Sustainable Environmental Modules

for an Environment Across the Curriculum Program

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Proposal to the
Steinbrenner Institute for Environmental Education and Research
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The Carnegie Mellon strategic plan for broadening our undergraduate education seeks to “ensure environmental, ecological and ethical literacy in the context of decision making” as part of our commitment to educating students for “leadership with integrity and social responsibility.” This commitment implies that environmental education should be greatly enhanced and distributed widely on campus. In particular, we believe that all students graduating from the University should have an adequate understanding of the links between human activities and the natural world, to provide a guide for sound and informed decisions in the times ahead.

Objectives. We propose to develop and implement an Environment Across the Curriculum (EAC) program with the following objectives: (1) to add environmental issues to non-environmental courses across campus so students develop an appreciation for the environment as related to several disciplines, (2) to evaluate the success of these courses in enhancing understanding and changing attitudes of students toward the environment, (3) to develop activities that maximize chances of sustaining the EAC once the proposed project is over, and (4) to extend the environmental education activities at CMU to K-12 classes in the Pittsburgh area.

In carrying out the project, we plan to build on the infrastructure established as part of the Luce Foundation grant, where faculty members from several disciplines have been assembled to incorporate environmental issues in their respective courses. The Luce infrastructure also includes a framework for course assessments supported with expertise from the Eberly Center, a schedule for meetings to discuss progress, established cooperation among the team members to promote the success of the environmental modules, and a website for sharing ideas and maintaining a dialogue. This infrastructure makes it possible to achieve significant gains in the proposed EAC program at a very modest cost. By continuing to bring the core group of faculty members together with this mission in mind, we have a good chance of building and sustaining this “learning community” of environmental educators from diverse disciplines and institutionalizing an ethos of ecological literacy in the fabric of our education.

Work Plan. We propose to identify instructors who are not necessarily environmental experts, but who are interested in professional development and are committed to including environmental material in important fundamental undergraduate courses. We seek individuals who are committed to the EAC concept regardless of what course they are teaching in a particular semester. These instructors can be from any academic department on campus, although we will work to identify individuals from one or more of the following departments: architecture, art, business, design, and any of the engineering departments. The proposed Systems Engineering program in CIT is of particular interest, and we will target that program for one participant. We believe the culture of these disciplines is most likely to promote EAC activities.

We propose to send an email message to all CMU faculty inviting individuals to apply for participation in the new EAC program. The message will explain the importance of the EAC initiative, citing papers and books by prominent authors regarding the increasing need for environmental literacy among our population. The message will also explain the mission of the Steinbrenner Institute, focusing on the themes of urban infrastructure and energy and environment, as well as the goal of achieving excellence in environmental education at CMU. We propose to solicit applications through several means: (1) direct applications in response to the email, (2) personal contact with individual faculty members who are suggested by others, and (3) conversations with department heads around campus. We expect to receive a reasonable number of applications with these approaches.

Applicants will be asked to write a short plan for teaching in Fall 2004, specifically pointing out the opportunities to include either a whole environmental module, or weaving environmental
concerns throughout their course, and indicating how they see this effort being sustained. The applicants will be asked to discuss specific topics to be included in their course material, ensuring that the Steinbrenner focus areas of urban infrastructure or energy and environment are included. We expect to have 3-5 faculty members on board by summer 2004, in time to develop modules for their Fall 2004 courses. These individuals will be designated as “Steinbrenner Fellows.” Each Fellow will receive $5,000 for participating in the program.

The 3-5 Steinbrenner Fellows must be willing to join the Luce group, attend the Luce meetings and participate in the activities of the group. Each Fellow must be willing to develop an environmental module for the course he or she will teach in Fall 2004, possibly working with an environmental faculty member. The Fellows must also have a commitment to the EAC above and beyond their Fall 2004 courses. We believe there are indeed faculty members at CMU committed to the environment and to professional development in this area, even though they may not have expertise in the range of disciplines necessary to address environmental issues. The proposed project provides a vehicle for such individuals to learn about aspects of the environment of interest to them and to introduce modules in their courses.

Although the proposed program is able to take advantage of the infrastructure provided by the Luce funds, the program is different from Luce in that it will focus on development of modules rather than complete environmental courses, although some of the Luce effort includes parts of courses. Thus the proposed program has the potential of reaching a large number of students, albeit with a smaller environmental exposure. Indeed, the two programs complement one another by using two different models to enhance environmental awareness.

As with the faculty involved in the Luce project, the Steinbrenner Fellows will conduct assessments of their courses, and provide written results of the assessments along with copies of their modules as part of their commitment. The framework of the Luce grant makes it easy to add 3-5 additional faculty to the group. We will encourage all Steinbrenner Fellows to continue with the program through 2007, following the term of the Luce grant. By then, it is hoped that all of the faculty participating in both the Luce and Steinbrenner programs will have a personal commitment to the EAC for their future teaching. At the end of the proposed project, each of the Luce and Steinbrenner faculty participants will make a brief presentation on the environmental content in their courses and will prepare a short report for the Steinbrenner website.

Dissemination to the K-12 system will be explored through two channels—through the Pittsburgh Regional Center for Science Teachers, directed by Jane Konrad, and through our own Center for School Outreach (CSO). Both are certified to give continuing professional development (Act 48) credits to teachers and have appropriate venues for the transfer of materials to the K-12 system. We will also explore the possibility of working with Winchester Thurston school, with whose teachers Judy Hallinen of our CSO has close ties.

Expected Significance of the Proposed Program. The Luce and Steinbrenner Programs will set the stage for much greater efforts. We expect to use the course assessments to document our successes and obtain funding from NSF, EPA, and other agencies for national dissemination of the models developed here. In addition, we will continue discussions with the Heinz Endowments, where one of the PIs (CID) is requesting funds for environmental short courses for public servants from city and county governments.

Qualifications of the Principal Investigators. Both PIs have had NSF grants to fund environmental course development in the past. One of the PIs (IN) has used NSF funding to develop a website for her course (http://telstar.otc.cmu.edu/environ/).