EXPANDING ENVIRONMENTAL LITERACY AT SMITH COLLEGE

EMILY TAYLOR ‘08

SMITH COLLEGE
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ABSTRACT

The world is facing a serious challenge as resources are being depleted and global climate change wrecks havoc on innocent communities. To remedy our current situation, institutions of higher education must do what they can to create a generation of environmentally aware and savvy individuals. It is the students of today and tomorrow that will be faced with arguably the largest challenge to face humankind.

Smith College can do more to prepare its students for the future. Expanding environmental literacy is imperative to the success of the institution, the students and the world.

By surveying and interviewing faculty members of the top two departments in Division I and Division II, a number of plausible suggestions for creating a voluntary, incentive-based strategy designed specifically for Smith. These suggestions include an Eco-Honors program, a Center for the Environment, an Environmental Science and Policy major, a 2-credit environmental studies course and an environmental website for Smith College.

INTRODUCTION

The world has become a place of environmental degradation as its inhabitants struggle to grasp the knowledge of sustainability and environmental stewardship. Every action humans take impacts the environment around us. This environment includes not only the trees, mountains, rivers and lakes, but also the urban environment in which we live. As our global economy grows and expands, understanding of how that growth impacts the environment is becoming rarer, and at the same time, desperately needed.
Kevin Doyle, National Director of Program Development for the Environmental Careers Organization asserts that environmental knowledge, understanding and creativity will be the most important skills for competitive applicants in the job market. But how does one sharpen those skills when they are not sufficiently supported within the educational system? Though it is ideal to begin environmental education with small children and throughout primary school, there must be a system in place to pick up the slack for those who do not receive adequate environmental instruction and interaction growing up. It is this environmental literacy at the collegiate level—more specifically at Smith College—that is of my utmost concern. If colleges commit to producing graduates who are the most competitive and the most knowledgeable to serve the world, then environmental knowledge must be a component of their college-level education, especially if little or no emphasis was placed on the natural world as a child or teenager.

The idea of environmental education and environmental literacy stems from the relationship that a child once developed with the natural world. This relationship would mature and grow as the child grew, creating a mutual understanding. Today, in the age of video games, televisions, computers and ipods, it is much more difficult for children to establish the crucial connection with nature.

David W. Orr, author of *Earth in Mind: On Education, Environment, and the Human Prospect* (1994), is the chair of the environmental studies program at Oberlin College in Ohio. He is also the education editor of the journal, *Conservation Biology*. Orr’s
collection of essays addresses the necessity and importance of environmental education and what an ideal education should look like.

One of Orr’s main points is the value of shifting from our discipline-centered educational lifestyle to an interdisciplinary one. Orr claims that environmental issues permeate every academic discipline and that all global issues are intertwined, but we are blind to their connectedness because we have failed “to educate people to think broadly, to perceive systems and patterns, and to live as whole persons” (1994). Going so far as to say our historic discipline-centric education led us into danger, Orr claims that our current system of education that “enabled us to industrialize the earth will not necessarily help us heal the damage caused by industrialization” (1994). Having fragmented the world into disciplines and sub-disciplines, “after 12 or 16 or 20 years of education, most students graduate without any broad, integrated sense of the unity of things” (Orr 1994).

We find ourselves in the midst of an environmental crisis and unless we change the way we educate our children and future generations, how will they learn how to get us out of this mess?

When addressing the problem of education today, Orr warns that “without significant precautions, education can equip people merely to be more effective vandals of the earth” (1994). Orr goes so far as to assert that “if one listens carefully, it may even be possible to hear the Creation groan every year in late May when another batch of smart, degree holding, but ecologically illiterate, Homo sapiens who are eager to succeed are launched
into the biosphere” (1994). Possibly a bit dramatic in his statement, Orr makes a valid point.

Another clear distinction that should be made in the sphere of academia is the difference between intelligence and cleverness. According to Orr, “the goal of education should be to connect intelligence with an emphasis on whole systems and the long range with cleverness, which involves being smart about details” (Orr 1994). It is this focus on whole systems that has been lacking from our education.

