Sustainability at Colorado College

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1. Does Colorado College have a sustainability program?

Colorado College has a very active sustainability program, which is fully described on our web page (http://www.coloradocollege.edu/welcome/tour/sustainability/). Because of our location, we traditionally attract students with strong environmental interests, who spend their weekends and block breaks hiking, climbing, kayaking and skiing. We've had an active environmental student group for twenty five years; recently their efforts have shifted from preserving the wilderness (old growth forests, endangered species, etc) to sustainability on campus and in the community. Administration support has also increased; sustainability is a significant effort of President Celeste, who signed the President's Climate Commitment in 2009. In 2008, he created the Sustainability Council, which is composed of administrators, facilities staff, faculty, and students, and oversees all campus sustainability initiatives. Administrative support has enabled us to increase the level of support for sustainability, but many of the initiatives continue to be student-driven.

2. Does Colorado College have a "sustainability in the curriculum" program?

While our sustainability efforts are quite robust, we have made much less progress on sustainability in the curriculum. It is of course a significant part of our Environmental Science Program, of course, and a number of other courses in all three divisions of the college have sustainability as an area of concern. But there is no coordinated or sustained effort to broaden these efforts. Before coming to this workshop, I asked my colleagues to send me syllabi of courses that addressed sustainability. These are all posted on : https://prowl.coloradocollege.edu/course/view.php?id=1748; the enrollment key is RachelCarson.

One unique feature of our curriculum is an emphasis on service learning; some of these projects address sustainability. I'd like to address two examples from my own courses:

a. Home Energy Audit/Retrofit

This project is managed by my colleagues, Mark Morgenstern and Sally Meyer, along with students Tyler Ruggles and Amanda Wierzba. With their support I incorporate this project into several of my classes. We first study thermodynamics and energy transfer from a physics point of view. We then learn to audit a model home for its energy efficiency, calculating R-values, heat losses, payback times, and so forth. We then visit an existing home, sometimes on campus and sometimes in the Colorado Springs community, and perform an actual audit. We model this home and calculate the most cost efficient way to reduce its carbon footprint. Finally, after a visit to Home Depot, we spend a full day at the house, performing the retrofit, weatherstripping, blowing insulation, installing CFL's and so on. The students write a final report to the homeowner (and the instructor) detailing the changes we made, what savings to expect, and further recommendations for energy efficient changes.

This is an incredibly effective project that helps students understand the practical value of the abstract ideas of thermodynamics. It serves as a lab in introductory and advanced courses in physics, chemistry, and environmental science. It gives students the idea that they can use their developing scientific skills to make significant changes in the world, and it is my hope that we can attract a broader range of students into the sciences by emphasizing these practical, human-oriented applications.

b. Campus sustainability

I also teach a course in ecofeminism, cross-listed in Environmental Science and Feminist and Gender Studies, which emphasizes the intersection between social justice (including gender justice), and environmental issues; we cover topics like environmental racism, globalization, and climate change. This year I emphasized sustainability, and asked the students to do twelve hours of volunteer work on campus sustainability projects. They worked in the campus garden, promoted recycling on campus, conducted tours for elementary students, and many other projects. They (and I) learned a lot about what is going on, and had a very good time.

3. How is sustainability understood in my discipline?

a. Physics

I'll address this for two of my three areas of interest; I think the application of sustainability to Environmental Science is obvious. I have used the audit/retrofit project in a junior-level thermodynamics class (see PROWL page for details), as well as in the sophomore-level environmental class on Energy. It has many benefits; first, it brings the abstract ideas of thermodynamic down to earth very effectively. It gives students the idea that their developing scientific skills are applicable to the solution of very important problems in the real world. It allows students with more practical lab-oriented skills to shine, and share their skills with other students. Finally, I hope that it will have a long-term effect on the demographics of the physics community. Many women and students of color are attracted to science by its potential to solve human problems, so projects like this may attract a broader range of students into physics.

b. Feminist and Gender Studies

I next want to address sustainability as a topic in Feminist and Gender Studies. Most such courses focus on more socially oriented topics like globalization, domestic violence, reproductive rights, and so on. This has led to a disconnect between gender studies and science that is unfortunate and inappropriate. There are many environmental and scientific topics that have important gender dimensions. For example, the greater poverty of women in the world (of the billion poorest people in the world, 70% of them are women) means that global warming will impact women more severely. I would like to help both women's studies scholars and scientists address the important gender dimensions of these and other environmental issues. My course on ecofeminism (mentioned above and described on the Prowl page) is a beginning.

4. Why are you interested in FaCE? What do you hope to gain from this workshop?

This project brings together several pedagogical ideas that I have been interested for some time. I have discussed above my interest in helping students use their developing scientific skills in the solution of human problems—sustainability is an important contemporary issue that engages student interest. I am also interested exploring the links between gender and

environmental issues. I am hoping to discuss these issues with other faculty with similar interests.

In this workshop I hope to gain practical and useful ideas for projects, materials, books, etc., that will be useful in the classroom. from others who are also interested in these topics. I am also eager to share the ideas that I and my colleagues have been working on.