Appendix E. Proposal for Summer Support for Preparing a Web-Supported or Web-Based Course

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Describe the course you propose to modify/develop, who it will serve and how it fits into the department/program’s overall instructional efforts. Indicate whether it is a service course, liberal studies course, or major course and whether graduate or undergraduate. When will you next teach the course? What is the course’s usual enrollment?

In fall 1998 I will be teaching one of two sections of BCH 4053, General Biochemistry I, a course mainly for undergraduate majors in the sciences (generally biology, chemistry, biochemistry and chemical engineering) and also for some graduate students in biochemistry and biology. This course is the first semester of the primary undergraduate offering in biochemistry (BCH 4053-4054), so it is critical in the Chemistry Department’s curriculum. There are about 120-150 students who will take it in the fall 1998, with 30-50 in my section. My section will be smaller than the parallel section, so that I can try out some new pedagogies in teaching, such as using a Web site. The same course is also offered in the spring and summer terms. Timothy Logan will be teaching the parallel section of the BCH 4053 biochemistry course in fall 1998, and he will encourage his students to utilize the Web site that I develop.

Describe what you expect to achieve with your course as a result of participating in this program.

I expect to engage the students in active learning by using the Internet and the Web page that I develop as part of this proposal. The plan is to develop an interactive Web site that links students to other Internet sites but that also has resources directly on it, such as the ability to move models of macromolecules in space, to see where small molecules dock onto macromolecules, to see how different macromolecules interact with each other. Students will also have access to databases of information of DNA and protein sequences.
In addition, I plan to have the students write about the content of biochemistry, via linking to FSU’s Curriculum and Instruction, Connecting Communities of Learners, Web site at the URL: <http://www.fsu.edu/~curricin/> which is password protected. I will utilize the dialogue journal site, where I can group students together who are working on group projects, so that they can communicate and have an updated record of their postings. One of the group assignments will be to design a biochemistry Web page that the students will upload to the class Web site. The students will be able to choose a topic that relates to the topics in the curriculum and that interests the group. All students in the class will be able to access the group generated Web page.
Other features of the CCL Web site include that anyone in the class can E-mail anyone else either individually or in groups through the electronic mail room. There are conference rooms, where we can have discussions on various topics, such as biotechnology or inborn errors of metabolism or light-driven proton pumps. In addition, the Web site has the capability of students posting individually graded assignments, which then can be automatically set up so other students peer review two other students’ critical reviews in a double blind fashion. There also is a place to post the syllabus and another site to chat.

How would your proposed development of the course contribute to the improvement of teaching and learning?

It is critical to encourage your students to become active learners, to use the language of the discipline, and to think critically. One way of engaging your students in these ways is to utilize the World Wide Web and develop a Web site for the course. I think students will learn about the nature and process of science, the content of biochemistry, and the excitement in biochemistry, all from utilizing the Web site. In biochemistry we are learning at a phenomenal rate, as the entire human genome is being sequenced, structures of macromolecules are being determined, and regulation of biochemical processes is being understood at many levels. Without computers many students have a hard time imagining what molecules look like, how molecules interact with each other, and how changes in binding can affect the functioning of molecules. With some of the modern software currently available, students will have a chance to develop their computer skills while they learn biochemistry and see its impact on the world. Having my students develop a link for our class Web site will engage my students actively in learning biochemistry and in utilizing technology, but will help all students in both sections learn about biochemistry.

I also think that I will learn from the program FSU is offering this summer for supporting faculty like myself who are using Web pages in their teaching. Other faculty who are interested in this technology will certainly give me ideas on developing my own Web site. Also there will be technology staff who will be helping us as well. I will be able to help other faculty as well, including those who want to utilize the CCL Web site.

Please indicate what your long range plans are for the use of Web-based instructional material, for example, do you plan to allow students to do their coursework partially or exclusive by electronic means, or offer the course at a distance?

I see myself becoming increasingly involved in computers in my teaching and research. For instance, this summer I will be offering the Science, Technology and Society course again through the CCL Web site (developed by Curriculum and Instruction) to about 50 practicing teachers. Some parts of this course are totally through the Web, and some parts are on-site.

I am also a distance learner at Curtin University of Technology in Australia where I am enrolled in a graduate program for a second doctorate in science education (my first was in biochemistry 25 years ago at the University of California, Berkeley). Therefore, I use the Web, both as a faculty member (as Professor of Chemistry here at FSU) and as a
graduate student (at Curtin University). I have also taken a graduate course in
technology for credit from Professor George Dawson at FSU.
I also interact with many faculty members within the state university and community
college systems of the state of Florida in an effort to improve the teaching and learning
of mathematics and science for all students from kindergarten through graduate school.
My own focus has been on improving the preparation of mathematics and science
teachers in the state of Florida. Part of a grant (i.e., Collaboratives for Excellence in
Teacher Preparation) I am just getting from the National Science Foundation with two
other universities involves utilizing Web-based courses to deliver courses to prospective
and practicing K-12 teachers in the state of Florida. Therefore, I will be involved in
developing these Web-based courses and working with others who have experience in
this area as well.

Describe any previous efforts on your part to incorporate a Web-based dimension
to this or any other of your courses, including the URL for the homepage for any
material currently available.

I have had students use the World Wide Web in courses since the spring of 1997 when I
had the students in Science, Technology and Society (STS) had the option of doing one
of their group projects utilizing the world wide Web.
In summer 1997 when I taught Physical Science to practicing elementary school
teachers, I utilized a CCL Web site. The CCL Web site is particularly good at engaging
students in utilizing the language of the discipline, becoming active learners, and
thinking critically about the subject matter and their learning, simultaneously. This
semester I am using the CCL Web site in my STS class again, now utilizing more
resources in the Web site, including an electronic portfolio, dialogue journals (where
groups can do their work together on the Web) and the critical reviews section (in which
the students each week critically review an article from the Science Times section of the
One of the groups in my STS class in spring ‘98 has developed a Web page as a group
project at the following URL: http://garnet.acns.fsu.edu/~jom5136/4a/4a.html. I
currently have a Web site that Mohammad Nazarian (an undergraduate DIS student) and
I co-developed on autoimmune diseases and cancer, which can be found at
http://chemWeb.chem.fsu.edu/learn. Students in my biochemistry class will be able to
access this site on diseases as well.
Please attach a course syllabus and a copy of your curriculum vitae and submit two
copies of this packet.
Approved for submission:
Chair/Program Leader______________________________________
Dean___________________________________________________
Proposals Due by noon Friday, April 24, 1998 in 408 Westcott