Orr defines an sufficient education as including the basic comprehension of (1994):

- Laws of Thermodynamics
- Basic Principles of Ecology
- Carrying Capacity
- Energetics
- Least-cost, End-use Analysis
- Limits of Technology
- Appropriate Scale
- Sustainable Agriculture and Forestry
- Steady-state Economics
- Environmental Ethics

Though this list is very idealistic, the point is that individuals should understand how natural systems work and how their actions in turn affect these systems.

Smith markets itself as an environmentally friendly campus to guests, students, faculty, staff and prospective Smith community members. For example, the new Ford Hall science and engineering building that is under construction right now is being heralded as
a sustainable building because it will be certified as a Leadership in Energy and Environmental Design (LEED) “green” facility (Smith College, Ford Hall Fact Sheet 2007). In many respects, Smith is doing a lot. This includes efforts like the new, on-site co-generation plant, as well as the brand new website, *Green Smith: Resources & Information on Environmental Sustainability at Smith and Beyond*. Smith has a Committee on Sustainability that is comprised of individuals from all facets of the Smith community to address sustainability issues on campus. We also have a number of student organizations, including Gaia, the Bad Seeds, the Greed Team, MassPIRG, the Smith Environmental Coalition, and Clean Energy for Smith.

Academically, Smith offers the Environmental Science and Marine Science and Policy programs, the Landscape Studies program and opportunities within the engineering department. However, the first three programs offer minors and no major.

But is there more that Smith can do to reach out to those students who have never experience nature or have never been introduced to environmental topics throughout their time before Smith? It is hard to escape a day without being faced with an advertisement, news story or article addressing a contemporary environmental concern. It’s time for Smith to take responsibility for preparing its students with tools to interpret this information and apply to their careers and to their lives.

**Methodology**
The study was conducted within the two largest departments, as determined by the number of declared majors, in Division I and Division II. In Division I, is English and Art and in Division II, is Government and Economics.

For the purpose of the study, it was assumed that those students majoring in Division III—the natural sciences—will have some level of education that is applicable to environmental studies and science. For that reason, these departments are excluded from this project.

E-mails, with a survey attached were sent to all faculty in the four participating departments requesting their participation. Faculty were self-selected by responding with either the completed survey or requesting an interview with either investigator to discuss the survey questions. Survey questions were centered on current course offerings, possible curriculum changes and additions, environmental knowledge of the faculty member, as well as their perception of student environmental knowledge.

The original intent of the project was to conduct a similar survey of the students majoring in the four department majors. Unfortunately, the investigators ran into logistical difficulties and abbreviated this portion of the project. However, to get an idea of student sentiment, an informal on-line survey was posted on the Smith DailyJolt and on the Smith Live Journal site. The students surveyed are not strictly from the four department majors as initially sought.
RESULTS

THE GOVERNMENT DEPARTMENT

Of a possible 16 faculty, there were three respondents—a 19% response rate. Of the three respondents, two faculty incorporate environmental issues into courses at some capacity. When asked to rate their own level of environmental knowledge on a scale of one to five, with five being very knowledgeable, the government professors had an average self-rating of 3.8. Interestingly, when asked to rate how knowledgeable Smith students are about environmental topics, the perceived student average was 3.

When asked whether or not the faculty support changes to the department curriculum, one professor responded no, while another commented that some changes are already underway. The third respondent was in support of bringing environmental education into current courses, but felt no need to create additional courses. However, when asked whether or not this answer would change if support were available in the form of workshops, the same faculty member expressed interest.

Two of the three respondents were not in support of adding requirements to the department major with the goal of instilling environmental knowledge in the students. The remaining professor expressed the ease at which environmental politics and policy can be incorporated into a government major’s education and was generally in support of a requirement.
Two of the respondents commented positively on whether or not they were in support of hiring additional faculty to conduct courses in environmental policy, but they also encouraged incorporating environmental issues into current course offerings.

THE ECONOMICS DEPARTMENT

Of a possible 13 participants, there were four respondents—a 31% response rate. Of the respondents, three already incorporate environmental issues into their current course offerings. When asked to rate their own level of environmental knowledge on a scale of one to five, with five being very knowledgeable, the economics professors had an average self-rating of 3.5. Interestingly, when asked to rate how knowledgeable Smith students are about environmental topics, the perceived student average was 2.8.

Of the four respondents, three were generally supportive of changing the department curriculum. However, when asked whether or not responses would change if support were available in forms of grants or workshops, one faculty member expressed interest.

