Office of Sustainability and WUGA radio, along with the Athens-Clarke County Recycling Division, host a Recycling Happy Hour as an annual event on campus. The spring-cleaning event is for students, faculty and staff and the general public to bring hard-to-recycle objects including electronics such as computers, televisions, phones, cords and cables; batteries; fluorescent bulbs; Styrofoam; and used cooking grease.

- Dawgs Ditch the Dumpster: Dawgs Ditch the Dumpster" is an initiative co-sponsored by University Housing, Hillel at UGA, Go Green Alliance, and the UGA Office of Sustainability. During move-out in early May of each year, students are asked to donate their unwanted items to the local community at a convenient drop site located within each campus residential community.

The website URL where information about the event(s) are available: http://sustainability.uga.edu/what-were-doing/annual-programs/

ER-T2-7: Outdoors Program
Complete 0.25 / 0.25 Kevin Kirsche, Director of Sustainability, Office of Sustainability

Also see: http://www.recsports.uga.edu/rec_template_1.php?page_ID=1280504963

Does the institution have a wilderness or outdoors program that organizes hiking, backpacking, kayaking, or other outings for students and follows Leave No Trace principles?: Yes

A brief description of the program: The trip component of Georgia Outdoor Recreation Program (GORP) is designed to provide fun, hands-on instructional opportunities for never-ever beginners and novice participants to learn the skills and safety concerns for a wide variety of outdoor activities in a supervised environment.

Unless stated, no prior experience is required and in most cases, all group equipment for that activity is provided as well as transportation by passenger van. An experienced staff of trip leaders provide logistical planning, instruction, leadership and facilitation for a group experience.

Some trips are available at an intermediate or experienced level for individuals to progress in their skill acquisition. In all cases, a moderate level of physical fitness will allow for a more enjoyable experience. This program is subsidized by the Student Activity Fee and is a great way to learn outdoor skills in a supervised setting, meet people with similar interests and take a break from the daily routine.

GORP also encompasses equipment rental from the Outdoor Recreation Center (ORC), indoor climbing wall and Challenge Course.

Activities includes: Backpacking, bouldering, canoeing, caving, cycling, day hiking, fly fishing, hang gliding, hiking, horseback riding, kayaking, paragliding, rafting, sailing, scuba diving, and ziplining.

The website URL where information about the program is available:
http://www.recsports.uga.edu/out_gorp.php

ER-T2-8: Themed Semester or Year

-- 0.00 / 0.25 Kevin Kirsche, Director of Sustainability, Office of Sustainability

There has not yet been a concerted effort at UGA to institute a campus-wide semester or annual theme.

Detail Description of Programs (Curricular)

ER-5: Sustainability Course Identification
Complete 3.00 / 3.00 Tyra Byers, Program Coordinator, Office of Sustainability

Has the institution developed a definition of sustainability in the curriculum?: Yes

A copy of the institution's definition of sustainability in the curriculum?: The UGA Office of Sustainability has defined sustainability in the curriculum as courses that seek to: Understand and improve upon the complex natural and political interrelationships between social, economic, ecological and human health aspects, both locally and globally, with an emphasis on meeting the needs of the present without compromising the ability of future generation to meet their needs.

Has the institution identified its sustainability-focused and sustainability-related course offerings?: Yes

A brief description of the methodology the institution followed to complete the inventory: Sustainability-focused courses are those 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 outline in the Earth Charter)

Sustainability-related courses are those courses that are primarily focused on a topic other than sustainability, but incorporate a unit or module on sustainability or a sustainability challenge, include one or more sustainability-focused activities, or integrate sustainability issues throughout the course.

Does the institution make its sustainability course inventory publicly available online?: Yes

The website URL where the sustainability course inventory is posted: http://sustainability.uga.edu/get-involved/courses/

ER-6: Sustainability-Focused Courses
Complete 3.55 / 10.00 Tyra Byers, Program Coordinator, Office of Sustainability

The number of sustainability-focused courses offered: 89

The total number of courses offered: 2,510

Number of years covered by the data: Three

A list of sustainability-focused courses offered:

AAEC(AFST)(ENVM) 4720 - Food Security, Economic Development, and the Environment
AESC 3125 - Organic Agricultural Systems
AESC 4700 - Agrosecurity Issues, Incidents, and Response Seminar
AFST 4900 - Service Learning in Africa
ALDR 3820 - Reflections on Fighting Hunger
ALDR 3820H - Reflections on Fighting Hunger (Honors)
ALDR 4600/6600 - Issues in Contemporary Agriculture
ALDR 4600E/6600E - Issues in Contemporary Agriculture
ALDR(AFST)(LACS) 4710/6710 - International Agricultural Development
ANTH 4010/6010 - Historical Ecology
ANTH 4060/6060 - Agricultural Anthropology
ANTH 4070/6070 - Cultural Ecology
ANTH 4075/6075 - Economic Anthropology
ANTH 4220/6220 - Mountain Anthropology
ANTH 4560/6560 - Anthropology of Development
ANTH 6490 - Foundations of Ecological Anthropology

ANTH 8420 - Human Ecosystem Evolution
ANTH 8520 - Cultural Dimensions of Biodiversity
ANTH(ECOL) 4290/6290 - Environmental Archaeology
ANTH(GEOG) 4275/6275 - Conservation and Development in Costa Rica
APTC(CRSS) 4010 - Principles of Sustainable Management
APTC(EHSC) 3080 - Introduction to Environmental Sciences and Engineering
ARID 4100/6100 - Studio IV: Non-Residential Green Interior Design
CRSS(HORT) 4400/6400 - Agro-Ecology
CRSS(HORT) 4400L/6400L - Agro-Ecology Laboratory
CRSS(HORT)(ANTH)(ECOL)(GEOG) 4930/6930 - Agroecology of Tropical America
CRSS(HORT)(ANTH)(ECOL)(GEOG) 4931/6931 - Agroecology of Tropical America Field Trip
ECOL 1000 - Ecological Basis of Environmental Issues
ECOL 1000H - Ecological Basis of Environmental Issues (Honors)
ECOL 3070 - Environment and Humans
ECOL 3100-3100L - Tropical Field Ecology
ECOL 3700 - Organic Agriculture: Ecological Agriculture and the Ethics of Sustainability
ECOL 3710-3710L - Organic Agriculture: Practical Application of Organic Agriculture Principles
ECOL 6080 - Principles of Conservation Ecology and Sustainable Development I
ECOL 8400 - Perspectives on Conservation Ecology and Sustainable Development
ECOL 8440 - Principles of Agroforestry/Agroecology
ECOL(FORS)(ANTH) 6140 - Principles of Conservation Ecology and Sustainable Development II
ECON 4150 - Environmental Economics
ENGR 4490/6490 - Renewable Energy Engineering
ENGR(LAND) 4660/6660 - Sustainable Building Design
ENVE 2320 - Environmental Engineering – Urban Systems
ENVE 2610 - Introduction to Environmental Engineering and Sustainability
ENVE 4240 - Sustainable Energy Systems in a Global Economy
ENVE 4260 - Renewable Energy Systems
ENVE 4540 - Economics of Energy and Sustainable Development
ENVE 4620 - Sustainable Design in Urban Systems
ENVE 4720 - Urban Infrastructure Planning and Development
ENVM 2060 - Green Economics
ENVM 3060E - Principles of Resource Economics
FANR 4273/6273 - Field Studies in Sustainable Development
FANR 5680/7680 - Economic Perspectives on Natural Resource Issues
FANR 7750 - The Science of Sustainability
FANR(ANTH)(ECOL)(GEOG)(INTL)(RLST) 4271/6271 - Field Studies in Natural Resources
FANR(MARS) 4272/6272 - Antarctica: The Fragile Continent
FORS(CRSS)(ECOL)(ANTH) 4760 - Agroforestry in the Caribbean
GEOG 1125 - Resources, Society, and the Environment
GEOG 2010H-2010D - Introduction to Human Geography (Honors)
GEOG 2250H-2250D - Resources, Society, and the Environment (Honors)
GEOG 3660 - Geography of Food Commodities
GEOG 4290/6290 - Geography and Ethnoecology of Neotropical Mountains
GEOG 4710/6710 - Geography of Sub-Saharan Africa
GEOG 4720/6720 - Geography of Latin America
GEOG 4740/6740 - Geography of East and Southeast Asia
GEOG 4810/6810 - Conservation Ecology and Resource Management
GEOL 1120 - Environmental Geoscience
GEOL 2120 - Introduction to Environmental Geology
HIST 4020/6020 - Food and Power in American History
HORT(ECOL)(PBGG) 8390 - Conservation of Plant Genetic Resources
LAND 1500 - Design and the Environment
LAND 2510 - History of the Built Environment I
LAND 2520 - History of the Built Environment II
LAND 3030 - Landscape Architecture Design Studio III

LAND 3030S - Landscape Architecture Design Studio III
LAND 4730/6730 - Issues and Practices in Sustainable Design
LAND 6030 - Nature and Sustainability
MIBO(PBHL)(IDIS)(BHSI) 8260 - Global Perspectives on Tropical and Emerging Infectious Diseases
NRRT 5900/7900 - Tourism and Sustainable Development
PBIO 3060 - Rise and Fall of Civilizations, Eco-sociological Constraints, and You!
PBIO(ECOL) 4750/6750 - Tropical Ecology and Conservation
PBIO(ISCI) 2001-2001L - Life and Earth Sciences
PLAN 6560 - Environmental Planning Studio III
RLST 6020 - Social Foundations of Recreation and Leisure Studies
RLST(NRRT) 3310 - Outdoor Recreation and Environmental Awareness
RLST(NRRT)(ANTH) 5400/7400-5400L/7400L - Parks and Ecotourism Management
SAMS 5118 - Conservation Medicine
SAMS 5418 - Conservation Medicine
SOCI 3400 - Environmental Sociology
TXMI 4300 - Studio IV: Universal and Sustainable Residential Design
WILD 5200/7200 - International Issues in Wildlife Conservation

The website URL where the publicly available sustainability course inventory that includes a list of sustainability-focused courses is available:
http://www.sustainability.uga.edu/site/academics/sustainability_course_lists

ER-7: Sustainability-Related Courses
Complete 5.42 / 10.00 Tyra Byers, Program Coordinator, Office of Sustainability

The number of sustainability-related courses offered: 408

The total number of courses offered: 2,510

Number of years covered by the data: Three

A list of sustainability-related courses offered:

AAEC 3010 - Farm Organization and Management
AAEC 3400 - Introduction to Agricultural Policy
AAEC 3580-3580L - Intermediate Economic Principles
AAEC 4050/6050 - Agribusiness Law
AAEC 4210/6210 - Production Economics: Theory with Applications
AAEC 4760 - The Economics of Agricultural Processing and Marketing
AAEC 4960 - International Agricultural Trade Policy
AAEC 6630 - Decision Theory for Resource Allocation
AAEC 6960 - International Agricultural Trade
AAEC 7600 - Environmental Economics and Policy Analysis
AAEC 8080 - Production Economics: Theory and Application
AAEC 8100 - Nonmarket Economic Valuation Techniques and Applications
AAEC 8140 - Consumer Demand Theory
AAEC 8210 - Macroeconomics Issues in Agricultural and Natural Resources
AAEC 8400 - Agricultural Market Structure and Analysis
AAEC 8710 - Advanced Agricultural Development and Growth
AAEC 8750 - Natural Resource and Environmental Economics II
AAEC 8760 - Topics in Natural Resource and Environmental Economics
AAEC 8800 - Dynamic Optimization in Agricultural and Resource Economics
AAEC 8850 - Risk and Uncertainty in Agricultural Decision Making
AAEC(ECOL) 8700 - Advanced Environmental Economics and Policy Analysis
AAEC(EHSC) 4250H - Environmental and Public Health Law (Honors)
AAEC(ENVM) 3020 - Analysis of Agribusiness and Natural Resource Issues

AAEC(ENVM) 4710/6710 - Rural Economic Development and Growth
AAEC(ENVM) 4990 - Special Topics in Agricultural and Applied Economics
AAEC(HACE)(AFST)(ADSC) 3911 - International Agribusiness and Environmental Management
ADSC 1050 - The Meat We Eat
ADSC 3130 - Animal Biotechnology
ADSC 4350-4350L - Grazing Animal Production
AESC 2990S - Understanding and Communicating with the Latino Community in the Green Industry
AESC 3126 - Fertility and Pest Management in Organic Agriculture
AESC 4095 - Undergraduate Research in Organic Agriculture
AESC 4096 - Organic Agriculture Seminar
AESC 4530 - Agriscience and Environmental Systems Study Tour
AGED 4340/6340 - Developing Community Programs in Agriculture
AGED 4340E/6340E - Developing Community Programs in Agriculture
ALDR 3900 - Leadership and Service
ALDR 7200 - Foundations of Agricultural Leadership
ALDR 7200E - Foundations of Agricultural Leadership
ALDR 7250 - Agri-Leaders Field Experience
ANTH 1102 - Introduction to Anthropology
ANTH 2070H-2070L - Culture and Human Biology (Honors)
ANTH 2120H - Introduction to Anthropology (Honors)
ANTH 3090 - Evolution of Human Ecosystems
ANTH 3200 - How the World Works: The Anthropology of Consumption and Globalization
ANTH 3265 - Introduction to Cultural Anthropology
ANTH 3530 - Anthropology of Folk Medicine
ANTH 3541 - Anthropology of Eating
ANTH 4590/6590 - Ecology and Evolution of Human Disease
ANTH 8540 - Conservation and Community
APTC 3060 - Soil and Water Resource Conservation
ARGD 4020 - Environmental Graphic Design
ARID 3310 - Building Systems
BCHE 4460 - Biorefinery Engineering
BHSI 8100 - Current Topics in Public Health
CMLT 3210 - Ecocriticism
CMLT 4050/6050 - Literature and Ideas of Nature
CRSS 4300 - Crop Production and Management
CRSS 4580/6580-4580L/6580L - Soil Erosion and Conservation
CRSS(LAND) 4530/6530 - Soils in Natural and Managed Ecosystems
CRSS(WASR) 1020 - Introduction to Water Resources
ECOL 2100 - Global Climate Change: Past, Present, and Future
ECOL 2400 - Careers in Ecology
ECOL 3505H-3505L - Ecology (Honors)
ECOL 3520 - Ecological Applications
ECOL 3880H - Ecosystems of the World (Honors)
ECOL 4000/6000 - Population and Community Ecology
ECOL 4010/6010 - Ecosystem Ecology
ECOL 4050/6050-4050L/6050L - Ichthyology
ECOL 4100/6100-4100L/6100L - Ecological Biocomplexity
ECOL 4120H - Ecology of Global Change (Honors)
ECOL 4160 - Ecology of North America
ECOL 4500/6500 - Evolutionary Ecology
ECOL 4560/6560 - Science and Art of Conservation
ECOL 4940 - Internship in Ecology
ECOL 8030 - Cross-disciplinary Ecology
ECOL 8220 - Stream Ecology
ECOL 8230 - Lake Ecology
ECOL 8420 - Watershed Conservation

ECOL 8580-8580L - Theory of Systems Ecology
ECOL 8720 - Environmental Law for Scientists
ECOL 8990 - Problems in Ecology
ECOL(BIOL) 3500-3500L - Ecology
ECOL(BIOL) 4150/6150-4150L/6150L - Population Biology of Infectious Diseases
ECOL(PBIO)(WILD) 8310 - Population Ecology
ECOL(WILD) 8322 - Concepts and Approaches in Ecosystem Ecology
EDES 4660/6660 - Environment and Behavior: Theory and Practice
EDES 4670/6670 - History of Landscape Technology and Management
EDES 4680/6680 - Conservation of Culturally Significant Resources in Rural Areas
EDES 6510 - Evolution of the American Landscape
EDES 6520 - Ideas of the Garden
EDES 6540 - Ideas of Community and Place
EDES 6550 - History of the Built Environment I
EDES 6560 - History of the Built Environment II
EETH 4000 - Environmental Ethics Seminar
EETH 4200/6200 - Environmental Concepts
EETH 4230/6230 - Environmental Values and Policy
EETH 6000 - Environmental Ethics Seminar
EETH(AESC) 4190/6190 - Agricultural Ethics
EHSC 3060 - Introduction to Environmental Health Science
EHSC 4080/6080 - Environmental Air Quality
EHSC 4150/6150 - Solid and Hazardous Waste Management
EHSC 4350/6350-4350L/6350L - Environmental Chemistry
EHSC 4400/6400 - Environmental Issues in the Developing World
EHSC 4490/6490 - Environmental Toxicology
EHSC 4610/6610 - Water Pollution and Human Health
EHSC 4700/6700 - Genetic Applications in Environmental Health Science
EHSC 7010 - Fundamentals of Environmental Health Science
EHSC 8100 - Current Topics in Environmental Health Science
EHSC 8310 - Advanced Topics in Aquatic Microbiology, Health, and the Environment
EHSC(AAEC) 8120 - Roles and Responsibilities of Environmental Policy Makers
EHSC(MARS) 8410 - Oceans and Human Health
ENGL 4835 - Environmental Literature
ENGR 3440 - Water Management
ENTO 3740-3740L - Insect Pest Management
ENTO 3900 - Special Problems in Entemology
ENTO 4500/6500-4500L/6500L - Biological Control of Pests
ENTO(CRSS)(PATH) 4250/6250-4250L/6250L - Pesticides and Transgenic Crops
ENVE 1010 - Synthesis and Design First-Year Seminar
ENVE 3520 - Engineering Economics and Management
ENVE 4250 - Industrial Ecology
ENVE 4530 - Energy and Environmental Policy Analysis
ENVE 4710 - GIS for Urban Engineering, Planning, and Development
ENVM 3060 - Principles of Resource Economics
ENVM 4650/6650 - Environmental Economics
ENVM(AAEC) 4930/6930 - Environmental Law and Governmental Regulation
ENVM(ECOL)(FANR)(EHSC) 4770H - The Business of Environmental Law (Honors)
ENVM(EHSC) 4250/6250 - Environmental and Public Health Law
ESCI(EFND) 8310 - Inquiry of Eco-Justice Issues
ETES 5060/7060 - Energy Systems
FANR 2888E - Forest Ecosystem Services
FANR 3300-3300D - Economics of Renewable Resources
FANR 3400-3400D - Society and Natural Resources
FANR 4800/6800 - Renewable Resources Policy
FANR 8000 - Forestry and Natural Resources Seminar

FANR(AAEC) 7860 - Natural Resource and Environmental Economics I
FANR(ECOL) 1200 - Natural History of Georgia
FANR(ECOL) 4810/6810 - Natural Resources Law for Managers and Administrators
FANR(GEOG) 2200 - International Issues in Natural Resources and Conservation
FANR(MARS) 1100 - Natural Resources Conservation
FDNS 3200 - World Hunger and Human Nutrition
FDNS 4600/6600 - Food and the Consumer
FDNS 4600E/6600E - Food and the Consumer
FDNS 4630/6630 - Cultural Aspects of Foods and Nutrition
FISH(ECOL)(MARS)(WILD) 4550/6550-4550L/6550L - Conservation Aquaculture
FORS 4030/6030 - Regional Silviculture
FORS 4700/6700-4700L/6700L - Forest Economics
FORS 7710 - Advanced Forest Economics
FORS(ECOL)(GEOG) 4250/6250 - International Forest Management
FORS(ENGR) 8020 - Bio-Based Economy Seminar
GEOG 1101 - Human Geography: People, Places, and Cultures
GEOG 1103 - Cultural Geography of the United States
GEOG 2130H-2130D - Cultural Geography of the United States (Honors)
GEOG 3290 - Mountain Geography
GEOG 3620 - Introduction to Economic Geography
GEOG 3630 - Introduction to Urban Geography
GEOG 4160/6160 - Applied Climatology in the Urban Environment
GEOG 4620/6620 - Advanced Economic Geography
GEOG 4630/6630 - Advanced Urban Geography
GEOG 4640/6640 - Population Geography
GEOG 4650/6650 - Industrial Geography
GEOG 4660/6660 - Urban and Regional Development
GEOG 4670/6670 - Geography of Development
GEOG 4690/6690 - Advanced Topics in Political Geography
GEOG 4730/6730 - Geography of China
GEOG 4750/6750 - Geography of Europe
GEOG 4860/6860 - The Industrial Agro-Food System and Its Alternatives
GEOG 4890/6890 - Athens Urban Food Collective (AUFC) Service Learning
GEOG(AFST) 3650 - Africa in the Global Economy
GEOL 1121 - Earth Processes and Environments
GEOL 1121H - Earth Processes and Environments (Honors)
GEOL 2350H - Physical Geology (Honors)
GEOL 3150 - Coastal Processes and Conservation
GEOL 3220 - Water Resources Issues
GEOL 3250 - Earth Resources and the Environment
GEOL 4330/6330 - Geology of North America
GEOL 8770 - Hazardous Waste Site Remediation
GPST 3000 - Contemporary Global Issues
HACE 3150 - Consumer Decision Making
HACE 8400 - Demographics and Policy
HIPR 4000/6000 - Introduction to Historic Preservation
HIPR 6200 - Preservation Law
HIPR 6510 - Preservation Economics/Grant Writing
HIST 1200 - Introduction to Latin America and the Caribbean
HIST 2051 - Multiculturalism in Early America
HIST 3040 - Latinos/Latinas in the United States
HIST 3056H - Multicultural America (Honors)
HIST 3160 - American Environmental History
HIST 4725/6725 - Environmental History of the Modern World
HIST(AFST) 3530 - Women in Sub-Saharan Africa
HIST(AFST) 4510/6510 - History of Famine and Food Systems in Africa

HORT 3333S - Conserving Native Plants
HORT 4010/6010-4010L/6010L - Vegetable Culture
HORT 4020/6020-4020L/6020L - Fruit Production
HORT 4890/6890 - Biodiversity and the World's Food Crops
HORT 4990/6990 - Environmental Issues in Horticulture
HORT(CRSS) 4800/6800 - Agricultural Biotechnology
HPAM 7400 - Public Health, Law, and Society
HPAM 8600 - Health Economics
HPRB 3150 - Issues in Women's Health
HPRB 3700 - Community Health
HPRB 4480 - International Health Promotion
HPRB 7010 - Social and Behavioral Foundations in Public Health
HPRB 7010E - Social and Behavioral Foundations in Public Health
HPRB 8410 - Human Ecology of Health and Illness
IDIS(CBIO) 3100 - People, Parasites, and Plagues
IDIS(CBIO) 3100H - People, Parasites, and Plagues (Honors)
IDIS(POPH) 3110 - Food Animal Infectious Diseases
IHDD 5720/7720 - Advocacy Practices in Disability
IHDD 5720S/7720S - Advocacy Practices for Social Change
INTL 1100 - Introduction to Global Issues
INTL 1100H - Introduction to Global Issues (Honors)
INTL 4610 - Environmental Politics
INTL(SOCI) 4320S - Politics of Development
JRLC(LACS) 5060 - Telenovelas, Culture, and Society
JURI 4826/6826 - Energy Law Seminar
JURI 4828/6828 - Water Law
JURI 4900/6900 - State and Local Governments
JURI 4910/6910 - Natural Resources
JURI 5280/7280 - Environmental Law
JURI 5285/7285 - Environmental Practice Seminar
JURI 5289/7289 - Environmental Law Practicum
JURI 5290/7290 - Interdisciplinary Environmental Law Practicum
JURI 5585/7585 - Bioethics
JURI 5622/7622 - Public Health Law
JURI 5750/7750 - International Environmental Law
KINS(HPRB)(FDNS) 7600 - Public Health Physical Activity and Nutrition Interventions
LAND 3440 - Planting Design I
LAND 3440S - Planting Design I
LAND 3530 - Planning and Design
LAND 4050/6050 - Landscape Architecture Design Studio V
LAND 4050S/6050S - Landscape Architecture Design Studio V
LAND 4060 - Landscape Architecture Design Studio VI
LAND 4060S - Landscape Architecture Design Studio VI
LAND 4090/6090 - Architectural Design
LAND 4251/6251 - Advanced Computer-Aided Design
LAND 4360 - Applied Landscape Ecology
LAND 4580/6580 - Landscapes in Painting, Poetry, Literature, and Design
LAND 6010 - Landscapes
LAND 6020 - Gardens
LAND 6040 - Community and Place
LAND 6310 - Landscape Ecology: Materials and Processes
LAND 6320 - Landscape Design: Materials and Processes
LAND 6340 - Landscape Engineering
LAND 6350 - Ecological Landscape Restoration
LAND 7850 - Campus Planning and Design Studio
MARS 1010-1010L - The Marine Environment

MARS 1011 - Introduction to the Marine Environment
MARS 1015H-1015L - The Marine Environment (Honors)
MARS 1020-1020L - Biology of the Marine Environment
MARS 1025H-1025L - Biology of the Marine Environment (Honors)
MARS 3000 - Coastal Zone and Marine Law
MARS 3100 - Oceans in Peril
MARS 3450-3450L - Marine Biology
MARS 4810/6810 - Global Biogeochemical Cycles
MARS 7020-7020L - Marine Science for Teachers
MARS 8050 - Climate, Oceans, and the Marine Biosphere
MARS 8100 - Estuarine and Coastal Oceanography
MARS 8220 - Geobiology
NRRT 5800/7800 - Environmental Interpretation for Outdoor Recreation and Nature-Based Tourism
NRRT 7980 - Natural Resource Recreation and Tourism Problems
NRRT 8980 - Natural Resource Recreation and Tourism Problems
NRRT(RLST) 5410/7410-5410L/7410L - Wilderness Management
PADP 7230 - Funding Nonprofit Organizations
PADP 7240 - Nonprofit Advocacy and Social Change: Lobbying, Advocacy and Influence in the Nonprofit Sector
PADP 7500 - Local Government Management
PADP 7520 - Urban Policy
PADP 7540 - Productivity Improvement in Local Government
PADP 7920 - Equal Employment Opportunity, Affirmative Action, and Diversity in the Public Sector
PADP 7930 - Human Services Administration in Government
PADP 8210 - Public and Private Provision: Civil Society, Nonprofits, and Government
PADP 8520 - Administration of Local Government: Growth and Development Policy
PADP 8540 - Administration of Local Government: Human Vitality and Quality of Life
PATH 2000H - Social Impact of Plant Diseases (Honors)
PATH 8410 - Advanced Plant Disease Management
PATH(ANTH) 2010 - Plants, Pathogens, and People
PATH(BIOL)(GENE)(PBIO) 6910 - Genetics of Host Plant Resistance to Disease
PATH(FDST) 2030 - Marvelous and Malevolent Microbes
PBHL 3100 - Introduction to Public Health
PBIO 3160-3160L - Mushrooms
PBIO 3400 - Plants and Society
PBIO 3650 - Natural History of Georgia Plants
PBIO 8890-8890L - Plant Physiological Ecology
PBIO(AFST)(BIOL) 3450H - Natural History of Africa (Honors)
PBIO(BCMB)(FORS) 4670/6670 - Plant Molecular Responses to the Environment
PBIO(BIOL) 1210 - Principles of Plant Biology
PBIO(BIOL) 1210H - Principles of Plant Biology (Honors)
PBIO(BIOL) 1210L - Principles of Plant Biology Laboratory
PBIO(BIOL) 1220 - Organismal Plant Biology
PBIO(BIOL) 1220H - Organismal Plant Biology (Honors)
PBIO(WILD)(ECOL) 8410 - Community Ecology
PHIL 2030 - Introduction to Ethics
PHIL 2030H - Introduction to Ethics (Honors)
PHIL 4210/6210 - Social and Political Philosophy
PHIL(EETH) 4250/6250 - Technology and Values
PHRM 3101 - Introduction to Public Health
PHRM 5000 - Non-Traditional Medical Systems and Therapies
PHRM 5500 - Introductory Pharmacy Practice Experience II
PHRM 8610 - Social Behavioral Theory in Health Care
PHRM 8630 - Health Care Systems
PHRM(PMCY) 5530 - Ethics in Health Care
PLAN 6124 - Ethics, Justice, and Professional Practice

