Final Report - April 14, 2008
NWACC Proof of Concept Grant Proposal – 2007

I-Pod Tours of Evergreen's Ecosystems: Accessing ongoing faculty and student field research

Investigators:

Alison Styring (Member of the Faculty - Biology)
The Evergreen State College
Lab I, 1065B
The Evergreen State College
Olympia, Washington 98505
(360) 867-6837
styringa@evergreen.edu

Judy Cushing (Member of the Faculty - Computer Science)
LAB 1, 1003
The Evergreen State College
Olympia, Washington 98505
(360) 867-6652
judyc@evergreen.edu

Thad Curtz (Member of the Faculty – Emeritus)
The Evergreen State College
Olympia, Washington 98505
curtzt@evergreen.edu

Project Website: http://nikmolnar.com/nathist/

(The server at Evergreen which will be dedicated to hosting this project is set up, but the transfer from our development site to that Drupal installation isn't quite finished, due to the press of other business at Computer Services.) Its URL will be:

http://www2.evergreen.edu/naturalhistory

Long Term Goals :

By creating an easily used database backed website we will provide a convenient way for students and faculty in our interdisciplinary curriculum to upload and share work in ecology, visual art and natural history writing with each other and the public. The website will be searchable in a variety of ways, offering access to accumulating species accounts with field notes and links to other resources including student and faculty research reports

and past student writing and art about natural history. We'll develop iPod materials about the natural history of our forested 1,000 acre campus, its 1,000 meter beach and similar Pacific Northwest lowland environments. Students will be able to work in the field with iPod identification keys and multimedia guides to the campus' trails, beach, and ecological communities, which will be downloadable by iPod owners and available for other campus users on iPods loaned by the library. (Other faculty and advanced students doing projects in academic programs and individual contracts will add more materials like these over time.) Eventually, we hope to have a sequence of seasonal pieces about recurring campus natural phenomena of interest and where to look for them, based on material from the project. (Users will be able to subscribe to podcasts of these pieces, subscribe to an email list broadcasting these seasonal suggestions, or view them on the web.)

Pilot Project Goals:

Our goals for the pilot grant project, as stated in the proposal, were to:

1. Design and implement the database and website,
2. Produce web and downloadable iPod guides to two campus trails and the beach using prior student and faculty natural history work supplemented by additional images and writing,
3. Produce iPod keys and web keys for several of the groups of campus organisms for which student and faculty material is available,
4. Conduct a summer workshop to introduce interested faculty and staff to the project,
5. Experiment with campus field biology programs and other interested students using the website and iPods with the project's guides and keys installed, and
6. Assess the usefulness of these materials.

Project Results:

We have built a database backed website using Drupal, an open source content management system, and a number of small custom modules we've written to add features to it. (Since the award, we've gotten some feedback and advice about its design through a presentation about the system to some interested faculty and MES students as well as through informal conversations with other interested faculty.) The website provides access control for various user roles, and we have created web forms to allow easy adding of new species descriptions and new species observations to the database in addition to Drupal's existing facilities for adding images. Observations, species descriptions, and images can be tagged using hierarchical taxonomic categories for locally available flora and fauna (though we still have some gaps in the taxonomy to fill, particularly for fungi and lichens), and the hierarchy is displayed in a breadcrumb trail including the common name on each item's page. Searching integrates queries of the keyword index and the categories to find and easily filter results by taxonomic terms, common names, months, authors, etc… Images are displayed in categorized thumbnail galleries, and can be accessed in various sizes; we've collected, scanned and included

about fifty of the best botanical illustrations done in the field by students over the past few years. We've also ported and categorized extensive previous work by students on campus insects and on local marine organisms to our site. We've extracted accounts of all the campus plants from an existing text flora, created starter pages in the system for each of them, and have started adding documents and links for previous work on campus ecology to the system.

We've also edited and retagged existing HTML identification keys for campus slugs and land snails, ground beetles, and lady beetles so they run as linked files with text and images in iPod Notes, and created three iPod enhanced podcast tours, with audio and images, for the trail to the college's Organic Farm (16 minutes), the trail to the campus beach (12 minutes), and the large mounded ant nests that *Formica obscuripes* colonies make on campus (15 minutes). Users can view these podcasts on-line, download them, or subscribe to a feed from our website which delivers new podcasts to iTunes and loads them automatically to an iPod when it is synched with a user's computer. The college's computer support group has set up a dedicated machine to run the database and web server, and is in the process of transferring our Drupal installation from our development server to this college machine. A library computer displaying the website has also been installed, and nine iPods and cases have been purchased, catalogued, set up with our materials and printed instructions for users, and made available for checkout at circulation. (We have also worked out arrangements we that we think will keep their contents updated easily and efficiently.)

Impact and future plans:

This spring PI Styring will introduce a few advanced students in the classes she's teaching to the system; we'll gather feedback from them to help polish it. In the summer, she will be introducing students in the full-time field biology program she's teaching to it; each of them will choose some campus organism to research and observe during the course of the summer session and will create a podcast based on their work for the project site as a culminating project. We've submitted a proposal to the dean in charge of faculty development for doing one of the regular paid summer faculty institutes about the project. In it, faculty would learn how to use the system with students, and each participant would create a podcast for it; proposals for these institutes are currently under consideration. Faculty emeritus Thad Curtz intends to continue adding material to the site – converting other available identification keys to run in iPod notes, working with four more faculty who have already volunteered to record podcasts (on Indian plum, Northwest nature poetry, bird identification, and local ethnobotany), filling in remaining gaps in the taxonomic hierarchy, adding mushroom images and information from a retired faculty expert who has agreed to provide us with material this fall, etc.

URLs of any related Web sites:

We've located and drawn on a number of websites to provide initial content for the site, which we expect will gradually be replaced by more locally focused content created by student editors. In particular, the Seattle Audubon Society has generously given us

permission to link our bird identification pages to their extensive pages about the birds of the state at BirdWeb (http://www.birdweb.org), and we've drawn on images from various photographers who have made them available at a number of different sites under Creative Commons licenses, especially the contributors to the Wikimedia Commons (http://commons.wikimedia.org/wiki/Main_Page) and from the many photographers who have made their work available for educational uses through the USDA PLANTS database project (http://plants.usda.gov/). Chris Parrish, from the University of the South, has also generously agreed to let us use bird recordings from his website: (http://cparrish.sewanee.edu/birds/).

6. **Publicity:**

We're just putting the project on line; the display in the library will provide some immediate student publicity for the project. In the fall, after testing the project with students in Styring's summer program, we expect to publicize it through articles in the campus paper and the local newspaper, ***The Olympian***.