Overall, the respondents were not in support of adding requirements with the goal of instilling environmental knowledge in the students to the department major. There was just one professor who expressed possible support in her response.

Every participant from the Economics department strongly expressed the need to fill the environmental economics position. This position has been vacant for several years now, and a hiring request is in cue, but not likely to be approved for some time.
THE ART DEPARTMENT

Of a possible 25 faculty, there were four respondents—a 16% response rate. All four respondents already incorporate environmental issues into courses at some capacity. When asked to rate their own level of environmental knowledge on a scale of one to five, with five being very knowledgeable, the art professors had an average self-rating of 3.6. When asked to rate how knowledgeable Smith students are about environmental topics, the perceived student average was close to the faculty value with a 3.5.

When asked whether or not the faculty support changes to the department curriculum, all respondents expressed some level of support. One respondent in particular was extremely enthusiastic and supported not only curriculum changes, but also additions within current courses and collaboration across departments. When asked if their response would change if support were made available in forms of grants or workshops, the faculty member expressed interest in terms of an enhanced recycling program as well as the establishment of a sustainable materials library. This library would be a great asset to the architecture students in particular.

In terms of adding requirements to the department major, there were mixed opinions. Two respondents expressed possible support, one enthusiastic respondent was very much in support of an environmental requirement, and the third one was against requirements, but supported required class discussions pertaining to environmental issues.
Three of the four respondents commented on whether or not they were in support of hiring additional faculty to conduct courses in environmental policy, and all three support hiring, but expressed pessimism as the administration is still in a hiring freeze.

**THE ENGLISH DEPARTMENT**

Of a possible 27 faculty, there were six respondents—a 22% response rate. Of the six respondents, half of them incorporate environmental issues into courses at some capacity. When asked to rate their own level of environmental knowledge on a scale of one to five, with five being very knowledgeable, the english professors had an average self-rating of 3.8. When asked to rate how knowledgeable Smith students are about environmental topics, the perceived student average was 3.2.

When asked whether or not the faculty support changes to the department curriculum, there were mixed attitudes. One professor claimed that it was not the job of the English department to teach environmental topics or even incorporate them into the curriculum, but rather it should happen through the American Studies program. Another respondent supported the enhancement of current offerings and did not see a need to actually change the curriculum. A third respondent said they are already incorporated into course offerings. The final two faculty members were supportive and one was particularly interested in more courses on American nature writing and the literature of place. However, when asked if this answer would change if support were available in forms of grants or workshops, the faculty member had mixed responses. For a third of the group,
funding or grant support would be helpful and the remaining two-thirds did not have a definitive response.

For the English department in particular, “requirements” is a stigmatized word. None of the six respondents were supportive of establishing new major requirements.

Of the respondents, only one was strongly against hiring additional faculty. One professor commented on the cost of hiring additional faculty and another suggested better utilizing STRIDE scholars in this interdisciplinary area of study.

**ACADEMIC SUGGESTIONS**

Included in the survey was a section for suggestions. There were several suggestions that were particularly insightful and warrant further discussion.

Faculty members, on average, were more supportive of incorporating environmental education into current courses—not creating new ones. One suggestion in how to do this is encouraging students to have an environmental focus in final projects, particularly within lower-level courses. Additionally, a suggestion to mitigate the hiring freeze would be invite visiting scholars to the campus who have an environment-related expertise.

The Landscape Studies (LSS) program has strong support across campus. One of the more popular courses in the program for non-majors or minors is a 2-credit class that consists of a series of speakers each week addressing a different aspect of LSS. One
suggestion is to create a comparable course as part of the Environmental Science and Policy (ES&P) program. Similarly, another valid suggestion is to increase the collaboration between the LSS and ES&P programs. These two programs overlap to some degree and it could be assumed that those interested in participating in either program would be interested in crossing program the lines.

There was also widespread support throughout the surveyed departments to expand the ES&P program to include a major. Two faculty members in the English department also suggested incorporating more writing and reading of personal environment-related narratives into the ES&P program.

Lastly, the idea of an Eco-Honors—a Latin Honors distribution with an environmental focus—was widely supported by all faculty to which it was explained.

Several of these suggestions will be discussed in more depth later on.