PLAN 6520 - Environmental Planning Studio I
PLAN 6540 - Environmental Planning Studio II
POLS 4090 - Social Justice
POLS 4090H - Social Justice (Honors)
POLS 4510 - Public Opinion and American Democracy
POLS 4540 - Interest Group Politics
POLS 4710H - United States Constitutional Law/Civil Liberties (Honors)
POLS 4750 - Gender, Law, and Politics
POLS 6080 - Theories of Social Justice
POLS 6090 - Theories of Equailty
POUL 3500 - Behavior and Welfare of Domestic Animals
PSYC(AFAM) 2150 - Understanding Cultural Diversity
RELI 3010 - Family Dynamics in Morocco
RELI(HIST) 3150 - Religion in the United States
RELI(NAMS) 2004H - Introduction to Religion in Native American Cultures (Honors)
RLST 2000 - Leisure in a Diverse Society
RLST 3850 - Contemporary Societal Issues in Recreation and Leisure Studies
RLST 4000 - An Appetite for Local Leisure: The Slow Food Movement
RLST 4302/6302 - Crime Deviance and Leisure
SOCI 1101 - Introductory Sociology
SOCI 1101H - Introductory Sociology (Honors)
SOCI 2090 - Social Change
SOCI 2420 - Class, Status, and Power
SOCI 2470 - Deviance and Social Control
SOCI 2500 - Culture and Social Institutions
SOCI 2600 - Social Problems
SOCI 2730 - Social Interaction
SOCI 3010 - Sociology of Culture
SOCI 3030 - Sociology of Religion
SOCI 3250 - Social Movements and Collective Behavior
SOCI 3320 - Sociology of Urban Life
SOCI 3330 - On the Road: Tourists, Travelers, Vacationers, Pilgrims, and Adventurers
SOCI 3350 - Animals and Us
SOCI 3500 - Sociology of the Political Economy
SOCI 3750 - Sociology of Work and Industry
SOCI 3950 - Sociology of Organizations
SOCI 4280 - Global Perspectives on Gender
SOCI 4300 - Social Mobilization in Latin America
SOCI 4800 - Sociology of Morality
SOCI 6010 - Sociological Approaches to Culture
SOCI 6090 - Social Change
SOCI 6280 - Sociology of Gender
SOCI 6500 - Sociology of the Political Economy
SOCI 8250 - Seminar on Social Movements
SOCI 8280 - Seminar in Gender Stratification
SOCI 8500 - Seminar in Political Sociology
SOCI(AFAM) 3300 - Global Perspectives on Racism and Sexism
SOCI(ANTH) 6450 - Sociopolitical Ecology
SOCI(INTL) 4560 - Globalization and Work
SOCI(INTL) 4560S - Globalization and Work
SOCI(LACS) 4290 - Sociology of Latin America
SOCI(WMST) 8290 - Seminar in Global Perspectives on Gender
SOWK 2101 - The Social Welfare Institution
SOWK 2107H - The Social Welfare Institution (Honors)
SOWK 2154S - Service-Learning in Introduction to the Social Work Profession
SOWK 2156 - Social Work with Diverse Populations

SOWK 5340 - Human Behavior in the Social Environment
SOWK 5701 - Social Welfare Policy and Services
SOWK 6011 - Social Welfare Policy and the Social Work Profession
SOWK 6022 - Human Behavior in the Social Environment: Theoretical Perspectives
SOWK 6082 - Cultural Diversity
SOWK 6133 - Legislative Advocacy
SOWK(MNPO) 7143 - Organizing Community Groups
SOWK(MNPO) 7397 - Topics in Social Justice
SPCM 2360 - Rhetoric and Popular Culture
SPCM 3320 - Environmental Communication
SPCM 4360/6360 - Communication Strategies in Social Movements
SPCM 4500 - Advanced Interpersonal Communication
SPCM 8520 - Seminar In Communication and Social Influence
SPCM(JRMC) 7611 - Health Advocacy in a Multicultural Society
SPCM(JRMC)(PBHL) 8165 - Public Health Communication
SPED 4800/6800 - Crosscultural Perspectives in Developmental Disabilities: Ireland
STAT 8040 - Environmental Statistics
THEA 2131H - American Ethnic Cinema (Honors)
TXMI 3320 - Residential Building Construction and Materials
TXMI 8140 - Environmental Aspects of Textiles
TXMI 8500 - Contemporary Topics in Textiles, Merchandising and Interiors
UNIV 1114 - Strategies and Skills to Enhance Success for Nontraditional Students
VPAT 4000/6000 - On the Origins of Disease
WASR 8500 - Environmental Systems Analysis and Control
WASR(CRSS)(ECOL)(ENGR)(GEOG)(GEOL) 4700L/6700L - Hydrology, Geology, and Soils of Georgia
WASR(FORS) 4000/6000-4000L/6000L - Forest Soil Management
WASR(FORS) 4110/6110-4110L/6110L - Forest Hydrology
WFED 7560 - Diversity in Workforce Education and Work
WFED 7560E - Diversity in Workforce Education and Work
WFED 9030 - Philosophy of Education and Work
WFED 9030E - Philosophy of Education and Work
WILD 4060/6060-4060L/6060L - Field Ornithology
WILD 4280/6280 - Field Study in Natural History
WILD 7980 - Wildlife Ecology and Management Problems
WILD 8350-8350L - Waterfowl and Wetland Management
WILD 8980 - Wildlife Ecology and Management Problems
WILD(CRSS) 5330/7330-5330L/7330L - Conserving Wildlife in Agricultural Landscapes
WILD(ECOL) 3580-3580L - Vertebrate Natural History
WILD(ECOL) 4040/6040-4040L/6040L - Herpetology
WILD(ECOL) 4575/6575-4575L/6575L - Conservation Medicine
WILD(ECOL) 8330 - Landscape Ecology
WMST 3110 - Gender, Race, Class, Sexuality
WMST 3260 - Gender and Popular Culture
WMST 4010/6010 - Introduction to Feminist Theories
WMST 4010W - Introduction to Feminist Theories
WMST 4120/6120 - Sex, Politics, Science, and Reproduction
WMST 4130/6130 - Transnational Perspectives on Women and Gender
WMST 4170S/6170S - Environment, Gender, Race, and Class
WMST 8030 - Transnational Gender Studies

The website URL where the sustainability course inventory that includes a list of sustainability-related courses is posted: http://www.sustainability.uga.edu/site/academics/sustainability_course_lists

ER-8: Sustainability Courses by Department
Complete 3.62 / 7.00 Tyra Byers, Program Coordinator, Office of Sustainability

The number of departments that offer at least one sustainability-related or -focused course: 47

The total number of departments that offer courses: 101

A list of departments that offer sustainability courses:

College of Agriculture & Environmental Sciences:
Agricultural & Applied Economics; Agricultural Leadership, Education, & Communication; Animal & Dairy Science; Biological & Agricultural Engineering; Crop & Soil Sciences; Entomology; Food Science & Technology; Horticulture; Office of Global Programs; Center for Food Safety

College of Environment & Design:
Environmental Planning; Landscape Architecture; Historic Preservation; Environmental Ethics Certificate Program

College of Public Health:
Environmental Health Science; Health Policy & Management; Institute for Health Management & Mass Destruction Defense; Center for Global Health

Franklin College of Arts & Sciences:
Anthropology, Art (Lamar Dodd School of), Biochemistry & Molecular Biology, Biological Sciences, Cellular Biology, Chemistry, Communication Studies, Comparative Literature, Computer Science, English, Genetics, Geography, Geology, Marine Sciences, Microbiology, Plant Biology, Religion, Sociology

Institute of the Faculty of Engineering

Odum School of Ecology

School of Law

School of Social Work

Warnell School of Forestry & Natural Resources:
Environmental Systems Analysis; Fisheries & Aquaculture; Forest Biology, Biotechnology, Biometrics, Business & Management; Natural Resources, Recreation, & Tourism; Water & Soil Resources; Wildlife Ecology & Management

The website URL where the publicly available sustainability course inventory that includes a list of departments that offer sustainability courses is available:
http://www.sustainability.uga.edu/site/academics

ER-9: Sustainability Learning Outcomes
Complete 1.19 / 10.00 Tyra Byers, Program Coordinator, Office of Sustainability

The number of graduates covered by the sustainability learning outcomes: 1,137

Total number of graduates: 9,517

A list of degree programs that have sustainability learning outcomes:

Related Schools & Colleges:

College of Agricultural & Environmental Sciences

Franklin College of Arts & Sciences
Odum School of Ecology
College of Environment & Design
Warnell School of Forestry & Natural Resources
School of Law
College of Public Health
College of Engineering

Degree Program / Number of Fall 2013 Graduates:

Agricultural and Applied Economics, MS / 3
Agricultural Engineering, BSAE / 27
Agricultural Leadership, MAL / 18
Animal Science, BSA / 75
Anthropology, AB / 76
Conservation Ecology and Sustainable Development,MS / 2
Crop and Soil Sciences, MS / 7
Ecology, BS / 41
Ecology, MS / 4
Environmental Economics and Management, BSES / 28
Environmental Economics, MS / 3
Environmental Engineering, BSENVE / 17
Environmental Health, BSEH / 22
Environmental Health, MS / 2
Environmental Planning and Design, MEPD / 17
Environmental Resource Science, BSES / 5
Fisheries and Wildlife, BSFR / 59
Forestry Resources, MFR / 12
Forestry, BSFR / 16
Geography, AB / 14
Geography, BS / 16
Geology, AB / 2
Geology, BS / 21
Health Promotion, BSHP / 118
Historic Preservation, MHP / 15
Horticulture, BSA / 24
Landscape Architecture, BLA / 52
Landscape Architecture, MLA / 24
Natural Resources, MNR / 13
Sociology, AB / 116
Terry BBA taking ECON 2100 / 176
Water and Soil Resources, BSES / 5
Natural Resources, Recreation and Tourism, BSFR / 22
Public Health, MPH / 85

Total = 1137

The website URL where the publicly available sustainability course inventory that includes a list of degree programs that have specified sustainability learning outcomes is available:
http://sustainability.uga.edu/site/academics/sustainability-related_degree_programs

ER-10: Undergraduate Program in Sustainability
Complete 4.00 / 4.00 Mark Grafton, Intern, Office of Sustainability

Does the institution offer an undergraduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, undergraduate degree program (1st program): Environmental Economics and Management (B.S.E.S)

The website URL for the program (1st program): http://bulletin.uga.edu/MajorsGeneral.aspx?MajorId=64

ER-11: Graduate Program in Sustainability
Complete 4.00 / 4.00 Mark Grafton, Intern, Office of Sustainability

additional URL for Conservation Ecology and Sustainable Development Masters Program:
http://ecology.uga.edu/degree.php?About_the_M.S._in_Conservation_Ecology_Program-6/

Does the institution offer a graduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, graduate-level degree program (1st program): Conservation Ecology and Sustainable Development (M.S.)

The website URL for the program (1st program):
http://www.uga.edu/gradschool/programs/conservation_eco.html

The name of the sustainability-focused, graduate-level degree program (2nd program): Integrative Conservation (Ph.D.)

The website URL for the program (2nd program):
http://ecology.uga.edu/degree.php?About_the_Ph.D._in_Integrative_Conservation-21/

The name of the sustainability-focused, graduate-level degree program (3rd program): Masters in Environmental Planning & Design (M.E.P.D.)

The website URL for the program (3rd program): http://www.ced.uga.edu/index.php/degree/list/cat/mepd/

The name and website URLs of all other sustainability-focused, graduate-level degree program(s): ---

ER-12: Sustainability Immersive Experience
Complete 2.00 / 2.00 Tyra Byers, Program Coordinator, Office of Sustainability

Does the institution offer a program that meets the criteria for this credit?: Yes

A brief description of the sustainability-focused immersive experience(s) offered by the institution:

UGA Global Programs in Sustainability
The UGA Global Programs in Sustainability offers programs abroad in the South Pacific that take a multidisciplinary approach on how humans interact with the environment; implementing courses and field activities that focus on sustainable development, conservation, and human populations. The Sustaining Human Societies and Natural Environment program recognizes the combined environmental, societal, and economic aspects of sustainability and was developed to incorporate all majors. Nine total programs are offered in Australia, New Zealand, Fiji, Antarctica, Hawaii, and the United Kingdom during Spring, May, Summer, Fall and Winter semesters every year.
http://pacific.uga.edu/index.php

Sustainability In Action, Costa Rica campus
Integrating lectures and fieldwork to explore various facets of conservation ecology, organic agriculture, environmental ethics, sociology, and climate change, UGA Costa Rica's new Sustainability in Action program follows acclaimed conservation scholars into the tropics on this collaborative exploration of sustainability.

Sustainable Natural Resource Management in Brazil

The Sustainable Natural Resource Management program in Brazil focuses on the relationship between agricultural production and the environment, specifically agricultural development in Brazil and how it affects the sustainability of areas such as the Amazon Basin. On this 21-day study program during June and July, students gain perspective on natural resource management issues that face large countries through field activities, courses, and interaction with students and professors from local Brazilian universities. http://www.global.uga.edu/students/brazil.html

Sustainable Beef and Grain Production & Marketing Systems- Argentina/Uruguay
The Sustainable Beef and Grain Production & Marketing Systems program in Argentina and Uruguay focuses on the similarities and differences in beef and grain production systems between Argentina and the US, specifically foreign economic policy and the effects on producers. In Uruguay, students learn about sustainable food production through the context of production of beef and other horticultural crops. https://www.oie.uga.edu/ViewProgram/2807

Conservation Biology and Conservation Medicine- Costa Rica
This month-long program is designed to immerse students in the field of conservation biology and medicine, interdisciplinary subjects that combine the fields of animal health, environmental health, human health, economics, ecology, natural resources, sociology and more to maintain biodiversity. It uses the ecology, flora and fauna of Costa Rica as a template to explore these topics. In addition to courses, students also provide service/outreach to local communities and complete research projects to better understand how the interaction between humans and the environment have changed the Costa Rican landscape.
http://www.externalaffairs.uga.edu/costa_rica/index.php/site/program_detail/conservation_biology_conservation_medicine/students

Tropical Watershed Management in Costa Rica
This is a tropical field course focusing on watershed management strategies, focusing primarily on the Tempisque Basin in northwestern Costa Rica. Students start with a two-day course in Georgia then for 21 days visit eight sites that have different land uses and management systems. It is taught in conjunction with the University of Costa Rica and combines the subjects of geography, environmental services, resource management, human impacts, climate change, and public policy to examine different watershed management systems.
http://www.externalaffairs.uga.edu/costa_rica/index.php/site/program_detail/tropical_watershed_management/students

The website URL where information about the immersive experience is available: ---

ER-13: Sustainability Literacy Assessment
-- 0.00 / 2.00 Kevin Kirsche, Director of Sustainability, Office of Sustainability

UGA Discover Abroad has been assessing sustainability literacy of students taking Maymester sustainability-focused and non-sustainability-focused courses on UGA's main campus and abroad. To date, these assessments primarily address sustainability values and beliefs and are therefore not considered to meet the knowledge assessment intent of this credit.

ER-14: Incentives for Developing Sustainability Courses
Complete 3.00 / 3.00 Tyra Byers, Program Coordinator, Office of Sustainability

Does the institution have a program that meets the criteria outlined above?: Yes

A brief description of the program(s): Sustainability Across Curriculum Faculty Development Workshops

These faculty development workshops provide strategies and examples for enhancing teaching aimed at preparing students to address the challenges of sustainability in their professional, civic and personal lives regardless of discipline.

The Committee for the Integration of Sustainability Across the Curriculum – with support from the Office of Vice President for Instruction, Center for Teaching & Learning, Odum School of Ecology and the Office of Sustainability – has offered a two-day faculty development workshop for infusing sustainability into academic curricula at UGA in spring 2012 and 2013. This workshop will be offered again in spring 2014.

The faculty-led workshop will provide opportunities for cross-disciplinary interaction, definitions and examples of sustainability education, discussion of learning outcomes and student engagement, and tours of on-campus sustainability resources. Participants will have the summer to revise an existing syllabus or create a new one.

A brief description of the incentives that faculty members who participate in the program(s) receive:

$500 Faculty Development Grants are available for up to 20 participants. Applications are accepted from all current UGA faculty.

The website URL where information about the program is available: http://sustainability.uga.edu/get-involved/faculty/curriculum-workshops/

Curricular and Co-Curricular Information Reported to STARS by Agnes Scott College

Characteristics	
Full-time Equivalent Enrollment	871
Number of Undergraduate Students	899
Number of Graduate Students	0
Full-time Equivalent Employees	280
Institution type	Baccalaureate
Institutional control	Private non-profit
Endowment size	258,000,000
Percentage of students that are Residential	82.76
Percentage of students that are Full-time commuter	14.91
Percentage of students that are Part-time commuter	2.33
Percentage of students that are On-line only	0.0
Gross square feet of building space	975,858.0
Gross square feet of laboratory space	37,240.0
Acres of cultivated grounds	100.0
Acres of undeveloped land	Not Available
Climate region	Mixed-Humid

Campus Features

Feature	Is Present?	Is Included in Report
Agricultural School	No	No
Medical School	No	No
Pharmacy School	No	No
Public Health	No	No
Veterinary School	No	No
Satellite	No	No
Hospital	No	No
Farm	No	No
Agricultural experiment station	No	No

Co-Curricular Education **17.50 / 18.00**

Credit	Status	Points
Student Sustainability Educators Program	Complete	5.00 / 5.00
Student Sustainability Outreach Campaign	Complete	5.00 / 5.00
Sustainability in New Student Orientation	Complete	2.00 / 2.00
Sustainability Outreach and Publications	Complete	4.00 / 4.00
Student Group	Complete	0.25 / 0.25
Organic Garden	Complete	0.25 / 0.25
Model Room in a Residence Hall	Not Pursuing	0.00 / 0.25
Themed Housing	Complete	0.25 / 0.25
Sustainable Enterprise	Not Pursuing	0.00 / 0.25
Sustainability Events	Complete	0.25 / 0.25
Outdoors Program	Complete	0.25 / 0.25
Themed Semester or Year	Complete	0.25 / 0.25

Curriculum **14.52 / 51.00**

Credit	Status	Points
Sustainability Course Identification	Complete	3.00 / 3.00
Sustainability-Focused Courses	Complete	1.29 / 10.00
Sustainability-Related Courses	Not Pursuing	0.00 / 10.00
Sustainability Courses by Department	Complete	1.23 / 7.00
Sustainability Learning Outcomes	Not Pursuing	0.00 / 10.00
Undergraduate Program in Sustainability	Complete	4.00 / 4.00
Graduate Program in Sustainability	Not Applicable	0.00 /
Sustainability Immersive Experience	Complete	2.00 / 2.00
Sustainability Literacy Assessment	Not Pursuing	0.00 / 2.00
Incentives for Developing Sustainability Courses	Complete	3.00 / 3.00

Detail Description of Programs (Co-curricular)

ER-1: Student Sustainability Educators Program
Complete 5.00 / 5.00 Justine Schwartz, Sustainability Fellow, Sustainability

Total number of degree-seeking students enrolled at the institution: 899

Program name (1st program): Environmental Residents

Number of students served by the program (1st program): 899

A brief description of how the student educators are selected (1st program): All interested, residential students are eligible to apply for the Environmental Residents (ER) program. They must fill out an application, attach a resume and two letters of reference. The group's student co-chairs and staff advisor read over the applications and invite applicants to attend a brief interview. After the interviews, the co-chairs and advisor select candidates based on their availability and willingness to support sustainability programming. Students who wish to be a part of the ER program without participating in the residential aspect can join the ERs as a club member.

A brief description of the formal training that the student educators receive (1st program): In the week before Orientation and first-year students arrive on campus, the Environmental Residents return for a two-day retreat and training program. Led by their staff advisor, they get an overview of sustainability, read and discuss articles pertaining to sustainability generally as well as related to the education and outreach they'll be doing on campus. The ERs go over the expectations for their position--acting as the sustainability liaisons to the student body--and discuss their role as the main environmental interest club on campus. They brainstorm ideas for events and activities for the whole year, as well as plan out their calendar and begin the nomination process to elect the executive board. In addition to their training and planning during the retreat, they also get a chance to have a little fun through get-to-know-you and team building activities designed to foster a strong group dynamic.

A brief description of the staff and/or other financial support the institution provides to the program (1st program): The Environmental Residents are directly supported by the Office of Sustainability with the Sustainability Fellow serving as their staff advisor. They are also a recognized and registered organization through the student senate, and receive a budget supported by the Dean of Students office and the Student Government Association. The Office of Sustainability also provides financial support to the ERs activities when needed.

The website URL for 1st Program: http://agnesscott.edu/about/sustainability/volunteer.aspx

ER-2: Student Sustainability Outreach Campaign
Complete 5.00 / 5.00 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution hold a campaign that meets the criteria for this credit?: Yes

The name of the campaign(s): RecycleMania

A brief description of the campaign(s): Each year Agnes Scott College participates in the national competition, RecycleMania. This competition pits Agnes Scott against colleges on a national and regional scale. For two months the college, particularly the student body, is engaged more intensively in our recycling and composting programs. They are encouraged to recycle as much as possible. Other aspects of the campaign educate the campus on zero waste programs, and discourage contamination. We also put our efforts in the context of waste management issues locally and globally.

A brief description of the measured positive impact(s) of the campaign(s): Zero waste efforts were the first solid initiative from the Office of Sustainability. RecycleMania is a great way to showcase how well we are doing in the realms of recycling and composting. The lasting effects of RecycleMania are that we have

yearly national and regional rankings to report along with our diversion numbers. It is an effective tool to encourage the campus throughout the rest of the year.

The website URL for the campaign: http://agnesscott.edu/about/sustainability/recyclemania.aspx

ER-3: Sustainability in New Student Orientation
Complete 2.00 / 2.00 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution include sustainability prominently in new student orientation?: Yes

A brief description of how sustainability is included prominently in new student orientation: Sustainability is a large part of new student orientation. The Orientation Council committed to reducing paper use and printing and shipping costs by designing Orientation materials to load onto USB drives. Everything from schedules to the Orientation Guide to the course catalog are featured on the small thumb drive. The Office of Sustainability and sustainability efforts are featured prominently in the Orientation Guide, including recycling and composting, the college's print reduction system, alternative transportation options, information about the Environmental and Sustainability Studies minor, and many other sustainability related efforts.

There are opportunities for incoming first-years to hear about sustainability on campus whether it is in a one-on-one or group setting. During orientation, the Office of Sustainability presents to all the incoming first-year students about the college's recycling and composting programs, energy and water reduction, and other aspects of our sustainability efforts. The Office of Sustainability was also a clue and location for a first-year scavenger hunt designed to familiarize students with the physical layout of the campus. All new students participated. In addition, Environmental Residents and sustainability staff gave short presentations to the small groups of first-years.

The website URL where information about sustainability in new student orientation is available: http://www.agnesscott.edu/admission/undergraduate/accepted/orientationschedule.aspx

ER-4: Sustainability Outreach and Publications
Complete 4.00 / 4.00 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution have a central sustainability website that consolidates information about the institution's sustainability efforts?: Yes

A brief description of the central sustainability website that consolidates information about the institution's sustainability efforts: The website for the Office of Sustainability is a great resource for all of the college's sustainability efforts. The available information covers everything from our zero waste efforts, to RecycleMania results, to volunteer opportunities, to information about the college's Climate Action Plan. Currently the college is updating its entire web site, so we expect more coverage of and regular update for sustainability than have been possible in the past.

The website URL for the central sustainability website that consolidates information about the institution's sustainability efforts: http://agnesscott.edu/about/sustainability

Does the institution have a sustainability newsletter?: No

A brief description of the sustainability newsletter: ---

The website URL for the sustainability newsletter: ---

Does the institution have a vehicle to publish and disseminate student research on sustainability?: Yes

A brief description of the vehicle to publish and disseminate student research on sustainability: Every spring, the college hosts the Spring Annual Research Conference, or SpARC. The conference allows

students and faculty to present their research and analysis to the Agnes Scott community. Sustainability has a strong presence during the conference. In 2011, there were four presentations from the Environmental and Sustainability Studies department and/or internship programs.

The website URL for the vehicle to publish and disseminate student research on sustainability: http://www.agnesscott.edu/academics/internships/sparc.aspx

Does the institution have building signage that highlights green building features?: Yes

A brief description of building signage that highlights green building features: The Anna I. Young Alumnae House is the college's first LEED Silver certified building. It's formal parlor is used often, for alumnae events, wedding receptions and other formal gatherings. There is a series of professionally designed materials displayed at each event that highlight the building's green features from the mechanic systems to paint choices and reused materials.

The website URL for building signage that highlights green building features: http://www.agnesscott.edu/alumnae/alumnaehouse

Does the institution have food service area signage and/or brochures that include information about sustainable food systems?: Yes

A brief description of food service area signage and/or brochures that include information about sustainable food systems: The dining hall staff locally sources several food items, and posts noticeable, professionally designed signs to indicate the items' distinction as a local food. There are also similar signs for fair and equal trade items. Finally, the dining hall staff has hung signs encouraging customers to taste food before they take a plate, which cuts down on food waste.

The website URL for food service area signage and/or brochures that include information about sustainable food systems: ---

Does the institution have signage on the grounds about sustainable grounds-keeping strategies employed?: Yes

A brief description of signage on the grounds about sustainable grounds-keeping strategies employed: The college's irrigation comes 100% from our retention pond on campus. There are signs across campus landscaping to indicate the irrigation water is pumped from the retention pond so that everyone, including the surrounding community, is aware that we are not using drinking water for irrigation.

The website URL for signage on the grounds about sustainable grounds-keeping strategies employed: http://agnesscott.edu/about/sustainability/waterconservation.aspx

Does the institution have a sustainability walking map or tour?: No

A brief description of the sustainability walking map or tour: ---

The website URL of the sustainability walking map or tour: ---

Does the institution have a guide for commuters about how to use alternative methods of transportation?: Yes

A brief description of the guide for commuters about how to use alternative methods of transportation: On both the sustainability web site and the sustainability blog, there is information about alternative transportation methods, such as the bike share program, car share program and reduced price public transportation passes. In addition, our dining hall contributes used cooking oil to another college's bio-diesel powered bus system.

The website URL for the guide for commuters about how to use alternative methods of transportation: http://agnesscott.edu/about/sustainability

Does the institution have a guide for green living and incorporating sustainability into the residential experience?: No

A brief description of the guide for green living and incorporating sustainability into the residential experience: ---

The website URL for the guide for green living and incorporating sustainability into the residential experience: ---

Does the institution have regular coverage of sustainability in the main student newspaper (either through a regular column or a reporter assigned to the sustainability beat)?: Yes

A brief description of regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: The Office of Sustainability has a liaison to the college's student newspaper and sustainability and "green" efforts are regularly featured in the paper.

