




MEMORANDUM

Office of the Deans
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March 16, 2007

TO: Executive Dean Pat O'Brien
College of Letters and Science

FROM: Dean Emil Reisler 
Division of Life Sciences

RE: Instructional Enhancement Initiative in the Life Sciences

The Instructional Enhancement Initiative (IEI) has had a significant impact on undergraduate instruction in the Division of Life Sciences. I strongly recommend continuation of the fee at the present level of \$6.00 per unit.

The IEI fees are deployed primarily to fund staff and equipment needs that are related to course web sites. These funds are also used to staff and upgrade computerized class laboratories across the division. In addition to IEI fees, major grants have been secured, matched with divisional resources, to enable the development of innovative discipline-specific software for courses in genetics, ecology, physiology, microbiology and neurosciences. This and other types of software developments will continue, as the division is committed to strengthening its use of technology for improving the delivery of undergraduate instruction.

In 2000, the division undertook an extensive review of the IEI, including input from the departments with regard to the role that the IEI plays in teaching and research. Many of the sentiments expressed in 2000 are true today. Almost every faculty member recognizes the importance of course websites and the various functions that they provide. The use of bulletin boards and chat rooms, for example, provides a vast improvement over traditional communication methods. In addition, our ability to post assignments, test keys, power points, and general announcements on course websites provides a tremendous benefit to students. Most faculty emphasize that these communication means save paperwork and copying time, as well as the cost associated with class handouts, practice exams, etc. In short, websites have become integral to teaching almost any class in Life Sciences. For larger undergraduate classes, such as LS1-4 (and the Cluster Courses), it is difficult to imagine how a class could be taught without the websites anymore.

Most of our faculty became accustomed to using Power Point and other animated tools in delivering instruction. This is due mainly to the IEI and the exposure that faculty have had to technological advances. Virtual office hours are maintained by many of our faculty, as they recognize the

importance of their accessibility to students through email and other communication media. In fact, some faculty report that e-mail provides a more effective way of responding to student questions, as this information is available to a wider audience. Without question, as noted above, the support of course websites that are funded almost entirely by the IEI has made the transmission of information and communication much better.

Notably, some faculty expressed concern over course websites development, citing a danger of using online materials as a substitute for class attendance. This would be an undesirable outcome, as some have stated, since it could decrease face-to-face student-teacher interactions.

In summary, with regard to course websites, the IEI has brought important changes in the way we respond to faculty and student demands for technology in the classroom. The program has generated support among all segments of the division, instilling a sense of pride and progress as to the tangible benefits associated with educational instruction. The program has been especially effective at improving communication among faculty, students and staff. It has enabled faculty to provide immediate results by posting important course information, creating fast and direct communication among faculty, teaching assistants and students.

The computing facilities within the Division play a significant role in our ability to deliver quality instruction. Faculty and students are now provided, in most cases, with state-of-the art computing facilities and web connectivity. This offers unlimited possibilities for instruction and research. Instructors value both the physical environment of these computing labs, as well as the expert support that is provided by staff in the computing labs. In some cases, the computing labs have stimulated faculty and teaching assistants to develop computer demonstration modules, most notably in statistics, research methods, and experimental design. In fact, by last account, roughly 30% of instructors in the Department of Psychology who teach an upper division experimental lab or a small seminar have taught in one or more of the computing labs.

Innovations

1. The web is not just used to grade and assign home works, but as a tool that the students develop and use (see www.bruinfly.ucla.edu). This development took extramural, departmental and divisional resources which were not recovered through charges any fees to the students. However, for internally funded projects such a recovery will be critical.
2. With newer techniques available, we will provide concepts such as streaming videos that can be analyzed piecemeal by the students (as in LS5HA/B).
3. Information technology is beyond power points, we have started using clickers etc to enhance classroom experience. We hope to include such technologies in what used to be simple power points.
5. The core program in Life Sciences is doing a great job in creating "field guides" that are maintained over the web. The field guides unify the experience of a single class taught by different instructors in different quarters.
6. In the extreme, classes can be delivered (Bob Goldberg has already done this) to multiple campuses at the same time.

Improvements

1. In silico experiments, including animations, are one of the educational tools at the forefront of new approaches. They add to the more costly traditional labs, many parts of which can be better done in silico (especially for experiments requiring data gathering at remote ecological sites in real time, for example, or work that requires ready access to large databases that are themselves changing each minute).
2. The "clicker" approach is moving from number pads to full key boards, to meet expanding technology designed to bring greater real-time interactions to the class room, and all of this must go/stay wi-fi.
3. E-books are coming, and they are not just electronic versions of paper texts. Rather, these are heavily hot-linked means to access far, far greater wealth of information by a click of the mouse than a traditional text can ever provide. They combine the power of Google with the potential of wikipedia-like rapid updating of information and, in fact, a specific course's learning development for the students.

SOME of these advances require very modern, computer-based class rooms/labs, where modern computers (either the students' or ours) wi-fi in a collective/interactive way. We are not there yet in our class rooms. ALL of them require broad band width for off-site study and work by both the students and the educators. Not all have broad bandwidth access, so sattelite drop-in labs are essential to even the playing filed. If we do not stay abreast of these changes, we will quickly find ourselves in the backwaters.