**CAMPUS-WIDE SUGGESTIONS**

In addition to the academic suggestions, there were many campus-wide suggestions with the goal of increasing environmental literacy among students. A key strategy is to stress the importance of individual action among students. This is a suggestion that would require education of the same sort that this project is trying to achieve. Another idea would be to support and encourage student debate on controversial environmental topics.
and have students on either side educate the Smith community. Learning from one another is an important tool.

Improving campus-wide programs, like recycling, would reemphasize the college’s commitment to a green campus. This could even include disposal centers with not only a garbage can and a bottle bin, but also paper and compost in the place of every trash can that stands alone on campus. Another program idea would to develop local projects relating to environmental issues in the area that could become a different campus-wide initiative each year.

Two suggestions, one of which is under discussion right now, is the creation of a Center for the Environment and a Sustainable Materials Library. The Sustainable Materials Library idea came from faculty in the Art department who wanted architecture students, to know what different building materials are and how they can be used. Hands-on learning that would take place in such a space would be a great asset to the Smith community. The Center for the Environment is one of four new Centers to hopefully come out of Smith’s Strategic Plan.

Another suggestion is to create an environmental issues website for Smith. Interestingly, during the course of this project, such a site was developed: Green Smith, which was previously mentioned in the introduction section of this report.

Several of these suggestions will be discussed in more depth later on.
**POTENTIAL CHALLENGES**

Throughout the course of the interviews, and made apparent in several surveys, there are financial constraints attached to many of the suggestions generated and attached to course development and, of course, hiring more faculty. It’s a simple question of prioritizing—if money goes to one project, it’s taken away from another. Every funding action has opportunity costs attached to it. Smith is also in the middle of a hiring freeze as the college continues to shrink its faculty size. It will be very difficult to convince the administration to hire anyone, despite overwhelming support among the department, like we saw with the environmental economics position.

Despite David Orr’s clear and obvious presentation of why we should embrace an interdisciplinary education, it is a huge challenge. Attempting to incorporate an interdisciplinary study into a world of academia based upon disciplines is a brave contest to take on. Our civilization’s system of education, divided into mathematics, history, English, biology, physics, and so on, is unable to embrace an interdisciplinary topic that crosses all of the disciplinary boundaries and is interwoven in every subject.

One of the largest obstacles to overcome is generating support for involvement within departments and from faculty. Departments as a whole are less likely to embrace any sort of considerable change, particularly when the word “requirement” is brought into the picture. And on the other end, encouraging faculty to develop new courses or to change their current offerings is tricky. Faculty are not automatically willing to restructure every
course they teach to include a specific focus—especially if they have been teaching the same course for years.

Some of the faculty responses fit the unfortunate reality that our educational system is over-compartmentalized and too discipline-centric. These responses came in the form of a claim that it was the department’s job to teach skills and tools for interpretation—not actually what to interpret or topics of activism.

Probably the most overwhelming challenge is incorporating environmental education on a large scale. Because the goal is to reach out to as many students and individuals as possible, it will be difficult to succeed because the college can always do more to influence even more students to be aware of their impact on the environment and the environment’s impact on their lives.

**Student Survey**

The informal on-line survey garnered had 47 student respondents. When asked to rate their own level of environmental knowledge and that of their peers on a scale of one to five, with five being very knowledgeable, the students ranked themselves between two and three—lower than where most faculty perceived them to be.

Interestingly, given the number of environmental organizations on campus, 80% of students surveyed are *not* involved in any group. The goes to show that just having the option to participate is not enough—an incentive-based system must be established.
When asked if they would like to see the Environmental Science and Policy program offered as a major, 58% of respondents said yes, 12% said no and 30% had no opinion. And when asked if they would prefer to incorporate environmental education through their department, through electives or both, 57% said electives only, 2% said department only and 38% said they would prefer both.

**DISCUSSION**

After analyzing and interpreting faculty responses, there was an obvious set of criteria for suggestions that surfaced. It is evident that major requirements in environmental topics are not a viable option at this time. Most of the recommendations below address either the environmental culture of Smith or academic incentives. The point is to make it easy for Smithies to be informed and make good, environmentally-friendly decisions. Instilling this knowledge and behavior in students will hopefully prepare them for any career or lifestyle that requires an element of environmental understanding.

