

SPREADING ROOTS

SUSTAINABILITY ACROSS THE CURRICULUM AT UVA

Spreading Roots; Research on Peer Institutions and Integrating Sustainability into the Curriculum

Global Sustainability, Spring 2013

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ABSTRACT

The current UVa academic curriculum is lacking in sustainability-oriented/related courses. This report provides a compilation of research on successful implementations of sustainability in the curriculum by comparable peer institutions, and a recommendation on how to begin integrating it here at the University of Virginia. The research on these institutions included the compilation of information such as size, geographic location, STARS rating, program's strengths and weaknesses, etc. More in-depth analysis went into the academic aspect of each school, and into the different methods each institution has undergone to achieve a more sustainability-oriented curriculum. The analysis of our findings allowed for a final recommendation on how to begin implementing changes in the UVa curriculum. It includes both top-down and bottom-up approaches for accomplishing this. This report may serve as a useful tool for entities seeking advice on how to go about addressing change.

PRECEDENT ANALYSIS

Project Definition

Background

The issue our project addresses is the lack of sustainability in the curriculum at UVa

The status of sustainability in the University of Virginia's curriculum is currently in a subprime state. While the topic is briefly touched upon in many of the schools, there are no requirements to study sustainability, organized curriculum outside of the Department of Environmental Studies, and the dialogue between different schools remains minimal. The opportunity for students to study sustainability through co-curricular outlets exists, but UVa has not incorporated sustainability into much of its curriculum. For many on Grounds, sustainability remains an esoteric concept.

The University has made strides to adopt sustainable practices, but it has yet to make this same effort to incorporate sustainability into the curriculum. The disorganized state of sustainability in the curriculum at UVa is even more apparent when compared to other universities of similar scale and prestige. When we began researching other universities, we noticed that many had more classes on sustainability in more departments, requirements to study sustainability, formal conduits for communication about sustainability across departments, and more ways for students to incorporate sustainability into the curriculum.

Problem

The problem is how to choose the correct approach to adding sustainability to the curriculum

The overall question we would like to address with this report is "How can UVa better incorporate sustainability into its curriculum?" Answering this requires answering a host of sub questions. Should the university institute a sustainability requirement for all students? Should it a centralized approach and promote and develop the School of Environmental sciences as the central hub for studying sustainability at UVa? Or adopt a decentralized approach and give more funding for new sustainability classes within different academic departments? Create workshops for teachers to informally share ways to incorporate sustainability into existing courses? Create an office to formally oversee and plan the teaching sustainability across different academic departments?

Many of these solutions are incongruous with each other. Given current limitations on manpower, time, money, and other resources, it is important that UVa chooses the best possible solution. This will require us to carefully plan our approach to further incorporating sustainability into the curriculum.

Solution

Look at peer institutions to learn best practices about sustainable curriculums

Our team's solution to efficiently and effectively adding sustainability into the curriculum is to learn about programs that have been successfully implemented in comparable peer institutions. Many other schools have adopted a variety of approaches, and by examining their strengths, weaknesses, effectiveness of the programs as well as the issues, roadblocks, and mistakes that they have faced, UVA will be better equipped to follow in their footsteps and make sustainability a bigger part of learning on Grounds. We hope that this project will provide an initial starting point so that UVA can better understand the different approaches to this problem, best practices that have been used by other schools, and how to implement its own solution. Our initial analysis can help UVA expedite this process.

Stakeholder analysis

This project will benefit direct and indirect stakeholders

Our community partner is Andrew Greene in the UVA Office of the Architect and the University Committee on sustainability. His ultimate goal is to better incorporate sustainable thought into the curriculum at the University. In order to achieve this, he needs a better understanding of existing programs at peer institutions so that he can identify better practices.

The direct stakeholders for this project are the students and faculty, and indirect stakeholders include other universities looking to also implement sustainability programs. The project will likely affect the direct stakeholders through the model for teaching and learning within the University. We hope that it will affect the way many professors lead their classes and that students will be exposed to material that they otherwise would not necessarily encounter. Other universities stand to gain a greater understanding of how to implement their own sustainability programs. Hopefully, a broad dissemination of this project will encourage greater discussion and sharing of knowledge between these peer institutions. Indirect stakeholders include people who live in the communities around these universities. The schools often form a large part of a town's economy, population, and political action groups, meaning that the colleges have a large impact on the environment and ability to change it. A central theme of this course has been that "everyone matters" and we hope that this project will benefit all stakeholders.

