

# Associated Colleges of the South Information Fluency Project Proposal

## 1. Title of the proposed project, workshop, course, program or event

Development of a Journal Review Course Module in Biology

## 2. Names of leaders and contact information - including e-mail addresses

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## 3. Brief abstract of the project

In this course module students will first learn how to use information technology to find biological papers on a specific topic of interest. The students will then be taught how to read and summarize the paper they have found, prior to participating in a discussion of the paper. To stimulate discussion of the paper, students will learn how to access and use the Blackboard course management system, where they will post their summaries of the paper, and read summaries written by the other students in the class and by the course instructor. The effective development of this exercise requires the expertise of an information technologist and a librarian, in addition to the faculty serving as the primary instructor for the course. We will develop an entrance survey assessing information fluency background and skills, and an exit survey assessing the success of the course module in advancing those skills. Tutorials and navigation guides created in conjunction with the course will be utilized in a workshop sponsored by the Furman Faculty Development Committee where we will train/educate interested faculty, librarians, and information technologists on how to incorporate this form of information fluency into the classroom. The model we develop will be applicable to other courses, both in Biology and in other disciplines, throughout Furman University and at all other ACS member institutions. Our format, materials and other course documents will be readily available and exportable to all interested parties.

#### **4. Rationale (why should ACS fund this project and how will it benefit the consortium?)**

Among the challenges we face as educators in today's increasingly technical world are to learn not only how technology will change the ways we teach and learn, but also how best to use information technology to enhance learning by our students. We all must realize that we are at the very beginning of an information revolution that has been made possible by computer technology. It is making unprecedented amounts of information in all fields of scholarship available in digital format to scholars, students, and the general public upon demand and just in time. But it is only information that is being made available, not knowledge. Do we always know how to use the new technology in our classrooms to better turn information into knowledge? The answer is obviously no. It is up to us as faculty to learn how to use this enhanced access to information to create a more effective learning environment, to promote scholarship, and to invigorate the pursuit of knowledge. It is our obligation as scholars to use this technology to shape the future of education.

Easy and immediate access to vast amounts of information changes the questions that one can ask and then answer. But because of such enhanced access, information overload for faculty and students is a major problem. It is up to the faculty and other support staff to help students learn to find and evaluate appropriate and legitimate electronic learning resources and overcome the distractions that easy and immediate access can cause. An important aspect of information fluency is to improve students' abilities to identify and use bibliographic materials in the practice of scholarly pursuits. The students' fluency will be enhanced by coaxing out of each article references and insights that may be advanced through subsequent application of more focused searching. Their discriminating skills will be sharpened through this process, leading to improved critical thinking abilities. We propose that students' information fluency will be accomplished more readily when tied to the knowledge processes within a particular discipline. The same immersion should then be possible with any subject or assignment.

With the aid of collaboration, a liberal arts education may better take advantage of the technology and the fruits of information fluency, allowing our institutions to optimize our particular model of teaching and learning. This can be accomplished through blending the traditional lecture and laboratory with the technological extensions that create additional dimensions of teaching and learning upon which the curriculum can continue to build.

Thus, we feel that the enhanced use of information technology in the classroom is inevitable - and desirable, if used correctly. The new electronic technologies can all provide students with greater involvement in the process of learning. These kinds of activities are wonderful additions to the learning process. The students can study additional information, use additional resources, and be engaged in off campus activities (e.g., research and internships), all of which can enhance their education. However, we feel that the most sensible way to learn how to use (and teach, for that matter) this technology appropriately is with the aid of a collaborative team of experts in the field of information technology with experts in academic disciplines.

