2002 – 2003 Executive Summary*
Five-Year Reviews of UM-St. Louis Departments and Centers

Department: Biology

College: Arts and Sciences

Departmental and Program Mission:
The missions of the Department of Biology are to provide undergraduate and graduate academic programs appropriate for the development of understanding and skills in life science studies and to provide support for its members in the acquisition and dissemination of new knowledge through scholarship and original research in the life sciences. The Department offers B.A. and B.S. degrees at the undergraduate level, M.S. and Ph.D. degree programs in Cell and Molecular Biology (CMB), M.S. and Ph.D. degree programs in Evolution, Ecology, and Systematics (EES), and certificate programs in Conservation Biology and Biotechnology.
Strengths and distinguishing characteristics of the program(s):
The Department of Biology has two endowed Des Lee professorships and one Curators Professor. Each has an active research program that attracts students and collaborators to UM-St. Louis. Two of these professorships have strong research connections with the Missouri Botanical Garden and the Saint Louis Zoo. The Department is also associated with two Centers, the International Center for Tropical Ecology (ICTE), which is housed entirely within Biology, and the Center for Neurodynamics, which is housed in two departments, Biology and Physics. The ICTE excels in its role as a magnet for excellent international students. It has been particularly successful in attracting funding for these students, in the form of research scholarships as well as fellowship support. The graduate programs in EES (Evolution, Ecology, and Systematics) are especially strong in terms of the numbers of students enrolled (60 Ph.D. students) and their credentials. Other notable sectors include the successful Science Education program shared with the College of Education.

Assessment (include trends in student enrollments and degree completions:
Enrollments have declined slightly, but steadily over the 5-year period covered by this review, from totals of 3582 in 1998 to 3180 in 2002. This decline is explained mostly by enrollments in lower division classes, which declined over this period from 1687 to 1326. The 2002-2003 AY enrollments are markedly improved. Graduate fluctuated more (not a steady decline) and averaged around 65 undergraduates and 24 graduate students per year. Several recommendations during the review suggested strategies for improving both sets of numbers. The undergraduate curriculum is being revised. Procedures such as structuring consistent and predictable course schedules are in place to encourage students to progress efficiently towards the undergraduate and graduate degrees.

The review addressed the disparity in size between the EES component of the department (12 FTE regular faculty) and the CMB component (3.5 FTE regular faculty members), and the corresponding or even more skewed sizes of their graduate programs. As the fall 2003 semester begins the department is adding one Assista Professor in CMB, and is preparing an offer to a senior researcher for an endowed professorship in the CMB component. It is essential to maintain a strong CMB faculty. It is also essential to build connections between tl two components, CMB and EES. The department hopes to accomplish this by focusing future hiring carefully o people whose research interests link strongly to both areas.
Productivity of faculty in scholarship and public service:
The department contribution to the grant funding and research productivity on campus is healthy and increasing (almost 2 million dollars during the last fiscal year, and an average of 2 publications annually per faculty member). However, research productivity is uneven across research groups. The department plans to continue to encourage current faculty and heed the advice from the Review Team to target new hiring in areas of intense research activity. Department faculty members are well represented on panels of funding agencies such as NSF and NIH. They serve as elected officers in national and international societies and hold

multiple editorships and associate editorships on the boards of national and international professional publications.

Curriculum Quality:
Department programs include high quality coursework, but scheduling difficulties arise from offering too many different courses. The department faculty are revising the curriculum with the intent to eliminate some courses and consolidate the contents of others with the goal of offering a smaller number of predictable, modern courses that will offer students sufficient diversity of elective coursework.

Program Accreditation (if any): not applicable
Long-range goals and strategies:
The department faculty is eager work with the campus to help realize the UM-St.Louis research potential in the rich science environment in metropolitan St. Louis. Based on discussions at meetings with the Campus Review Team, the external reviewer, and the Academic Officers, goals and strategies that were discussed include:

- Strengthening the undergraduate teaching mission by doing a better job of teaching, offering a predictable schedule of high-quality courses, and engaging students in opportunities outside of the classroom.
- Solidifying connections between the molecular area and the evolution, ecology, and systematics area of the department.
- Hiring faculty in the molecular (CMB) area by targeting areas of cross-interest to research strengths in evolution, ecology, and systematics (EES). Such hiring may replace the faculty positions of those who accepted the UM early retirement plan.
- Identifying additional staff support to administer effectively the research grants in the department,
- Providing sufficient funding for start-up and facility renovation for new faculty hires.
- Attracting and supporting graduate students by providing adequate internet access and competitive graduate student stipends.