Our goals for the project

Andrew Greene's ultimate goal, and the goal of David Tucker's section, is to better incorporate sustainability into the curriculum at the University of Virginia. In order to achieve this goal, we hope to give Andrew Greene a better understanding of programs that have been implemented at similar peer institutions.

Our role in the process

Provide the initial framework for further exploration of the sustainability in the curriculum

This project will be the initial shovel work needed to start the process of adding sustainable thought into UVA's formal curriculum. We will gather relevant information from peer institutions that will help UVA further explore the topics as needed. First, we hope that this will start a dialogue within the University itself. It can be disseminated to different offices and academic departments. This will hopefully start a discussion about sustainability in curriculum, how it can be incorporated within existing courses and departments, and raise the overall awareness of faculty and staff about sustainability. In addition, we hope that by contacting other universities about their curriculums it will start a launching pad for a continued sharing of ideas and best practices. While we do not pretend that this project will solve the issue of teaching sustainability at UVA, we hope that it will help get the process started.

Research Methodology

Research Topics

We will research sustainability in the curriculum at peer institutions

To benefit the broader and more abstract project “Sustainability in the Curriculum at UVa”, our team researched peer institutions that have already accomplished many of the sustainable milestones we one day hope to attain at the University of Virginia. The research we will eventually compile and share had to be pertinent, and for this, we came up with several topics to focus on: the institution’s description (size, STAR ratings, geographic locations, strengths, weaknesses, whether different programs are plausible at UVa, and the applicability of the program to UVa) .We believe these topics are broad enough to serve as malleable ideas of how to proceed, yet narrow enough to be relevant to the project.

Approach to collecting information

The approach we took to gather information was to funnel the research. First, through broad web searches (Google, STARS) and prior personal knowledge, we decided on several educational institutions to further investigate, and divided them between us depending on size, whether they were public or private, and geographic location. We then individually carried through a more targeted research on the institutions by taking advantage of the public resources available for each of them. If it is necessary to learn more specific details regarding their sustainability programs that are not currently provided to the public, we will resort to email and phone interviews with the contacts provided publicly by the institutions themselves.

Target schools

We researched schools of varying sizes and academic focuses

The educational institutions we focused our research on are: Middlebury College, Ithica College, American University, UNC Chapel Hill, Duke University, University of South Carolina, George Mason University, Virginia Tech, Pennsylvania State University. It is a diverse list of Colleges and Universities, with varied programs and areas of expertise that have proved useful in the compilation of relevant information.

Findings and key results

Our findings include a report on the specific institutions and their relevant subjects, a chart comparing the different institutions to one another, and a general report that will include our personal suggestions on the matter. The key results are presented in the form of a report, with a supplemental, more visually oriented aspect to it, depicting graphs and images on a poster board.

DEVELOPMENT OF A GUIDE

Approach

In order to achieve our project's goals, we sought to confer with peer institutions who have developed curricula focused on sustainability, either through distinct programs or by integrating sustainability into courses. Should they be adopted, we feel that either of these methods would be beneficial to UVA and its student body, and that each has its own benefits. By establishing a program whose core objective is sustainability we would be able to directly prepare students interested in sustainability for careers in the field, equipping them with knowledge from courses that go more in depth on topics ranging from corporate sustainability to conservation practice. Establishing this program would also

draw more publicity and interest to the field of sustainability among students at UVA, similar to the effect that the Global Development Studies program has had.

Schedule

The research took about three weeks. Once this was done, Organizing the relevant information took two more. However, the most essential part of the report was the time we spent coming up with a final recommendation. Overall, we stuck to our schedule, and were able to put together the report in the given amount of time without any major issues.

Budgeting and Funding

As we stated in our precedence analysis, this project should not incur any costs, so we have no budget concerns.

Documentation and Assessment

We documented our findings neatly and organized in a graphical form so as to make it easy to follow. We believe that we be better able to analyze the current state of sustainability in the American university curriculum and create actionable recommendations by keeping a tight grasp on all information that we have collected. There were multiple assessments of our relative success. In addition to David Tucker's response to our drafted report, we also received feedback from the poster competition judges. \

Dissemination

Because our goal is to identify the best practices at peer institutions, the dissemination and sharing of our findings is an important part of our project. First, our project write up will be directly shared with Professor Crisman, David Tucker, and Andrew Greene. If considered valuable, we hope efforts will be made to share it with the greater UVA community, as well as other peer institutions as a means to establish a dialogue with them for future guidance in actual program implementation.