Our project thus hopes to advance the information fluency of biology students at Furman University by development of the proposed course module. Our proposal requires the expertise

of a librarian, a member of the computing and information services staff, and an assistant professor of biology. All of us will work together in producing materials to be used in this module, and in the education of students in how best to use and learn from these materials. We will also conduct a workshop to do similar training with faculty and staff at Furman University. We feel that such a collaborative team will allow us to (1) help faculty learn how to use this enhanced access to information to create a more effective learning environment, (2) help students learn to find and evaluate appropriate and legitimate electronic learning resources, and most importantly (3) aid in the development of critical thinking skills in our students as they learn new ways to analyze information, to discuss its significance, and to present conclusions effectively.

These goals seem to meet the intent of this call for proposals. A further benefit of our proposed project is that it will result in materials that are readily transportable to faculty and students in virtually all disciplines and at all ACS member institutions. We also hope to take advantage of the high level of interest among the faculty at Furman University in the use of the Blackboard course management system. We are coordinating with other members of the Furman University community on the acquisition and use of Blackboard. We envision using this course module to demonstrate to other faculty the use of information technology at Furman University. Thus, our proposal can help to increase the information fluency of large numbers of students and faculty throughout the consortium.

## **5. Preliminary description, including:**

### **a. number of days an event or the project will last**

We plan to begin work on this project over the course of the summer, and will continue throughout the academic year as necessary. Course materials, survey forms, tutorials, and navigation guides will be developed initially, and we will teach this module in the Animal Physiology course during the academic year. Additionally, we will conduct a one-day workshop for all interested Furman University faculty and staff during the Spring semester. We anticipate that 100-110 hours per person will be spent in total on this project.

### **b. agenda**

Our initial steps in developing this course module will be to create library navigation guides with search strategies and tutorials on usage of the Blackboard course management system. We plan to use Blackboard for this project because of its online presence and because of its utility in enabling collaborative course work. The discussion and annotation capabilities of the system will be particularly valuable teaching tools. Student contributions to the information fluency module of this course will be maintained and viewed from within Blackboard. The current plan is to use the services of Blackboard.com for the course, but we are also exploring the possibility of setting up an on campus server which would make the administration of the course even more convenient.

The tutorials we develop will lead the students step by step through the basic phase of the training and ready them for further exploration. The tutorials and navigation guides will be placed online within the Blackboard course management system. They will be tailored for the

Animal Physiology course, but will also be designed as standalone training modules that may be adapted to other courses with minimal modification. Initial training with the modules will be done in the classroom, but since the modules will be available through Blackboard they will be accessible to the students at any time, and be readily exportable throughout the ACS. In the Spring semester we will also conduct a workshop sponsored by the Furman University Faculty Development Committee. The tutorials and navigation guides we create will be used at this workshop to train/educate interested faculty, librarians, and information technologists on how to incorporate this form of information fluency into the classroom.

The second initial project we will work on is the development of an entrance survey assessing information fluency background and skills, and an exit survey assessing the success of the course module in advancing those skills. The results of these surveys will help us to gauge the effectiveness of the course module in enhancing the information fluency skills of the students involved. These surveys are intended to measure their information fluency skills in three ways:

1. Level of familiarity with database searching as opposed to simply “web” searching.
2. How well they recognize the literature in the discipline.
3. Discrimination among resources leading to the most productive results

Periodic assessments will also be conducted through the use of short quizzes during the teaching of the course itself. The quiz will use Blackboard’s testing and survey component for these assessments, and the questions will focus exclusively on their information fluency skills. Another form of assessment will be conducted as the Reference librarian serves as an on-line reference for questions that arise during the course. The number and type of questions will be collected and contribute in the measure of students’ overall progress. During the last two weeks of class a second survey will be conducted including questions aimed at a higher level of discrimination than in the first survey. We hope the design will provide an accurate measure of any shift in information fluency.

