

Biology Department

**2007-2008 BIOLOGY Program Review
Action Update**

The 2005 Biology Program Review listed 14 Recommendations for Action. Following is a partial listing with actions accomplished since the 2004-2005 academic year.

1. Consider revision of the Environmental Management major into an interdisciplinary environmental studies major.

During Spring 2008 the decision was made to suspend the Environmental Management major until further study could be completed to decide what sort of program would best fit student interests and market needs.

2. Refocus green campus efforts by involving students in campus projects.

1) During the 2006-07 and 2007-08 academic years, SPLSS (Society of Physical and Life Science Scholars), the Natural Science Division's student organization) became more directly involved in the planning and implementation of Earth Day. During Earth Day 2007, these efforts resulted in five student booths and demonstrations focusing on environmental issues and concerns. In 2008, this effort was expanded to a total of 15 student operated booths, 4 Green businesses/groups and 2 faculty booths.

Further, during the 2006-07 academic year student membership was added to ULV's Sustainable Campus Committee, and in Spring 2008 students were members were added to the Green Valley Initiative (GVI), and created a sub-entity called Green Initiative for Village Empowerment (GIVE). The ULV GIVE chapter attracts students from many disciplines, not just natural science Students. These students have made, and continue to make, important contributions to these environmental efforts.

3. Consider expanding the research methods and biostatistics course into a 3-4 hour course to better cover biostatistics or possibly require students to take a statistics course offered by another department, such as Psychology.

During Spring 2008, BIOL 379 Research Methods and Biostatistics (2 semester hours) was split into two-2 hr courses: BIOL 379 Research Methods, and BIOL 380 Biostatistics, which will be required in the Junior year. The addition of a second course will allow more comprehensive coverage of both research methodology and statistical techniques used in the biological sciences.

4. Consider the implementation of alternatives to the currently emphasized empirical senior project for meeting graduation requirements.

The grant proposal model recommended by the Senior Project outside reviewer (Dr. Wright of Pomona College), was initiated in 2006 and is currently being pursued by six seniors and several past 'graduates' that left with their projects uncompleted.

5. Develop a better tracking strategy to monitor progress of senior projects and minimize the chances of students losing the momentum begun in the fall semester of their junior year.

In 2005, to better support progress on student projects, the BIOL 499 Science Seminar course was required both semesters of the senior year. Then, beginning in 2006 a new research model was implemented by Drs. Broussard, Novak, Garcia, and Weaver, all of whom are actively engaged in individual research projects. In this model, student projects were designed as components of a larger research effort. With multiple students involved in similar endeavors, there is greater opportunity for collaboration and peer support, and faculty supervision is easier. Since these two modifications, we have seen a significant increase in the number of successful project completions. Drs. Broussard and Garcia alone have each had over 10 students complete their project work since Spring 2007.

6. Consider adjustment of the teaching load expectations of faculty engaged in research and oversight of student research projects beyond a given number.

The consensus among Departmental faculty is that the current teaching load of 24 hours is excessively heavy when added to the demands of conducting significant research. Currently, three of the junior faculty (Broussard, Novak, Weaver) have research projects funded by internal and external grants which demand very significant time investments. This important issue has been discussed with various administrators and we continue to press for implementation of policy changes to offer additional course-release time. To their credit, both Dean Yaffe and the Faculty Research Committee have been supportive in funding course releases for several faculty (including Professors Broussard and Weaver in the past two years).

To help alleviate the problem of excessive work-load, in consultation with the Division chairs, the manner in which laboratory course load was calculated was adjusted to account for the more sophisticated laboratory exercises currently being conducted.

7. **Rethink/revitalize the science seminar format and make appropriate adjustments.**

Dr. Weaver was given responsibility for NASC 370 Science Seminar during the 2006-07 academic year, and she proposed several modifications that have been incorporated. Now, rather than meeting weekly, seminars are scheduled bi-monthly, with alternate weeks being devoted to lab meetings between faculty and Junior and Senior students to discuss their research progress. For scheduled seminars, different faculty members are responsible for securing a speaker and organizing the seminar. This change was made in response to student dissatisfaction with seminar, and the need for a time for research groups to meet together to discuss collaborative work.

Additionally, for the Spring 2008 semester, all senior project oral presentations are scheduled for a single day (May 16) in an event that will be attended by all Division faculty and Biology majors. This arrangement will more closely mimic the format of a standard scientific meeting and allow celebration of all student work in a single event.

