

## Organismic and Evolutionary Biology

An interdisciplinary graduate program offering the M.S. and Ph.D.

### ■ The Review Process

This was a standard AQAD review. Because of the strong interest on the campus in issues spanning the life sciences, the Deans of Natural Sciences and Mathematics, Food and Natural Resources, and Social and Behavioral Sciences agreed to conduct simultaneous AQAD reviews of the Departments of Biology and Biochemistry and Molecular Biology and the interdisciplinary graduate programs in Molecular and Cellular Biology (MCB), Neuroscience and Behavior (NSB), Organismic and Evolutionary Biology (OEB), and Plant Biology (PB). The design of the review process encouraged interaction among the six units in preparing for the team visits, and sharing of key information as the process unfolded. Reviewers:

Ring Cardé, chair (University of California, Riverside)

George Lauder (Harvard University)

Judy Myers (University of British Columbia)

### ■ Executive Summary

The review team noted that “integrated graduate programs represent the future of graduate education in the life sciences at UMass,” and that the OEB program, “in particular, represents a locus of excellence in which a broad array of faculty has formulated a cohesive and well-respected program that is attracting top-quality graduate students.” The team praised the OEB’s success in achieving a strong reputation in only seven years, especially given the modest resources available to it. The team identified a number of factors that will be important to OEB’s future development:

1. *Recruitment and Student Support.* The team found OEB to be highly successful in attracting top graduate students (fifty applicants for six openings in 1999), but warned that teaching expectations may be too high for some TAs, and that graduate student stipends need to be increased in order to remain competitive. The team recommended that the program’s website be updated; that stipends be increased (including a guarantee of summer stipends); and that TA teaching assignments be limited to no more than two lab sections per semester.

2. *Academic Program.* The team recommended that the OEB program take responsibility for organizing the two “cornerstone” upper division courses required of all students (one in evolution and one in ecology), rather than rely on departmental offerings. In addition, the team noted that students expressed a desire for a biostatistics course tailored to their research needs, rather than rely on statistics offerings in other departments. The team recommended that OEB consider developing such a course, and consider statistical expertise when filling future faculty positions.
3. *Student Support.* The team found graduate student advising to be a strength of the OEB program, particularly the annual evaluation of each student’s progress by the Graduate Operations Committee. A comprehensive student guide provides necessary policy and related information. The faculty holding leadership positions within the program and the program’s administrative assistant were praised by students, and the team observed that “it would be difficult to imagine a more effective or efficient team, given the resources available.” The seminars, social events, and other activities organized by the program were found to provide students “many opportunities to come together to learn, discuss, hone their presentation skills, evaluate and bond,” which the team felt to be “the essentials of an excellent graduate program.”
4. *Darwin Fellows.* The Darwin Post-doctoral Fellows program brings an outstanding group of recent Ph.D. recipients to campus for two-year appointments in OEB. The team found that the program brings “great national visibility” to OEB, and that “the level of competition for these positions is keen.” The Darwin Fellows serve as mentors for the graduate students, and the team found that “students were extremely enthusiastic about their interactions” with the Fellows. The team also observed, however, that there is as yet no permanent funding source for the Darwin Fellows. While the team acknowledged that the program has “great potential for funding through an endowment,” they also warned that it would be essential for the fellowships to be maintained during the process of fundraising.
5. *Facilities.* Given the interdisciplinary nature of the program, the availability of a seminar room as a common meeting space was found to be a strength. The proximity of the offices of the Darwin Fellows to the seminar room was also seen as highly valuable. The team noted that UMass Amherst possesses a number of natural history collections (herbarium, vertebrae and insect collections), and that a public natural history museum could “provide valuable outreach and research potential for the university.” The team suggested that fundraising for such a museum “should progress in parallel with the OEB.”
6. *Organization and Funding.* The team observed that “interdisciplinary graduate programs provide the optimal pattern for synergizing the diverse array of departments” in the life sciences, but also noted that, because such programs span many departments, “lines of reporting and resource allocation are complex and diffuse.” In particular, the team found

that “goals common to many units may not be accepted when one college and department must accept responsibility for funding and housing a [faculty] position.” The team commented on several organizational approaches possible in this context (the current “lead dean” approach, organization of all interdisciplinary programs under a Provost or Vice Chancellor for Research, location of all programs within a new College of Life Sciences). While expressing a preference for the latter, the team indicated that what was most important was that a final decision be made regarding the creation of a College of Life Sciences, and that “interdisciplinary graduate programs participate fully in planning activities at the college level.” With respect to funding, the team observed that OEB’s operating budget is “less than is typical for programs of this size on other campuses,” but also acknowledged long-standing funding instability for the campus as a whole. The team recommended that the OEB seminar series, the Darwin Fellows program, and the natural history museum be identified as fundraising priorities. In addition, the team recommended an increase of \$10,000 (to \$40,000) in the program’s support budget.

**Action Plan.** The OEB action plan reflected the program’s satisfaction with the team’s report, and indicated that “the suggestions of the review team are excellent and we will do our best to implement them.” Specific responses were made to many of the team’s recommendations:

1. *Recruitment and Student Support.* OEB reported that it is moving forward with improvements to its website. The action plan indicates agreement that faculty “should generally be expected to provide financial support for summer salaries” for graduate students, and that in any case “faculty who take OEB students will clarify their financial commitments before students begin their graduate work.” The program agreed with the recommended target for the full compensation package for graduate students. With respect to teaching obligations for graduate students, the action plan noted that workload assignments are determined by the departments contributing the TA lines, and that OEB will “explore limiting the commitment to two sections per semester.” The program also indicated that it will seek funding to assist in application for training grants.
2. *Academic Program.* The action plan reports that OEB is exploring establishment of its own courses in evolution and ecology, and that the Darwin Fellows will begin teaching a discussion course for new students each fall. A committee of OEB faculty and students will examine the issue of statistical training, focusing both on basic statistical preparation and specialized, supplemental coursework.
3. *Darwin Fellows.* The action plan cites commitment of long-term funding for the Darwin Fellows program from the central administration as the program’s “highest priority.” The program indicated it will also explore the possibility of endowment funding through Campaign UMass, but expressed doubt that fundraising at that level (\$2.7 million endowment) might be unrealistic. The Dean will initiate a discussion of the feasibility of fundraising.

4. *Organization and Funding.* The action plan indicated “strong support” within OEB for creation of a College of Life Sciences, and also urged the campus administration to ensure that “the interdepartmental graduate programs be included in the overall planning for the life sciences, in faculty hiring and in budgetary decisions.” The program agreed that “we badly need a modest increase in base funding.”

#### ■ **Student Outcomes Assessment**

Most of the focus on student outcomes assessment reflected in the AQAD procedures (and the literature as a whole) refers to undergraduate instruction. No special issues related to outcomes assessment emerged from this review, although the review team’s praise of the annual evaluation of graduate students indicates that the program has in place a useful, formal structure within which individual faculty feedback and assessment is organized.