The Web-Based Educational Module Project of the North Carolina Alliance of Environmental Science and Studies Programs

A wide variety of colleges and universities throughout North Carolina offer undergraduate programs in some aspect of Environmental Science and Studies. Essentially all campuses in the UNC System offer such degree programs, or at least an environmental specialization within a traditional discipline. These diverse programs, however, have not been well coordinated. The focus of each program, the backgrounds of faculty involved, the courses required, etc, is different, giving rise to significant differences in the degrees at the different campuses.

To help coordinate these degree programs, the Directors of these programs recently formed the North Carolina Alliance of Environmental Science and Studies Programs (see www.unc.edu/~dcrawfor/educnc.htm). The goal is to bring some commonality of focus to the various degree programs, to share resources, to champion environmental science and studies within the UNC system and elsewhere in the State, and to link the state directly to programs elsewhere in the country and world. To this end we have established all of the baseline accoutrements of an Alliance: a web site, an email listing, a list-serve, etc, and have begun to sponsor state-wide symposia (the first was held this past month).

As a first major project, we want to create a web-based collection of educational modules which would form a common basis for team-based, problem-oriented projects in the introductory environmental science and studies courses within the UNC system and elsewhere. These would be similar to the ones developed through a consortium of UNC-CH, Duke and NC State faculty in the Visualization Technology in Environmental Curriculum (VTEC) Project (see www.unc.edu/~dcrawfor/vtec.htm). Each campus with an environmental program would submit the case studies currently used in their introductory environmental courses, after having migrated these into a web-based format so students from throughout the Alliance (including all UNC system schools) can make use of them. The goals are several fold:

- To create a common set of such modules that will standardize introductory environmental courses throughout the Alliance schools so students may transfer credit easily when they switch schools;

- To provide a base of modules faculty may use in creating new programs and courses. This is particularly important at campuses where environmental programs are only in the initial stages of development and where faculty environmental expertise is limited.

- To stimulate use of team-based, problem-oriented projects as the basis for undergraduate education.

- To facilitate the ability of students to conduct such projects outside the classroom, including at remote sites such as study abroad.

- To allow students at any campus to draw on the expertise and resources of the other campuses, creating a "virtual environmental faculty" from throughout the system.

To bring this vision to bear, we require $30,000 to be administered through the Alliance (Dr. Crawford-Brown will act as PI for purposes of coordinating the project). The co-PIs are the Alliance representatives from NC State, UNC-Asheville, Appalachian State, East Carolina University, UNC-Wilmington and UNC-Charlotte. Alliance members from the non-UNC system schools will also contribute modules, but not through funding provided in this proposed project. The steps of the project are as follows:

1. Each co-PI, and each non-UNC system school representative, identifies 2 case studies currently forming the basis for their introductory environmental course.
2. Each case study is formed into a team-based, problem-oriented short project (lasting approximately 1-2 weeks).
3. The materials for the project are placed into a web-based format, as in the case of one of the VTEC modules (please see the Global Warming Module at www.unc.edu/~dcrawfor/vtec.htm for the most complete example).
4. The modules are tested by selected students and faculty from throughout the Alliance schools.

The project can be completed between now and June 30 since the case study materials are available and need simply be formatted for the web. The modules will be maintained at www.unc.edu/~dcrawfor, with mirror sites at several other locations in the Alliance (mirror sites to be determined later). Costs are as follows:

- $3000 each to the 7 PIs for development of the modules.
- $5000 for consulting in developing web-based aspects of the modules (primarily from the Academic Programs group at the Supercomputing Center, who also collaborated on the VTEC project).
- $2000 for administrative support to act as liaison between the PIs and to collect written materials or graphics needed for the various modules.
- $2000 to outfit one computer at each Alliance school (UNC-system schools only) with web-based teleconferencing capabilities so student teams can interact between campuses when using the modules.

All activities associated with the project will be coordinated with the Center for Teaching and Learning at UNC-CH, with the analogue at the other participating campuses, and with TLT staff to ensure the modules can be accessed easily by the various campuses and to ensure that instructors and students know of the modules. The Carolina Environmental Program will support the Alliance project by providing a permanent server site for the modules, and by devoting the necessary staff time to maintain the site (through the Office of Environmental Academic Programs, directed by Professor Crawford-Brown).