CURRENT RESEARCH

Research on UVa

Before forming recommendations for how to further implement sustainability into UVa's curriculum, we felt it was necessary to first examine its current state. We did this primarily through relying upon the STARS (detailed above) report for UVA, which gave the university a Silver Star, putting it in the median category with 122 other universities. The four main categories that the report broke sustainability at UVA down into were:

- Education & Research
- Operations
- Planning
- Administration & Engagement
- Innovation

Within this report, we found that the issues highlighted were very similar to those that the University currently faces. The overall score for Education & Research, formed from the total points of the subcategories Co-Curricular Education, Curriculum, and Research, was 52.65%. While UVA scored fairly highly on Co-Curricular Education -- with 16.80 out of 18 available points -- the University received a dismal 24.61/55 points for Sustainability-based

curriculum and 11.24/27 points for research into sustainability. The Co-Curricular Education score was the result of the large number of student-led sustainability outreach programs which are incorporated into the University such as Green Living, Sustainability Advocates, Sustainability at UVA, and the sustainability-themed Semester at Sea program.

In terms of sheer curriculum, UVA received the majority of its points for its curriculum-based definition of sustainability, which emphasized the three E's of Environment, Economy, and Equity, as well as the importance of:

- a Systems Thinking foundation to counter traditional practices
- an Engaged Citizenship
- a high level of Innovation which prompts integration and implementation of knowledge
- Research to foster further thought and analytics-based conclusions, and
- an Interdisciplinary nature which connects the many challenges facing sustainability

Furthermore, UVA earned considerable credit for both its Environmental Thought & Practice major as well as its Global Sustainability minor. However, over 20 points were lost for an insufficient number of courses which delve into the topic of sustainability or focused exclusively on it.

For many of these same reasons, UVA did not score high on the research assessment. Very few projects were being conducted on sustainability, only a handful of UVA's many departments were involved in sustainability research, and even fewer faculty were or had incentive to be involved in sustainability research.

No categories under Operations concerned integration of sustainability into the UVA curriculum; however, under Planning, Administration & Engagement the two key areas in which UVA lost points were Investment in sustainability and Public Engagement. Once again, we felt that these low scores were representative of the lack of funding for sustainability-focused projects and the apathy of the administration regarding sustainability measures. Specifically, the STARS report called attention to the lack of incorporation of sustainability into education, and community service on the Public Engagement side, and the lack of a committee to oversee socially responsible investment, shareholder advocacy, and sustainable investments/organizations.

Lastly, UVA earned a perfect 4/4 points for Innovation, due to projects which went beyond the standards expected of the STARS evaluation. Examples of these for UVA were the UVA Bay Game, headed by Professor Mark White, as well as research by Professor James Galloway into the concept of the "nitrogen cascade". This STARS report illuminated many key aspects of UVA's current concept of sustainability for the group, helping us identify what areas UVA has been able to excel and where we have struggled. More often than not the scores were, we believed, accurate and predictable representations of the incorporation of sustainability into the curriculum and operations at the University. This report weighed heavily on our comparisons in the following section, as well as on the Final Recommendations Section.

Research on Peer Institutions

Our research on peer institutions was captured into tables for convenience of reading. See Appendix Figures 1.a-c.

CONCLUSION

Recommendation

While we have learned from our research of peer institutions that it is difficult to overcome the initial resistance to sustainability-based education, we have also seen many other schools similar to UVA overcome this through

professor and student interest. While there is no single clear route to success, we have learned that there are three key tenets UVA must follow in order to better achieve sustainability in the curriculum:

- Building vocal support for sustainability
- Finding funding for the programs
- Getting the buy-in of the entire University

Build vocal support

At many of the schools we have studied, change was not effected until the administration felt that the students and professors were adamantly in need of sustainability-based curriculum. UVA is experiencing the same issues because the Office of Sustainability and other sustainability-based organizations are having difficulty scheduling meetings with the deans, who do not see it as a high-priority issue. So far, most efforts have been focused on top-down approach of winning over the administration, but we have found that success at other schools was brought about by winning over the student body that in turn pressured the administration.