**RECOMMENDATIONS**

**Eco-Honors:** The creation of an Eco-Honors system would provide students with an academic incentive, but no requirement to complete a Latin Honors distribution with an environmental focus. The current Latin Honors system requires taking a course in the following seven fields of knowledge:

- Literature (L)
- Historical Studies (H)
- Social Science (S)
- Natural Science (N)
• Arts (A)
• Mathematics & Analytical Philosophy (M)
• Foreign Language (F)

Eco-Honors should include these same fields; however, the catch is that the student will take courses that have an environmental focus. For a social science class, for example, one could take SOC 233, Environment & Society. A sample Eco-Honors distribution is given below for Suzy Smith:

L – ENG 120: Reading the Landscape (Writing Intensive)
H – AMS 102: Globalization and the Culture of the United States
S – SOC 232: World Population
N – BIO 106: Plants and Human Affairs
M – LOG 100: Valid and Invalid Reasoning
A – LSS 105: Introduction to Landscape Studies
F – POR 221: Topics in Portuguese and Brazilian Literature and Culture

After looking through the 2006-07 Smith College Bulletin and making a list of all courses that would satisfy the various fields of knowledge, two distributions in particular rendered a very sparse list of courses to choose from—foreign language (F) and mathematics and analytical philosophy (M). When determining which courses Suzy Smith would take to satisfy those requirements, Logic 100: Valid and Invalid Reasoning was chosen because many environmental issues and natural resource conservation issues require an element of valid, logical reasoning. Though this course does not specifically address environmental topics, it prepares Suzy for that future challenge. Probably more of a challenge was finding a foreign language course for Suzy. POR 221: Topics in Portuguese and Brazilian Literature and Culture was chosen because the topic offered was about “shifting landscapes” and discussion on “constructions of place and narratives of displacement” (Smith College 2006). Language has a unique place in the Eco-Honors system as only higher-level courses with more freedom in topic discretion can focus
strictly on environmental issues or history in France, Spain, Brazil or Germany, for example. However, encourage discussion on these topics within the 1-credit discussion classes that supplement the lower 200-level grammar courses is a valid option. Ideally, Smith would be able to create the necessary courses that closely examine environmental issues through the lens of analytical philosophy, or international environmental problems by reading personal narratives from another country, in another language.

A different solution would be to replace these two fields of knowledge with an ethics and an economics distribution. However, this is not ideal as it would no longer concurrently satisfy the traditional Latin Honors requirement. A final option would be to keep the current Latin Honors system that we have now and add an eighth distribution in ecology or environmental studies. This idea would meet the most resistance as it is requiring all who satisfy Latin Honors to take a course in this field. However, if Smith College is committed to producing environmentally savvy students, this is the optimal way to demonstrate the importance of this knowledge in the world today.

The Center for the Environment: Smith’s Strategic Planning process has yielded space for discussion focusing on campus-wide improvements in sustainability and environmental stewardship, whether that is through academic changes, operational improvements or the creation of a comprehensive Center for the Environment (Smith College Strategic Planning 2006). The Center’s physical space should be a place for research, information gathering, dialogue and activism on campus. Envisioning a space where students, faculty and staff can come together to discuss the global environmental issues of the day, or the latest happenings on campus is energizing. The addition of this
Center will play an integral role in Smith’s environmental future and pave the way for cross-campus collaboration, study, research and action.

An Environmental Science & Policy Major: The current Environmental Science and Policy (ES&P) program only offers a minor. Many argue that Smith is not staying ahead of comparable institutions by failing to offer an environmental major. Regardless of the current debate over whether or not the major should be under an “Environmental Studies” or current “Environmental Science and Policy” heading, the expanded program is desperately needed at Smith. Despite only graduating approximately 20 Environmental Science & Policy minors a year, the decade-old ES&P program has been receiving stronger and increased interest among Smith students throughout its existence (Keir and Smith 2006). Furthermore, this number would be even higher if many students who would be likely ES&P majors didn’t chose other majors instead, such as geology, biology, government or American studies.