The website URL for regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: http://ascprofile.com/

Does the institution produce another sustainability publication or outreach material not covered above? (1st material): Yes

A brief description of this material: We have made a series of posters aimed at encouraging behavioral changes in energy consumption. The posters have a similar aesthetic so students can easily recognize them. These posters range from competition announcements to instructional materials with information about turning off lights, switching to CFL bulbs or hang-drying clothing. They are posted all around campus.

The website URL for this material: http://ascsustainability.tumblr.com/

Does the institution produce another sustainability publication or outreach material not covered above? (2nd material): Yes

A brief description of this material: The Office of Sustainability is very active through social media. We have a Twitter account @SustainableASC, as well as a Facebook page and Tumblr. The Tumblr is our primary blog where we keep supplemental information to our website, and it automatically updates to our Twitter account.

The website URL for this material: http://ascsustainability.tumblr.com/

Does the institution produce another sustainability publication or outreach material not covered above? (3rd material): Yes

A brief description of this material: Our primary outreach so far has been articles and illustrations in the Agnes Scott alumnae magazine which we use as handouts for multiple audiences. We had a major article just after our programs started which we forward to people interested in our start-up phase. We have two "maps" that show our progress over several years and a recent two page summary of our latest efforts, highlighting some students and faculty.

The website URL for this material: ---

Tier2-1: Student Group
Complete 0.25 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution have an active student group focused on sustainability?: Yes

A brief description of the student group: The Environmental Residents are the Office of Sustainability's liaisons to the student body. They are also the main environmental interest group on campus and function as a club that promotes sustainability and environmental awareness in the greater campus community.

The website URL where information about the student group is available:
http://agnesscott.edu/about/sustainability/volunteer.aspx

Tier2-2: Organic Garden
Complete 0.25 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution have an on-campus garden where students are able to gain organic farming and/or gardening experience?: Yes

A brief description of the garden: Through the Office of Sustainability, the college has an organic demonstration garden where students can volunteer. They are welcome to take home any vegetables and herbs harvested. Additionally, the Office of Sustainability manages the greenhouse which allows the organic gardening efforts to continue through the winter months. A local community garden uses the greenhouse to seed their plants in the early spring, and they allow students to volunteer in the greenhouse as well as at the garden.

The website URL where information about the garden is available: ---

Tier2-3: Model Room in a Residence Hall
-- 0.00 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

This credit was marked as Not Pursuing so Reporting Fields will not be displayed.

Tier2-4: Themed Housing
Complete 0.25 / 0.25 Susan Kidd, Director of Sustainability, Sustainability Office

Does the institution have sustainability-themed housing (residential floor or hall, or theme house) where residents learn about sustainability together and to which residents must apply?: Yes

A brief description of the themed housing: Agnes Scott has recently established an "Eco-house" themed residence. Students are currently applying to live in the house beginning in the summer of 2012. The house provides Agnes Scott and the surrounding Decatur community with an environmentally friendly residence facility, and promotes an opportunity for educating students, faculty, staff and community members about sustainable living. This house encompasses the objective of sustainable living by incorporating the three E's of sustainability: environment, economy, and equity. The three E's will help create goals for residents living in this house to experience sustainable living in the best ways possible through educational experiences and actions towards conservation. The Eco House helps to spread awareness about environmental concerns and to educate the rest of the campus about ways to live more efficiently and become more conscious about how their choices affect the world. This house embodies the ideas of sustainability on campus through example.

The website URL where information about the themed housing is available: ---

Tier2-5: Sustainable Enterprise
-- 0.00 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

This credit was marked as Not Pursuing so Reporting Fields will not be displayed.

Tier2-6: Sustainability Events
Complete 0.25 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution hold major events related to sustainability, such as conferences, speaker series, or symposia, that have students as the intended audience?: Yes

A brief description of the event(s): The Office of Sustainability often plays host to large events, such as conferences or a speaker series, and students are welcome and encouraged to attend.

In 2011, the college and the city of Decatur hosted architect Steve Mouzon to discuss his book "The Original Green." In early 2012, the Institute for Georgia Environmental Leaders had their annual summit at Agnes Scott. They had many panel discussions available to students, particularly one that focused on green careers. The college has also hosted a reading and discussion by David Orr.

The Environmental Residents put together a panel discussion called "The Three E's Panel," which discussed the triple bottom line through the lens of student life.

The website URL where information about the event(s) are available: ---

Tier2-7: Outdoors Program
Complete 0.25 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

Does the institution have a wilderness or outdoors program that organizes hiking, backpacking, kayaking, or other outings for students and follows Leave No Trace principles?: Yes

A brief description of the program: The Outdoor Adventure Club began in the Fall of 2007. They organize various outings for students such as indoor and outdoor rock climbing, overnight backpacking and camping trips, and hiking on wilderness trails and on Atlanta's urban trails.

The website URL where information about the program is available: ---

Tier2-8: Themed Semester or Year
Complete 0.25 / 0.25 Justine Schwartz, Sustainability Fellow, Sustainability

Has the institution chosen a sustainability-related theme for its themed semester, year, or first-year experience during the past three years?: Yes

A brief description of the themed semester, year, or first-year experience: Each fall the college's president sets the tone for the academic year with her speech at Agnes Scott's Opening Convocation. In the fall of 2010, the president announced it was the year of living honorably. Designed to mirror the college's honor code, sustainability was an integral part of the theme and it continues to be through our strategic plan and master planning process.

The sustainability-related book that was chosen, if applicable: ---

The website URL where information about the theme is available: ---

Detail Description of Programs (Curricular)

ER-5: Sustainability Course Identification
Complete 3.00 / 3.00 Susan Kidd, Director of Sustainability, Sustainability Office

Has the institution developed a definition of sustainability in the curriculum?: Yes

A copy of the institution's definition of sustainability in the curriculum?: Sustainability refers to a stable balance between rates of consumption and renewal of resources, and to the impact of human actions on the health and maintenance of the biosphere. Sustainability issues are central to many dimensions of human life and culture, especially in the interaction of biological and physical principles, social and political systems, economic decisions and ethical thought.

Has the institution identified its sustainability-focused and sustainability-related course offerings?: Yes

A brief description of the methodology the institution followed to complete the inventory: Sustainability-focused courses incorporate as a major theme one or more of the dimensions of sustainability as a lens through which students will see the relevance of the subject matter to local, national and global sustainability issues.

Sustainability-related courses consider as at least one distinct course component or module the relationship between one or more of the dimensions of sustainability and the discipline.

Does the institution make its sustainability course inventory publicly available online?: Yes

The website URL where the sustainability course inventory is posted:
http://www.agnesscott.edu/academics/undergraduate/environmentalandsustainabilitystudies

ER-6: Sustainability-Focused Courses
Complete 1.29 / 10.00 Susan Kidd, Director of Sustainability, Sustainability Office

The number of sustainability-focused courses offered: 12

The total number of courses offered: 927

Number of years covered by the data: Two

A list of sustainability-focused courses offered:

ESS 101 (2)
ESS 201
FYS 190
ANT 231 (2)
BIO 108
BIO 308
Public Health 101 (3)
Philosophy 109

The website URL where the publicly available sustainability course inventory that includes a list of sustainability-focused courses is available:
http://www.agnesscott.edu/about/sustainability/academics.aspx

A copy of the sustainability course inventory: ---

ER-7: Sustainability-Related Courses
-- 0.00 / 10.00

This credit was marked as Not Pursuing so Reporting Fields will not be displayed.

ER-8: Sustainability Courses by Department
Complete 1.23 / 7.00 Susan Kidd, Director of Sustainability, Sustainability Office

Biology Department Website: http://biology.agnesscott.edu/

Sociology / Anthropology Website:
http://www.agnesscott.edu/academics/undergraduate/sociologyanthropology

Public Health Website: http://www.agnesscott.edu/academics/undergraduate/publichealth

The number of departments that offer at least one sustainability-related or -focused course: 3

The total number of departments that offer courses: 19

A list of departments that offer sustainability courses:

Biology
Sociology/Anthropology
Public Health

(First Year Seminar and Environmental & Sustainability Studies are not considered departments, so the courses in ER-6 are not all reflected here.)

The website URL where the publicly available sustainability course inventory that includes a list of departments that offer sustainability courses is available: ---

A copy of the sustainability course inventory : ---

ER-9: Sustainability Learning Outcomes
-- 0.00 / 10.00

This credit was marked as Not Pursuing so Reporting Fields will not be displayed.

ER-10: Undergraduate Program in Sustainability
Complete 4.00 / 4.00 Susan Kidd, Director of Sustainability, Sustainability Office

Does the institution offer an undergraduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, undergraduate degree program (1st program): Environmental and Sustainability Studies

The website URL for the program (1st program):
http://agnesscott.edu/academics/undergraduate/environmentalandsustainabilitystudies

ER-11: Graduate Program in Sustainability
n/a 0.00 / Susan Kidd, Director of Sustainability, Sustainability Office

This credit was marked as Not Applicable for the following reason: Institution offers fewer than 25 distinct graduate programs.

ER-12: Sustainability Immersive Experience
Complete 2.00 / 2.00 Susan Kidd, Director of Sustainability, Sustainability Office

Does the institution offer a program that meets the criteria for this credit?: Yes

A brief description of the sustainability-focused immersive experience(s) offered by the institution: Biology 215 examines the biology of marine organisms in temperate and tropical environments at selected sites on a Georgia barrier island and in the Caribbean. The course introduces the student to the principles of marine biology; investigating and applying these concepts through laboratory and field studies of barrier islands, sandy beaches, rocky shores and coral reef habitats. Field studies are conducted at the University of Georgia, Marine Institute, Sapelo Island, GA, and at the Institute for Marine Science, Roatan, Bay Islands, Honduras. The student also will gain insight into other aspects of marine science including satellite monitoring of marine resources, sustainability and the impact of human life on the marine environment. This is an immersive summer course that was offered during the two year period of calculating our STARS curriculum credits.

The website URL where information about the immersive experience is available: ---

ER-13: Sustainability Literacy Assessment
-- 0.00 / 2.00 Susan Kidd, Director of Sustainability, Sustainability Office

This credit was marked as Not Pursuing so Reporting Fields will not be displayed.

ER-14: Incentives for Developing Sustainability Courses
Complete 3.00 / 3.00 Susan Kidd, Director of Sustainability, Sustainability Office

Does the institution have a program that meets the criteria outlined above?: Yes

A brief description of the program(s): Agnes Scott College offers a training program for teaching sustainability across the curriculum. Faculty receive a stipend for attending. In turn they commit to develop a sustainability- related or sustainability-focused course after completion of the training program. Eight faculty were trained in the first Azalea Project offering and eight more will be trained in 2012. The college has also supported two faculty members to participate in national or regional "train the trainer" workshops. They lead the workshops for their peers on campus.

A brief description of the incentives that faculty members who participate in the program(s) receive: Stipend for attendance and course development, as well as technical assistance.

The website URL where information about the program is available: ---

Curricular and Co-Curricular Information Reported to STARS by Emory University

Emory has decided to be as inclusive as possible in reporting our STARS data. Therefore, Emory is reporting for our entire main contiguous campus, including research and Emory Healthcare and facilities contiguous to our main campus (including Emory University Hospital, Wesley Woods Hospital, Yerkes National Primate Research Center, Emory Clinics A and B, Emory Eye Center, the Rehabilitation Center, The Emory Clinic at 1525 Clifton, Winship Cancer Institute, the School of Medicine, the Emory University Hospital Education Annex, and several other research buildings). This operational boundary definition is in congruence with Emory's greenhouse gas emissions inventory, which includes the previously mentioned facilities because Healthcare is a large energy consumer and quality data is available for these locations.

As a result, 123 buildings with a total square footage of approximately 9,000,000 square feet have been considered in this assessment.

Co-Curricular Education **18.00 / 18.00**

Credit	Status	Points
Student Sustainability Educators Program	Complete	5.00 / 5.00
Student Sustainability Outreach Campaign	Complete	5.00 / 5.00
Sustainability in New Student Orientation	Complete	2.00 / 2.00
Sustainability Outreach and Publications	Complete	4.00 / 4.00
Student Group	Complete	0.25 / 0.25
Organic Garden	Complete	0.25 / 0.25
Model Room in a Residence Hall	Complete	0.25 / 0.25
Themed Housing	Complete	0.25 / 0.25
Sustainable Enterprise	Complete	0.25 / 0.25
Sustainability Events	Complete	0.25 / 0.25
Outdoors Program	Complete	0.25 / 0.25
Themed Semester or Year	Complete	0.25 / 0.25

Curriculum **30.26 / 55.00**

Credit	Status	Points
Sustainability Course Identification	Complete	3.00 / 3.00
Sustainability-Focused Courses	Complete	2.96 / 10.00
Sustainability-Related Courses	Complete	3.14 / 10.00
Sustainability Courses by Department	Complete	4.38 / 7.00
Sustainability Learning Outcomes	Complete	1.78 / 10.00
Undergraduate Program in Sustainability	Complete	4.00 / 4.00
Graduate Program in Sustainability	Complete	4.00 / 4.00
Sustainability Immersive Experience	Complete	2.00 / 2.00
Sustainability Literacy Assessment	Complete	2.00 / 2.00
Incentives for Developing Sustainability Courses	Complete	3.00 / 3.00

Detail Description of Programs (Co-curricular)

ER-1: Student Sustainability Educators Program
Complete 5.00 / 5.00 Jessica Levy, Intern, Office of Sustainability Initiatives

Total number of degree-seeking students enrolled at the institution: 12,236

Program name (1st program): Resident Advisor Program

Number of students served by the program (1st program): 4,221

A brief description of how the student educators are selected (1st program): Resident Advisor (RA) applicants apply online and participate in an interview with professional staff and students and a group process activity. Based on their applications, recommendations and performance in the interview process, they are selected for the position.

A brief description of the formal training that the student educators receive (1st program): All Resident Advisors (RAs) receive sustainability training and training on the Emory as Place Initiative during Resident Advisor Training in August. Resident Advisors incorporate this sustainability knowledge into hall programming throughout the year. Resident Advisors also receive additional training during the RA class held throughout the regular school year. Resident Advisors in Few and Evans Halls, which are part of the Living Green First Year Living/Learning community, receive additional training in sustainability.

A brief description of the staff and/or other financial support the institution provides to the program (1st program): Resident Advisors (RAs) receive financial and staff support from the Office of Residence Life & Housing. All RAs also receive a stipend in addition to free room and board.

The website URL for 1st Program: http://www.emory.edu/HOUSING/JOBS/ra.html

Program name (2nd program): Emory Dining Green Team

Number of students served by the program (2nd program): 12,236

A brief description of how the student educators are selected (2nd program): Green Team members are self-selected through voluntary participation with the organization.

A brief description of the formal training that the student educators receive (2nd program): Green Team members receive training and instruction from staff liaison Julie Shaffer and senior members of the Dining Green Team.

A brief description of the staff and/or other financial support the institution provides to the program (2nd program): The Green team receives staff support through Emory Dining's Sustainability Food Service Education Coordinator, Julie Shaffer.

The website URL for 2nd program: http://www.emory.edu/dining/Green_Team.php

ER-2: Student Sustainability Outreach Campaign
Complete 5.00 / 5.00 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution hold a campaign that meets the criteria for this credit?: Yes

The name of the campaign(s): Energy Awareness Campaign and Reduction Competition; Recyclemania; Haiti Relief Conservation Challenge; Zero Waste Commencement; Don't Dump It, Donate It!

A brief description of the campaign(s):

Energy Awareness Campaign and Building Energy Reduction Competition:
Campus-wide energy reduction campaigns are organized annually by the Office of Sustainability Initiatives. A prize goes to the greatest reduction of energy use in comparison with that month in the previous year. Outreach efforts include articles and posters, banners around campus, signs near elevators, etc.

Recyclemania:
Emory also participates annually in Recyclemania.

Haiti Relief Conservation Challenge:
In 2010, Emory participated in this challenge, which turned energy reduction savings into money to send two research teams to Haiti. All cost savings from reduced electricity usage from March of 2010 as compared to the same month in 2009 were redirected to a fund managed by the Global Health Institute to fund two cross-university student research projects in Haiti that will improve access to chlorinated water and assess mental health needs.

Zero-Waste Commencement:
At Emory's 2010 Graduation, all College and professional school Commencement events were organized as zero-waste events. Emory Recycles provided equipment for composting and recycling to help graduates, guests, faculty, and staff place their waste in the proper containers and keep it out of the landfill. A number of events had volunteers and balloons at their waste stations to help keep compostables and recyclables out of the landfill and educate guests about the zero-waste event.

Don't Dump It, Donate It!:
This event is coordinated by the Emory Recycles Program in coordination with several local Atlanta charities. This drive gives students an opportunity to donate items such as clothes, bedding, or furniture they no longer have use for to local Atlanta charities.

A brief description of the measured positive impact(s) of the campaign(s):

Energy Awareness Campaign:
Emory's annual energy reduction competition resulted in a $30,500 drop in utility costs in the month of October 2010. Overall, the contest resulted in savings of 414,000 kWh, 317 tons of CO_2 emissions, and 54,000 gallons of water compared to October 2009.

Recyclemania:
During the 2010 competition, Emory placed 8th out of 346 schools in the Gorilla Prize Competition. During the competition, Emory increased its weekly recycling tonnage from 86,051.0 lbs during Week 1 to 88,891.0 lbs during Week 10.

Haiti Relief Conservation Challenge:
Through the campaign, Emory saw a 4% energy reduction on top of ongoing energy reduction efforts and saved $32,940. This money was used to send two teams to Haiti to conduct relief projects.

Zero-Waste Commencement:
14 Commencement events participated in the Zero-Waste Commencement efforts, including the graduation ceremonies for the graduate and professional schools, the College, as well as the Baccalaureate Brunch. 1.85 tons of waste were diverted from the landfill.

Don't Dump It, Donate It!:
During the 2010 drive, roughly 5,000 lbs of material, mostly clothing, were donated by students and diverted from the landfill.

The website URL for the campaign: http://www.recyclemaniacs.org/

ER-3: Sustainability in New Student Orientation
Complete 2.00 / 2.00 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution include sustainability prominently in new student orientation?: Yes

A brief description of how sustainability is included prominently in new student orientation: In 2009, Emory held its first "Zero-Waste" Orientation. This tradition has continued every year since. All possible divertible material, e.g. recyclables and food waste, is collected via Emory's recycling and composting programs and sent to the appropriate vendor. Zero-Waste Orientation events included the Orientation Fair, a required event for all new students on the first day of orientation, the Parent's Breakfast, and the Orientation Cook-out and Coke Toast, and reaches over 4,000 new students and parents and diverted over 1.74 tons of waste from the landfill.

For several years, new Emory students have received 10 sustainability tips and a general introduction to sustainability at Emory in a flyer and/or via the Orientation website, which has replaced pre-arrival paper orientation material sent to new students. Information on alternative transportation options and “back to school” shopping tips are also provided.

On arrival at Emory, new and returning students receive a door hangtag with 10 energy saving tips. Each student receives a reusable water bottle (and information about problems with bottled water) and a recycled-content tote bag, with information about sustainability on it. All residence halls have active, in-room recycling programs.

The Office of Sustainability Initiatives, the Emory as Place program and Bike Emory have three tables to provide information to incoming students at the Orientation Fair, which all new students are required to attend. Educational Garden Project information is available, compact fluorescent light bulbs are provided to students, and sustainability t-shirts are available for sale. Recycled-content tote bags are also provided to students at the fair. Students are encouraged to peruse the new sustainability website and to volunteer for activities and sign up for the listserv. Zip Car and Bike Emory also have a major presence at the fair, offering bike safety tips, bike check-out program, and alternative transportation information.

For graduate students, the Emory as Place Sustainability Initiative provides a 30-minute slide-show introduction as part of regular orientation. This program highlights Emory's and Atlanta's history, civil rights struggles, environmental challenges, and opportunities for students to contribute. In addition, all new graduate students receive a recycled-content tote bag with information about recycling, and there is a table at orientation with information about alternative transportation and Bike Emory.

In the Goizueta Business School, the BBA Program Orientation has moved in recent years to reduce the amount of paper distributed to students and instead direct them to a list of helpful websites. Each new student receives a reusable water bottle as part of the orientation program and recycling is present throughout the morning orientation program

In the School of Nursing, the School Life Committee highlights sustainability in the new student orientation by showing the "Emory as Place" video, going on a woods walk, and distributing sustainability reusable grocery totes and water bottles.

In Candler School of Theology's orientation, Emory's Director of Sustainability Initiatives, Ciannat Howett, presented at a sustainability panel.

The website URL where information about sustainability in new student orientation is available: http://sustainability.emory.edu/page/1013/Emory-as-Place

ER-4: Sustainability Outreach and Publications
Complete 4.00 / 4.00 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have a central sustainability website that consolidates information about the institution's sustainability efforts?: Yes

A brief description of the central sustainability website that consolidates information about the institution's sustainability efforts: The Office of Sustainability Initiatives website serves as a central resource for Emory's sustainability vision, efforts, news, events, organizations, policies, guidelines and initiatives. In addition, the website provides links to other related websites, including Emory Recycles, the Emory University LEED Map, the Department of Parking and Transportation, Bike Emory, the Emory as Place blog, the Outdoor Emory Organization and the Emory Environmental Alliance.

The website URL for the central sustainability website that consolidates information about the institution's sustainability efforts: http://sustainability.emory.edu/

Does the institution have a sustainability newsletter?: Yes

A brief description of the sustainability newsletter: The Office of Sustainability Initiatives publishes an online newsletter twice a year that is distributed to the Emory community and surrounding neighborhoods. OSI also issues sustainability notices through the Sustainability Listserv, which updates subscribers about sustainability events and news around campus. Currently, the listserv has 1,037 subscribers, and notices are sent out roughly 3-4 times a month.

The sustainability website also features an "Articles and Resources" section, which serves as an online compilation of News and Articles related to sustainability efforts and events at Emory.

Lastly, sustainability features prominently in numerous campus newsletters including "Emory Magazine", "Emory Report", Housing and Residence Life's "Living Green Newsletter" and Campus Services' "Newsbeat," which regularly features green efforts of the Facilities Management Department.

The website URL for the sustainability newsletter: http://sustainability.emory.edu/page/1018/Articles-and-Resources

Does the institution have a vehicle to publish and disseminate student research on sustainability?: Yes

A brief description of the vehicle to publish and disseminate student research on sustainability: The Scholarly Inquiry and Research at Emory (SIRE) Program serves as the primary vehicle for showcasing undergraduate student research. SIRE promotes undergraduate research projects through grants, faculty-student research partnerships, and summer research stipends, offering advantages to both students and faculty. Undergraduate Research Symposiums are held bi-annually and feature student research from all disciplines. While this symposium is not focused directly on sustainability research, numerous research projects in the past have related to sustainability. Some examples of previous research projects in sustainability research include: "Identification and Assessment of Water, Sanitation, and Hygiene Practices of Two Rural Communities in Greater Accra, Ghana" by Andrew Foote (Fall 2009), "Seasonal Influence of CSO [Combined Sewage Overflows] Water Chemical and Environmental Parameters on Culex Vector Oviposition" by An Nguyen (Fall 2009), and "Home Grown: Ngöbe home gardens in a changing world" by Gillian Locascio (Spring 2009).

The website URL for the vehicle to publish and disseminate student research on sustainability: http://college.emory.edu/home/academic/research/sire/

Does the institution have building signage that highlights green building features?: Yes

A brief description of building signage that highlights green building features: All LEED certified buildings at Emory feature a LEED certification plaque. There is also additional signage around campus that highlights particular green features of some of the LEED buildings. Turman, Longstreet-Mean, and Evans and Few residence halls are equipped with a building dashboard that measures and displays total electricity, heating energy, cooling energy, water consumption and per-floor electricity use. In many of our LEED certified buildings, a number of plaques highlight various green features of the building, including natural lighting and recycled material used in construction. The Campus Services' demonstration green roof, featured on Building A, includes signage that explains the project and the differences between the four green roofs being tested.

The website URL for building signage that highlights green building features: http://sustainability.emory.edu/page/1007/green-buildings/green-space

Does the institution have food service area signage and/or brochures that include information about sustainable food systems?: Yes

A brief description of food service area signage and/or brochures that include information about sustainable food systems: In the main dining halls, there is signage to highlight the local and organic foods available in the dining area, as well as signs instructing customers about recycling and composting. Cling stickers at each food station indicate if the food is obtained from the state of Georgia or Emory's 8 state region, as defined in the Emory Sustainability Local Food goal. Outdoor light pole banners, electronic signs, posters, and hard copy fliers draw attention to Emory's Educational Garden projects, Emory Farmer's Market, Local Food specials, and other sustainable food initiatives. The Emory Dining Sustainability website and a "Sustainability News corner" in Emory Dining's monthly electronic newsletter also highlight sustainable food options and tips.

The website URL for food service area signage and/or brochures that include information about sustainable food systems: http://www.emory.edu/dining/Sustainability.php

Does the institution have signage on the grounds about sustainable grounds-keeping strategies employed?: Yes

A brief description of signage on the grounds about sustainable grounds-keeping strategies employed: The Emory Grounds Department uses signage around campus to indicate water conservation efforts, indicating when irrigation is provided by underground cisterns and the use of plant species that use less water.

The website URL for signage on the grounds about sustainable grounds-keeping strategies employed: ---

Does the institution have a sustainability walking map or tour?: Yes

A brief description of the sustainability walking map or tour: In May 2010, Emory launched a comprehensive online, interactive campus sustainability map in conjunction with Emory's Walk n' Roll campaign. Using the layered map, people can view the locations of Emory's educational food gardens, Bike Racks and shower facilities, building tours of Emory's LEED certified buildings, Cliff shuttle routes, recycling options, and guides to campus plant life, history, arts and more.

In addition to the online Sustainability Map, the "Emory as Place" Guided Lullwater Walks provide a one hour and fifteen minute introduction to the history, ecosystems, and ethical responsibilities inherent in Lullwater Preserve as part of Emory University's legacy. Exercises include story-telling, identification of plants and their historical Creek and Cherokee usage, and discussion of Emory's commitment to sustainability. These guided walks are open to all Emory community members and are regularly taken by first year residents as part of their hall programming.

The website URL of the sustainability walking map or tour:
http://sustainability.emory.edu/html/map/index.html

Does the institution have a guide for commuters about how to use alternative methods of transportation?: Yes

A brief description of the guide for commuters about how to use alternative methods of transportation: Both the Office of Sustainability Initiatives and the Office of Transportation and Parking websites provide information to commuters about Emory's many alternative commute options, including BIKE Emory (features Bike Map), Cliff Shuttles (features Cliff Shuttle schedules and real-time locater), subsidized MARTA passes, and more.

The website URL for the guide for commuters about how to use alternative methods of transportation:
http://transportation.emory.edu/transportation/index.html

Does the institution have a guide for green living and incorporating sustainability into the residential experience?: Yes

A brief description of the guide for green living and incorporating sustainability into the residential experience: Emory's "Living Green: Sustainability in the 21st Century Living Learning Community" is a program available to first year students at Emory which fosters students commitment to a living green lifestyle through various hall programs. In addition, residence hall bulletin boards and hall decorations highlight various green living tips ranging from energy reduction to recycling.