Find Funding Fast

Although not all of the solutions are costly, most of the sustainability in the curriculum programs at other schools do require a small amount of funding. Because of this, the Office of Sustainability needs to begin to solicit funds before it can start to change the curriculum. While the administration will likely be hesitant to sponsor a new course or special program, if it sees that this program is capable of finding its own funding and mobilizing its advocates to search and secure funds, it is all the more likely that the administration will match or eventually supplant these funds with money of its own.

Because funding will likely be difficult to acquire, it is important that sustainability groups look at cost-efficient ways to implement their solutions. Creating new courses is an expensive and arduous task. Therefore, we believe that it would be better to focus on integrating sustainable learning into existing courses rather than starting new ones.

Sustainability is everywhere

Ultimately, sustainability both in the curriculum and in the University community cannot be the sole responsibility of the Office of Sustainability. At Virginia Tech, as well as at other institutions, the key catalyst was the realization by interested parties that sustainability is not a solely environmental topic; it is a crisis that affects engineers, English majors, business students, and beyond. By hosting outreach and curriculum workshops with professors, perhaps led by Professor Crisman, UVA can make a strong first step in achieving a sustainability-filled curriculum.

Full Initiative Implementation

After getting the vocal support of the student body, acquiring enough funds for the curriculum, and getting the buy-in of the University as a whole, UVA can begin to implement specific solutions that integrate sustainability into the existing curriculum. For any solution to be effective, we believe it must:

- successfully incorporate sustainability into the curriculum
- not alienate professors and giving them ultimate control over what is taught in their classes
- cost efficient

We recommend the following following specific initiatives in order to achieve these goals:

- Create an optional sustainability pledge for professors to sign
- Creating resources through which professors can learn more about how they can incorporate sustainability into their existing course work
- Focusing on bottom-up approach by creating a new CIO focused on sustainable education
- Using a top-down approach by working with the administration

Sustainability pledge

One of the simplest solutions we have seen at other schools is creating an optional sustainability pledge to devote (1-2) class periods to sustainability topics that are directly relevant to their course material. This approach has many strengths. First, we believe that this would teach students that sustainability is not a separate topic, but rather one that is directly relevant to all aspects of education and life. Second, this solution would be easy to implement. The only difficulty would be educating professors on *how* they can specifically add sustainability to their course, but this can be easily taught by creating a workshop on the topic (either through UVa or an intermediary organization). Third, this solution is cost efficient, It would flow seamlessly into existing courses and not require the creation of new ones, which is often a complicated and expensive task. Fourth, this may create social pressure for professors to incorporate sustainability, as those who do would be seen as forward thinking and innovative. The Office of Sustainability can aid this process by publishing a list of professors who have made the pledge. Lastly, and perhaps most importantly, this solution would leave professors with ultimate control over what is taught in their classrooms as it would be entirely optional. This is important because we need professors on board and advocating for the incorporation of sustainability into the curriculum. If we alienate them in any way, they have the power to veto any of our solutions or efforts. Throughout our research we noticed that universities that successfully integrated sustainability into their curriculum also place a premium on professor autonomy. For this reason, we strongly urge against setting *requiring* professor to dedicate a class to sustainability or any other measure that would remove their power to decide what to teach.

Create resources that would support professors who wish to incorporate sustainability

A pledge will not have any power unless professors have the resources they need to begin to add sustainability to their current courses. Duke University noted that while many professors at their school would like to add sustainability topics, they often did not know how to do so. To overcome this problem, they created workshops in which professors could learn from each other. This solution would be both simple and cost effective for UVa to implement. In addition, the Office of Sustainability could appoint a member to serve as a central point of contact with all professors who wish to add sustainability to their curriculum. This would aid the distribution and sharing of information and best practices. So far, the University of South Carolina-Columbia has been successful with this solution.

Use a bottom-up approach by creating a CIO

We believe that the integration of sustainability into UVa's curriculum requires a bottom up approach and support from the entire university. This can be done by creating a CIO or focus group with the primary goal of curriculum integration. We believe that this would show a student-led push for integration in the curriculum. In order to best gain legitimacy, the group should consist of both students and faculty. By creating this student organization, the current sustainability groups could start a movement from the bottom of the administration chain and hopefully secure a deans meeting.