8. **Apparently low MCAT scores in recent years suggest that there may be a problem with preparation of students for matriculation into graduate schools and this issue warrants further analysis.**

To date, no specific effort has been devoted to further investigate this concern, however the pass rate for the Biology Senior exit exam was 70% for the first cohort in Spring 2008, the highest over the past 8 years, and admission of students into graduate programs has been steadily increasing. At least six pre-health students have been admitted into graduate school this spring (2008) and others are anticipated.

There remains a small number of students that are unsuccessful in passing the currently administered Departmental exam even after several efforts. The majority of these are ones that have remained in the program in spite of low performance. To help better advise marginal students, the Department has administered a Junior candidacy program in which second semester sophomore student must apply for candidacy into the Junior year. Those that do to meet candidacy requirements (appeals will be possible) will be counseled for alternative programs.

In spite of the fact that MCAT scores have been low for some, admission into graduate programs continues to be strong and the numbers accepted students increasing. We anticipate approximately 50% of Spring graduates to continue their education in post-graduate programs.

9. Consider revision of the biology curriculum, including identifying courses for possible deletion and courses for addition.

Courses deleted from the BIOL curriculum include **BIOL 203**, Principles of Biology **BIOL 443**, Histology, and **BIOL 372**, Investigating Biofeedback Systems. Courses added to the curriculum include **BIOL 305** Vertebrate Zoology, **BIOL 380** Biostatistics . Other modifications include the addition of a lab component to **BIOL 310** Cell Biology, increasing the credit hours of **BIOL 204** and **BIOL 205** to 5 hrs (4 lecture hours plus 1-3 hr lab section).

10. Cultivate additional adjunct faculty to aid in the offering of additional CORE 340 courses.

Harvey Good, Professor of Biology emeritus, has been teaching additional CORE 340 sections as has Jay Jones. As of Spring 2008 no other faculty have been secured for this course, however discussions with Zandra Waggoner are presently ongoing for to explore the offering of additional courses.

11. Revise syllabi to address perceived deficiencies as identified by Dr Wright of Pomona College.

Faculty have received copies of Dr. Jonathan Wright's (external reviewer) recommendations and have worked to address perceived deficiencies. No specific evaluation has been yet done to monitor progress in this area.

12. Plan for pending retirements and staffing needs.

Dr. Harvey Good retired in Spring 2006 and Dr. Kathleen Weaver, (PhD, U. Colorado) was hired as his replacement. In her first two years she has enjoyed high teaching evaluations from both students and faculty, had one paper selected for publication (with several others in preparation) and implemented research that is currently involving a significant number of students.

Dr. Neher indicates that he intends to continue in his role as Professor and Division head into the immediate future, a decision that is welcomed by all.

Pablo Weaver has excelled in his role as Laboratory manager, however is greatly overworked and the addition of a half-time or full-time position for helping in laboratory preparation and equipment maintenance is considered essential to be able to maintain persons in this position. Pablo also has demonstrated both high quality teaching and mentoring skills and in the future we hope to be able to continue to assign him adjunct teaching opportunities, but only if we can secure

additional help in the lab manager position.

13. Explore ways to incorporate programming at the Montana Magpie Ranch campus into home campus programs.

During 2007, Kathleen Weaver took five students to the Magpie Ranch facility for the field portion of BIOL 325, Field Biology, and spent 2 weeks conducting research on terrestrial snails. Similar plans are in place for a 2008 summer visit.

14. Develop programs to recruit higher quality and better-prepared students.

The Division contacted Ana Lisa Van Zell in Spring 2007 to plan for a Math and Science Open House (“Science and your Future”) for High School juniors to showcase Division programs. Because of the inadequate time for planning, it was decided to postpone the first open house until Spring 2008. Throughout Fall and Spring of the 2007-2008 academic year, meetings were held and plans put into place for an April 16 event. All Departments in the Division participating in the planning, however on April 14 the event was canceled when several of the schools that had scheduled to participate pulled out due to scheduling conflicts (Science Award Banquet Night). We did however host the Principal and several faculty from Claremont High School, and were able to show them our program and facilities which they greatly appreciated. We plan to revisit this effort in 2009.

Also, during Summer 2007, Professors Jones, Burkhart, and Weaver worked with Don Pollock to produce a ULV TV program on environmental sustainability that is available for student recruitment use.

Other, on-going efforts to recruit better students include faculty making themselves available for speakers are area High Schools. Jerome Garcia for example recently (Spring 2008) participated as a speaker at Pomona High school (S08) and is scheduled for a similar presentation during Fall 2008 at Claremont High School

Lastly, again through Jerome Garcia’s leadership, this summer (August, 2008), 10 ULV students will be participating with Global Medical Brigades doing volunteer work in Honduras for two weeks. Efforts such as this bring focus on both our Department and the greater University.