

## Learner-Centered Education Grants

# 2004 Final Report

### 1. Project Name and Project Director's Name. Include mailing address, phone and e-mail address.

Project Name: Improving Communication and Information  
Access within the Community  
Environmental Leadership Program

Director Name: Diane Austin

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### 2. Brief Description of Project:

This project was designed to enhance the experiences of the student and faculty participants in the Community Environmental Leadership Program (CELP). The project developed a common base from which students from various campus departments can continue to work together through ongoing community-based environmental projects and can build successfully on the work of their predecessors. This project has helped facilitate their communication among students working on community-based projects and has improved their access to reports, booklets, and fieldnotes produced by students who working on related projects in the past. Through this project we developed (1) a one-month series of learning modules for all interns working on CELP projects that addresses diversity, communication, and leadership; (2) a web-based communication network that supplements weekly team meetings and has facilitated sharing of project calendars, contact lists, tasks, and data files, as well as providing regular opportunities to expand the lessons of the initial learning modules; and (3) a web-based retrieval interface for documents that makes it possible for students to access documents that they need.

### 3. Goals, Outcomes and Assessments

#### a. Goals and Primary Accomplishments:

The goal of this project has been to utilize an internet-based interface through which student and faculty participants in the Community Environmental Leadership Program communicate with one another and access information generated by that program. The primary accomplishment of the program was the enhanced performance of student interns and successful transition from one group of students to another due to improved communication and access to information generated in prior program periods.

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### b. Outcomes and Assessment for each Goal:

The project goal was accomplished through eight tasks. For each task, this report summarizes the outcomes.

Task 1: Assess knowledge and experience of incoming interns via questionnaires and pre-internship interviews

This task was completed in the spring of 2004. Three groups of students were assessed: (1) those who had completed internships within the past three years, (2) those who had at least one semester of experience in an internship and were still involved in the program, and (3) those who were becoming interns for the first time. Interns were assessed to determine their knowledge of Tucson and the specific communities in which they would be working, direct experience related to the topic of their internship (e.g., environmental issues, community development), familiarity with the general policy process in their geopolitical and content area, knowledge and experience related to the practice of social science research, their involvement in community work, and their computer knowledge and skills. Interns sought a better orientation to and information in five areas: *working with a community, working with others as part of a team, the history and goals of specific projects, the local environments, and social science methods.*

Task 2: Develop intern training modules

This task began in the spring of 2004. Using the information gained from the initial assessment, students, faculty, and staff worked together to identify key areas for training and to develop modules on these topics. The modules were developed in the spring and modified during the summer of 2004. They were pilot tested during the 2004 Pre-session term and then modified for use with high school students in a Summer Youth Research Camp. This latter opportunity arose during the spring 2004 semester and provided the participating students an opportunity to share what they had learned and, in the process, identify remaining weaknesses in the training program. It also made it possible for us to begin to develop a parallel training program for high school teachers and their students who are also involved in the Community Environmental Leadership Program on the Arizona-Sonora border. The modules were used with two project teams during the fall of 2004, reviewed by students and faculty during the spring of 2005, and updated again in the spring of 2005, based on feedback from students. They are available online at [intern.bara.arizona.edu](http://intern.bara.arizona.edu). They were used during the 2005 Pre-session term and the 2005 Summer Youth Research Camp. The camp involved 24 students in grades 9-12 from two Nogales, Sonora schools and one Nogales, Arizona school. The modules will continue to be used with students as they enter the CELP each fall.

Task 3: Assemble program-related information and organize it by topic

This task began in the spring of 2004 and continued throughout the summer. Due to the success of the summer pilot program, the application of the web-based communication network and intern modules was expanded to bring in students beyond the Community Environmental Leadership Program. The format was adapted to include students and faculty developing an interdisciplinary program focusing on immigrant communities and schools. The network and modules were organized into the four areas: (1) computer basics, focusing on electronic communication, the internet, file management, and presentation software; (2) social science research methods, focusing on participant observation and formal and informal interviewing; (3) the Santa Cruz Watershed, especially the cities of Tucson and Nogales; and (4) social and

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environmental issues, focusing on native vegetation, water harvesting, transportation, and refugees.

### **Task 4: Scan and process materials not yet available digitally**

This task began in the spring 2004 with a thorough inventory of all the reference materials created by and used in the Community Environmental Leadership Program. Protocols were created for electronic files. Several items that had been created electronically using software that is not widely available (such as Microsoft Publisher) were converted to new, more accessible formats. Other items that were available only in hard copy were processed and scanned with the help of the UA Library's document scanning system. This task was completed during the summer of 2004 for the 2004-05 academic year but has required and will continue to need ongoing maintenance; for example, the products created by the 2004-05 interns will be incorporated into the communication system by fall 2005.

### **Task 5: Organize materials in an electronically searchable format**

This task began in the spring 2004 and continued through the summer and early fall. Student-produced materials were linked directly to the project's central website; copyrighted reference materials were linked to the website via the UA Library's electronic reserves system. In addition, an Endnote database was created to facilitate tracking and locating materials specifically related to environmental education, and 84 items were included in the database by the summer of 2004. Links to online materials were created directly in that database. This task was completed during the summer of 2004 for the 2004-05 academic year but has required and will continue to need ongoing maintenance; for example, the products created by the 2004-05 interns will be incorporated into the system by fall 2005 and each semester the links to the UA Library electronic reserves system will have to be redone.