Use a top-down approach by working with the administration

It is also pertinent to be working on the top down movement by finally holding a meeting with the deans to ensure that all parties (students, professors, and administrators) are on board with the growing sustainability movement with curriculum. By housing the Office of Sustainability under a different academic title, it would be better able to help sustainability efforts both within and outside the curriculum. This position could even be responsible for setting up the aforementioned workshops and assisting professors in any sustainable concerns.

Lessons learned

The project objective was clear since the beginning: create a guide of possibilities for incorporating sustainability into the UVa curriculum as exemplified by peer institutions. The research that had to be done to produce the final outcome was clear and the materials easily accessible, therefore, we did not face very many barriers in

accomplishing it. Perhaps the only barrier we encountered was getting in touch with representatives from other institutions; many, if not all our requests to learn more about the different programs were ignored. Fortunately, we were able to compile a good amount of information through their public sources so that we could build our report. Unfortunately, we were not able to build a network or start a discussion on sustainability with other universities.

Future work

The next step in this project is to carry out detailed case studies on individual programs that could have the potential to work in UVA. This way, rather than simply a compilation of suggestions on how to incorporate sustainability in the curriculum, we could have a step-by-step guide of how to bring specific programs to fruition at UVA. Additionally, performing individual case studies would inevitably require interactions with representatives from other institutions. This we believe should be exploited, for in the future, it might be beneficial to build active partnerships with them. This could facilitate the integration of new programs, providing us with valuable insight and serving as a key asset when proposing new initiatives to the administration. We believe that this would be a good base for a groups in upcoming semesters to further research the topic.

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APPENDIX

Figure 1.A-C: Compiled Research and STARS Scores of Peer Institutions

George Mason University			
Rating	Score	Submission Date	President's Letter
Silver	51.98	Marquet Lu Aug. 9, 2011	Download
Submission Boundary			
Education & Research			51.73%
Co-Curricular Education			12.25 / 18.00
Curriculum			19.99 / 55.00
Research			19.49 / 27.00
Public			
20,067 (Undergraduate) and Virginia 10,804 (graduate)			
George Mason has an emphasis on co-curricular education. More specifically, the system of Greenleaf courses which must examine their three key points of sustainability: people, planet, and profit. In addition to offering over 30 courses, they also offer at least a dozen programs including undergraduate and graduate majors as well as degree certificate programs. Mason offers a network of programs and classes that could serve as a great model for UVA and devotes 12 positions for a number of faculty involved directly in sustainability efforts. In addition to federal funding for their sustainable efforts, Mason also offers tuition and research related support for sustainability. In the summer of 2011, the Mason administration approved the creation of the Patriot Green Fund (PGF), which is a \$100,000 per year sustainability fund that is devoted to making Mason's campuses more sustainable through facility upgrades or "trial balloons and student research projects" ("GMU Environmental Action Group").			
The greatest weakness of George Mason's program is that they have just begun to integrate sustainability into the curriculum. Only 40 of 6247 classes at Mason are sustainability related. While they are making great strides to change this, the main focus of the Mason Sustainability Institute has been Operations and student initiatives.			
Virginia Tech			
Rating	Score	Submission Date	President's Letter
Silver	63.30	Demos Corrigan March 18, 2013	Download
Submission Boundary			
Education & Research			79.01%
Co-Curricular Education			12.29 / 18.00
Curriculum			35.78 / 55.00
Research			27.00 / 27.00
Public			
23,796 (Undergraduate) and Virginia 4,620 (graduate)			
Some of the highlights of Tech's program include it's interdisciplinary endeavors. Being primarily an agricultural/technical school, it would be easy for the school to focus their attention in those areas such as agriculture and architecture. However, the school has woven sustainability throughout all of their academic departments. Here the school lists a number of courses in sustainability that cross all disciplines ("Undergraduate Courses"). It is also important to note that few of them include the term sustainability which is unique. This indicates that these classes are not token afterthoughts to fulfill a sustainability requirement, and that sustainability is an important and integral part of all majors. This however it can also be seen as negative because of the lack of attention it gives the initiative. It also devotes a lot of funding to their sustainability research program.			
Their knowledge about sustainability from research has not been added to the curriculum			
Pennsylvania State University			
Rating	Score	Submission Date	President's Letter
Silver	58.76	Mary Esterling July 28, 2011	Download
Submission Boundary			
Education & Research			51.42%
Co-Curricular Education			10.77 / 18.00
Curriculum			16.93 / 55.00
Research			23.77 / 27.00
Public			
more than 90,000 total			
Pennsylvania			
Penn State is a great school to look to in regards to sustainability research. The program has taken on a number of projects including participation in the Solar Decathlon, perhaps one of the most difficult and impressive sustainable building competitions in the country. However, because we looking to enhance the curriculum at UVA, in particular interdisciplinary, it may not be the best model. It does offer, however, 30 undergraduate majors and 18 minors that are sustainability oriented. Their program is new and is making huge strides. However, they may still be of value as they are in a similar state of development to the University. This may indicate a possibility for a partnership on the topic. If anything should be taken away from Penn State in regards to curriculum it is that sustainability is an important movement that many large state funded schools are jumping in on and investing in for the future.			
Penn State has a strong focus on individual program initiatives rather than inter-curricular studies. In addition, because most of their initiatives are research based, their funding also derives from those sources. This may not be as applicable to UVA.			
Ithaca College			
Rating	Score	Submission Date	President's Letter
Gold	65.88	Marian Brown Aug. 2, 2011	Download
Submission Boundary			
We have evaluated the main Ithaca campus only. This report does not include the leased facilities in Washington DC, London, or Los Angeles.			
Private			
62,000 (Undergraduate) and New York 470 (graduate)			
Ithaca College has become in recent years a vocal supporter and promoter of sustainability in higher education, and although it differs in most aspects to the structure of UVA, it is important to study and learn from its accomplishments. Sustainability is taught in a co-curricular regard. It is a multidisciplinary and an interdisciplinary subject matter. There is ample breadth in course offerings: over 100 courses meet UNESCO criteria for education for sustainable development. This has been aided in many respects by the faculty: they have adapted their personal curriculum to be more sustainability focused, perhaps through programs such as the annual Finger Lakes Project workshops that incentivizes faculty through mini-grants to develop new sustainability-oriented courses or include it in their already set curricula. Additionally, the university encourages sustainable thought early on through institutionalized policies. For instance, it offers sustainability-oriented first year seminars.			
It's established programs there may not be plausible or applicable to the University of Virginia. There is also room for improvement in making their sustainability efforts more of an outreach program to share ideologies with other institutions.			