The Asbury House serves as the base for the S.E.E.D. Student Experiment in Educational Design program, which is a housing option for upper class Emory students to learn about and practice a green lifestyle while also participating in service and educational opportunities in the community.

The website URL for the guide for green living and incorporating sustainability into the residential experience: http://www.emory.edu/HOUSING/LLC/green_about.html

Does the institution have regular coverage of sustainability in the main student newspaper (either through a regular column or a reporter assigned to the sustainability beat)?: Yes

A brief description of regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: Emory's student newspaper, The Emory Wheel, does not have a regular column or a reporter assigned to cover sustainability-related news, but it regularly covers sustainability efforts and events on and around campus.

The website URL for regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: http://www.emorywheel.com/

Does the institution produce another sustainability publication or outreach material not covered above? (1st material): Yes

A brief description of this material: Generation Response is officially "Emory's Environmental/Humanitarian magazine" written by Emory students. The magazine covers local, national, and international humanitarian and environmental issues. Articles shed light on the people and organizations at Emory and in the greater Atlanta area that are making a positive difference in response to the issues.

The website URL for this material: http://generationresponse.wordpress.com/

Does the institution produce another sustainability publication or outreach material not covered above? (2nd material): Yes

A brief description of this material: Hybrid Vigor is Emory's magazine focusing on Science and Society. Although Hybrid Vigor examines a number of issues with the aim of providing an alternative perspective to other science publications, the magazine often covers sustainability-related topics and the 2010 Spring edition focused entirely on Green issues.

The website URL for this material: ---

Does the institution produce another sustainability publication or outreach material not covered above? (3rd material): Yes

A brief description of this material: Featured prominently around Emory's campus are light-post banners that promote various sustainability initiatives and sustainability tips to the Emory community and visitors. The banners advertise upcoming events, highlight energy saving tips, and promote Emory's Sustainability Pledge which asks community members to choose particular sustainability efforts that they already do or they will complete in the near future.

The website URL for this material: ---

Does the institution produce another sustainability publication or outreach material not covered above? (4th material): Yes

A brief description of this material: Second Nature is a monthly publication that aims to promote global health, public health, and sustainability awareness at Emory as well as on a national and global basis. Through this publication, the writers aim to trigger members of the Emory community to make healthier decisions, even small ones such as taking the stairs versus the elevator, that can truly transform the community. The goal of the organization is to promote changes in a new, creative, and influential way.

The website URL for this material: ---

Tier2-1: Student Group

Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have an active student group focused on sustainability?: Yes

A brief description of the student group: Emory has a number of student organizations that work on issues related to sustainability.

The Student Sustainability Forum is an umbrella organization comprised of student leaders from sustainability-related organizations, student publications, and student government associations which helps to coordinate and build awareness about sustainability efforts across the various schools of the university.

Emory Environmental Alliance is the primary undergraduate environmental group that emerged from the former Ecoseac and works closely with the Office of Sustainability Initiatives to effect both institutional and societal change. Though attending more to environmental issues, its interests include the full range of the "triple bottom line."

Slow Food Emory is an organization that promotes “good, clean, and fair food” on campus through eating and cooking together, discussing food access and production issues, educating peers to think critically about their food and its origins, and other activities that reconnect us with the pleasure of eating and the unquantifiable value of food.

Emory Conservation Organization (ECO) raises awareness among Emory students as well as members of the Atlanta community regarding the loss of biodiversity worldwide and promotes conservation of the delicate and complex ecosystems that sustain life on earth.

MetroVision is a community outreach organization that tutors juveniles at the MetroVision juvenile detention center in Atlanta at least once a week. The group's goal is to motivate juvenile offenders to become successful once they are released back into the community by allowing them to express their creativity and by making them aware of societal issues that they have the opportunity to impact.

EUGHO (Emory Undergraduate Global Health Organization) serves to provide information and opportunities for student action concerning international health issues. EUGHO tries to enlighten students about graduate opportunities in the field of global health that reach beyond the obvious public health school options. EUGHO participates in volunteer opportunities both on and off campus with EGHO, Emory's graduate school global health organization. These activities include Quilt on the Quad, World AIDS day, Medshare International, health walks, and educational trips to the CDC (Center for Disease Control) and the Carter Center.

The Emory Global Health Organization is a graduate student organization based at Emory's Rollins School of Public Health (RSPH). The group seeks to engage in issues of global health outside the classroom by organizing community service events, advocacy campaigns and networking opportunities.

The Goizueta Energy Group (GEG) is dedicated to educating and involving members of the business school community with the traditional and non-traditional energy markets. GEG is not only interested in oil and coal, but the entire vast and growing list of energy sources in this world, including sources of alternative energy. Through club meetings and guest speakers from the energy industry, the goal is to increase awareness on the constant evolution of this dynamic sector and how it relates to economic, geopolitical, and other kinds of developments across the globe.

Net Impact Goizueta is an international nonprofit organization with an Emory Chapter, whose mission is to inspire, educate, and equip individuals to use the power of business to create a more socially and environmentally sustainable world. Net Impact members are current and emerging leaders in CSR, social entrepreneurship, nonprofit management, international development, and environmental sustainability who are actively improving the world.

REHAC (Rollins Environmental Health and Action Committee) is a student-run organization at the Rollins School of Public Health that advocates reducing pollutants, pathogens, and physical hazards and promotes a harmonious relationship with nature. They seek to improve and protect our living and working environment through locally-focused and collaborative education, action and reaction. REHAC maintains an organic food garden and has created a Sustainable Food subcommittee that organizes food-related education activities, collects consumer preferences on sustainability for the new green café opening at Rollins, and organized a CSA drop off point.

CORE (Conserving Oxford's Resources and Energy) is an Oxford College's student organization focused on sustainability related issues. CORE maintains strong ties with the faculty's ad-hoc sustainability group, the Sustainability Committee. At the beginning of each semester, the committee sets at least one relevant and attainable goal that is used as one measure of success throughout the semester. The organization has four sub-committees on Recycling, Invasive Plants, Food, and PR.

There are also the following sustainability related groups on campus: College Council Ad-Hoc Environmental Task Force, Environmental Law & Conservation Society, Outdoor Emory, Nourish International, SGA Sustainability Committee, Students for Progressive Transit, and the Wilderness Medical Society.

The website URL where information about the student group is available:
http://sustainability.emory.edu/page/1035/Student-Engagement

Tier2-2: Organic Garden
Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have an on-campus garden where students are able to gain organic farming and/or gardening experience?: Yes

A brief description of the garden: The Emory Sustainability Vision set a goal to "include community gardens in the university landscape plan for aesthetic and educational purposes." To date, Emory has eight small educational food gardens on campus that highlight sustainability and food. These food gardens are maintained by a team of staff, students, neighbors, and faculty, and harvests are shared within each team. Two other gardens are dedicated to general education about seasonal grains and fruits, and a third medicinal herb garden was established at the School of Nursing in 2008. All of the gardens are managed using organic gardening techniques.

The website URL where information about the garden is available:
http://sustainability.emory.edu/page/1008/Sustainable-Food

Tier2-3: Model Room in a Residence Hall
Complete 0.25 / 0.25 Ciannat Howett, Director, Sustainability Initiatives

Does the institution have an occupied, formally designated model room in a residence hall that is open to students during regular hours and demonstrates sustainable living principles?: Yes

A brief description of the model room: The Asbury House, which houses the Student Experiment in Ecological Design (S.E.E.D.) Program, serves as Emory's model housing for sustainable living. The purpose of S.E.E.D. is to incorporate lifestyle and technological changes in order to decrease the environmental waste of the house and those who inhabit it. The theme is designed to educate and excite people about the environment and how we can best adapt to a new wave of awareness. The SEED House is open to Emory students as an example of sustainable living, including practices like indoor and outdoor composting, reusing sink and shower water for flushing the toilet, turning lights off as often as possible, eating locally, organically and seasonally, recycling/reusing when possible, unplugging electrical items when not in use, using only compact fluorescent light bulbs, and more.

The website URL where information about the model room in the residence hall is available:
http://www.emory.edu/HOUSING/UNDERGRAD/asbury.html

Tier2-4: Themed Housing
Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have sustainability-themed housing (residential floor or hall, or theme house) where residents learn about sustainability together and to which residents must apply?: Yes

A brief description of the themed housing: Emory has several sustainability-themed housing options for students. First year students have the opportunity to participate in the “Living Green: Sustainability in the 21st Century” at LEED Gold Few and Evans halls, “Citizenship: Your Passport to Emory Program” in LEED Silver Turman Hall, or the “Global Cultures: Bringing the World to Emory” in registered, but not yet certified LEED Longstreet-Means themed residence halls. (These programs are used for Tier 2-8: Themed Semester or Year as part of Emory's First Year Experience and are therefore not credited here.) The Asbury House, which houses SEED (Student Experiment in Ecological Design), provides an option for upperclassmen to participate in a sustainable living community. The house incorporates lifestyle and technological changes in order to decrease the environmental waste of the house and those who inhabit it. Outside of goals, which include indoor and outdoor composting, reusing sink and shower water for flushing toilets, taking shorter showers, and turning lights off, house members volunteer at GAIA gardens and maintain a plot at a local community garden.

The website URL where information about the themed housing is available:
http://www.emory.edu/HOUSING/LLC/green.html

Tier2-5: Sustainable Enterprise
Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have a student-run enterprise, such as a cafe, through which students gain sustainable business skills?: Yes

A brief description of the enterprise: The Green Bean Coffee Cart is a student-run sustainable enterprise committed to nurturing the community and environment while maintaining a practical and profitable business. Student employees are involved in the evolution of business practices and provide a fuel of creativity. The Green Bean aims to be a long-lasting and community-friendly campus resource, both for great tasting coffee and tea, and for sustainability education. The Green Bean sells coffee from Cafe Campesino, a fair trade and organic coffee roaster in Americus, Georgia, and organic, vegan Pure Bliss Bars, made in Marietta, GA, in addition to fair trade and organic tea, hot cocoa, and pastries. The Green Bean Coffee Cart is located outside Cannon Chapel under the archway and is open from 8:30 a.m. to 1 p.m. Monday through Friday. The Green Bean also provides catering services by request for special events. The Green Bean was started from an Incentives Grant issued by the Office of Sustainability Initiatives.

The website URL where information about the sustainable enterprise is available:
http://sustainability.emory.edu/page/1035/Student-Engagement

Tier2-6: Sustainability Events
Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution hold major events related to sustainability, such as conferences, speaker series, or symposia, that have students as the intended audience?: Yes

A brief description of the event(s): Emory's Office of Sustainability Initiatives hosts an annual Sustainability Speaker Series that is open to Emory students, faculty, staff and community members. Previous guests have included authors Barbara Kingsolver, Steven Hopp, Alice Waters, Jay Hakes, Paul Hawken, Steve Sanderson, Jonathan Bloom, and Carlo Petrini.

Emory also annually participates in Campus Sustainability Day (October), Arbor Day Celebration and Tree Planting (February) and Earth Day (April), all of which typically feature many events on campus, mostly student-run.

Emory's Sustainable Food Initiative and the Emory Farmer's Market regularly host events to educate Emory students and community members about sustainable food. Events in 2009-2010 included "Berry Bash", "Tomato Centric" and "Grow Your Own". Events in 2009 included a chefs lecture series featuring Ann Quatrano, Linton Hopkins, and Scott Peacock.

Other sustainability-related events include Green Networking Night, hosted by the Career Center, which brings over 50 representatives of environmental organizations in Atlanta to network with Emory students, as well as movie screenings, etc., which have students as the targeted audience.

Lastly, Emory's Wonderful Wednesdays, an Emory student-led tradition that features various student groups in Asbury Circle on Wednesdays from 11am-2pm for social and political activism and other activities, annually features a sustainability-related theme.

A list of sustainability-related events can be found on the Office of Sustainability Initiatives website.

The website URL where information about the event(s) are available:
http://sustainability.emory.edu/page/1016/Sustainability-Events#/?i=3

Tier2-7: Outdoors Program
Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have a wilderness or outdoors program that organizes hiking, backpacking, kayaking, or other outings for students and follows Leave No Trace principles?: Yes

A brief description of the program: The Outdoor Emory Organization (OEO), which annually retains a membership of 350 or more students, is Emory's largest student-run organization and is one of the largest and most active university outdoors organizations in the country. OEO operates in line with Leave No Trace and includes this practice in the curriculum used to train trip leaders. The group organizes a number of weekend trips around the Southeast and has explored North America, from the Grand Canyon to Baja Mexico, and the Boundary Waters to Lake Tahoe. The trips are subsidized by money from the Student Government Association (SGA) to increase their affordability for Emory students. Every year, OEO leads three-day Adventure Orientation trips for incoming students, which take place before students move in and begin orientation and give incoming students the opportunity to meet other new faces and learn about Emory from upperclassman while sleeping under the stars, rafting down a river, climbing rocks, or riding horses through the countryside.

The website URL where information about the program is available:
http://www.students.emory.edu/OEO/general/about.cfm

Tier2-8: Themed Semester or Year
Complete 0.25 / 0.25 Jessica Levy, Intern, Office of Sustainability Initiatives

Has the institution chosen a sustainability-related theme for its themed semester, year, or first-year experience during the past three years?: Yes

A brief description of the themed semester, year, or first-year experience: First year students at Emory have the opportunity to participate in the Living-Learning Communities as part of Emory's First Year at Emory experience, run by the Office of Residence Life and Housing. There are three Living-Learning Communities: "Citizenship: Your Passport to Emory", "Living Green: Sustainability in the 21st Century", and "Global Cultures: Bringing the World to Emory". While the "Living Green" program is the one most directly focused on sustainability, each of these experiences incorporates aspects of sustainability, equity, and social justice into hall programming, required freshman seminars and the overall residence hall atmosphere.

The sustainability-related book that was chosen, if applicable: ---

The website URL where information about the theme is available:
http://www.emory.edu/HOUSING/LLC/first.html

Detail Description of Programs (Curricular)

ER-5: Sustainability Course Identification
Complete 3.00 / 3.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

Has the institution developed a definition of sustainability in the curriculum?: Yes

A copy of the institution's definition of sustainability in the curriculum?: Sustainability-focused courses concentrate on the concept of sustainability, including its social, economic, and environmental dimensions, or examine an issue or topic using sustainability as a lens.

Sustainability-related courses incorporate sustainability as a course component or module, or address a single sustainability principle or issue, such as economic development, social justice, public health, energy, water, sustainable building or design, environmental health, land use, environmental policy, biodiversity, socio-economic diversity, human rights, etc.

Has the institution identified its sustainability-focused and sustainability-related course offerings?: Yes

A brief description of the methodology the institution followed to complete the inventory: In 2008, an electronic survey was sent to 1100 faculty members, excluding medical personnel and temporary, part-time faculty. The questions were drawn from the STARS queries. Over 153 courses were reported.

In the summer of 2010, a follow-up survey was sent to all Emory Department Chairs, Program Directors, and Department Administrators to update the previous course inventory.

Does the institution make its sustainability course inventory publicly available online?: Yes

The website URL where the sustainability course inventory is posted:
http://sustainability.emory.edu/page/1046/Sustainability-related-Courses

ER-6: Sustainability-Focused Courses
Complete 2.96 / 10.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

The number of sustainability-focused courses offered: 71

The total number of courses offered: 2,399

Number of years covered by the data: Three

A list of sustainability-focused courses offered:
Globalization & Transnational Culture (ANT/WS 352)
Global Health, Culture & Society: Intro to Global Health (ANT 338)
Anthropological Demography (ANT 311)
Nutritional Anthropology (ANT 311)
Past, Present, & Future of Food & Population (ANT 190)
Primate Behavior & Ecology (ANT 302)
Anthropology of Coffee & Chocolate (ANT 190)
Fast Food/Slow Food (ANT 250)
Issues in Sustainability (ANT 386)
Sustainable Food Fair (ANT 386)
Poor People, Rich Nations: Anthropology & Development (ANT 385)
Sustainable Development: Anthropological Perspectives (ANT 357/351)
Agrarian Transformations
Perspective in Chemistry: Proteins, Patients, Prisoners (CHEM 468WR)
Latin American Economic Development (ECON 364S)

Economics of Poverty (ECON 190S)
Health Policy & Economics (ECON 372)
Development Issues for Sub-Saharan Africa (ECON 366/390/AFS 389/POLS 385)
Economic Development (ECON 362/ AFS 389)
Resource & Environmental Economics (ECON 465)
Environmental Economics & Policy (ECON 365)
Culture & Community in Science Education (EDS 572)
American Literature & the Transformation of the Environment (ENG 190)
Ecocriticism & Green Studies (ENG 368/CPLT 389)
Environmental Restoration (ENVS 190S)
Sustainable Water Resources (ENVS 348)
Environmental Geology (ENVS 235)
Climate Change (ENVS 190S)
Climatology (ENVS 330)
Ecological Economics (ENVS 324)
Energy, Resources, & Environmental Change (ENVS 220)
Food & Water: Global Crisis (ENVS/ANTH/IDS 385)
Ecology of Emory (ENVS 442)
Natural History of Georgia (ENVS 385)
Fishers & Fisheries (ENVS 458)
Ecology, Health, & Disease (ENVS 385)
International Environmental Policy (ENVS 377/POLS 385)
Nature & Film (FILM/GER 373)
Intro to Italian Studies (ITAL 270R)
Special Topics in German Studies: "Screening Nature" (GER 375)
Intro to Global Health GHCS 102
Foundations of Sustainability/Nature of Evidence (IDS 206)
Environmental Ethics (PHIL 317)
Nature/Environment/ Sustainability (PHIL 117)
Philosophy of Nature (PHIL 417)
Nature & Culture in Japan (JPN/EAS 275)
Emory as Place (REL 382)
Religion & Ecology (REL 329)
Religion & Sustainability Internship (REL 380 R)
Transforming the Self: Contemplative Practices of Well-Being & Sustainability in American & Global Contexts (REL 700)
Wilderness Spirituality (REL 329)
Religion & Conflict: Comparative TRCs (REL 357R/AFS 389)
Special Topics: Sociology of Sustainability (SOC 389)
Social Change in Developing Societies (SOC 231R)
The 60s & Global Revolution (SPAN 460)
Sustainability & the Environment (SPAN 212)
Social Movements Theory & Practice (ANT 350)
Biology Independent Study (BIO 299R)
Environmental Science (BIO 111)
Sustainability Seminar: Fossil Fuels (CHEM 285R)
Special Topics-Sustainability (CHEM 285R)
Social Change in Developing Societies (SOC 231R)
Sustainability Issues for Gen Management (MBA Prog)
Climate Change & Other International Environmental Law Challenges (LAW 843)
Environmental Law (LAW 624)
Moultrie Farmworker Project (NRSG 461)
The Bible & the Care of the Earth (OT 670)
Summer electives in Republic of Georgia
Clinical Trials (BIOS 520)
Community Transformation (GH 572)

Strategies in Global Health (GH 542)

The website URL where the publicly available sustainability course inventory that includes a list of sustainability-focused courses is available: http://sustainability.emory.edu/page/1046/Sustainability-related-Courses

ER-7: Sustainability-Related Courses
Complete 3.14 / 10.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

The number of sustainability-related courses offered: 226

The total number of courses offered: 2,399

Number of years covered by the data: Three

A list of sustainability-related courses offered:

Intro to African American Studies
Concepts & Methods in Cultural Anthropology
Intro to Anthropology
Intro to Archaeology
Culture, Economy & Ecology
Development, Change, & Sustainability
Foundations of Development Studies
Understanding Architecture
Shamanism & Art in the Americas
Cell Biology & Oncogenes
History & Biology of Addiction & Depression
Science of Sound of Water
Ecology
Ecology Lab
Evolution: Concepts & Misconceptions
Cell Biology
General Chemistry Laboratory II
Intro to General Chemistry I Lab
Perspectives in Chemistry
On Recent Discoveries by Emory Researchers
Basic Organic Chem II Lab
General Chemistry II
Basic Organic Chem II
Intermediate Atmospheric Chemistry
Foundations of Chemistry II
Directed Reading in Economics
Public Finance
Public Choice
Latin American Economies
Culture & Community in Science Education (EDS 471)
Freshman Seminar: Culture, Community & Science
Science Education & Youth Empowerment
Romanticsm
Studies in Drama: Early Modern Animal Planet
Milton
The Ecology of Romanticism
Water
Freshman Seminar: Environmental Restoration
Urban Watersheds: Human Impacts on Natural Systems

Spatial & Landscape Ecology
Introduction to Environmental Studies
Environmental Studies Seminar
Geology & Human Health
Medicine & Compassion
Italy Culture & Civilizattion
Caribbean Literature & Culture
Screening Nature
Intermediate German I: "Coming of Age through the Ages"
Personal Health
Wellness: An Inside/Out Approach
Fitness Yoga
Principles of Physical Fitness
Beginning Scuba
U.S. Women's Multicultural History
The West in World Context
Freshman Seminar: Good Worlds, Bad Worlds: Utopian & Dystopian Visions
Science & the Nature of Evidence
Local Consumption & Global Exchange
Mapping the Urban Environment
Interdisciplinary Foundations
Interdisciplinary Perspectives on Water
The Work of Memory
Environmental Journalism
Science & Health Writing
Sugar & Rum
Visitor Meets Native: Tourism & Its Encounters with Caribbean Economy, Politics & Culture
Drums & Gongs: Asian Music Performance
Musical Cultures of the World
Musical Transformations of Asia
Music & Social Politics
American Transcendentalism
Intro to Philosophy
Happiness
Quest for Meaning in Post-Consumer Culture
Social Ethics, Sustainability, Race & Gender
Posthumanist Ethics & Aesthetics
Moral Ambiguity
American Philosphy
Asian Philosophy
Bioethics
Ethics
Ethics & the Environment
Feminist Philosophies (PHIL 423)
Feminist Philosophy (PHIL 123)
Good Life
Intro to Bioethics
Intro to Ethics
Philosophy of Human Nature
Philosophy of Medicine & Health
Philosophy of Race & Ethnicity
Social & Political Philosophy (PHIL 120)
Social & Political Philosophy (PHIL 420)
The Good Life
Contemporary Moral Issues
Freshmen Seminar: Happiness

Moral Issues
Intro to Polymers (PHYS 564)
Intro to Polymers (PHYS 751R)
Advanced Graduate Laboratory
Advanced Undergraduate Laboratory
Intro to American Politics
Global Human Rights
Politics of Oil Dependency
Community Building & Social Change
Planning & Evaluating Community Initiatives
Poverty in America
Practicum in Community Building
Political Economy of Development
Grad Seminar on the Political Economy of Development
Politics of Education & Health
Politics of Southeast Asia
Economic Development in Africa
Environmental Policy
Primate Social Psychology
Animal Behavior
Child Development
Graduate Teaching Seminar
Special Topics: Positive Psychology
Lab in Experimental Methods
Applied Statistics for Psychology
Advanced Chinese
Advanced Readings in Modern Chinese
Mind & Body in China
Imperial Russian Literature
The "Mad" Russian
Twentieth century Russian literature in English translation
20th C. Russian Lit. in English trans.
19th Century Russian Literature in English translation
"Mad Russian"
Religion Internship
The Holocaust
Religion, Ethics & Public Policy
Ethics: Bioethics & Religious Thought
War in the Hebrew Bible
Religion & Healing: Religious Literacy/Healthcare
Modern Buddhism: Religious Identity in Asia & America
Daily Life in Ancient Israel
Modern Islam
Intro to Religion: Nonviolent Christianity meets Nonviolent Islam
Restorative Justice: 'Great Desideratum' of Western Religions
Religious Pluralism in Atlanta
Freshman Seminar: Contemplation & Protest
Theology of Social Protest
Individual & Society
Social Interaction Processes
Aging in Society
Social Movements
Intro to Sociology
Narrative of Displacement: the Literature of Emigration & Exile
Amazon Rain Forest & Brazil
Modern Peninsular Studies

Drawing the Line: The Mexico-U.S. Frontera & its Stories
Contemporary Issues in Dance
Creating New Works
Intro to Women's Studies
Drug Development: From Proposal to Prescription
Field Botany
Plants & Society
Cell Biology & Genetics
Freshwater Ecology
Introductory Gen. Chemistry
Introductory Gen. Chemistry Lab
Intro to General Chemistry I w/Lab
Intro to General Chemistry I Lab
Outdoor Connection
Child Development
Psychology of Gender
Intro to Sociology
Social Problems
Intro to Sociology
Intro to Women's Studies
Entrepreneurship
Negotiation (BUS 432)
Negotiation (BUS 632)
Corporate Social Responsibility & Sustainability-The Emory Project
Social Enterprise (BUS 431)
Social Enterprise (BUS 631)
Animal Law
Disability & Discrimination
Genetics & the Law
Health Law
Law & Vulnerability
Law of International Common Spaces
Field Placement program -- various sustainability-related legal settings.
International Human Rights
International Environmental Law
Land Use Planning
Environmental Advocacy W/S
Advanced Environmental Law Seminars
Community Public Health Nursing Classroom & Clinical Experience
Birth & Global Health
Human Lactation & Breastfeeding Management
Clinical Nursing III: Developing Families
Empowering Youth for Global Citizenship
Christian Ethics
Leading the Congregation
Cancer Biology & Oncogenes
Biostatistics Methods I
Geographic Information Systems in Public Health
Global Climate Change: Health Impacts & Response
Public Health Ecology
Recognition, Evaluation, & Control of Environmental & Occupational Hazards I
Recognition, Evaluation, & Control of Environmental & Occupational Hazards II
Perspective in Environmental Health
Directed Study: Determinants of Food Intake
Water & Sanitation in Developing Countries
Environment, Climate & Infectious Diseases

Interdiscplinary Perspective on Human Rights
Health Systems Financing Methods & Evidence
Health systems performance in developing countries
International Health Program Management
Community-based Participatory Action Research
Global Perspectives in Parasitic Diseases
Diabetes: Epidemiology & Prevention
Diabetes: A model for Global Non-communicable Disease Prevention & Control
Core Issues in Global Health: Water, Santation, & Hygiene
Health as Social Justice
Knowledge Translation: From Research to Policy & Practice
Global Elimination of Micronutrient Malnutrition
Reproductive Health Program Mangement
Communicating for Healthy Behavior & Social Change
Development, Change & Sustainability
Ecology of Emory Lab
Introduction to Environmental Studies Laboratory
EASL Summer Internship
Social Interaction Processes

The website URL where the sustainability course inventory that includes a list of sustainability-related courses is posted: http://sustainability.emory.edu/page/1046/Sustainability-related-Courses

ER-8: Sustainability Courses by Department
Complete 4.38 / 7.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

Emory College and Graduate School have both departments and programs. Each of these entities offers courses and are therefore both counted in this credit.

Four of Emory's professional schools do not have departments and were therefore counted as a single entity school.