### **Task 6: Develop protocols for information exchange and establish a web-based interface through which students can communicate with one another and access information**

This task began during the summer of 2004 and continued throughout the fall. As the web interface developed, we identified several issues that required attention and re-evaluated our software selection and training to address them. Based on the evaluation of multiple web-platform options, we selected an OpenGroupware system utilizing the MySQL database management system. The software was customized to reduce the complexity of the interface while retaining the core tools required for web-based project collaboration. The availability of source code made it possible for us to add new tools as needed. This web-based software platform was put in place in the fall of 2004, and began to be utilized as the project participants were introduced to the new modules during the Spring 2005 semester. The web system was tailored to provide the following tools: address/contact management, file sharing with check-out and versioning capabilities, and a calendar/scheduling component.

### **Task 7: Offer intern training module**

A pilot training module was offered to a small group of interns during Pre-session 2004. This module was then modified and offered again in August-September 2004. Though one goal of this project was to create web-based training modules to allow students to proceed through the activities at their own rates, we discovered that students required more face-to-face attention in several areas. Thus, due to moderate student performance and frustration with the computer-based modules, we developed hands-on training workshops to supplement the web-based learning modules. One hands-on component provides the fundamental skills needed to negotiate

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the web-based system. Additional hands-on workshops were developed for teaching social science research methods. In the end, we developed four hands-on workshops to accompany the modules. The topics for these workshops are computer basics, participant observation, interviewing, and analyzing qualitative data. These workshops were offered during the fall 2005 semester and were fully integrated into the training program during spring 2005 in time for the 2005-06 academic year.

**Task 8: Administer post-internship questionnaires and conduct interviews**

This task was initially scheduled to occur during December 2004. However, because of the changes noted in Task 6 and the application of the new protocols in the spring of 2005, the post-internship evaluation took place in May 2005.

The performance of two groups was measured. First, successful technical team performance was assessed directly through the successful application of computer software in the creation of the web-based communication network and document retrieval interface. The technical team selected an OpenGroupware system utilizing the MySQL database management system as an appropriate tool for the CELP. The transition to the new program occurred in two phases; the first phase was accomplished during the fall of 2004 and involved one project team. The project team evaluated the new system throughout the fall term; the project team met weekly and communicated with the technical team on a regular basis. Thus, problems were addressed immediately as they arose. The second phase began in the spring of 2005 with the transition of the second project team to the new system.

Successful student performance was assessed directly as students carried out their work through the school year and in entrance and exit interviews with students during the semester prior to the project and after implementation. Student awareness of and access to materials related to their projects was measured by use of the website, their reflections in weekly fieldnotes, and their responses to interview questions. Following the training modules, all students were able to use the new web-based interface, gain access to and share the information they needed for their projects, and post products for others to see and use.

According to the students, the greatest benefit of the new web-based interface over the previous use of a standard network server has been that it can be accessed through any home computer with only an Internet connection. It does not require the students to use computers in the project offices on campus since they do not need to be on the network to use it. All interns on the pilot project agreed that this was a much more convenient system, especially since many students live off campus. They reported that the new interface allowed for better use of their time and energy since they could “post” and retrieve notes to the system at any time of the day and from the comfort of their own home. In addition, in contrast to the network server, the web-based system does not have space limitations and therefore it proved to be much easier for students to share photographs, power point presentations, and other large files.

In addition, the network server recurrently crashes or becomes unavailable for use, a problem that did not occur with the new web-based interface. The new system caused only one problem over the course of the entire first year of use. One intern tried to upload many files of different types simultaneously and the system denied him access to do so. Instead, he had to upload smaller groups of files of the same type in phases. Given only this trivial inconvenience, the

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interns on the piloted project unanimously advised the other project managers to switch from the standard network server to the new web-based interface.

### **4. Problems or Issues Encountered:**

Problems that arose during the project include loss of university personnel through budget cuts, staff reductions, and staff turnover, turnover within the project team, and the need for face-to-face instruction for our students. All challenges were successfully overcome during the implementation of the project.

### **5. Conclusions, Recommendations and Future Directions:**

The intern learning modules and web-based interfaces have enhanced the success of the BARA internship program and CELP. Because these modules and materials are closely linked to the particular needs of students, they will continue to require modification and updating. However, the development of the new communication system has greatly facilitated the addition of new material, the modification of existing material, and the removal of material no longer needed. The Summer Youth Research Camp benefits both UofA and high school students and will be continued.

### **6. Has this project led to sustainable change in your department/college? Describe:**

Yes, one significant outcome of this project has been the standardization of our intern training program for the CELP within the Bureau of Applied Research in Anthropology. As a result of the project, intern training is both more substantial and systematic. Each fall, interns who will be working within project teams on community-based research and outreach receive a one-month training program through which they are introduced to computer skills, social science research methods, the communities within which they will be working, and the major social, environmental, and health issues of concern to community residents.

In addition, this project facilitated the development of a Summer Youth Research Camp for high school students in Ambos Nogales on the Arizona-Sonora border. The intern training modules serve as the foundation for the research camp; the UofA interns do the modules and then modify them to address the particular needs of the participating high school students. Through this model, the interns receive immediate feedback on their understanding of and ability to apply the new information and skills they have learned and are given opportunities to reinforce their learning.

### **7. Impact:**

- a. Have other faculty been affected by this project? x Yes  No. If so, describe:

Two BARA faculty who were not originally associated with the CELP have become involved in the program and have utilized the intern training modules for their research project teams. In addition, one faculty member from the Department of Language, Reading, and Culture has become involved in the summer research camp and has agreed to have students from one of her courses work with students from a school in Nogales to do a joint research project.

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- b. Number of courses affected/involved.     2 plus internship program
- c. Number of students affected.     15-20 interns per academic year, approximately 25 high school students per year

### **8. Significant Outcome:**

What was the most significant outcome based on learner-centered principles that occurred through your project?

The most significant outcome of this project has been the standardization of our intern training program for the CELP within the Bureau of Applied Research in Anthropology and the incorporation of the training program in a Summer Youth Research Camp on the Arizona-Sonora border.