Figure 1.B

PEER INSTITUTION		PUBLIC OR PRIVATE	SIZE	LOCATION	STRENGTHS	WEAKNESSES																
<p>University of North Carolina at Chapel Hill</p> <table border="1"> <tr> <td>Rating</td> <td>Score</td> <td>Submission Date</td> <td>President's Letter</td> </tr> <tr> <td>Silver</td> <td>51.11</td> <td>Jan. 31, 2011</td> <td>Download</td> </tr> </table> <p>Submission Boundary Boundaries include buildings and grounds owned and actively managed by UNC Chapel Hill. On February 2nd University of North Carolina, Chapel Hill requested that ASSET Staff make the following adjustments to their institutional boundary to add more clarifications. The assessment includes our large medical school and some clinics, but does not include UNC Hospitals, which are managed by a separate entity.</p> <table border="1"> <tr> <td>Education & Research</td> <td>49.18%</td> </tr> <tr> <td>Co-Curricular Education</td> <td>12.50 / 17.75</td> </tr> <tr> <td>Curriculum</td> <td>18.71 / 35.00</td> </tr> <tr> <td>Research</td> <td>17.89 / 27.00</td> </tr> </table>		Rating	Score	Submission Date	President's Letter	Silver	51.11	Jan. 31, 2011	Download	Education & Research	49.18%	Co-Curricular Education	12.50 / 17.75	Curriculum	18.71 / 35.00	Research	17.89 / 27.00	Public	18,579 (Undergraduate) and 10,811 (graduate)	North Carolina	The biggest strength of UNC's sustainability program is that students of all areas of study have the chance to learn about sustainability. The university offers over 150 sustainability related undergraduate and graduate courses. While the majority of these courses are taught in the College of Arts and Sciences, many of the graduate schools, including the Schools of Business, Journalism, Mass Communication, Law, Public Health, and Social Work have begun to teach sustainability. Students also have the ability to get a sustainability minor that focuses on environmental science, business, public policy, and planning. Some students also participate in campus case studies or research through the Institute for the Environment. Overall, it's very easy for student to learn about sustainability because it has so thoroughly permeated every academic department. Another strength of UNC's program is that different academic departments collaborate together to solve environmental problems through the Institute for the Environment. This has started a dialogue between different departments about how they can jointly tackle the issue of sustainability ("Institute for the Environment").	While UNC staff and students collaborate on environmental issues through the Institute for the Environment, this so far has not morphed into a discussion of the curriculum. Sustainability is decentralized, with each department independently choosing how to best teach sustainability. In addition, the have not collaborated with other universities on incorporating sustainability into the curriculum. Most collaboration has been focused on research and operations (Shel). Together, these weaknesses prevent UNC from sharing and learning best practices.
Rating	Score	Submission Date	President's Letter																			
Silver	51.11	Jan. 31, 2011	Download																			
Education & Research	49.18%																					
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Curriculum	18.71 / 35.00																					
Research	17.89 / 27.00																					
<p>Duke University</p> <table border="1"> <tr> <td>Rating</td> <td>Score</td> <td>Submission Date</td> <td>President's Letter</td> </tr> <tr> <td>Gold</td> <td>65.74</td> <td>Jan. 31, 2011</td> <td>Download</td> </tr> </table> <p>Submission Boundary The boundaries of this submission include "Duke proper" - the university and health system buildings on or adjacent to the Durham Campus and the Beator/ Marine Lab. The inventory did not include leased space or satellite health system buildings and hospitals. The boundaries were decided by the Campus Sustainability Committee based on the ability to affect areas of campus and the level of control the central administration had over these units.