

CDLTI Report:

Interdisciplinary teaching in Introduction to Environmental Studies

Prepared by Tim Parker (Biology, Environmental Studies), Workshop Coordinator

Participants (official):

Jan Crouter (Economics)
Bob Carson (Geology, Environmental Studies)
Nick Bader (Geology)
Frank Dunnivant (Chemistry)

Participants (unofficial – but equally important!):

Don Snow (Environmental Humanities)
Kari Norgaard (Sociology, Environmental Studies)

Also, special thanks to Aaron Bobrow-Strain for providing readings and stimulating discussion on the topic of agriculture and the Green Revolution.

Workshop Theme:

The Environmental Studies program is fundamentally interdisciplinary, but we individuals in Environmental Studies are rooted in disciplines and benefit from deliberate exploration of interdisciplinary perspectives. Following our external review in 2008, we established an ad hoc committee to find ways to enhance ‘interdisciplinarity’ in the program. This led, for instance, to the revision of our curriculum to include mandatory 300-level interdisciplinary coursework for all ENV5 majors. The committee also recommended fostering interdisciplinary perspectives in Introduction to Environmental Studies (ENV5 120) by convening representatives from departments in all three divisions to share and discuss ideas. ENV5 120 is an unusual class. It is an introduction not to a single discipline, but to a broad array of ideas and information from across the spectrum of academic disciplines. In this class we introduce students to concepts and information with intellectual roots in philosophy, literature, economics, sociology, politics, biology, chemistry, physics, and elsewhere. Because we in Environmental Studies expect our students to develop proficiency in analyzing environmental issues from interdisciplinary perspectives, we believe it is important to model interdisciplinary analysis beginning here in ENV5 120. This poses challenges. As Environmental Studies instructors we value interdisciplinary problem solving and have environmentally relevant expertise outside of our individual disciplines, but all of us recognize that we have room to grow as interdisciplinary scholars and educators. Thus those of us in rotation or hoping to be in rotation to teach this course (Carson, Parker, Bader, Norgaard, Snow – each section is taught by an individual, not a team) wanted the opportunity to learn not just each other’s perspectives on the essential content of this interdisciplinary course, but the perspectives of committed Environmental Studies educators from an even broader selection of disciplines.

Our workshop brought together faculty from the humanities, the social sciences, and the sciences to identify and analyze important concepts at the foundation of Environmental Studies. Those of us who currently teach the class organize it around environmental issues that we then explore from an interdisciplinary perspective. The workshop was similarly arranged. We identified a series of environmental topics. On each day that we met we focused on one of these topics. Prior to attending each workshop session, all participants read a series of short pieces, suitable for ENV5-120 students, assigned by each participant. During the session we discussed our individual disciplinary and interdisciplinary perspectives on the topic and worked to identify concepts and information that should be part of the foundation that ENV5-120 provides for our students.

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Workshop format:

Each participant assigned one reading to the group in the week before each of our seven meetings. Selected readings were appropriate for ENVS-120 students. Participants also often provided one or more supplementary readings for each meeting. Supplementary readings were available if participants wished to consult them prior to the workshops and were, for the most part, suitable for assigning to ENVS-120 students

We had seven two-hour meetings, each devoted to a different environmental topic, and an eighth one-hour concluding meeting. Our discussions differed substantially from week to week depending on the relative expertise of participants, the types of readings, and the questions pursued by participants.

The topics for each meeting were as follows:

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|------------|----------|---|
| 1. Jan 21: | 2-4 p.m. | Workshop and course expectations, disciplinary perspectives |
| 2. Jan 28: | 2-4 p.m. | Agriculture and the Green Revolution
(with special guest star Aaron Bobrow-Strain) |
| 3. Feb 11: | 2-4 p.m. | Energy and Climate |
| 4. Mar 4: | 2-4 p.m. | Biodiversity and conservation |
| 5. Apr 1: | 2-4 p.m. | Pollution and human health |
| 6. Apr 22: | 2-4 p.m. | Water resources and allocation |
| 7. May 6: | 2-4 p.m. | Natural resource management |
| 8. May 19 | 3-4 p.m. | Concluding discussion |

I (the coordinator) served as a secretary and typed extensive notes during each meeting to serve participants as a resource in future teaching.

