

## Organismic and Evolutionary Biology

An interdisciplinary graduate program housed in the College of Natural Resources and the Environment offering the M.S. and Ph.D. in Organismic and Evolutionary Biology.

### ■ The Review Process

This was a standard AQAD review. Reviewers were:

Andrew G. Clark (Cornell University)  
Thomas W. Schoener (University of California, Davis)  
Marvalee H. Wake (University of California, Berkeley)

### ■ Main Issues

The team found the OEB program to be “nationally recognized, especially for the unique Darwin Fellowship Program,” and attracting “excellent students.” In addition, “its presence is a significant feature in recruiting outstanding new faculty members.” The graduate program “provides a model for conceptual breadth, diversity of ideas and research interests, and innovative synthesis in the training of graduate students, involvement of postdoctoral scholars, and faculty collaboration.” The team cautioned, however, that “many of the excellent features of the program will be difficult, if not impossible, to maintain and expand without increased support, scientific growth, and increased communication.”

The team identified three areas of concern, and offered recommendations with respect to each:

- **The Graduate Student Experience.** The team found that OEB graduate students receive approximately half of their support from each of two sources — teaching assistantships and grant-funded research assistantships — and the “long-term stability of both these sources is a concern.” TA allocations come from participating departments, and can change from semester to semester, while RA funding varies with grant cycles. Of particular concern was the rapidly rising cost of graduate students. The team offered several suggestions for how greater stability in graduate student support might be achieved. In terms of the curriculum, the team found that course offerings were “somewhat ad hoc ... and not designed with the overall goal of what common body of knowledge and skills an OEB student should have.” The team recommended that an OEB committee should consider what might constitute a common body of knowledge and skills, and recommend ways for this to be expressed in the curriculum. Several approaches were offered for consideration. In addition, the team urged a more formal approach to training graduate students for future teaching. Specific recommendations were also made regarding research support for graduate students and identification of suitable working space.
- **The Darwin Fellows Program.** The team found the Darwin Fellows program to be “nationally and internationally recognized, “a model for programs that provide a postdoctoral experience that includes research, teaching of full courses, and mentoring of graduate students. The Program model is highly exportable, and already the basis for similar efforts at Brown, Arizona, and Macquarie universities.” The program was also found to be “key to the

identity of the OEB Graduate Program, and one of the most notable features of biology at the University of Massachusetts-Amherst.” The team was therefore “alarmed to learn that funding for the Program has become precarious, and that it already has declined to support only one Fellow.” The team recommended that development and grant support be aggressively sought to restore the program to its full complement of two Fellows.

- **Administrative Structure.** Despite “universal appreciation” of OEB’s value, “elements of the administrative structure seem to engender conflict. It is a shame that the departments are made to view the program as a fiscal burden, a tax that they must bear.” In the team’s view, “it seems inescapable that the interdepartmental programs should have a funding stream that lies above the level of departments.” Such a change “would allow the interdepartmental programs to retain their strength as strongly integrative and truly interdisciplinary, and would avoid the continuous frustration over having to negotiate program resources currently felt so strongly at the level of department chairs and Deans.” Support of the administration was also urged to help make faculty involvement in interdisciplinary programs be “seen as a positive.” Some concerns related to administrative structure revolve around the program’s voice. The team reported that the program feels “out of the loop” in terms of larger planning issues, and urged that OEB develop a strategic plan for faculty hiring that could inform departmental decisions. The team also urged reinstatement of a life sciences advisory committee to help set hiring priorities. The team recommended that the Dean of the College of Natural Resources and the Environment exercise responsibility for OEB is the campus retains the “lead dean” model.

## ■ Student Outcomes Assessment

The OEB program offers graduate degrees only, and therefore does not employ the kinds of student outcomes assessment tools appropriate to undergraduate education. OEB is a laboratory science discipline, in which learning outcomes are established in the framework of comprehensive exams, dissertation development, and identification of a research program with the faculty sponsor. Achievement of these outcomes is evaluated through the oral and written exams, individual faculty evaluation of laboratory work on an ongoing basis, participation in work leading to peer-reviewed publications, the comprehensive exam, and the major culminating experience of the dissertation and its oral defense.

The program has identified a set of outcomes for their graduate students appropriate for graduate study in a research-based Life Sciences program, including publishing, obtaining grants, timely program completion, and job placement. The progress of OEB students is assessed on a yearly basis by the Graduate Operations Committee and Director through review each student’s CV, list of completed courses and grades, and statement of accomplishments and goals.

In Spring 2008, OEB called upon the Office of Academic Planning and Assessment to assist them in understanding their graduate students’ mentoring experiences. This was part of a larger goal to evaluate the impact of the postdoctoral fellows (who had been brought in through the Darwin Fellowship program) on the mentoring experiences of the program’s graduate students. OEB collected detailed qualitative information directly from their students, results from OAPA’s Graduate Advising Survey (comparing departments/programs by key variables), and a customized report from OAPA (based on the Graduate Experience Survey) on their students’ level of satisfaction with their primary mentor.

## ■ Response to the Review

The program indicated general agreement with all of the team's recommendations. With respect to the graduate student experience, the department reported plans to seek greater predictability in the allocation of departmental TAs, and to request funding for research support for graduate students. The program described two planned changes in the curriculum: introduction of a two-credit "Skills for College Teachers" course, and organization of a Core Course Committee to develop a team-taught core course in the areas of evolution and ecology. The program agreed that stable funding for the Darwin Fellows program "is of the utmost priority," and described efforts to seek support from several sources. In terms of the administrative structure, the program expressed support for all the team's findings. A day-long retreat was held following receipt of the team's report, which included the first steps toward planning priorities for faculty hiring.

The Dean also generally endorsed the team's findings and recommendations. On the question of stable TA allocations, the Dean offered to work with NRE departments to put in place two to three year commitments of TA funding to OEB. The Dean cited the Darwin Fellows program as one of the "gems" of OEB, and reported providing short-term bridging money to allow the program to continue while permanent resources are sought. The Dean committed a portion of the College development effort to that purpose. The Dean reported on plans to change the administrative reporting structure for all the interdisciplinary life sciences graduate programs, and endorsed the permanent lead dean approach. One aspect of the change would include regular meetings between the program directors and department heads.