The number of departments that offer at least one sustainability-related or -focused course: 40

The total number of departments that offer courses: 71

A list of departments that offer sustainability courses:

EC: African American Studies
EC: Anthropology
EC: Art History
EC: Biology
EC: Chemistry
EC: Economics
EC: Educational Studies
EC: English
EC: Environmental Studies
EC: Film Studies
EC: French & Italian Studies
EC: German Studies
EC: Global Health, Culture, & Society
EC: Health, Phys Ed.
EC: History
EC: ILA
EC: Journalism
EC: Latin American & Caribbean Studies

EC: Music
EC: Philosophy
EC: Physics
EC: Political Science
EC: Psychology
EC: REALC
EC: REES
EC: Religion
EC: Sociology
EC: Spanish & Portuguese
EC: Theater & Dance
EC: Women's Studies
GS: Graduate Division of Biological & Biomedical Sciences
School of Business
School of Law
School of Nursing
School of Theology
SOM: Hematology Med Oncology
SOM: Pulmonary Med
SPH: Biostatistics & Bioinformatics
SPH: Environmental Health
SPH: Global Health

The website URL where the publicly available sustainability course inventory that includes a list of departments that offer sustainability courses is available:
http://sustainability.emory.edu/page/1046/Sustainability-related-Courses

ER-9: Sustainability Learning Outcomes
Complete 1.78 / 10.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

Not all programs at Emory University utilize learning outcomes as an assessment tool for academic programs. Therefore it is difficult to discern which programs have sustainability learning outcomes as defined by AASHE.

The number of graduates covered by the sustainability learning outcomes: 696

Total number of graduates: 3,906

A list of degree programs that have sustainability learning outcomes:

BS/BA Environmental Studies (21)
BA/BS Community Building and Social Change Minor (4)
MA Development Practice (No graduates yet)
Sustainability Minor (No graduates yet)
MPH Environmental Health (28)
MPH Global Health (71)
BA Anthropology (about 200)
ECAS- Latin American and Caribbean Studies (4)
BA/BS Physics and Astronomy (2)
LGS/BA- Sociology (70)
GBS-BBA Program (296)

The website URL where the publicly available sustainability course inventory that includes a list of degree programs that have specified sustainability learning outcomes is available:
http://sustainability.emory.edu/page/1046/Sustainability-related-Courses

A list or sample of the sustainability learning outcomes associated with the degree programs:

BA/BS: Environmental Studies Major
Students will develop the ability to think critically about environmental problems, and to apply ENVS problem solving skills to diverse problems. Students will develop their individual creative capacity, the ability to generate novel ideas, methods and solutions to environmental issues.
Social Science and Policy*
215 Human Ecology
225 Institutions and the Environment
227WR Environmental Policy
*Students are required to take 1 of these 3 Social Science and Policy ENVS courses.

ENVS students must also concentrate in one of the following areas:
1. Sustainability and Development
2. Conservation and Resource Management
3. Environment and Health
4. The Urban Environment
5. Ecology
6. Environmental Policy

BA/BS Minor in Community Building and Social Change
CBSC 370A: Community Bldg & Soc Change I
CBSC 370B: Planning Community Initiatives
CBSC 492R: Practicum:Comm Bldg & Soc Chng

Masters in Development Practice (MDP)
The Master's in Development Practice core curriculum integrates substantive knowledge spanning the disciplines of health sciences, natural sciences and engineering, social sciences and management in order to foster the development of practical, cross-disciplinary skills necessary to prepare students for the field of sustainable development practice.
• Health Sciences - nutrition, population sciences and reproductive health, basic epidemiology of infectious and non-infectious disease, health policy, health system design and management
• Natural Sciences and Engineering - agriculture, forestry and fishery management, water management, energy, engineering, environment and climate science, information management systems and design
• Social Sciences - anthropology, economics, education, politics and international political economies, statistics
• Management - project design and management, budget planning and financial management, commodities management, communication and negotiations, critical self-reflection, geographic information systems and decision making tools, institutional resource and human resource management, monitoring and evaluation

Sustainability Minor:
Students minoring in Sustainability must complete an integrative Introduction to Sustainability course, an interdisciplinary Capstone course (which involves a hands-on research or outreach activity), plus four other electives, distributed among the natural and social sciences and the humanities. In addition to coursework, students demonstrate the integration of sustainability knowledge and perspectives with an electronic portfolio that supports reflection on key issues. The portfolio is reviewed by a faculty steering committee each semester.

For more information visit:
http://ila.emory.edu/home/undergraduate/majors_minors/sustainability_minor.html

Anthropology BA:
Demonstrate an understanding of cultural theory and ethnographic research, with a more sophisticated understanding of the research in at least one sub-discipline of cultural anthropology, including medical

anthropology and global health, linguistics, political economy and development, sustainability, gender and sexuality, globalization, or psychological anthropology.

Physics and Astronomy BS/BA:
Apply and appreciate ethical principles of scientific conduct in regard to environmental protection, use of resources, and collaboration with colleagues.

GBS – BBA Program: Students will consider traditional business objectives in the context of community and environmental impact

ECAS – Latin American and Caribbean Studies: Social equity/poverty, interconnectedness of social, economic challenges.

LGS – Sociology: Comparative political economy and global development; culture; social inequality; and social psychology.

ER-10: Undergraduate Program in Sustainability
Complete 4.00 / 4.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

Does the institution offer an undergraduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, undergraduate degree program (1st program): Sustainability Minor

The website URL for the program (1st program):
http://ila.emory.edu/home/undergraduate/majors_minors/sustainability_minor.html

The name of the sustainability-focused, undergraduate degree program (2nd program): Environmental Studies Major

The website URL for the program (2nd program): http://www.envs.emory.edu/undergrad/

The name of the sustainability-focused, undergraduate degree program (3rd program): Community Building and Social Change Minor

The website URL for the program (3rd program):
http://college.emory.edu/home/academic/program/minor/community_building_social_change.html

The name and website URLs of all other sustainability-focused, undergraduate degree program(s): ---

ER-11: Graduate Program in Sustainability
Complete 4.00 / 4.00 Meredith Stocks, Intern, Office of Sustainability Initiatives

Does the institution offer a graduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, graduate-level degree program (1st program): Master's in Development Practice

The website URL for the program (1st program): http://web.gs.emory.edu/mdp/

The name of the sustainability-focused, graduate-level degree program (2nd program): Masters in Environmental Health

The website URL for the program (2nd program):
http://www.sph.emory.edu/cms/departments_centers/eh/degree_progams/index.html

The name of the sustainability-focused, graduate-level degree program (3rd program): Masters in Global Environmental Health

The website URL for the program (3rd program):
http://www.sph.emory.edu/cms/departments_centers/eh/degree_progams/index.html

The name and website URLs of all other sustainability-focused, graduate-level degree program(s): ---

ER-12: Sustainability Immersive Experience
Complete 2.00 / 2.00 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution offer a program that meets the criteria for this credit?: Yes

A brief description of the sustainability-focused immersive experience(s) offered by the institution: A number of Emory-based study abroad programs allow students an optional sustainability focus in their papers, original research, or other experiences. Emory's Tibetan Studies program in India focuses on language, Buddhism, and religion, but many themes of sustainability are present. Emory-approved study abroad programs (run by other schools or organizations) are more explicitly focused on sustainability (such as the SIT program in Panama). Emory offers scholarship funding for these programs.

UPGRADE is a joint program between The Center for International Programs Abroad and Ethics and Servant Leadership (EASL). UPGRADE provides a grant for Emory College students who wish to gain practical hands-on training in sustainable development by undertaking service programs in developing countries during the summer months. This non-credit bearing program provides students with the opportunity to undertake an international educational experience emphasizing service and focuses on students with a distinct set of skills and experiences. In-country supervision and training is done through the Foundation for Sustainable Development.

The Ethics and Servant Leadership program (EASL) offers students an opportunity to participate in summer internships, alternative Spring Break trips, and the Forum (an academic year program) while teaching students about service and community involvement. Many of these opportunities provide sustainability-focused immersive experiences, including placements at Emory's Office of Sustainability Initiatives, Decatur High School Community Garden, The Carter Center, Greening Youth Foundation, Park Pride, Trees Atlanta, Urban League, CARE, and Gaia Gardens.

The Emory Community Building and Social Change Fellows Programs, offered through the Office of University Community Partnerships (OUCP), provides students the chance to participate in an intensive twelve-month program that works first-hand with some of the challenges and opportunities for building community in contemporary urban America. Through academic coursework, an intensive 12-week summer field experience, local and national site visits, small group meetings, and a public presentation of work, Emory Community Building Fellows have the opportunity to see first-hand the critical role that collaboration plays in the resolution of important public problems, as well as hone skills needed to transform their passion into meaningful actions for the greater good. Dealing directly with community building and neighborhood transformation, the OUCP Community Building and Social Change Fellows Program incorporates the environmental, social, and economic aspects of sustainability into a hands on learning experience for students.

http://oucp.emory.edu/our_work/engaged_learning/cbsc_index.html

The website URL where information about the immersive experience is available:
http://www.cipa.emory.edu/

ER-13: Sustainability Literacy Assessment
Complete 2.00 / 2.00 Ciannat Howett, Director, Sustainability Initiatives

Has the institution conducted a sustainability literacy assessment?: Yes

Did the assessment include a baseline evaluation of students and then a follow-up evaluation of the same cohort?: Yes

A copy of the questions included in the sustainability literacy assessment: ---

A copy of the questions included in the sustainability literacy assessment : ---

A brief description of how the assessment was developed: 'Schooling' for Sustainability: Factors Affecting College Students' Environmentally Responsible Behavior

Karen Hegtvedt and Cathryn Johnson
Department of Sociology
Emory University

In 2008, Emory University opened two freshmen "living green" dorms, providing the basis for a naturally occurring field study focused on how aspects of college life influence the development of students' environmentally responsible behavior. Our study includes data from students living in the "green" dorms and two traditional dorms before arriving on campus, at the end of their first year, and at the end of their senior year (spring 2012). We also interviewed a subset of survey respondents during their sophomore year. Our data show that certain aspects of who you are, i.e. your environmental identity, what you "gather", e.g. sources of information, perceptions of university sustainability efforts, and what others around you do impact behaviors related to conservation, recycling, and advocacy.

A brief description of how the assessment was administered: The study includes data from students living in the "green" dorms and two traditional dorms before arriving on campus, at the end of their first year, and at the end of their senior year (spring 2012). We also interviewed a subset of survey respondents during their sophomore year.

A brief summary of results from the assessment: The data show that certain aspects of who you are, i.e. your environmental identity, what you "gather", e.g. sources of information, perceptions of university sustainability efforts, and what others around you do impact behaviors related to conservation, recycling, and advocacy.

The website URL where information about the literacy assessment is available: ---

ER-14: Incentives for Developing Sustainability Courses
Complete 3.00 / 3.00 Jessica Levy, Intern, Office of Sustainability Initiatives

Does the institution have a program that meets the criteria outlined above?: Yes

A brief description of the program(s): Emory began the Piedmont Project in 2001, which offers a program of incentives to infuse sustainability across the curriculum to faculty from every unit of the university. The program accepts up to 20 applicants a year, provides a stipend of $1,000, and requires a 2-day May workshop, summer independent time to develop a new syllabus or new course module, an August field trip and lunch to share results of the summer's work, and a follow-up dinner a year later to discuss continuing growth in understanding about sustainability. Faculty have participated from both of Emory's liberal arts undergraduate colleges, the graduate school of arts and sciences, and all six professional schools (Business, Law, Medicine, Nursing, Public Health, and Theology). Departments involved include languages (Spanish, French, Italian, Chinese, and Russian), mathematics, chemistry, biology, physical education and dance, sociology, anthropology, psychology, political science, history, economics, English, comparative literature, liberal arts, journalism, women's studies, religion, philosophy, classics, art, theater, and music. Faculty syllabi are posted on the Piedmont Project website.

The Piedmont Project has continued for ten years and a survey in 2006 determined that several thousand students a year are affected by the new or renovated courses. Over 120 faculty have participated, and

impacts are felt in a renovated medical school curriculum, new teaching techniques, faculty research programs, and new interdisciplinary collaborations. The adoption of sustainability as a core principle of the University during the 2005 strategic planning process, is widely regarded as attributable to the breadth of participation in the Piedmont Project.

A brief description of the incentives that faculty members who participate in the program(s) receive: Each program participant receives a $1,000 stipend, workshop assistance, and summer independent time to develop a new syllabus or new course module related to sustainability. Participants also attend an August field trip and lunch where they share results of their summer work, and a follow-up dinner a year later to discuss continuing growth in understandings about sustainability.

The website URL where information about the program is available:
http://sustainability.emory.edu/page/1021/Piedmont-Project

Curricular and Co-Curricular Information Reported to STARS by the Georgia Institute of Technology

Characteristics	
Full-time Equivalent Enrollment	20,942
Number of Undergraduate Students	13,003
Number of Graduate Students	6,429
Full-time Equivalent Employees	6,313
Institution type	Master
Institutional control	Public
Endowment size	1,626,835,000
Percentage of students that are Residential	41.0
Percentage of students that are Full-time commuter	51.0
Percentage of students that are Part-time commuter	Not Available
Percentage of students that are On-line only	Not Available
Gross square feet of building space	14,555,000.0
Gross square feet of laboratory space	2,000,000.0
Acres of cultivated grounds	430.0
Acres of undeveloped land	128.0
Climate region	Mixed-Humid

Campus Features

Feature	**Is Present?**	**Is Included in Report**
Agricultural School	No	No
Medical School	No	No
Pharmacy School	No	No
Public Health	No	No
Veterinary School	No	No
Satellite	Yes	Yes
Hospital	No	No
Farm	No	No
Agricultural experiment station	No	No

Additional Details

Georgia Tech is reporting on its main campus in downtown Atlanta plus leased campus space in NW Atlanta. Facilities' Utilities Group manage the utilities bills for these facilities. This represents 198 buildings and 14,123,683 gsf. Input for this survey was compiled from many sources across campus. Major contributors (both direct and indirect) include: Faculty, Researchers, many student organizations, Institutional Research and Planning, Procurement Services, Student Affairs, Facilities (including EHS, Energy Conservation Team, Motor Pool, Landscaping, etc), Campus Planning, Auxiliary Services (Dining, Housing, Parking & Transportation, etc), Georgia Tech Foundation, Human Resources, GTRI, Financial Aid, Diversity Services, Communications and Marketing, Government and Community Relations, and many more, too many to list

Co-Curricular Education **17.75 / 18.00**

Georgia Tech recognizes the importance of experiential learning in addition to traditional academic learning. An event as seemingly simple as "Tech Beautification Day" may end up with two students who didn't already know each other discovering a bond or common interest as they plant a tree. Participating in our inventing competition "Inventure Prize", "Business Plan Competition," or "IdeasToSERVE" competition has changed lives of our students, including those who decide to pursue their ideas fulltime after earning their degree instead of settling into a corporate job or a graduate program. As you may already know, Georgia Tech is internationally renowned for having students ready to contribute immediately to an organization's success due in large part to the practical learning experience they receive here. As we prepare to celebrate our centennial anniversary of the nationally accredited Cooperative Education program in 2012, it is important to remember that here at Tech, what we do is all about the student. https://www.gatech.edu/president/content/creating-environment-fosters-innovation, http://www.gatech.edu/about/campuslife.html, http://www.coop100.gatech.edu/index.html

Credit	Status	Points
Student Sustainability Educators Program	Complete	5.00 / 5.00
Student Sustainability Outreach Campaign	Complete	5.00 / 5.00
Sustainability in New Student Orientation	Complete	2.00 / 2.00
Sustainability Outreach and Publications	Complete	4.00 / 4.00
Student Group	Complete	0.25 / 0.25
Organic Garden	Complete	0.25 / 0.25
Model Room in a Residence Hall	Not Pursuing	0.00 / 0.25
Themed Housing	Complete	0.25 / 0.25
Sustainable Enterprise	Complete	0.25 / 0.25
Sustainability Events	Complete	0.25 / 0.25
Outdoors Program	Complete	0.25 / 0.25
Themed Semester or Year	Complete	0.25 / 0.25

Curriculum **54.00 / 55.00**

Georgia Tech has a goal that every student will take at least one course in sustainability. We have more than 260 courses with an emphasis in sustainability, spanning every college at Georgia Tech. Varied and numerous in nature, the educational aspects of Georgia Tech's commitment to environmental sustainability reflect our promise to produce the technological leaders of the future. Sustainability focused and related degree programs include 36 Undergraduate and 117 Graduate degrees. Georgia Tech also offers 14 Professional Education programs, 9 online programs, and 4 certificates related to sustainability via its Division of Professional Practice. http://www.stewardship.gatech.edu/educationsustainability.php

Credit	Status	Points
Sustainability Course Identification	Complete	3.00 / 3.00
Sustainability-Focused Courses	Complete	10.00 / 10.00
Sustainability-Related Courses	Complete	10.00 / 10.00
Sustainability Courses by Department	Complete	7.00 / 7.00
Sustainability Learning Outcomes	Complete	10.00 / 10.00
Undergraduate Program in Sustainability	Complete	4.00 / 4.00
Graduate Program in Sustainability	Complete	4.00 / 4.00
Sustainability Immersive Experience	Complete	2.00 / 2.00
Sustainability Literacy Assessment	Complete	1.00 / 2.00
Incentives for Developing Sustainability Courses	Complete	3.00 / 3.00

Detail Description of Programs (Co-curricular)

ER-1: Student Sustainability Educators Program
Complete 5.00 / 5.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Total number of degree-seeking students enrolled at the institution: 20,941

Program name (1st program): Earth Day and Think Green Week

Number of students served by the program to whom peer-to-peer sustainability outreach and education is offered (1st program): 20,941

A brief description of the program, including examples of peer-to-peer outreach activities (1st program): From research to grand challenges, documentary films to exercise, the Think Green Week is a week of free events to increase awareness and educate our community about living green, for the entire campus community to enjoy.

A brief description of how the student educators are selected (1st program): Student volunteers spend an hour a week for approximately 6 months planning the Earth Day event on campus, along with Think Green (a week of events preceding Earth Day). Education and awareness are featured and cover a broad range of topics from social entrepreneurship to eco-art to bike repair to movies and concerts. Planning Committee has 12-20 members. Earth Day volunteers number 100-200. Advertisements appear multiple times in the student newspaper and Earth Day/ Think Green Week events are promoted on screens and bulletin boards across campus.

A brief description of the formal training that the student educators receive (1st program): Students learn the processes associated with budgets, marketing, leadership. Students also learn about environmental impact of thousands of visitors in a day from waste generated via boxes, food, handouts, Tshirts, etc to researching environmentally manufactured and printed Tshirts to Office Surplus recycling programs to clothing recycling.

A brief description of the staff and/or other financial support the institution provides to the program (1st program): University's Recycling Department commits 2 people while other campus departments such as Facilities, Communications & Marketing, and Event Management contribute participants to this weekly meetings for 6 months plus giving them additional time for the programs just before their event days, the day of the events, and for follow-up after the events. Program has a budget of approximately $20K. All students, faculty and staff are encouraged to volunteer and participate in Think Green Week and Earth Day programs.

The website URL for 1st Program: http://www.earthday.gatech.edu/

Program name (2nd program): Earth Hour

Number of students to whom peer-to-peer sustainability outreach and education is offered (2nd program): 20,941

A brief description of the program, including examples of peer-to-peer outreach activities (2nd program): Earth Hour celebrations are student events centered around educating students to turn off their lights and unplug their electricity-using-appliances as symbols of reducing thier carbon footprint.
In this way they are joining people around the world in both a symbolic and visible education and awareness event to reduce nonrenewable energy sources.

A brief description of how the student educators are selected (2nd program): Earth Hour celebrations were driven by staff for 2 years, then the program transitioned to students to lead. The Student

Government Association used its budget and student volunteers to mold the Earth Hour celebration to more of a student focus and greater student engagement.

All students are welcome to volunteer and participate. Estimates are that 1000 students participate in the campus Earth Hour event.

A brief description of the formal training that the student educators receive (2nd program): Student Government Officers educate student volunteers involved in this program.

Education is tailored to the specific program each volunteer student is working on.

A brief description of the staff and/or other financial support the institution provides to the program (2nd program): Student Government Officers oversee the planning, budget, and marketing of this program.

The website URL for 2nd program: http://www.gatech.edu/newsroom/release.html?nid=55379

Program name (3rd program): Game Day Recycling

Number of students to whom peer-to-peer sustainability outreach and education is offered (3rd program): 20,941

A brief description of the program, including examples of peer-to-peer outreach activities (3rd program): Students visit with tailgaters, handing out blue recycling bags and dicussing both recycling on campus and other sustainabilsity initiatives on campus to raise awareness among the students, tailgaters, and community. Signage and recycling bins inside the stadium further encourage game day recycling inside the stadium.

A brief description of how the student educators are selected (3rd program): Student volunteers are recruited from campus, usually through outreach to existing student organizations. Estimated student participation is a total of at least 5000 students attending each game and recycling while there. Plus the 300 student volunteers over the season, but visible to all campus visitors (up to 50,000) each Game Day. Game Day Recycling occurs in the tailgating areas throughout campus and inside the stadium.

A brief description of the formal training that the student educators receive (3rd program): Students are trained on what items can be recycled, why Georgia Tech encourages everyone to recycle, what other green programs Georgia Tech has. Student engagement is a critical success factor for this program, since Tailgaters want to hear from the students and see their enthusiasm for the program. Started as a pilot, midseason in 2007, it has been operationalized (now via Recycling Department) and grown to include inside the stadium as well as tailgating.

A brief description of the staff and/or other financial support the institution provides to the program (3rd program): Recycling, Landscaping, and Athletics partner with students for this program. The cost of the program is covered by the participating departments.

The website URL for 3rd program: http://www.recycle.gatech.edu/programs/gdr.php

Program name (All other programs): Tech Beautification Day (TBD)

Number of students to whom peer-to-peer sustainability outreach and education is offered (All other programs): 20,941

A brief description of the program, including examples of peer-to-peer outreach activities (All other programs): A day of service where students could give back to Tech through a combination of on-campus clean up and landscaping tasks.

A brief description of how the student educators are selected (All other programs): Open to all students, faculty, and staff. The 2011 program had 1000-1500 attending.

Georgia Tech students, staff and faculty worked to spruce up campus, along with several neighboring communities. More than 50 projects—involving spreading ground cover, planting, painting and trash clean-up—were carried out by student volunteers participating in the annual Tech Beautification Day. Some trees also were planted, in keeping with the Institute's Tree Campus USA status.

http://www.gttbd.org/

A brief description of the formal training that the student educators receive (All other programs): This whole project is overseen by students. Campus planting beds were prepped, and facilities worked with [project supervisors] ahead of time to explain the projects and had someone on site for help, but TBD students supervised anywhere from eight to 30 students per project site.

Student volunteers plan, organize and facilitate TBD every year.

Members of the TBD Executive Committee start planning the initiative in January. Students help raise funds from sponsors, sign up volunteers and get the word out.

A brief description of the staff and/or other financial support the institution provides to the program (All other programs): Campus planting beds were prepared, and facilities worked with [project supervisors] ahead of time to explain the projects and had someone on site for help, but TBD students supervised anywhere from eight to 30 students per project site. Facilities also provided three tractor trailers of pine straw, which comprised the bulk of the projects.

http://www.whistle.gatech.edu/archives/10/apr/26/tbd.shtml

The website URL for all other programs: http://www.stewardship.gatech.edu/studentinit.php

ER-2: Student Sustainability Outreach Campaign
Complete 5.00 / 5.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution hold a campaign that meets the criteria for this credit?: Yes

The name of the campaign(s): Wasted Watts Residence Hall Energy Competition

A brief description of the campaign(s): Students living in the Residence Halls are asked to reduce their energy consumption, especially as during winter break. Results are tallied and posted. The winners receive prizes.

This is the third year the competition has been run. It also encourages students to learn how they can make a difference and that small steps add up, as explained at http://www.housing.gatech.edu/facilities/energy.cfm

A brief description of the measured positive impact(s) of the campaign(s): Amazingly, some students still had not heard of phantom energy use. Students learn to turn off appliances and to use power strips to truly turn off the otherwise "instant on" or vampire energy consumers such as chargers that consume energy even when they are not left plugged in when not charging a battery or cellphone, etc. Estimated savings is $20/student/year which adds up to $200,000/year savings.

The website URL where information about the sustainability outreach campaign(s) is available: http://nique.net/focus/2010/02/24/rha-raises-watt-waste-awareness/

ER-3: Sustainability in New Student Orientation
Complete 2.00 / 2.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution include sustainability prominently in new student orientation?: Yes

A brief description of how sustainability is included prominently in new student orientation: Reusable bags are used for new student orientation (FASET). Auxiliary Services hands out reusable water bottles and encourages students to participate in the dining hall and residence hall programs to have the greenest colleges experiences while at Georgia Tech. Advertising in both the Freshman Orientation materials and on the Stewardship website. http://www.stewardship.gatech.edu/greenresidence.php

Online Housing materials are featured instead of paper. Housing makes it clear students need to bring only EnergyStar appliances and to coordinate appliance purchases, if any, with roommates. Green Cleaning, Housing LEEDing the way, and other green operations and maintenance in Tech's residence halls are featured at http://www.housing.gatech.edu

http://www.housing.gatech.edu/assignments/items.cfm

Entering students interested in sustainability are encouraged to visit the "New Students" portion of the Environmental Stewardship website to learn the greenest ways to attend Georgia Tech. http://www.stewardship.gatech.edu/greenresidence.php

Auxiliary Services provides discounts on EnergyStar and Epeat laptops for students coming to campus.

Recycling Department and the Office of Environmental Stewardship participate in Freshman Orientation market place with tabling. Recycling gives away reusable bags and encourages students to volunteer at Game Day Recycling and Earth Day. Stewardship discusses sustainability aspects of Georgia Tech with students and families.

The website URL where information about sustainability in new student orientation is available: http://www.stewardship.gatech.edu/greenresidence.php

ER-4: Sustainability Outreach and Publications
Complete 4.00 / 4.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution have a central sustainability website that consolidates information about the institution's sustainability efforts?: Yes

A brief description of the central sustainability website that consolidates information about the institution's sustainability efforts: This central sustainability website includes links to relevant topics across campus and campus life such as research, academic, and socially oriented channels of related and relevant topics across campus and campus life.

For students wanting a quick view of sustainability at Georgia Tech, the website is www.greenbuzz.gatech.edu.

The two webs cross link each other as well as additional sites across Georgia Tech.

The website URL for the central sustainability website that consolidates information about the institution's sustainability efforts: http://www.stewardship.gatech.edu/

Does the institution have a sustainability newsletter?: Yes

A brief description of the sustainability newsletter: The Recycling Department publishes a monthly newsletter. As an engagement program, recycling is the topic people think of first when they think of sustainability. Recycling is typically the first and most visible step along the path toward sustainability. Recycling is an every day, all day opportunity to demonstrate sustainability engagement, across all parts of campus.

The website URL for the sustainability newsletter: http://www.recycle.gatech.edu/newsletters/

Does the institution have a vehicle to publish and disseminate student research on sustainability?: No

A brief description of the vehicle to publish and disseminate student research on sustainability: At Georgia Tech, 40% of students engage in hands-on research as undergraduates. Communications and Marketing highlights student research on popular sustainability themes on the GreenBuzz website, www.greenbuzz.edu.

For more in depth insight into the breadth and depth of sustainability research across Georgia Tech, students are encouraged to start with the Office of Environmental Stewardship website, www.stewardship.gatech.edu.

