Kalamazoo College
Mellon Grant Progress Report

Integrating Research Instruction into the Curriculum:
A Model for the Chemical Sciences

November 19, 2001

I. Project Description

Summary

This project will develop a model of instruction through which students learn research skills. They will experience face-to-face teaching with a librarian (supplemented with the Discus discussion board) as well as a Web tutorial on developing research skills that includes instruction on a science database (SciFinder Scholar). This project addresses skills Kalamazoo College students should develop over all four years, from their First Year Seminar (FYS) to their Senior Independent Project (SIP). The tutorial will be scalable enough for students at various skill levels to benefit from it and flexible enough to enable other disciplines to take advantage of it.

Logistics

Since there is no existing slot for research instruction in the Chemical Sciences curriculum, it is necessary to include this training in an existing but flexible location: the Junior Seminar. This course is required for Chemistry majors, and students take it in the spring of their junior year before they begin their SIPs but after they have returned from Study Abroad.

Typically one of the first sessions in the Junior Seminar consists of a speaker's presentation. Students will be asked to gather information resources they could use to write an introduction to this presentation. Though students will not be obligated to write this introduction, they will be required to produce a bibliography of sources. Coupling reference instruction with an assignment reinforces the research skills students learn in a concrete way.

Students will then meet with a librarian for three sessions during the quarter. A librarian will teach the seminar the session after the speaker's presentation. S/he will discuss research methods and other issues with students to enable them to begin their exploration of the literature. S/he will also introduce students to the Web-based tutorial. This tutorial will have two parts: a general introduction to research and an introduction to a discipline-specific resource (for the Chemical Sciences, this resource will be the SciFinder Scholar database). Students will complete the tutorial before the second meeting with the librarian. Students will be able to contact the librarian outside of class via email and the Discus discussion board. The librarian will guide students in their research through two follow-up class sessions during the Junior Seminar time.
II. Team Members

Kim Smith, Student (senior)
Kathryn Lightcap, Curricular Support Specialist
Stacy Nowicki, Reference Librarian (convener)
Robin Rank, Reference Librarian
Greg Slough, Chemistry Department Chair
Patrice Fields, Student (sophomore)

III. Timeline and Meeting Schedule

Timeline

Development of this project will continue through 2002. The first class using this format is tentatively scheduled to be taught in the spring quarter of 2003.

Meetings to Date

- **August 7-9, 2001**: Retreat at Kellogg Biological Station. Brainstormed project ideas and solidified project goals.
- **September 10, 2001**: Meeting of Mellon Team with Lisa Palchick. Discussed logistics and the possibilities of obtaining the SciFinder Scholar database.
- **October 23, 2001**: SciFinder Scholar Demonstration. CAS representative visited campus and demonstrated the SciFinder Scholar product.
- **October 29-November 9, 2001**: SciFinder Scholar Installation. Consulted with computer technicians about logistics of installing the SciFinder client on library and lab computers.
- **October 30, 2001**: Outlining Web Tutorial Requirements. Reference Librarians met to evaluate existing Web-based information literacy and research skills tutorials from other libraries.
- **November 13, 2001**: Outlining Web Tutorial Requirements. Continuation of meeting above.
- **November 14, 2001**: Discussion of Web Tutorials. Reference Librarians meet with group to discuss the creation of the Web tutorial.

Tentative Meeting Schedule

Fall Quarter 2001

- **Tuesday, December 11, 2001**: Meet to storyboard Research Skills tutorial and establish content
- **Thursday, December 13, 2001**: Continuation of previous meeting
- **Tuesday, December 18, 2001**: Continuation of previous meeting
Winter Quarter 2002

• Tuesday, January 15, 2002, 4:00pm (2nd week)
  Discuss Research Skills tutorial with entire Mellon Team

• Second January Meeting
  Librarians meet with Kathryn to solidify Research Skills tutorial requirements in design and navigation

• Tuesday, February 12, 2002, 4:00pm (6th week)
  Meeting with Lisa Palchick
  Discuss Research Skills tutorial with Mellon team

• Tuesday, March 12, 2002, 4:00pm (10th week)
  Refine Research Skills tutorial content and layout

Spring Quarter 2002

• Tuesday, April 9, 2002, 4:00pm (2nd week)
  Test Research Skills tutorial
  Continue general tutorial development