What was learned:

Although each participant benefited in a unique way, distinct themes emerge. All participants valued exposure to new readings from realms outside our disciplinary expertise. Not only did we each learn quite a bit from the readings, but because we selected readings that could later be assigned in ENVS 120 or other related course, we each acquired tangible resources for future teaching. We all gained as much or even more from our discussions of the readings. As anticipated, our different expertise and experiences brought to bear on common interests and passions provided insights for all. Just a few examples from my own experience include my improved appreciation of the workings of incentives (thanks to Jan), insights into the importance of single events in shaping policy directions (thanks to Don), and insights into the history of the development of industrial chemical additives (thanks to Frank). My experiences in this workshop will serve as a sturdy framework for my renovation of my section of Introduction to Environmental Studies. These experiences will also inform the development of my new Biodiversity interdisciplinary course. I am grateful to have had the opportunity to have learned so much from my colleagues.

I can identify two other unexpected outcomes of this workshop. First, several participants began planning a new interdisciplinary environmental studies course on water. It is not clear when this course might get taught, but it is clear that several workshop members will be enthusiastic contributors. Second, inspired

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by suggestions from Jan and Frank, we formed plans to continue these interdisciplinary environmental studies discussions as a component of the business of the environmental studies committee. We tentatively plan to devote one ENVS meeting per semester to a discussion format similar to that of the workshop. One possibility is to choose themes from the new ENVS 300 –level interdisciplinary courses.

I have included comments from the official participants highlighting their experiences with the workshop.

Jan Crouter (Economics):

Tim Parker organized an Environmental Studies Workshop under the auspices of the Cross-Disciplinary Learning and Teaching Initiative, and I was pleased to be invited to participate. On the basis of the workshop's usefulness to me, personally, my assessment is that it was very successful. The primary purpose of the workshop was to assist those teaching EnvS 120, *Introduction to Environmental Studies*, and although I am not currently teaching this course, nor do I plan to teach it in the very near future, the workshop was nonetheless very helpful to me in a couple of respects.

First, Tim's structure for the workshop offered a taste of interdisciplinarity. This is an important theme in the Environmental Studies program and in the Environmental Studies Senior Seminar (EnvS 479, *Citizenship and Leadership*) I co-taught with Kari Norgaard this semester. Engaging in a cross-disciplinary learning effort with my Environmental Studies colleagues this semester was particularly helpful since it illustrated some of the rewards and challenges that Kari and I presented to the students of the senior seminar. One important challenge is the work required to understand enough of another's area of expertise to even form intelligent questions that might help one understand the relationship of their discipline (its areas of study, its assumptions and language, and its methods) to one's own. The rewards are zingers, though. For example, I was thoroughly excited by our exchanges on how to approach some material for a course. Tim's problem-focused scheme was particularly conducive to interdisciplinary discussion in the workshop, and I think the membership of the workshop was an important factor in its success, too. We met for several two hour Friday sessions during the spring 2011 semester, and each session covered a particular topic: Introductions to the Disciplines of Environmental Studies; Energy & Climate; Agriculture; Biodiversity & Conservation; Pollution & Human Health; Natural Resource Management; Population; Concluding Discussion. For each session, we all contributed readings to be prepared in advance for discussion. The sessions (both the preparatory reading and the discussions) were informative, challenging and most of all, stimulating and fun.

Second, the workshop discussions and readings have deepened my background knowledge of environmental humanities, sciences and other social sciences. Whenever I teach my current environmental and natural resource related Economics courses (Econ 177, *Principles of Economics & the Environment*; Econ 277, *Global Environmental and Natural Resource Problems*; and Econ 477, *Environmental and Natural Resource Economics*) there are times when I wish that I had a better background in environmental studies disciplines so that I might offer a broader context for the concepts that I present to my students, should the opportunity arise. The workshop has gone a long way to providing this background in a short amount of time.

The September 1, 2010 "Requirements and Expectations" statement also asks for a description of how the results of the workshop might be incorporated into my instruction of current courses or possible new courses. My current courses will be subtly enriched through the exposure to environmental humanities, sciences and other social sciences, as I mentioned. In addition, I anticipate making at least one particular change in a current course. For example, I will be adjusting my presentation of the material for the Biodiversity section of my Econ 477 course in light of my new understanding, thanks to the workshop,

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that preservation or conservation of biodiversity, habitat, and wilderness are all very different things. I suspect that there will be other specific workshop-inspired changes to my current courses, too. As to possible new courses, our workshop sessions have also included ideas about interdisciplinary courses that we might offer so that Environmental Studies students could satisfy this major requirement. Don Snow started a thrilling brainstorm on a water course, and I'd love to be part of this if feasible.