The website URL for the vehicle to publish and disseminate student research on sustainability: http://www.stewardship.gatech.edu/

Does the institution have building signage that highlights green building features?: Yes

A brief description of building signage that highlights green building features: Restrooms have the sustainability signage students like the best: the paper towel dispenser's Green Seal Certified label.

LEED certified buildings have USGBC plaques in the lobby. Recycling signage is present in multiple locations throughout campus buildings and campus, including the first LEED Existing Building Operations and Maintenance, EBOM, building on campus, North Avenue Apartments. It is the largest LEED EBOM certified residence hall in the US.

Signage on solar PV and renewable energy is featured in the lobby of the Campus Recreation Center, which averages 53,000 visitors per month and was voted #1 athletic facility in the country by Princeton Review in 2011.

Signage on cisterns, water conversation, energy usage and conservation, renewable energy etc are highlighted on the dashboard in the new Undergraduate Learning Commons – home of all freshmen math and science courses and part of the campus library.

The website URL for building signage that highlights green building features: http://www.stewardship.gatech.edu/sustainablebuildingsoverview.php

Does the institution have food service area signage and/or brochures that include information about sustainable food systems?: Yes

A brief description of food service area signage and/or brochures that include information about sustainable food systems: All three dining halls at Georgia Tech include signage about sustainable food systems.

Signage covers topics such as local farms we buy from, which foods are in season, how dining services is conserving water and energy, nutrition and healthy eating ideas, food waste composting and other waste reduction programs, etc

http://www.stewardship.gatech.edu/food.php

The website URL for food service area signage and/or brochures that include information about sustainable food systems: http://www.gatechdining.com/sustainability_gt.html

Does the institution have signage on the grounds about sustainable grounds-keeping strategies employed?: Yes

A brief description of signage on the grounds about sustainable grounds-keeping strategies employed: Georgia Tech was one of the first ten campuses in the US to be part of and recognized by Tree Campus USA. Georgia Tech has submitted its Tree Campus USA for this year, making it 4 years in a row (out of 4 years). The Tree Campus USA banner is prominently displayed in the Student Center and the Tree Campus USA flag flies on a flagpole outside the Student Center.

Georgia Tech has a Landscape Master Plan and the Tree Campus USA documentation that describe Georgia Tech's grounds-keeping strategies.

The website URL for signage on the grounds about sustainable grounds-keeping strategies employed: http://www.stewardship.gatech.edu/landuse.php

Does the institution have a sustainability walking map or tour?: Yes

A brief description of the sustainability walking map or tour: Campus Sustainability Tour includes Historic Preservation portion of campus, Athletic Venues, LEED Certified Buildings, Renewable Energy sites, Green Spaces on Campus, Cistern sites, Reforestation Projects, Green Dorms, Composting Dining Halls, and other Sustainability highlights across campus.

http://www.stewardship.gatech.edu/ then click Key Links and Publications in the sidbar. Also at http://www.stewardship.gatech.edu/publications.php

The website URL of the sustainability walking map or tour: http://www.stewardship.gatech.edu/publications.php

Does the institution have a guide for commuters about how to use alternative methods of transportation?: Yes

A brief description of the guide for commuters about how to use alternative methods of transportation: Campus Transit vehicles carry over 2.3 million rides per year and connects directly with city's rapid transit system (MARTA). City bus routes and local community shuttle buses include campus in their routes.

Carpooling and car sharing, etc are available across campus and described at http://pts.gatech.edu/ride/alternative/Pages/alternative.aspx

The website URL for the guide for commuters about how to use alternative methods of transportation: http://www.stewardship.gatech.edu/alternativetransportation.php

Does the institution have a guide for green living and incorporating sustainability into the residential experience?: Yes

A brief description of the guide for green living and incorporating sustainability into the residential experience: Some students are surprised to learn the greenest way to attend college is to live in residence halls. Georgia Tech explains why living in our residence halls is the greenest way to attend college. Participating in our green dining halls, campus recreation center, library, and bringing only EnergyStar appliances are only some of the opportunities highlighted. They have each focused on energy and water efficient infrastructure, and together with campus transportation and alternative transportation planning, result in an efficient and effective lifestyle that is naturally environmentally friendly.

The website URL for the guide for green living and incorporating sustainability into the residential experience: http://www.stewardship.gatech.edu/housinggreen.php

Does the institution have regular coverage of sustainability in the main student newspaper (either through a regular column or a reporter assigned to the sustainability beat)?: Yes

A brief description of regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: There are sustainability topic newsfeeds available. Sustainability is a frequent topic in campus Facebook and Twitter feeds. Campus personnel highlight campus sustainability story opportunities each month with the various campus communication channels.

The website URL for regular coverage of sustainability in the main student newspaper, either through a regular column or a reporter assigned to the sustainability beat: http://www.gatech.edu/newsroom/

Does the institution produce another sustainability publication or outreach material not covered above? (1st material): Yes

A brief description of this material: En2Em Newsletter is a weekly newsletter describing Enterprise to Empower (En2Em) events and opportunities via a Georgia Tech student organization that seeks to educate, enable, and engage students in social entrepreneurship.

The website URL for this material: http://en2em.org/node/31

Does the institution produce another sustainability publication or outreach material not covered above? (2nd material): Yes

A brief description of this material: Ideas2Serve (I2S) Competition Newsletter
The I2S is a competition of ideas; where creativity, imagination, and technology are applied to:
• Solving community and social issues (for example reducing the effects of poverty, alleviating hunger, promoting physical and psychological health and wellness); and/or
• Sustaining our environment (for example improved water management, improved air and water quality, reduction of the rate of depletion of natural resources, developing alternate sources of energy).

The website URL for this material:
http://gatech.us2.list-manage.com/subscribe?u=e2ab208f9687db5dc76fd40d2&id=aac5acdcd2

Does the institution produce another sustainability publication or outreach material not covered above? (3rd material): Yes

A brief description of this material: Impact Newsletter
The IMPACT Speaker Series has brought highly successful business leaders from a variety of industries to campus to share their experiences and give advice to students and other entrepreneurs on topics ranging from "building a venture around intellectual capital" to "successful entrepreneurship in large organizations" and "socially responsible leadership".

http://gatech.us2.list-manage1.com/subscribe?u=e2ab208f9687db5dc76fd40d2&id=7e9bdf1dbf#IMPACT

Newsletter link is off of: http://www.ile.gatech.edu/

The weekly series provides Georgia Tech students, alumni and the Atlanta business community an opportunity to network and learn from successful entrepreneurs, venture capitalists, and notable business and non-profit leader. The website URL for this material: http://www.ile.gatech.edu/

Does the institution produce another sustainability publication or outreach material not covered above? (4th material): Yes

A brief description of this material: Monthly E-newsletter, College of Architecture
Newsletter highlighting College of Architecture research, student work, events, guest lectures, and alumni news.

The website URL for this material: http://www.coa.gatech.edu/news/enewsletter

Does the institution produce another sustainability publication or outreach material not covered above? (5th material): Yes

A brief description of this material: Women in Engineering – we don't fit the mold, we make it!
Monthly newsletter featuring outreach programs, events, and research related to women in engineering.

The website URL for this material: http://us2.campaign-archive1.com/?u=a0f2cb8e7b576aa188641c349&id=f3bd417874&e=ca88720ba2

Does the institution produce another sustainability publication or outreach material not covered above? (6th material): Yes

A brief description of this material: College of Science monthly newsletter highlights student projects, research, events

The website URL for this material: http://us2.campaign-archive2.com/?u=f507fd35bff70ac2589f5dd8f&id=2cc64fbe41

Does the institution produce another sustainability publication or outreach material not covered above? (7th material): Yes

A brief description of this material: Quarterly magazine published by the Georgia Tech Alumni Association, featuring stories on faculty, students, and alumni

The website URL for this material: http://gtalumnimag.com/

Does the institution produce another sustainability publication or outreach material not covered above? (8th material): Yes

A brief description of this material: Overview of Sustainability at Georgia Tech – campus, academics, research as selected by the Office of Environmental Stewardship

The website URL for this material: http://www.stewardship.gatech.edu/index.php

ER-T2-1: Student Group
Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution have an active student group focused on sustainability?: Yes

The name and a brief description of each student group:

Energy Club at Georgia Tech
The purpose of the Energy Club is to educate students on the unique challenges and opportunities that are impacting the global energy industry.

The club's objectives include:
• Bring together students, alumni, faculty and industry professionals in a forum that allows for interaction, discussion, exchange of innovative ideas and networking.

• Develop student leadership specifically in the area of energy.

http://energyclub.gatech.edu/

List up to 4 notable recent activities or accomplishments of student group(s):

Georgia Tech's Energy Club is the second largest, and faster growing Energy Club in the country.

Key-note Speakers Series: A periodic lecture series in which prominent industry representatives present and discuss topics of interest.

Industry Tours: Tours of local energy industry facilities (headquarters, power plants, substations, manufacturing/repair, etc.)

Energy Conference: An event that brings together key leaders of every aspect of energy industry.

Energy Career Fair: A career fair that brings recruiting opportunities to students from sponsors specifically in the energy industry.

List other student groups that address sustainability: American Nuclear Society, Water Alliance, Engineering Students without Borders, Ideas To SERVE Competition, Georgia Tech Solar Jackets, Trailblazers, etc

The website URL where information about student group(s) is available: http://www.stewardship.gatech.edu/studentinit.php

ER-T2-2: Organic Garden

Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution have an on-campus garden where students are able to gain organic farming and/or gardening experience?: Yes

A brief description of the garden: Students have a small on-campus garden among the residence halls. In 2012, the students have raised money to expand their garden and have worked with the Landscape Committee to be allowed to build 10 large raised bed gardens near the Instruction Center Building.

Georgia Tech's Landscaping has included edible plants throughout campus for many years. The plants are demonstration projects, lovely and interesting landscaping, and a surprise for the many urban hikers who visit our campus.

The website URL where information about the garden is available: http://www.gatech.edu/greenbuzz/faqs

ER-T2-3: Model Room in a Residence Hall

-- 0.00 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

This credit was marked as Not Pursuing so Reporting Fields will not be displayed.

ER-T2-4: Themed Housing

Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution have sustainability-themed housing (residential floor or hall, or theme house) where residents learn about sustainability together and to which residents must apply?: Yes

A brief description of the themed housing, including name(s) and descriptions of theme(s): Georgia Tech has several sustainability themed residence options.

The North Avenue Apartments Residence Hall is the first LEED Existing Building Operations and Maintenance LEED certified building on the Georgia Tech campus. It is also the largest university residence hall in the world to be LEED Gold and EBOM certified. A former Olympic Village, it has once again earned a "Gold" medal. It is now a green home to 2000 students attending Georgia Tech. EBOM stands for Existing Building Operations and Maintenance.

STEM housing for Science, Technology, Engineering and Math focused women.

International House for students who want an international immersion experience while attending Georgia Tech's main campus. Over 40 percent of Georgia Tech's undergraduate students have a study abroad experience.

Housing's ThinkBIG program offers many programs but several have a strong sustainability features: Sustain & Outdoor, Kids@Nature, I-House, Thought for Food, etc. http://www.thinkbig.gatech.edu/

The website URL where information about the themed housing is available:
http://www.stewardship.gatech.edu/housinggreen.php

The total number of residents in themed housing.: 8,540

ER-T2-5: Sustainable Enterprise
Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution have a student-run enterprise, such as a cafe, through which students gain sustainable business skills?: Yes

A brief description of the enterprise: viaCycle, a startup created by Tech alumni, began testing its program on campus this summer and officially launched its fleet in November. The system is the first of its kind in the southeast and is designed to make bikes available for communal use via mobile technology, often a cellphone. After months of soldering metal, assembling parts and testing technology, a bike share program developed right on Tech’s campus is now open to all students, faculty and staff for use.

http://nique.net/news/2012/01/13/viacycle-rides-to-success/

The website URL where information about the sustainable enterprise is available:
http://www.gatech.edu/newsroom/release.html?nid=77641

ER-T2-6: Sustainability Events
Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution hold major events related to sustainability, such as conferences, speaker series, or symposia, that have students as the intended audience?: Yes

A brief description of the event(s): Georgia Tech as several outreach campaigns each year. Earth Day, Think Green Week, Net Impact, Ideas2Serve, Sustainability Award in Business Plan Competition, Inventure Prize features 30-60% sustainability inventions, etc

Earth Hour on campus was coordinated by staff 2 years, and then transitioned to our Student Government Association who has participated since 2007 and led the campaign since 2009.

http://www.whistle.gatech.edu/archives/09/mar/23/earthhour.shtml

http://nique.net/focus/2011/04/01/earth-hour-turns-students-off-power/

Since 2002, the IMPACT Speaker Series has brought highly successful business leaders from a variety of industries to campus to share their experiences and give advice to students and other entrepreneurs on topics ranging from "building a venture around intellectual capital" to "successful entrepreneurship in large organizations" and "socially responsible leadership".

The weekly series provides Georgia Tech students, alumni and the Atlanta business community an opportunity to network and learn from successful entrepreneurs, venture capitalists, and notable business and non-profit leaders.

http://www.ile.gatech.edu/IMPACT.html

The Georgia Tech Program in Science, Technology and Innovation Policy is sponsored by the Georgia Tech School of Public Policy and Georgia Tech's Enterprise Innovation Institute.

The STIP program aims to establish an internationally recognized initiative focused on research-based, economically-driven, science, technology and innovation policies.

http://stip.gatech.edu/?page_id=1147

The website URL where information about the event(s) are available:
http://www.stewardship.gatech.edu/events.php

ER-T2-7: Outdoors Program
Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution have a wilderness or outdoors program that organizes hiking, backpacking, kayaking, or other outings for students and follows Leave No Trace principles?: Yes

A brief description of the program: Outdoor Recreation Georgia Tech also known as ORGT! Georgia Tech has one of the best outdoor recreation programs in the country. ORGT offers a number of programs throughout the year from caving and rock climbing to whitewater rafting and sea kayaking. Rent equipment at the Wilderness Outpost for your own camping excursion or join us on an organized outing.

The website URL where information about the program is available:
http://www.crc.gatech.edu/orgt/plugins/content/index.php?id=1

ER-T2-8: Themed Semester or Year
Complete 0.25 / 0.25 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Georgia Tech is a national leader in graduating minority and female engineers.

http://diversity.gatech.edu/resources/student-resources

Has the institution chosen a sustainability-related theme for its themed semester, year, or first-year experience during the past three years?: Yes

A brief description of the themed semester, year, or first-year experience: Believing in the Journey. Change through innovation has been key to Georgia Tech's success. It is the philosophy that bonds the community. For African Americans at Georgia Tech, the pace has sometimes been slow but the journey has been dramatic. We look at a university now that has some of the best and brightest minds in the nation and leads the country in the number of African American engineers. Fifty years of believing in the journey have propelled Tech into the forefront of higher education.

The sustainability-related book that was chosen, if applicable: I Have a Dream: Writings and Speeches That Changed the World

The website URL where information about the theme is available:
http://www.diversity.gatech.edu/50thanniversary

Detail Description of Programs (Curricular)

ER-5: Sustainability Course Identification
Complete 3.00 / 3.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Has the institution developed a definition of sustainability in the curriculum?: Yes

A copy of the institution's definition of sustainability in the curriculum?: Georgia Tech's 2010 Strategic Plan outlines a vision for where Georgia Tech aspires to be in the year 2035, the Institute's 150th anniversary. http://www.gatech.edu/president/

Vision: Georgia Tech will define the technological research university of the 21st century. As a result, we will be leaders in influencing major technological, social, and policy decisions that address critical global challenges.

Mission: Technological change is a fundamental to the advancement of the human condition. The Georgia Tech community – students, staff, faculty, and alumni – will realize our motto of "Progress and Service" through effectiveness and innovation in teaching and learning, our research advances, and entrepreneurship in all sectors of society. We will be leaders in improving the human condition in Georgia, the United States, and around the globe.

• Our students are taught to be collaborative, innovative, interdisciplinary, and global.
• They operate at the intersection of technology, policy, business and sustainability.

Georgia Tech is a leader in research in fields of energy, climate change, nanotechnology, biomedical technology, engineering, management, public policy, transportation and logistics, health information technology, and material science engineering, economic development and tech transfer.

To stimulate cooperation in emerging areas of education and research, Georgia Tech has established a network of more than 100 centers that cut across traditional academic disciplines. Drawing upon human and technical resources throughout the university, the centers provide an interdisciplinary setting for addressing basic and applied problems of interest to government and private enterprise. They also provide a mechanism for interdisciplinary graduate and undergraduate education.

Approximately 45% of tenured/tenure track faculty participated in the Undergraduate Research Opportunities Program in 2009-2010. Tech is among the nation's top producers of women and minority engineers. Tech has research centers, educational program partnerships, and business and economic development partnerships and centers globally.

GTRI is the largest research entity at the Georgia Institute of Technology (Georgia Tech) and has developed a reputation as one of the world's premier university-based applied research and development organizations. GTRI and Georgia Tech are world-class institutions that combine the best of both applied and basic research to solve the innovation equation on behalf of clients. This combination provides unsurpassed expertise, capabilities and know-how in solving some of the toughest problems facing government and industry.

Georgia Tech's definition of sustainable research spans many subject areas of Service and Progress:

1. Improving the Human Condition, Social and Individual Transformation, Education, Outreach, Lifelong Learning
2. Energy, Materials, Water, and Environment
3. Health, Food, Nutrition, Nanomedicine, Medical Engineering
4. Innovative Technologies, Complex Systems, Sustainable Systems, Systems Thinking
5. Technology Transfer, Economic Development, Entrepreneurship, Leadership, Economics, Business

6. Global Technologies, Collaboration, Policies
7. Partnerships between Private/Public, Profit/Non-Profit, Government/Non-Government Organizations
8. Logistics, Sustainable Manufacturing and Design

Has the institution identified its sustainability-focused and sustainability-related course offerings?: Yes

A brief description of the methodology the institution followed to complete the inventory: This list sustainability Focused courses was developed working through the Academic Deans of each College's Departments with input from faculty. http://www.stewardship.gatech.edu/images/courses.pdf

Lists of sustainability related courses and degrees are also available online.

This definition of sustainability is from the Georgia Tech Strategic Plan. For nine months, several hundred students, faculty, administrators and staff, researchers, alumni, and supporters joined together to contribute their time and ideas about how to transform Georgia Tech. The process was comprehensive and inclusive.

More than 1,200 ideas were submitted. In addition, the Tech community participated in 70 town hall type meetings, focus groups, and “Days of Engagement.”

http://www.gatech.edu/vision/the-planning-process

Does the institution make its sustainability course inventory publicly available online?: Yes

The website URL where the sustainability course inventory is posted:
http://www.stewardship.gatech.edu/educationsustainability.php

ER-6: Sustainability-Focused Courses
Complete 10.00 / 10.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

The number of sustainability-focused courses offered: 264

The total number of courses offered: 1,271

Number of years covered by the data: Three

A list of sustainability-focused courses offered: http://www.stewardship.gatech.edu/images/courses.pdf

The website URL where the publicly available sustainability course inventory that includes a list of sustainability-focused courses is available: http://www.stewardship.gatech.edu/images/courses.pdf

ER-7: Sustainability-Related Courses
Complete 10.00 / 10.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

The number of sustainability-related courses offered: 997

The total number of courses offered: 1,271

Number of years covered by the data: One

A list of sustainability-related courses offered: Courses in 26 of the 30 departments are listed.

The website URL where the sustainability course inventory that includes a list of sustainability-related courses is posted: http://www.stewardship.gatech.edu/educationsustainability.php

ER-8: Sustainability Courses by Department
Complete 7.00 / 7.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

The number of departments that offer at least one sustainability-related or -focused course: 29

The total number of departments that offer courses: 30

A list of departments that offer sustainability courses:

College of Architecture
- Building Construction
- City Planning
- Industrial Design

College of Engineering
- Aerospace Engineering
- Chemical Engineering
- Civil and Environmental Engineering
- Electrical and Computer Engineering
- Polymer, Textile, and Fiber Engineering
- Industrial and Systems Engineering
- Material Science Engineering
- Mechanical Engineering
- Nuclear and Radiological Engineering

Ivan Allen College
- Economics
- History, Technology, and Science
- International Affairs
- Literature, Communication, and Culture
- Modern Languages
- Philosophy, Science, and Technology
- Public Policy

College of Computing
- Computational Science & Engineering
- Computer Science
- Interactive Computing

College of Management

College of Science
- Biology
- Chemistry & Biochemistry
- Earth & Atmospheric Sciences
- Mathematics
- Physics
- Psychology

The website URL where the publicly available sustainability course inventory that includes a list of departments that offer sustainability courses is available:
http://www.stewardship.gatech.edu/educationsustainability.php

ER-9: Sustainability Learning Outcomes
Complete 10.00 / 10.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

The number of graduates covered by the sustainability learning outcomes: 5,028

Total number of graduates: 5,028

A list of degree programs that have sustainability learning outcomes: Georgia Tech has a goal that every student will take at least one course in sustainability. Varied and numerous in nature, the educational aspects of Georgia Tech's commitment to environmental sustainability reflect our promise to produce the technological leaders of the future.

Sustainability is embedded in both core curriculum and in upper curriculum to ensure that by the time a student graduates, he will have had at least one course in sustainability.

We have more than 260 courses with an emphasis in sustainability spanning every college at Georgia Tech. Sustainability is a focus of over 23 degrees available from Georgia Tech.

In 2010, 5028 undergraduate and graduate degrees were conferred by Georgia Tech.
http://www.irp.gatech.edu/sites/www.irp.gatech.edu/files/2010_MiniFB.pdf

Examples of some of the Georgia Tech degrees focusing on sustainability:
Master of Science in Environmental Engineering
Master of Science in Civil Engineering
Master of Science in Public Policy
Master of Science in International Affairs
Master of Science in Urban Design
Master of City and Regional Planning
Bachelor of Science in Building Construction
Doctor of Philosophy with a Major in Civil Engineering
Doctor of Philosophy with a Major in Environmental Engineering
Doctor of Philosophy with a Major in Public Policy
Doctor of Philosophy with a Major in City and Regional Planning

The website URL where the publicly available sustainability course inventory that includes a list of degree programs that have specified sustainability learning outcomes is available:
http://www.stewardship.gatech.edu/educationsustainability.php

A list or sample of the sustainability learning outcomes associated with the degree programs:

The School of Civil and Environmental Engineering (CEE) at the Georgia Institute of Technology is consistently ranked as one of the nation's most prominent programs of its kind in both graduate and undergraduate education. The School was originally established in 1898, and it has become the second largest civil and environmental engineering program in the country, offering a broad range of academic opportunities and strategic research initiatives within the field. CEE has sixty tenure-track faculty members who are leading experts in their respective discipline. Our faculty is grouped by areas of affinity, based on their expertise. CEE's affinity groups include: Construction Engineering; Environmental Engineering; Environmental Fluid Mechanics and Water Resources; Geosystems Engineering; Structural Engineering, Mechanics and Materials; and Transportation

ENROLLMENT (as of Fall 2010): 813 UNDERGRADUATE students and 340 GRADUATE students, 60 full-time FACULTY members http://www.ce.gatech.edu/about/profile-and-rankings?phpMyAdmin=NDm1O9X7P8CPZZKqOJVJ5bWxWqd,

http://www.ce.gatech.edu/research/enve, http://www.ce.gatech.edu/research/efmwr, http://www.ce.gatech.edu/research/tse

ER-10: Undergraduate Program in Sustainability
Complete 4.00 / 4.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution offer an undergraduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, undergraduate degree program (1st program): Bachelor of Science in Environmental Engineering

The website URL for the program (1st program): http://www.ce.gatech.edu/academics/undergraduate

The name of the sustainability-focused, undergraduate degree program (2nd program): Bachelor of Science in Civil Engineering

The website URL for the program (2nd program): http://www.ce.gatech.edu/

The name of the sustainability-focused, undergraduate degree program (3rd program): Bachelor of Science in Earth and Atmospheric Science

The website URL for the program (3rd program): http://www.eas.gatech.edu/

The name and website URLs of all other sustainability-focused, undergraduate degree program(s): Georgia Tech has a goal that every student will take at least one course in sustainability. We have more than 260 courses with an emphasis in sustainability spanning every college at Georgia Tech. Sustainability is a focus of over 23 degrees available from Georgia Tech.

- Architecture, Industrial Design, City & Regional Planning, Building Construction
- Computer Science, Interdisciplinary Computational Media, Robotics
- Engineering : Civil & Environmental, Environmental, Industrial Systems, Material Sciences, Electrical, Mechanical, Aerospace Engineering
- Literature, Communication, & Culture
- Public Policy
- Business and the Environment, Ethics, Social Entrepreneurship
- Earth and Atmospheric Sciences programs in Meteorology , Earth Science, Environmental Science
- Biology, Biochemistry. Chemistry, Physics, Applied Math, Applied Physics

http://www.stewardship.gatech.edu/educationsustainability.php

ER-11: Graduate Program in Sustainability
Complete 4.00 / 4.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution offer a graduate degree program that meets the criteria for this credit?: Yes

The name of the sustainability-focused, graduate-level degree program (1st program): Doctor of Philosophy in Public Policy

The website URL for the program (1st program): http://www.iac.gatech.edu/academics/schools/spp

The name of the sustainability-focused, graduate-level degree program (2nd program): Master of City and Regional Planning

The website URL for the program (2nd program): http://www.planning.gatech.edu/degrees_home

The name of the sustainability-focused, graduate-level degree program (3rd program): Master of Science in International Logistics

The website URL for the program (3rd program): http://www.scl.gatech.edu/index.php

The name and website URLs of all other sustainability-focused, graduate-level degree program(s): Georgia Tech offers an astounding number of graduate degrees with a sustainability focus. They are summarized here:

College Architecture, 9 degrees

College Sciences, 28 degrees

College of Engineering, 50 degrees

College of Management, 5 degrees

College of Ivan Allen, College of Liberal Arts, 12 degrees

College of Computing, 12 degrees

http://www.stewardship.gatech.edu/educationsustainability.php

ER-12: Sustainability Immersive Experience
Complete 2.00 / 2.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Does the institution offer a program that meets the criteria for this credit?: Yes

A brief description of the sustainability-focused immersive experience(s) offered by the institution: Georgia Tech offers immersive sustainability experiences via academic& experiential learning opportunities like Undergraduate hands on Research (40%), Work-Study (Co-op program) (25%), Study Abroad (42%). International students attending Georgia Tech (27%).

Engineers without Borders-GT is a student international service organization. Student design & implement solutions to health & infrastructure problems in developing communities.