According to a research document created by Smith STRIDE scholar, Laura Keir and faculty member, L. David Smith, Smith is ready for an environmental major. This report reaffirms that Smith could further distinguish itself by offering a major, “given that more than 50% of the top twenty liberal arts colleges currently lack an environmental major…” (Kier and Smith 2006). Smith must show its commitment to an environmentally educated student body and at the very least give students the opportunity to major in environmental studies.
A 2-Credit Environmental Studies Course: Using the course currently offered through the Landscape Studies program as a guide, the addition of a 2-credit course in environmental topics would be a great way to reach out to students who wouldn’t normally take an environmental studies class. The structure of the course is a series of speakers each class that discuss a specific element or topic within the scope of environmental studies. Students who want to get ahead in credits, or for other reasons take a 2-credit course, fundamental interest in environmental topics isn’t a prerequisite, but would hopefully solidify throughout the semester. When speaking with a faculty member who helped design a similar course, she claimed that the amount of work that goes into the preparation for program like this one is less than a full week—40 hours—of work. This is a viable option that could be instituted relatively easily—especially if student interns or STRIDE scholars are used to help organize the programming.

A Smith Environmental Website: At the commencement of this project, Smith lacked a website dedicated to providing resources and information about environmental topics at Smith and in the world. But to my surprise, in early May 2007, the Green Smith website was launched, with the help of the Sustainability Committee. This website is a centralized resource where online visitors can learn about environmental efforts and opportunities on campus, be that student organizations, student research projects or operational initiatives like the co-generation plant being installed as we speak. One can learn about the academic programs offered at Smith, including the Environmental Science & Policy program, the Picker Engineering program and Landscape Studies. This site also offers a list of Smith alumnae initiatives. This list is a compilation of former
Smithies from ’58 to ’02, describing their life’s achievement and work thus far. This site is filling a void and was sorely lacking from Smith’s on-line resource network.

Spring 2007, The Gate, an on-line source of news and events for the Smith College community, posted an article discussing current sustainability efforts on campus. The article even had a direct link off the Smith College homepage in the news and events section. This was an educational article informing students about the efforts being made around campus. The Gate is becoming more popular, and it should be encouraged to provide a weekly article or “column” focusing on a different issue at Smith, whether it is a successful project, or a project that should be done. Continuing on this path of environment in Smith media, a weekly column in the student-run newspaper, the Sophian, would show the Smith community the dedication students have to overcoming environmental challenges on campus and beyond.

THE NEXT STEPS FOR SMITH

Smith College has been going through a Strategic Planning process for the last two years. In the May 2006 report from the Committee on Missions and Priorities (CMP), “re-imagining the liberal arts at Smith” was one of the first topics of discussion. All of the complex global problems, including sustainability and environmental stewardship, “are messy and difficult, and their solutions will require complex, interdisciplinary thinking skills” (CMP 2006). The Committee goes further on to discuss a true liberal arts education for Smith:

“Ensuring students’ abilities to address such [complex global] problems requires skills of synthesis and integration, not simply a satisfaction of distribution requirements. Liberal arts colleges, such as Smith, are well-positioned to achieve
these aims, with their focus on student-faculty interactions in and out of class, productive collaborations among students, ample opportunities for active and inquiry-based learning experiences, prompt and meaningful feedback to students, and experiences with students and faculty from other cultures and backgrounds. The challenge to Smith is to construct a curriculum and overall college experience that makes use of these structures and experiences to develop essential student capacities. The strategic planning process should encourage the college to take risks, rethink organizational structures, and propose creative ways of achieving institutional goals” (2006).

Since this was written, the Strategic Plan has developed and Smith’s environmental mission is being discussed and defined. The Smith community should expect more to come from the plan that just a Center for the Environment. But it’s worth making sure the administration is aware of the campus-wide support for such initiatives. However, a challenge I foresee after looking at the faculty responses within the four departments I examined, there was not sufficient encouragement for the academic community to overhaul the Smith liberal arts education and convert to a collaboration-based teaching strategy, building “skills of synthesis and integration.”

In the end, it is community-wide support that really changes the culture of a campus. Write now, the majority of students are not informed enough to provide that support. Therefore, the administration must make the initial commitment and not back down on their pledge to create a better Smith and a better world. Let us challenge ourselves to take that bold step today, because tomorrow, we won’t have a choice.

**Literature Cited**

1. Anonymous Faculty Interviews and Surveys conducted April 2007.