In short, this was a great workshop. I've learned a lot, been inspired to think of teaching ideas for my current courses and courses that I might teach in the future, and I've been made to feel a little more a part of the Environmental Studies program. I am grateful to you for the Cross-Disciplinary Learning and Teaching Initiative which made this workshop a possibility, Tim for his organization and leadership, and to my other fabulous workshop colleagues. Thank you.

Frank Dunnivant (Chemistry):

The ES program is the shining star of our interdisciplinary programs and this workshop will only increase the luminescence. When I was asked to join the workshop I knew it would be interesting, given the participants, but I have no idea how educational it would be. All of us meet regularly for meetings but this workshop allowed everyone to concentrate on teaching, not programmatic paperwork.

What I gained from the workshop was an education on the topics, efforts, and interdisciplinary nature of ES 120; what an excellent course! The themes selected by Tim Parker were well thought out and advanced everyone's understanding of the complexity of the topics (for us and for our students) and how each discipline can contribute in a multifaceted, but unified way. In addition, what I have learned will change and in some cases amplify what I teach in CHEM 100, Environmental Chemistry and Science. My most significant epiphanies came from Jan Crouter's excellent contributes from environmental economics.

Nick Bader (Geology):

The aim of this workshop was not to explore new interdisciplinary connections, but to strengthen our ability to teach an existing interdisciplinary course: ENVS 120, Introduction to Environmental Studies. As one of the participants who has taught the course in the past (including this semester), I am fully aware of the primary challenge in teaching an interdisciplinary course: mastery of pertinent areas of multiple disciplines is required. Therefore, our goal was to discuss how each of us might approach a certain subject from within our own discipline. The workshop was very successful in this regard.

Things that I thought were particularly effective:

1. A problem-based organization, which in my view is the best way to put together an interdisciplinary course.
2. Required readings submitted by all participants helped us stay focused.
3. Tim Parker was an organized and effective coordinator.

The primary thing that I feel we could have improved is increased participation from Divisions I and II. This is perhaps unavoidable since most professors who regularly teach ENVS 120 are in Division III.

I gained numerous new readings and insights into several important topics in Environmental Studies 120. More unexpectedly, a number of us discovered common ground that we intend to exploit in order to teach a new interdisciplinary course on water.

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Bob Carson (Geology, Environmental Studies):

The Environmental Studies 120 workshop was, for me, quite successful in helping me to learn about possibilities of broadening the interdisciplinary nature of the course. I am grateful for the readings as possible additions to or substitutions for my many short readings (on which I assign short papers).

I have been teaching (and hopefully tuning) ES 120 and its predecessors for 2 decades. I have already made many changes based on learning from Jan Mejer, Don Snow, and Kari Norgaard when the course was co-taught. I am unlikely to make major new changes in a course which, I believe, is already quite successful. However, I expect to improve on the biological, chemical, hydrologic, and economic aspects of the course based on the notes I took while Tim, Frank, Nick, and Jan talked. (Jan and I have been discussing environmental economics, particularly benefit-cost studies, for more than a decade.)

During our discussions on ES 120, we came up with some ideas for other ES interdisciplinary courses; considering the limitations of 3-2, it is unlikely I would be involved. Nick has already taken over my interdisciplinary water resources course; it is now called hydrology. My interdisciplinary climate change course was sacrificed by 3-2.

ES120 is necessarily interdisciplinary and multi-disciplinary because of the nature of environmental knowledge, problems, and potential solutions. To me the greatest value of our workshop was the opportunity for us to discuss contributions from our various disciplines to Whitman's Environmental Studies program. It is rare that we have (or take) the time to talk with our colleagues about teaching and learning.

Recommendations for future workshops:

My only disappointment with this workshop was that two participants (from Divisions I and II) who initially committed to the workshop backed out because of limited time and another invited participant never joined due to similar constraints. Although the financial incentive to join the workshop may well have promoted participation from some members, providing time may be equally or even more effective at drawing in participants. I was strongly committed to this workshop, but still there were a couple of weeks when I simply did not have time to complete the readings. Further, my participation in the workshop took away from my other responsibilities as a faculty member. In light of this, a course release may be an effective means of enhancing participation (though of course some faculty members may not be in position to take advantage of such an offer).