In Housing's ThinkBig program, students live together & connect around a theme. A recent topic was: Green-fluence: Active and Sustainable Living. Engage in a healthy, active lifestyle and delve into green living beyond the pop-culture of sustainability. Join us as we explore the community in which we live! Visit local organic farms, raft the Ocoee River and bike the Beltline, Discuss the issues and dilemmas regarding sustainability, Explore Atlanta's diverse neighborhoods & socio-ecological system

The website URL where information about the immersive experience is available: http://www.stewardship.gatech.edu/outreach.php

ER-13: Sustainability Literacy Assessment
Complete 1.00 / 2.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Has the institution conducted a sustainability literacy assessment?: Yes

Did the assessment include a baseline evaluation of students and then a follow-up evaluation of the same cohort?: No

Housing's Sustainability Quiz:

1. Georgia Tech Housing aims for LEED Gold Certification. What does LEED stand for?
2. Which action does NOT save energy in your residence hall?
3. How many years does it take the aluminum soft drink can you just threw away to decompose?
4. What are the 4 R's of Sustainability?
5. What is your Carbon Footprint?
6. What percentage of your daily water usage does the bathroom account for?
7. How much chemical fertilizer and pesticide does it take to grow the cotton to make the t-shirt and pair of jeans you put on this morning?
8. How much water can you waste in one day if your faucet leaks?
9. Recycle that aluminum can your hand and you can save enough money to run your laptop for how long?
10. How much waste does the average college student produce annually?

www.stewardship.gatech.edu/images/Sustainability quiz housing.pdf

A brief description of how the assessment was developed: As part of Housing's seeking LEED EBOM certification for the North Avenue Apartments (2,000 person bed residence hall):

- Over 700 students completed an online sustainability survey designed to engage and educate them. Residents were incented to participate via outreach programs at Earth Day and via signage in building lobbies, etc. Students who successfully completed the online survey received a T-shirt.

- A separate program engaged students in turning recycled plastic beverage bottles into fabric and clothing. Students who participated in the demonstration received a T-shirt made of recycled plastic beverage bottles. Over 600 students participated.

- Research and Citizen Science, The Need for Research into the Efficacy of Education Strategies… Use of models to construct scientific understanding http://sciencelearning.rutgers.edu/research.html

A brief description of how the assessment was administered: Via Housing's LEEDing the way website, online at

http://www.housing.gatech.edu/facilities/leedingtheway_chem.cfm

A brief summary of results from the assessment: 700 students voluntarily took the quiz during 2010-2011

Approximately 600 students participated in the plastic bottle recycling demonstration to recieve a tshirt

The website URL where information about the literacy assessment is available:
http://www.stewardship.gatech.edu/housinggreen.php

ER-14: Incentives for Developing Sustainability Courses
Complete 3.00 / 3.00 Marcia Kinstler, Sustainability Director, Office of Environmental Stewardship

Incentives for developing sustainability Courses at Georgia Tech take many forms.

Georgia Tech's reputation for academic and research excellence help facilitate opportunities for grants, contracts, and consulting opportunities. An example is the grant recently received to Establish One of Nation's 1st Cross-Disciplinary Energy PhD Programs.

Georgia Tech's interdisciplinary centers, basic science expertise, expert engineering faculty, collaborative atmosphere, and cutting edge industry partnerships provide a solid foundation to build and innovate upon.

Funding is also offered as incentives. Examples include the GT FIRE funding which developed around the Strategic Planning Initiatives and stipends associated with the ThinkBIG program in Housing.

Does the institution have a program that meets the criteria outlined above?: Yes

A brief description of the program(s): To stimulate cooperation in emerging areas of education and research, Georgia Tech has established a network of more than 100 centers that cut across traditional academic disciplines. Drawing upon human and technical resources throughout the university, the centers provide an interdisciplinary setting for addressing basic and applied problems of interest to government and private enterprise. They also provide a mechanism for interdisciplinary thrusts in graduate and undergraduate education.

Tech's centers involve faculty from academic colleges and from the Georgia Tech Research Institute (GTRI). GTRI provides additional flexibility to research at Georgia Tech and compliments academic programs. All of Tech's interdisciplinary centers perform sponsored research on a contractual basis. Industry affiliate memberships are also available through several of the centers. A brief description of the majority of Georgia Tech's centers can be found through the Georgia Tech web site at http://www.gatech.edu/research/centers.html

A brief description of the incentives that faculty members who participate in the program(s) receive: "Grant Will Establish One of Nation's 1st Cross-Disciplinary Energy PhD Programs" The project will establish at Georgia Tech, one of the nation’s first truly interdisciplinary PhD program in energy science, technology, and policy. The program will serve a critical need for the development of new, more efficient materials to address energy challenges during the next several decades. Specifically, it will examine Nanostructured Materials for Energy Storage and Conversion.

"Georgia Tech Fund for Innovation in Research and Education (GT FIRE)Sparks Innovation Among Faculty"… to facilitate planning for a …, multidiscipline, multi-institution, Tech-led Department of Energy Integrated Research Project research proposal … includes research and education.

www.stewardship.gatech.edu/

The website URL where information about the program is available:
http://www.evpr.gatech.edu/reporting-units

Report on VIRTUES Academic Survey, Spring 2014

VIRTUES administered an electronic survey to all 31 units of the University System of Georgia, 24 academic units of the Technical College System of Georgia, and to an additional 15 private universities and colleges in Georgia (70 total schools). An invitation for the institution to complete the survey was emailed to the chief academic officer at each school (usually the Vice-Provost for Academic Affairs). Responses were received from 41 institutions, including 10 technical colleges, 21 of the University System units, and 10 private schools. See Table 1. A copy of the survey is attached as the appendix.

Table 1. VIRTUES Sustainability and Academics survey recipients and respondents.

Responded?	University / College	Responded?	University / College
✓	Abraham Baldwin Agricultural College	✓	Georgia State University
✓	Agnes Scott College	✓	Gordon State College
	Albany State University	✓	Gwinnett Technical College
	Albany Technical College	✓	Kennesaw State University
✓	Altamaha Technical College		Lagrange College
	Armstrong Atlantic State University		Lanier Technical College
✓	Athens Technical College	✓	Mercer University
✓	Atlanta Metropolitan State College	✓	Middle Georgia State College
✓	Atlanta Technical College	✓	Morehouse College
	Augusta Technical College		Moultrie Technical College
	Bainbridge State College		North Georgia Technical College
✓	Berry College	✓	Oconee Fall Line Technical College
✓	Brenau University	✓	Ogeechee Technical College
	Central Georgia Technical College	✓	Oglethorpe University
✓	Chattahoochee Technical College		Okefenokee Technical College
✓	Clark Atlanta Unversity		Paine College
	Clayton State University	✓	Piedmont College
	College of Coastal Georgia		Savannah State University
✓	Columbus State University	✓	Savannah Technical College
	Columbus Technical College	✓	South Georgia State College
✓	Dalton State College		South Georgia Technical College
	Darton State College	✓	Southeastern Technical College
✓	East Georgia State College		Southern Crescent Technical College
✓	Emory University		Southern Polytechnic State University
	Fort Valley State University		Southwest Georgia Technical College
✓	Georgia College & State University		Spelman College
✓	Georgia Gwinnett College		Toccoa Falls College
✓	Georgia Highlands College	✓	University of Georgia
✓	Georgia Institute of Technology	✓	University of North Georgia
	Georgia Northwestern Technical College	✓	University of West Georgia
✓	Georgia Perimeter College	✓	Valdosta State University
	Georgia Piedmont Technical College	✓	Wesleyan College
✓	Georgia Regents University		West Georgia Technical College
✓	Georgia Southern University		Wiregrass Georgia Technical College
✓	Georgia Southwestern State University		Young Harris College

Preparing the Data for Analysis

Responses were reviewed for completeness and redundancy. Responses in which only the questions identifying the respondent's institution were completed, but that no other questions were completed, were deleted. For these entries, it was assumed to be likely that the respondent was "previewing" the survey and intending to return later to complete survey. Because partial surveys could not be saved, on returning the respondent, would need to start the survey over again as a new respondent. For other institutions, multiple responses were received. For these instances, the following actions were taken in order to derive a single representative survey for each responding school:

1. Athens Technical College received 2 responses. The first response was completed by 2:56PM on 9/9/2013. A new response for only question #10 was received at 3:21PM also on 9/9/2013. The second response was received from the same IP address as the first response suggesting that the second response was from the same person. Because answers could not be modified by the survey takers once the survey was submitted, based on the evidence above, it was assumed that the respondent desired to substitute answers to question #10 received in the second response for those provided to question #10 in the original response. In the final analysis here, the first complete survey, with replacement of answers to question #10 from the second survey response, was assumed to constitute the response of record for Athens Technical College.
2. Berry College received 3 responses. Chronologically, the first and third responses were incomplete with no responses after question #4. The second response was completed, and based on the time started to time ended (~2 hours), the respondent spent more time with the survey than the other survey respondents (~2 mins for the first respondent and 53 seconds for the third respondent). Up through question 4, the first response was very nearly the same as the second response. In this analysis, it is recognized that the first responder's limited answers are well represented by the second responders answers and are thus duplicative. In this case, the answers from the first respondent were omitted from the analysis. The third respondent used the same IP address as the second respondent – suggesting this was the same person – and made changes only to questions #3 and #4 approximately 4 hours after entry 2. Primarily, entry 2 had "NA/unsure" about graduate curriculum, but entry 3 included responses about graduate curriculum. In the final analysis here, the second entry is assumed to be the response of record, with substitution for questions #3 and #4 from the third respondent.
3. Piedmont College received two responses. Both responses were provided from the same IP address suggesting both may have been from the same person, but the responses were submitted 4 days apart. The first entry was completed only through question #8. The second survey was complete. It is assumed that the latter survey is the response of record for Piedmont College, though it is recognized that the answer to the very basic question #2 "Would you say that sustainability is part of your campus' culture?" was "no" for the second response and "yes" for the first response. It is assumed here that the respondent, upon further reflection, made the conscious decision to change his/her answer in the intervening 4 days.
4. University of North Georgia received two responses. The first entry did not provide any information past question #2. The second entry received 3 days later from a different IP did not provide answers past question #4. The first respondent listed only the Gainesville campus, while the second respondent purported to represent the Cumming, Dahlonega, Gainesville, and Oconee campuses. Though differences existed between the two respondents for question #2 – one affirmed that sustainability was part of the campus culture while the other rejected that characterization – it is assumed here that the second entry is the response of record based on the more complete survey and the representation of multiple campuses.
5. Ogeechee Technical College received 3 complete surveys. The third respondent self-identified herself as the person responsible for sustainability curriculum at Ogeechee Tech. Entry 3 will therefore be assumed to be the survey of record for Ogeechee Tech, though the other two responses received were very similar. Where the three responses differed were in the open ended questions, and therefore for these type of questions, responses from entries 1 and 2 were added to the responses from entry 3.
6. Georgia Southern received 5 responses, with the first 3 incomplete and the last 2 complete. All were received from different IP addresses. The first three entries were completed in 18, 3, and 7 minutes. The next two were completed in ~1.5 hours and 35 minutes. Open ended responses are

most detailed from the fourth respondent, but most responses to all questions from all respondents are fairly similar. Based on this evidence, the fourth response is assumed to be the survey of record for Georgia Southern University. Where there were differences in the rating questions, the median response was selected among the 5 respondents, and open ended responses were compiled together.

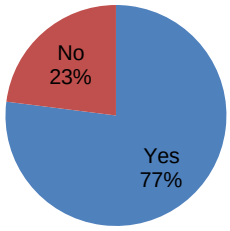
7. Georgia Tech received 6 responses to the survey. Chronologically, entries 1, 2, 3, and 6 were complete. Both entries 4 and 5 only responded through question #4. Entries 3 and 6 were the most profuse and complete in answering the open ended questions. For the entry of record, all open ended responses were consolidated and the median responses to the other questions were assumed to be representative of Georgia Tech.
8. Georgia College and State University received 9 responses to the survey, and 8 were complete. The second entry did not respond past question #2 and was deleted. For the entry of record, all open ended responses were consolidated and the median responses to the other questions were assumed to be representative of GCSU.
9. Georgia Highlands College received two responses. One response was identified as being only from the Rome campus, and the other response was identified as being only for the Cartersville campus. Because these responses were clearly identified as being from separate campuses, both were kept and will considered as constituting separate unique entries (i.e. in this sense, Georgia Highlands College is counted twice in the analysis that follows).

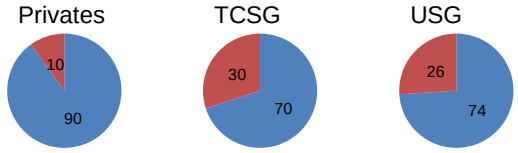
Analysis

The survey began with Question #1 (Q1) asking respondents to identify their school. This information was used to aggregate the remaining responses into sub categories of private schools, technical colleges, and units of the University System.

Q2

Is sustainability part of your campus' culture?





Assessment: Most, but not all, schools in Georgia recognize sustainability as a part of their campus culture, with private schools the most and techincal colleges the least inclined towards sustainability.

Q3

Rate the areas in which sustainability is important (% responding important or very important)

F&O = Facilities & Operations

UG = Undergraduate Curriculum

GRAD = Graduate Curriculum

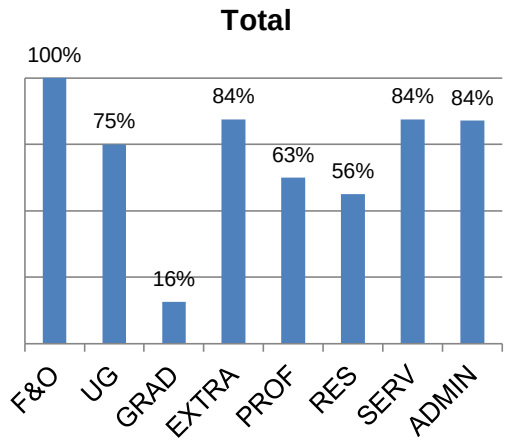
EXTRA = Co / Extra Curriculum

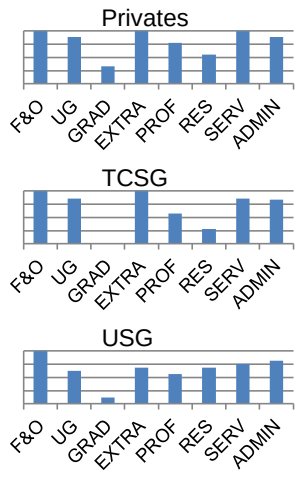
PROF = Professional Education

RES = Research

SERV = Community Service

ADMIN = Administration





Assessment: Universally and with respect to sustainability, schools place the most emphasis on campus facilities and operations. Schools emphasize sustainability the least in the graduate curriculum, though this may be reflective of the larger relative importance of graduate education on some campuses, i.e. at research universities like Georgia Tech, UGA, and CAU, sustainability in graduate education was rated as "important," and at all schools without a graduate program (e.g. all the technical colleges) sustainability in graduate education was not rated at all (i.e. respondents replied "NA" for not applicable). Still, for schools answering anything other than NA, only 5 of 14 (36%) indicated that sustainability is important in graduate curriculum. Extracurricular and co-curricular activies represent potentially very strong commitments to sustainability, especially at the private and TCSG schools – see many activities / opportunities lists associated with survey questions 11, 12, and 13 (not included in this summary). Community service activities may also find high campus commitments to sustainability.

Q4

Rate the commitment of different campus communities to sustainability
(% responding very committed or somewhat committed)

UG = Undergraduate Students

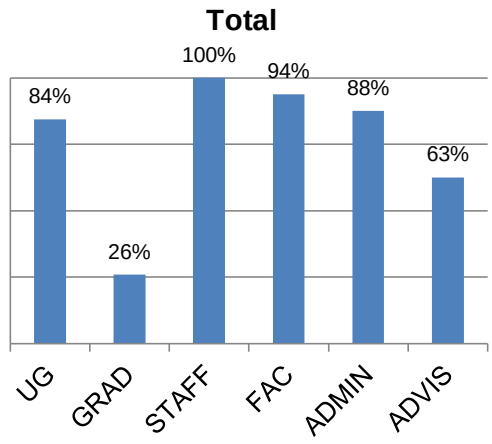
GRAD = Graduate Students

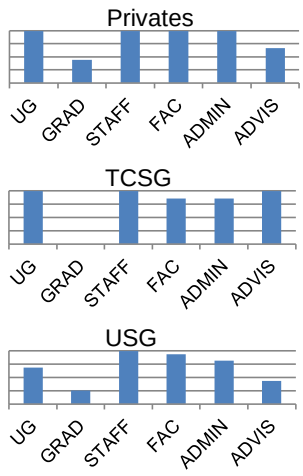
STAFF = Staff

FAC = Faculty

ADMIN = Administration

ADVIS = Advisory Board

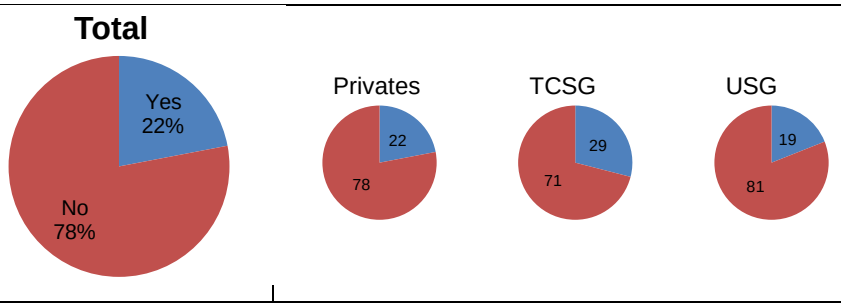




Assessment: As in the prior question, graduate students are absent or represent only a small fraction of the student population on many campuses, and as such the response is partially lower due to absence of this constituency. For those respondents that answered other than "NA/Not Sure" for graduate students, the % responding "very committed" or "somewhat committed" was 73% (8 of 11 schools). Thus while sustainability may not be a significant part of the graduate education curriculum, it doesn't necessarily mean that graduate students are not committed to sustainability. Staff are universally committed to sustainability which is consistent with the previous question identifying sustainability as being important to Facilities and Operations (i.e. the primary areas of responsibility for "staff"). Interestingly, the faculty and administration meet the undergraduates commitment within the private schools, lag the undergraduate commitment at the technical colleges, and exceed the undergraduate commitments at the USG units. Such gaps may be indicative of differences between sustainable education supply and demand (e.g. students more interested in sustainability than the faculty are willing to satisfy at the technical colleges,or the faculty at the USG schools being overzealous their commitment to teach sustainability to their undergraduates). Note: this survey did not sample student opinions, and so this conjecture cannot be fully substantiated. It does make for a reasonable hypothesis subject to further study, however.

Q5

Does your campus offer a degree in sustainability (associate's, bachelor's, master's, doctorate)

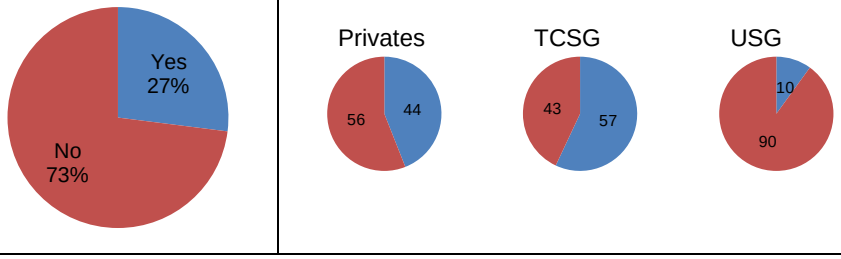


Assessment: Few responded affirmatively, and those that did listed a mix of existing and planned degree programs. The positive response may be an overestimate at this time. A few programs identified seemed to be new degree programs specific to sustainability, but others were existing or adapted degree programs that perhaps have a strong connection to sustainability but were not originally created around the concepts of sustainability, and may have preceded the emergence of sustainability as a distinct educational discipline. Here are the schools responding affirmatively and the programs identified:

- Piedmont College: School of Arts and Sciences, Environmental Science, BS
- Wesleyan College: undergraduate BA major program in Environmental Studies
- Ogeechee Technical College: Fish and WIldlife Management, Agribusiness, Photovoltaic Systesms Installation and Repair
- Savannah Technical College: We offer a Sustainability Technology Professional Diploma, Residential Weatherization diploma and Associate Degree, which all include green building and energy techniques.
- University of Georgia: Odum School of Ecology - MS Conservation Ecology and Sustainable Development College of Agricultural & Environmental Sciences - MS Environmental Economics College of Agricultural & Environmental Sciences - BSES Environmental Economics and Management College of Engineering - BSEE Environmental Engineering College of Engineering - MS Environmental Engineering College of Environment and Design - MEPD Master in Environmental Planning & Design Center for Integrative Conservation Research - PhD Integrative Conservation College of Public Health - BSEH Environmental Health College of Public Health - MS Environmental Health Visit http://sustainability.uga.edu/get-involved/degree-programs/ for more info.
- Georgia State University: Technically, there is a interdisciplinary degree in environmental science, although I don't know that it is highly popular. But there isn't a humanities and social science certificate or major in sustainability at GSU.
- Kennesaw State University: At this time it's a sub-heading of an "Interdisciplinary Studies" degree; there's a more formal degree awaiting Regents' approval.
- University of West Georgia: Not on books yet, but plans are in the works

Q6

Does your campus offer a minor, concentration, or certificate in sustainability?



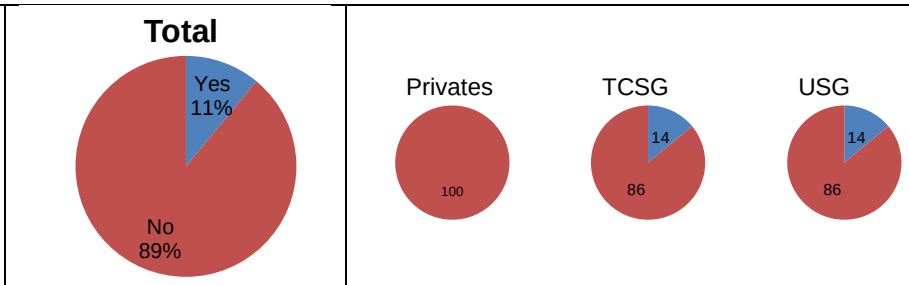
Assessment: Relative to degree offerings, considerably more private schools and technical colleges responded affirmatively to their schools offering minors, concentrations, or certificates in sustainability. However, the USG schools reported fewer offerings at this lower attainment level. Of the 8 schools responding that they offered degree programs in sustainability, 5 of them also reported having minors,

concentrations, or certificates in sustainability. The three schools reporting degree programs but not minor programs were Georgia State, Kennesaw State, and the University of West Georgia. This may reflect the pending and tentative state of their respective degree programs (see question above) as much as it describes their minor offerings. Here are the schools responding affirmatively and the minors, concentrations, and certificates identified:

- Agnes Scott College: Minor in env and sustainability studies
- Emory University: A minor in Sustainability in Emory College. Also, Masters in Public Health can be taken in Environmental Health. Law degree can be taken in Environmental Law.
- Piedmont College: School of Arts and Sciences: Environmental Science, minor
- Wesleyan College: undergraduate BA minor program in Environmental Science
- Athens Technical College: Our college offers two separate certificate programs related to alternative energy sources. The Alternative Energy Fundamentals certificate is part of our Electronics Technology program. The Photovoltaic Systems Installation and Repair Technician certificate is part of our Electrical Systems Technology program.
- Gwinnett Technical College: Sustainable Food Production - trains the student in successful methods of sustainable food planting and production as well as introducing business management and marketing of the resultant produce.
- Ogeechee Technical College: Photovoltaic Systesms Installation and Repair
- Savannah Technical College: We have certifications in Photovoltaic Installation, Green Hydronic Heat, Residential Energy Auditor, and Green Building Technician.
- Georgia Southern University: 18 credit Interdisciplinary Concentration in Environmental Sustainability that includes 1 intro course, a choice of 12 intermediate credits from many disciplines and a capstone practicum.
- University of Georgia: Odum School of Ecology - Certificate in Conservation Ecology and Sustainable Development College of Environment & Design - Certificate in Environmental Ethics Note: Currently developing interdisciplinary undergraduate and graduate Certificate in Sustainability

Q7

Does your campus offer any professional certifications related to sustainability?

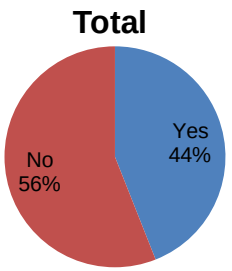


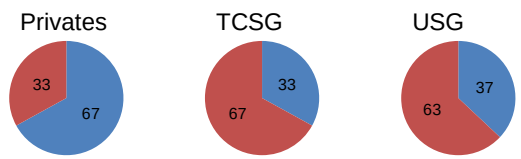
Assessment: Not all schools offer professional education, and the structure of the question did not provide a means for respondents to indicate that this question may not be applicable to their campuses. As a result, the response may not be representative of the schools that do offer professional education. Four schools answered affirmatively. Here are the professional education programs they identified:

- Gwinnett Technical College: Building Operators Certification - 2 levels of classes designed to help the building systems maintenance professional to optimize performance of the systems equipment
- Georgia Institute of Technology: DLPE has some environmental certifications I believe.
- Georgia Southern University: Fully online Sustainability Advisor Certificate Program, offered through Continuing Education.
- University of Georgia: The Georgia Center for Continuing Education offers professional courses in grant writing; human resources; business and leadership; legal studies; project management; governmental training; healthcare and pharmacy; teaching and education; turf, landscape and gardening; and others.

Q8

Does your campus offer courses for credit that DIRECTLY address sustainability?





Assessment: Below are the schools responding affirmatively that their campuses' offer courses directly related to sustainability. Comparing this list of schools with the lists of schools responding to the previous questions about sustainability degree and minor programs, there are some notable discontinuities. Both Piedmont College and Wesleyan College report having sustainability degree and minor programs, but the respondents answered this question negatively regarding having courses in sustainability. Likewise Athens Technical College and Gwinnett Technical College also reported having minors, concentrations, or certificates in sustainability but also answered "no" to this question about offering courses that directly address sustainability. (Gwinnett Technical College also reported offering professional certifications in sustainability.) Perhaps this is an oversight on the part of the respondents, but it does suggest the need for follow-up clarification. The other schools affirmatively answering previous questions about degrees, minors, and other concentrations or certifications were consistent in their responses down to the course level.