</p> <table border="1"> <tr> <td>Education & Research</td> <td>61.35%</td> </tr> <tr> <td>Co-Curricular Education</td> <td>18.00 / 18.00</td> </tr> <tr> <td>Curriculum</td> <td>24.80 / 55.00</td> </tr> <tr> <td>Research</td> <td>18.55 / 27.00</td> </tr> </table>		Rating	Score	Submission Date	President's Letter	Gold	65.74	Jan. 31, 2011	Download	Education & Research	61.35%	Co-Curricular Education	18.00 / 18.00	Curriculum	24.80 / 55.00	Research	18.55 / 27.00	Private	6,484 (Undergraduate) and 8,107 (graduate)	North Carolina	Duke has many ways in which students can formally study sustainability and the environment. The Nicholas School of the environment offers four different majors: A.B. in Environmental Science and Policy, B.S. in Environmental Sciences, A.B. in Earth and Ocean Sciences, B.S. in Earth and Ocean Sciences. In addition it offers two separate minors: Minor in Environmental and Science Policy, Minor in Earth and Ocean Sciences. The Engineering school offers a B.S.E. in Civil and environmental majors, and Trinity College of Liberal Arts allows students to create their own major, which may use to study sustainability across different disciplines. Finally, Duke offers two undergraduate certificate programs: Certificate in Marine Science and Conservation Leadership and Certificate in Energy and Environment. Overall, Duke offers many different ways to formally study sustainability outside of the environmental science department. This is likely to attract students from other areas of interest to the subject, and would be a good model for Uve to follow. Duke's other major strength is that faculty from other departments work together on sustainability in the curriculum. Each May, the faculty participates in the Trillium Workshops, in which faculty members are mentored in "how to incorporate sustainability concepts into their new or revised syllabi across all disciplines and departments" ("Faculty Trillium Workshop). By having this ongoing dialogue between departments, they are better able to share ideas, best practices, and organize their curriculum. This is a program that Uve could easily adopt and would help us better structure the learning process.	Use many other schools, Duke is just now beginning to interact with other universities about best practices for a sustainable curriculum. More importantly, however, it is a private university with more control over its funds and organization. This means that it may not be possible to implement their entire program at the University of Virginia.
Rating	Score	Submission Date	President's Letter																			
Gold	65.74	Jan. 31, 2011	Download																			
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<p>University of South Carolina</p> <table border="1"> <tr> <td>Rating</td> <td>Score</td> <td>Submission Date</td> <td>President's Letter</td> </tr> <tr> <td>Gold</td> <td>66.33</td> <td>Feb. 13, 2012</td> <td>Download</td> </tr> </table> <p>Submission Boundary</p> <table border="1"> <tr> <td>Education & Research</td> <td>61.60%</td> </tr> <tr> <td>Co-Curricular Education</td> <td>12.75 / 18.00</td> </tr> <tr> <td>Curriculum</td> <td>27.89 / 55.00</td> </tr> <tr> <td>Research</td> <td>15.96 / 27.00</td> </tr> </table>		Rating	Score	Submission Date	President's Letter	Gold	66.33	Feb. 13, 2012	Download	Education & Research	61.60%	Co-Curricular Education	12.75 / 18.00	Curriculum	27.89 / 55.00	Research	15.96 / 27.00	Public	22,556 (Undergraduate) and 8,165 (graduate)	South Carolina	Sustainability is taught in most academic departments at USC. Out of 74 that offer classes, at least 46 of them offer classes related to sustainability. However, the most impressive part of USC's sustainability in their curriculum is their Curriculum Team that monitors and fosters courses related to the environment. This is of great value because it creates a central team with knowledge of sustainability across academic departments that can share information, best practices, and resources throughout the different school. The program so far has had great success. A lot of participants after one workshop found that ("Curriculum Team"). 64% added new module, vast majority reported teaching methods changed, 62% research interests changed, 47% published new work in sustainability/environmental areas, 42% led to new presentations, 57% led to new interdisciplinary work and 58% new external funding.	The main drawback of using USC as a comparable is that it is more than twice the size of the University of Virginia. Because of this, it has more academic departments and resources, which may make it difficult to implement the same plan at the University.
Rating	Score	Submission Date	President's Letter																			
Gold	66.33	Feb. 13, 2012	Download																			
Education & Research	61.60%																					
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Research	15.96 / 27.00																					