• Tuesday, May 7, 2002, 4:00pm (6th week)
  Meeting with Lisa Palchick; Refine tutorial
  Define content requirements for SciFinder tutorial

• Tuesday, June 4, 2002, 4:00pm (10th week)
  Last meeting with students; Refine Research Skills tutorial
  Begin design of SciFinder tutorial

Summer 2002

Define content and learning requirements for instruction session
Librarians meet with Kathryn to discuss design and layout for SciFinder tutorial

Fall 2002

Solidify content and navigation of SciFinder tutorial
Test SciFinder tutorial
Solidify presentation of instruction session

Winter 2003

Refine SciFinder tutorial
Refine presentation of instruction session

Spring 2003

Implement instruction session with Research Skills tutorial and SciFinder tutorial

Other meetings may be scheduled as appropriate. Summer 2002 and Academic Year 2002-2003 schedule TBA.
IV. Discussions and State of Development

Discussions

Discussions to date have fleshed out the need for this project and its goals. The Retreat at Kellogg Biological Station in August allowed team members to discuss their roles and brainstorm project ideas. The project goals were established at this meeting.

SciFinder Scholar Database

Kalamazoo College has instituted a relationship with two other colleges (Muhlenberg College in Allentown, PA, and Hamilton College in Clinton, NY) to purchase access to SciFinder Scholar, a scientific database. This database will be incorporated into the Web-based research skills tutorial created by the Mellon committee. The contract for purchasing SciFinder Scholar was signed on October 16, 2001, and Kalamazoo College received access to this database on November 1, 2001. The installation process has proved more time-consuming than anticipated; faculty and staff were granted access on November 8, 2001, but it was not installed immediately in the library or computer labs because of technical difficulties. SciFinder was installed on the 12 Macintosh computers in the lab in the Dow Science Building (Room 224) November 8. SciFinder has been tested on the 12 computers in the Reference section of the Library but has not yet been loaded; it should be loaded by the end of December at the latest depending on logistics and various other difficulties. Because of anticipated use patterns and logistical difficulties, it will not be installed in other labs on campus. Off-campus access for this resource is planned, but has not yet been addressed; the librarians will wait until after the quarter has ended in December so they can work on proxy server issues without interruption.

Web Tutorials

The Reference Librarians met to discuss their requirements for a Web-based information literacy and research skills tutorial. They evaluated over 50 Web-based information skills tutorials from other libraries and chose seven to show the entire Mellon Team (http://www.kzoo.edu/is/library/tutorials.html). These tutorials demonstrate content, design, and navigation elements the Reference Librarians both believe are key to the tutorial’s success (see Appendix A). The Mellon team met to discuss these tutorials and outline the important aspects of navigation, form, and content. The Team will meet again in December to storyboard the tutorial and establish content guidelines. Though the students may not be present for these initial meetings (because they fall during a break period) they will return for meetings in January to offer their input.
Appendix A:
Mellon Grant Project Web Tutorial Guidelines
14 November 2001

Design and Layout

- Minimum of scrolling
- Keep text to a minimum--white space is good
- Use bullet points with white space
- Text should be in a table to make nice margins
- No fancy software (Flash, etc.)
- No animated graphics!
- Should have a color or graphic overall theme

Navigation

- Navigation links at the top of the page for overall/general navigation
- Navigation links on the left side of the page for navigation within a module
- Must be able to navigate from each page (jump to anywhere)
- Should have a linear path
- Each page within a module should be designated (page 1 of 6)
- Links must be intuitive
- Links must take you somewhere that coincides with the learning process (Why am I on this page?)
- No external links (never click the back button!)
- Include "next" and "previous" links at the bottom of each page
- Quiz questions could have small popup windows for answers (click here to close) like I.U. Bloomington--avoids an internal loop
- At the end of a module, say "The next module is…"
- Avoid screen shots

Content

- State objectives at the beginning of each module
- One concept per page
- Only a few modules (4-5)
- Content-driven, not source-specific
- Include quizzes at the end of modules
- Graphics for visual interest and to demonstrate concepts
- Assessment: quizzes within each module (e.g. type in keywords)
- Pictures of library?? (only if relevant)