- Agnes Scott College: ESS 101
- Berry College: Environmental Sciences Majors and also Environmental Studies coursework in School of Humanities.
- Clark Atlanta Univerisity (CAU): CEGR 101 - Introduction to Engineering CEGR 102 - Introduction to Desgn CEGR 110 - Engineering Graphics CEGR 481 - Environmental Engineering
- Emory University: IDS 206: Introduction to Sustainability IDS 391: Sustainability Capstone Seminar
- Mercer University: Environmental Science Topics in Environmental Sustainability
- Oglethorpe University: No response
- Ogeechee Technical College: Terrestrial Ecology, Aquatic Ecology
- Savannah Technical College: We have Learning Community Courses that are built around the sustainable programs within Industrial Technology as a division. We are working toward additional contextualization of these concepts within the curriculum.
- Georgia College & State University: GC1Y Climate and Chemistry GC1Y GI Challenge GC1Y Global Challenges GC1Y Into Wilderness GC2Y Crossroads GC2Y Ecosophy GC2Y Ethics & What We Eat GC2Y Global Connections GC2Y This Island Earth GC2Y Water & Society ENSC/GEOG 4400/5400 Resource Use ENSC/GEOG 4450/5450 "Environment and Society" ODED 4500 Ecological Connections in Outdoor Education, Introduction to Environmental Science ENSC 1000 Resource Use GEOG 4400 Environment & Society 4450 Environmental Conservation GEOG 4740/BIOL 4740, GC2Y 2000: Ethics and What We Eat GC2Y 2000: Ecosophy--Environmental Philosophy, ODED 3510 Foundations in Environmental Education ODED 6570 Applied Environmental Education The majority of other courses have a significant component related to sustainability as it relates to the central topics or experiential strategies used to deliver a course.
- Georgia Institute of Technology: http://www.stewardship.gatech.edu/images/courses.pdf. Also PUBP 4140 Foundations Leadership PUBP 4200 Social Policy Issues PUBP 4211 Urban Policy PUBP 4212 Women & Public Policy PUBP 4214 Gender, Sci, Tech & Pub Plcy PUBP 4226 Business & Government PUBP 4260 Econ Dev Policy & Plan PUBP 4338 Environ Impact Assessment PUBP 4416 Critical Issues - Sci & Tech PUBP 4440 Sci Tech & Regulation PUBP 4501 Info Policy and Mangagement PUBP 6010 Ethic, Epistem, & Public Pol PUBP 6012 Fund

of Policy Processes PUBP 6014 Organization Theory PUBP 6017 Public Management PUBP 6018 Policy Implementation & Admin PUBP 6300 Earth Systems PUBP 6310 Environmental Issues PUBP 6312 Economics-Environ Policy PUBP 6314 Policy Tools- Environ Mgt PUBP 6326 Environ Values & Pol Goals PUBP 6327 Sustainability & Env Pol PUBP 6330 Environmental Law PUBP 6403 Sci Careers / Workplaces PUBP 6415 Tech Regions & Policy PUBP 6417 Critic Perspect-Sci&Tech PUBP 6440 Sci Tech & Regulation PUBP 6501 Info Policy and Mangagement PUBP 6600 Local Econ Dev Plan&Plcy PUBP 6602 Econ Dev Analy& Practice PUBP 6604 Urban Policy Analy& Plan PUBP 6701 Energy Technol & Policy PUBP 6741 Geography of Innovation PUBP 6748 Social Justice & Design PUBP 6749 Feminist Theory PUBP 6753 Comp Science&Tech Policy PUBP 8530 Adv Science& Tech Policy PUBP 8540 Adv Environmental Policy PUBP 8550 Adv Urb&Region Econ Dev PHIL 4174 Perspectives-Sci & Tech PHIL 4176 Environmental Et. At the School of International Affairs, these would qualify: INTA 2040 Science, Technology, and International Affairs INTA 2803 Global Food Politics INTA 3031 Human Rights INTA 3230 Government and Politics - China INTA 3240 Government and Politics - Africa INTA 3240 Latin American Politics INTA 3301 International Political Economy INTA 3303 Political Economy of Development INTA 4803 Comparative Development INTA 4803 Computers, Communication and International Development INTA 4803 Global Politics of Technology Regulation INTA 4803 Evaluating International Development Projects INTA 4803 Global Issues and Leadership INTA 4803 Modernization and Development

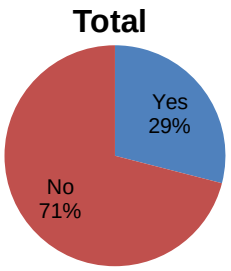
- Georgia Southern University: TCGT 1530 - Global Sustainability and Innovation INDS 3530 - Sustainable Materials and Methods for the Interior Environment TCM 2330 - Green Building and Sustainable Construction SUST 4730 Practicum in Environmental Sustainability
- Georgia State University: There may be a list that [name omitted] has and the GSU go green website has about some teachers who are into sustainability and teach some eco-focused classes. [name omitted] teaches an elective class open to all majors "communicating environmental issues" SPCH/JOUR 3040, but it is a smaller class (20 or less) and has not gained widespread attendance or interest yet.
- Kennesaw State University: "Sustainability at KSU" - cross-listed as BIOL 3720 & ENVS 3720 SCI 1102 "Science, Society, & the Environment" uses sustainability as its central theme
- University of Georgia: AAEC(AFST)(ENVM) 4720 - Food Security, Economic Development, and the Environment ALDR 3820 - Reflections on Fighting Hunger ALDR 3820H - Reflections on Fighting Hunger (Honors) ANTH 3200 - How the World Works: The Anthropology of Consumption and Globalization ANTH 4060/6060 - Agricultural Anthropology ANTH 4075/6075 - Economic Anthropology ANTH 4560/6560 - Anthropology of Development ANTH 6490 - Foundations of Ecological Anthropology ANTH 8540 - Conservation and Community ANTH(GEOG) 4275/6275 - Conservation and Development in Costa Rica APTC 4010 - Principles of Sustainable Management CRSS(WASR) 1020 - Introduction to Water Resources ECOL 1000 - Ecological Basis of Environmental Issues ECOL 2100 - Global Climate Change: Past, Present, and Future ECOL 3070 - Environment and Humans ECOL 3700 - Organic Agriculture: Ecological Agriculture and the Ethics of Sustainability ECOL 3710-3710L - Organic Agriculture: Practical Application of Organic Agriculture Principles ECOL 4120H - Ecology of Global Change (Honors) ECOL 6080 - Principles of Conservation Ecology and Sustainable Development I ECOL(FORS)(ANTH) 6140 - Principles of Conservation Ecology and Sustainable Development II EETH 4000 - Environmental Ethics Seminar EETH 4230/6230 - Environmental Values and Policy EHSC 3060 - Introduction to Environmental Health Science EHSC 4080/6080 - Environmental Air Quality EHSC 4400/6400 - Environmental Issues in the Developing World EHSC 7010 - Fundamentals of Environmental Health Science EHSC(ENVM) 4250/250 - Environmental and Public Health Law ENGR (LAND) 4660/6660 - Sustainable Building Design ENVE 2610 - Introduction to Environmental Engineering and Sustainability ENVE 4540 - Economics of Energy and Sustainable Development ENVM 2060 - Green Economics ENVM 3060E - Principles of Resource Economics ENVM 4650 - Environmental Economics I FANR 1100 - Natural Resource Conservation FANR 3400-3400D - Society and Natural Resources FANR 7750 - The Science of Sustainability FORS(CRSS)(ECOL)(ANTH) 4760 - Agroforestry in the Caribbean GEOG 1125 - Resources, Society, and the Environment GEOG 2250H-2250D - Resources, Society, and the Environment (Honors) GEOL 3250 - Earth Resources and the Environment HIST 3160 - American Environmental History HIST 4020/6020 - Food and Power

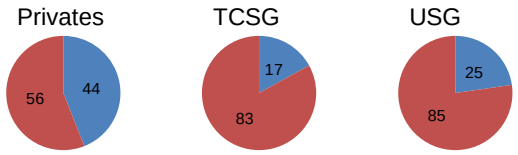
in American History HIST 4725/6725 - Environmental History of the Modern World HORT 3125 - Organic Farming Systems HORT 3126 - Organic Soil Fertility and Pest Management HORT 3300 - Organic Gardening HORT 333S - Conserving Native Plants HORT 4030S/6030S - Sustainable Community Food Production HORT 4070/6070 - UGArden Internship INTL 4610 - Environmental Politics JURI 4670/6670 - International Human Rights JURI 5280/7280 - Environmental Law LAND 1500 - Design and the Environment PBIO 3060 - Rise and Fall of Civilizations, Eco-sociological Constraints, and You! SOCI 3400 - Environmental Sociology WMST 4170S/6170S - Environment, Gender, Race, and Class

- University of West Georgia: No response

Q9

Does any of your degree, minor, or certificate programs require students to complete a course or program outside of their major to satisfy a sustainability related objective?





Assessment: With the exception of Georgia Southern University and the University of Georgia (and possibly Kennesaw State University, though its requirement seems to be more related to a science requirement than a sustainability requirement), most degree, minor, and certificate programs appear either not to require students to take a course in sustainability, or they address the concepts of sustainability within the programs themselves without the need for external input. Where there are common sustainability related courses that all students are required to take (i.e. at GSU and UGA), it warrants further exploration for VIRTUES to understand when students take these courses within their programs of study, the degree that students of different majors interact, the common language they use and concepts they study, and how they react or use this knowledge as they move forward in their academic or professional careers.

- Agnes Scott College: It is an interdisciplinary minor so courses are required from Econ philosophy chemistry etc. we have a program to help faculty develop sustainability related courses in their field of study.
- Berry College: Bio requires EVS
- Clark Atlanta Univerisity (CAU): Dual Degree Engineering Program Supply Chain Management
- Mercer University: Environmental Science to cover topics in sustainability and environmental justice
- Ogeechee Technical College: Biology,
- Georgia Institute of Technology: Yes, students of Public Policy must take a Philosophy course to fulfill a core ethics requirement. Other response said "Everyone has to take an ethics course" (believe this was submitted from INTA; Note added by MEC 6/4/2014).
- Georgia Southern University: All students at Georgia Southern are required to take a 1000 level Environmental Science course (which has a significant sustainability component) prior to graduation.
- Kennesaw State University: all non-science majors take SCI 1102; Environmental Science degree students take ENVS 3720
- University of Georgia: All Students must meet an environmental literacy requirement. All students must meet a cultural diversity requirement. All students pursuing a degree in the Franklin College of Arts and Sciences must meet a biological sciences requirement.
- University of West Georgia: It is an interdisciplinary minor so courses are required from Econ philosophy chemistry etc. we have a program to help faculty develop sustainability related

courses in their field of study.

Q10

Students have opportunities to (% responding often or sometimes):

TEAM = Work on teams

EXP = Learn by doing (experiential learning)

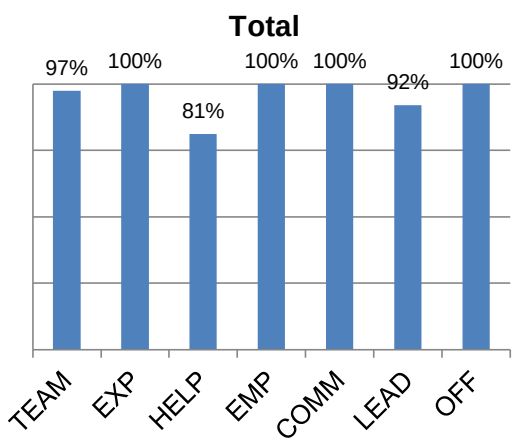
HELP = Learn by helping others (service learning)

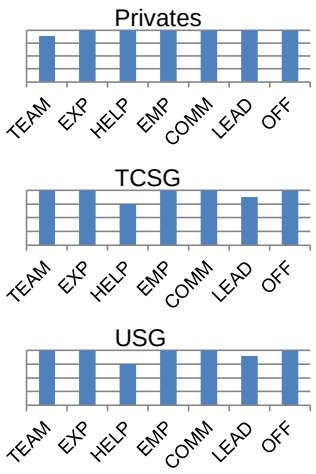
EMP = Consider other viewpoints (empathy)

COMM = Communicate in class

LEAD = Lead

OFF = Have meaningful off campus experiences (e.g. internships)



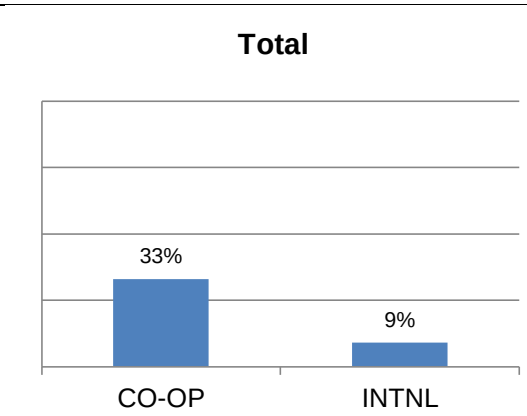


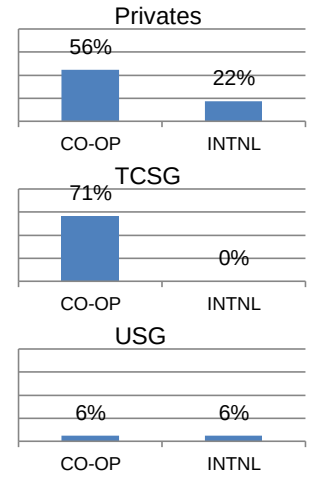
Assessment: Pedagogical methods thought to be important to the teaching of sustainability appear to be part of the normal practice on most campuses.

Q11, Q12, and Q13 asked respondents to list sustainability related student clubs, recurring events, and opportunities for students to get involved in facility initiatives. For brevity, these lists are not included here in this summary.

Q14 & Q15

Proportion of students completing a co-op or internship experience (CO-OP), and proportion of students completing an international experience or study abroad program (INTNL) (% respondents answering "many" or "a lot").



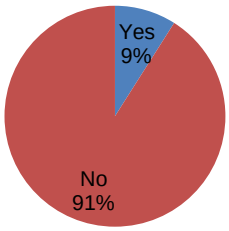


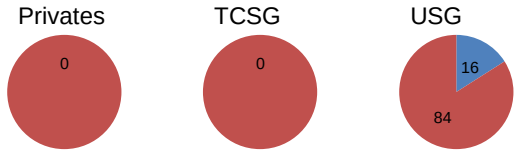
Assessment: Respondents were provided four choices of "little to none, some, many, or a lot" to characterize the number of students on their campuses participating in these programs. Co-ops and internships – i.e. "real world" work experiences – are most common at the technical colleges, slightly less at the private schools, and uncommon at most of the USG schools. Private schools most frequently see students take advantage of opportunities to study or learn abroad, though these experiences are popular at only a fraction of the colleges and universites. There was no variation in response for the seven

tecnnical colleges that responded to the international question: all selected the lowest possible category, “little to none.”

Q16

Are students assessed a sustainability fee?





Assessment: Only three schools responded affirmatively to having a “green fee:”

- University of Georgia: $3 Green Fee helps to fund UGA’s Office of Sustainability and its role in both coordinating existing programs that reduce the University’s environmental impact on each of its campuses as well as establishing new or more comprehensive programs with the same objective. The Green Fee also will support student internships in the Office of Sustainability, student research/service grants, and environmental education initiatives.
- Georgia Southern University: $10 per semester - just initiated in Fall 2013. Half is used to support the Center for Sustainability and its activities and half will be used for sustainability initiatives and improvements on campus.
- Georgia College and State University: $5/ student/ semester. The fee is used to support student research grants that promote sustainable initiatives on campus (http://www.gcsu.edu/green/greenfee.htm). Eighty percent (80%) of revenues from the fee shall be allocated to fund projects through a competitive grant process. Priority will be give to proposals that align with target areas established annually by the Sustainability Council. The remaining 20% of the funds shall be used to maintain a contingency fund, pay for administrative expenses and fund the Annual Sustainability Symposium. No more than 9% of the annual budget can be spent on administrative costs.

The following comments were also provided regarding upcoming plans for a “green fee” (though at the time of the survey, had not yet been enacted):

- Clark Atlanta University: A revolving fund is presently being planned on Campus.
- Georgia State University: Not yet, but [name omitted] has been working on it, so I expect a $3 fee to come soon through the Student Government Association. It pales in comparison to how much the students pay for football. Football!!! The administration and faculty need to pay or give more to sustainability efforts as well as the students (although the latter is less able to afford it, yet it is everyone's responsibility).

Q17

Greatest source of sustainability related funding on campus:

STUD = Student Fees

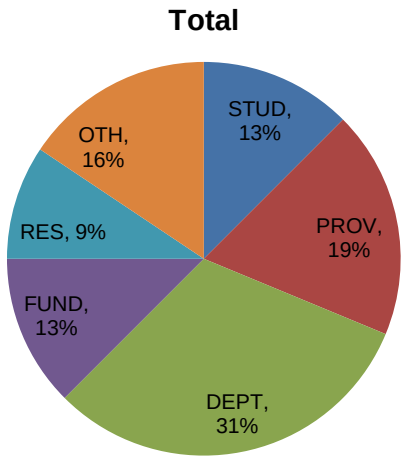
PROV = Central Academic (i.e. Provost Office)

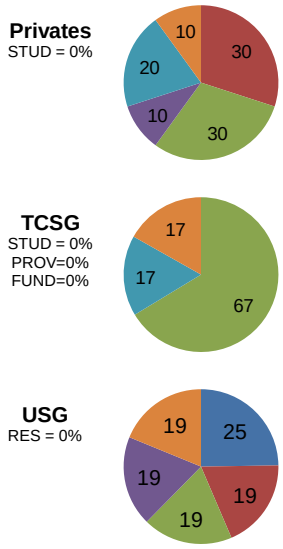
DEPT = Unit, school, or department

FUND = Foundation or outside donor

RES = Research grants and contracts

OTH = Other





Assessment: The question asked respondents to reply with a single answer of which is the greatest source of sustainability related funding on campus, not the proportion of funding from each source. Generally, funding appears to be highly diverse and relatively balanced, though the technical colleges are the least so relying mostly on discretionary funds at the department level. Those responding "other sources" provided additional information:

- Morehouse College: Campus Operation budget for sustainable buildings and grounds
- Athens Technical College: Student Groups
- Dalton State College: regular operating funds allocated to plant operations
- Georgia Institute of Technology: Not certain
- University of Georgia: Student Fees / Operational & Capital Project Funding

Q18

Who / What office is responsible for sustainability curriculum / academic sustainability at your institution, and where does it fall in the institution's hierarchy?

- Agnes Scott College: Faculty program directors responsibility. Report to faculty through curriculum committee.
- Berry College: Provost
- Brenau University: Sustainability Center, reporting to VP for Academic Affairs
- Clark Atlanta Univerisity (CAU): Under development
- Emory University: In the current strategic plan, expansion of sustainability-related education is one of the goals. Responsibility for achieving that goal falls ultimately on the Provost. The Office of Sustainability has a Faculty Liaison halftime position, whose responsibility it is to encourage development of sustainability-related curriculum. That individual offers faculty development workshops, talks, and events. The Office of Sustainability includes academic work and reports to the Provost and the Executive Vice President.
- Mercer University: Vice President for Academic Affairs and Provost
- Wesleyan College: The faculty are responsible for determining and defining the curriculum. Curricular initiatives are reviewed by the faculty Curriculum Committee and voted on by the faculty as a whole. Curricular matters are subject to review and administrative oversight by the Provost, President, and Board of Trustees of the College.
- Altamaha Technical College: No office
- Athens Technical College: Office of the Vice President for Academic Affairs
- Gwinnett Technical College: We have no administrative structure for these efforts
- Ogeechee Technical College: [name omitted], Fish and Wildlife Management Instructor/ [name omitted] Ex. VP

- Savannah Technical College: Currently we have a grant coordinator for the Sustainability Curriculum Initiative and an Academic Advisor that works directly with the students. Both positions report to Deans of Instruction who report to the Vice President of Academic Affairs.
- Abraham Baldwin Agricultural College: individual departments
- Dalton State College: there isn't such person or office
- East Georgia State College: Academic Affairs
- Georgia College & State University: The Education Work Group of the Sustainability Council promotes curriculum initiatives among faculty and staff. <http://www.gcsu.edu/green/education.htm> The Sustainability Council promotes, encourages, and reports on general sustainability initiatives. <http://www.gcsu.edu/green/index.htm>. The Council reports to the Senior Vice President for Finance and Administration. We do not have an Office of Sustainability, but we do have an Assistant Vice-President for Sustainability within Facilities Operations. She reports to the Director of Facilities Operations, who reports to the Senior Vice President for Finance and Administration. Other responses: The Sustainability Unit, non-academic, resides in the Facilities Operations Department. Sustainabiity curriculum/academics, is dependent on individual faculty members initiating related issues, activities, discussions in their own courses, across the curriculum.
- Georgia Gwinnett College: Office of Academic & Student Affairs, reports to Provost
- Georgia Highlands College: The VPAA's office would be responsible, and reports directly to the president.
- Georgia Highlands College (Cartersville Campus): We don't really have a sustainability initiative at GHC. But, of course, we should!
- Georgia Institute of Technology: Not certain.
- Georgia Perimeter College: The Office of the QEP is responsible for promoting sustainability across the curriculum at GPC. The Office of the QEP reports to the Dean of Institutional Effectiveness and the Vice President for Academic Affairs.
- Georgia Southern University: The Center for Sustainability (academics) - reports to the Provost as of Fall 2013 (previously reported to Assoc. Dean in the College of Science and Mathematics). Facilities Services (LEEDS and Construction Materials Recycling) Environmental Safety for paper, bottles, plastic, cartridges, and cardboard recycling
- Georgia Southwestern State University: We have no one officially designated at this point in time.
- Georgia State University: There is no one at GSU! [name omitted] and some other faculty (like the green senate committee) take it upon themselves to coordinate things, unpaid. I have heard that GSU is finally hiring a sustainability coordinator, although I would expect that person to work more on facilities and student activities than curriculum. [name omitted] did just win a sparks service award at GSU for his work coordinating sustainability efforts purely as unpaid service work.
- Kennesaw State University: Sustainability - Director reports to Provost/ Academic V.P.
- Middle Georgia State College: We have no central office for sustainability.
- South Georgia State University: Vice President for Student Affairs, Vice President for Academic Affairs, President, President's Executive committee, President's Cabinet
- University of Georgia: The Committee for the Integration of Sustainability Across Curriculum comprised of faculty from 12 academic units across campus and supported by the Office of Sustainability within Facilities Management Division.
- University of West Georgia: Sustainability Council reports to VP of financial affairs

Assessment: Responsibility for sustainability curriculum / academic sustainability varies from school to school, however there does appear to be a few recurring structures:

- No office / no person – Several institutions reported not having any identified office or person responsible for sustainability curriculum on their campuses (Altamaha Technical College, Gwinnett Technical College, Dalton State College, Georgia Highlands College, and Middle Georgia State College, and Georgia Southwestern State University).
- Individual Staff or Faculty / Faculty Champion – These persons may have formal sustainability related duties assigned to them (Ogeechee Technical College, Savannah Technical College, and Kennesaw State University), or may be acting on their own initiative (Georgia State University).
- Multiple Faculty / Faculty Committee (ad hoc) – groups of faculty work together for short periods on initiatives of their own or as called upon by the administration (Agnes Scott College, Wesleyan College, and Abraham Baldwin Agricultural College).
- Committee / Office / Center of Sustainability (standing) – formally established and standing organizations within schools that are duly authorized to address sustainability education (Brenau University, Emory University, Georgia College and State University, Georgia Perimeter College, Georgia Southern University, University of Georgia, and University of West Georgia).

- Administration – while all structures seem to ultimately report to VP for Academic Affairs or the Provost, a few schools report that sustainability education initiatives are housed at these higher levels of administration (Berry College, Mercer University, Athens Technical College, East Georgia State College, Georgia Gwinnett College, and South Georgia State University).

Q19

Additional comments provided by respondents.

- Clark Atlanta University: There is a need to institutionalize Sustainability in Georgia Universities to prepare our students for the workforce needs.
- Emory University: I have deep concerns that universities and colleges in Georgia have not yet sufficiently committed to this work, have not fostered incentives for interdisciplinary and problem-focused teaching, do not value engaged learning or experiential education, and are insufficiently aware of the future workforce demands on our graduates. Further, we are way behind other sectors of the country in shifting our goals with regard to quality of life, environmental footprint, alternative energy, commitment to greater equity, and ethical leadership toward a more sustainable society.
- Mercer University: Carry out more awareness campaigns through the Clubs and Projects.
- Athens Technical College: The concept of sustainability, as it is broadly operationalized in this study, is not a salient part of the culture of Athens Technical College, perhaps in part because our mission, and that of our sister institutions in the Technical College System of Georgia, is more narrowly focused than 4 year institutions in the state.
- Georgia College & State University: Yes, I have a lot of comments and concerns, and do not feel that this survey is the best tool for discovering the true situation at our institution. Please contact me by email or phone. Thank you for the opportunity to address these critical issues! [contact info omitted]

  Another response: Through my own research of the state, there are no dedicated degrees in "sustainability". Do not misunderstand, there are a few degrees in areas such as environmental science or engineering of some applicable sort. However, there are no degrees applicable to a student wanting to gain knowledge in the broad sense such as sustainability. Students interested have to consider going out of state or taking courses online to satisfy a degree in this area. Out of state for a student is not always convenient or applicable and online for a student is not always feasible or recommendable. For the state, there needs to be dedicated curriculum/degrees (associates to doctorates) for online and the traditional classroom to provide students another option and to aid retention.

  Another response: I would love to see a Sustainability Studies program (preferably a major but at least a certification program) here at Georgia College!

- Georgia Gwinnett College: Sustainability-related education and training at our institution is supported, but not prioritized in every office or department. Only two committees-- the faculty/staff Sustainability Committee, and the student Environmental Club-- are charged with promoting sustainability awareness throughout campus, which is a daunting task. Various other faculty and staff do make efforts to educate and promote related issues, but there is not a strong culture of sustainability on a campus that does house three sustainable buildings and many other such features.
- Georgia Highlands College (Cartersville Campus): Personally, I think it should be mandatory for every student in the USG to take at least one core course in their course of study that addresses sustainability issues.
- Georgia Southern University: We need to fill the vacant position of Sustainability Coordinator in Environmental Safety once the VP for Business and Finances gives the green light.
- Georgia Southwestern State University: You pose good questions, and I hope you'll share your results so that we can move in that direction. Also, "irregardless" is not used in standard English.
- Georgia State University: There needs to be a mandate from the USG that environmental literacy is a skill that needs to be a required part of the curriculum for anyone graduating in Georgia, just as writing and multiculturalism are required elements that are deemed important to being an informed college graduate and citizen. I think GSU needs an interdisciplinary major in environmental studies (or at the very least a certificate in environmental literacy).
- University of Georgia: "The Committee for the Integration of Sustainability Across the Curriculum is committed to enhancing teaching and learning for sustainability. The committee is organized by the following goals:

  Goal 1: Track Progress; Establish a baseline of current level of integration and track progress over time.

Identify and designate courses with a curricular sustainability component and increase the number of these courses by 10% or more by 2020. (UGA 2020 Strategic Plan, Strategic Direction VII) Assess: Updates made regularly to course list. Departments contacted for revisions.

Goal 2: Communicate and Connect; Provide opportunities for faculty to communicate, collaborate and connect across disciplines (including faculty breakfasts and other interdisciplinary networking opportunities). Assess: Number of faculty on list serve, at breakfasts, at workshops, and other events. Number of opportunities provided.

Goal 3: Provide Faculty Development Opportunities; Provide resources and programs that assist faculty in integrating sustainability into their courses (including website, Faculty Development Workshop, etc.) Assess: Number of opportunities provided (workshops, FLC, etc.), number of faculty who attend.

Goal 4: Create Institutional Change: Create institutionally relevant and appropriate programs to establish a leadership position in sustainability education per UGA 2020 Strategic Plan Introduction (including a Certificate in Sustainability and other academic programs). Assess: Creation of new programs, support of existing programs, and removal of barriers.

Goal 5: Connect Academics and Operations. Encourage the use of the UGA campus as a living laboratory for classes. Assess: Number of courses using campus as a laboratory.

Broad objectives of the proposed interdisciplinary certificate in sustainability include 1) Provide students of any discipline a foundation in sustainability concepts; 2) Supplement students existing area of study with interdisciplinary knowledge, systems thinking, and integrative approaches; and 3) Provide an opportunity to apply knowledge learned to real world problems inside and outside of the classroom.

- University of West Georgia: There are number of very committed faculty and student who are working hard to enhance sustainability on campus, even though we (UWG) is currently playing catch up to some other similar institutions.