Figure 1.C

Middlebury College						
Rating	Score	Submission Date	President's Letter			
Good	66.90	Jan. 31, 2011	Download			
Submission Boundary						
Education & Research			73.10%	Private	2,500 undergraduates	Vermont
Co-Curricular Education			37.50 / 17.75			
Curriculum			26.69 / 51.00			
Research			25.80 / 27.00			
American University						
Rating	Score	Submission Date	President's Letter			
Good	69.73	Jan. 31, 2011	Download			
Submission Boundary						
Education & Research			72.18%	Private	6,700 (undergraduate) and 3,500 (graduate)	Washington DC
Co-Curricular Education			34.38 / 17.75			
Curriculum			36.67 / 55.00			
Research			21.13 / 27.00			

Middlebury is well known for having a student body very willing to embrace changes in favor of more sustainable practices.

Public information regarding its specifics very hard to find. Basis of this institution's research must be done through intermediaries.

American university often breaths in courses related to sustainability. 785 are either sustainability-focused or sustainability-related. It also tries to build an environmental conscious by implementing policies on "Greening" classrooms, and offering a "Green Orientation" for new members. American offers a variety of sustainability-oriented study abroad programs, and it takes advantage of its privileged geographic location to provide their students with access to environmentally oriented internships, presentations, etc.

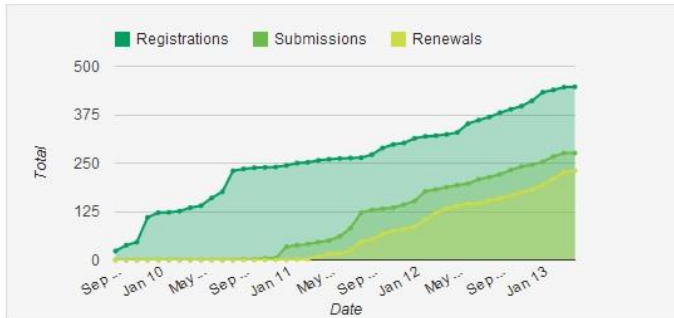
While there is a lot of public information on Environmental consciousness, there is less of a focus on sustainability in their curriculum.

Figure 2.A: Location of STARS ranked schools

Data Last Updated: April 2, 2013, 5:05 p.m.



Figure 2.B: STARS Participants



STARS Registrations and Submissions

Registrations	447
Submissions	276
Renewals	230

STARS Registrations, Submissions, and Renewals over time.