We then plan to use the course materials, tutorials, and navigation guides during the teaching of Animal Physiology. Both the course instructor and the reference librarian will conduct a training session that will show the students the resources and electronic databases available through the Furman library system, and how to effectively search these databases to find an article relevant to the topic of interest. Students will also be shown the tutorials and navigation guides to aid them in achieving independence in this process. To stimulate discussion of the paper, students will learn how to access and use the Blackboard course management system, where they will post their summaries of the paper, and read summaries written by the other students in the class and by the course instructor. This will allow them to see how their peers did, and they can thus learn from them as well as from the instructor. Training on this aspect of the assignment will be done primarily by the course instructor. We will also provide links to appropriate web sites and other ancillary material for each set of summaries to enhance their understanding of the topic discussed in the scientific paper. By comparing and contrasting the articles with the provided ancillary material the students will gain a better understanding of the legitimacy; substance, and relevance of the article under discussion. Whenever possible, we will attempt to contact the author(s) of the paper we are reading, and see if they will be willing to join us in a live video conference as the class discusses the article and its significance. This

exercise will be repeated 5-7 times during the course of the term, so that the students can apply what they have learned by reading the summaries of other students and the instructor to improve their own summaries in subsequent weeks. We feel that this course module will have multiple impacts on our students. First, it will advance their fluency in the use of information technology for the reasons outlined above. Just as importantly, they will see the link between information fluency and a specific academic discipline – in this case, Biology. The collaborative model we have proposed will greatly enhance the students understanding of the topics discussed, hopefully evoking a constructive platform of critical thinking upon which they can build throughout the course.

### **c. strategies for recruiting participants**

We plan to conduct a faculty/staff workshop sponsored by the Furman University Faculty Development Committee. The chair of this committee, Hazel Harris, has agreed to head up recruitment efforts for the workshop by sending out announcements, coordinating the scheduling of the event and procuring an appropriate site on Furman's campus to hold the workshop. Other participants will be undergraduate students that enroll in Animal Physiology.

### **d. target audience**

Initially, our target audience will be students taking Animal Physiology at Furman University, and to interested faculty, librarians, and information technology staff. However, we plan to make the results of our project available to any interested party throughout the ACS, so ultimately we hope that undergraduates in many disciplines and at many institutions will be the beneficiaries of the project.

## **6. Plans for follow-up and evaluation**

One aspect of this will be the use of the entrance and exit surveys we will be developing to assess the effectiveness of the course module in enhancing the information fluency skills of the students who participated in the Animal Physiology course. We will assess the efficiency of the survey and make any adjustments for its use in future courses and as a means of development so that the instrument is applicable across courses and disciplines at Furman University and other institutions. Our assessment of the surveys will focus on points that will be translatable to other situations at all ACS institutions regardless of the course format. We will also use the results of this survey to help us improve the course module for future classes. We plan to incorporate the skills learned here in future courses we are directly involved in, and to help others throughout the University in modifying and incorporating a version of this course module into their classrooms.

## **7. Plans for dissemination of results to the rest of ACS and beyond**

We will develop a training module with tutorials and navigation guides for the course module described above. We will present this to Furman University faculty and staff at a workshop during the Spring semester, and we will also make the training module available to all interested parties in the ACS. Our tutorials will be placed online within the Blackboard course management system, and could also be linked directly to the ACS information fluency web

pages, where faculty and staff at ACS institutions could readily access them. Results of our survey on information fluency will also be made available to all interested parties.

### **8. Suggestions for replication at other campuses**

This procedure can be readily replicated at other institutions. The basic materials and format can be very similar to those that we develop. All that really needs to be changed are the resources, databases and specific topics of research that are relevant to the specific discipline. However, this process would be easy to replicate with the aid of a librarian and a faculty member in the appropriate discipline.

### **9. Preferred time of year for event: weekend during the academic year? summer? -- be as specific as you can be (if using ACS Tech Center facilities, note that limited dates are available)**

The main work on our project will be conducted throughout the entire 2002-2003 academic year. However, we do plan to conduct a workshop on the campus of Furman University during the Spring semester for interested faculty and staff. This will likely be a mid-week event sometime in the month of April.