

## Neuroscience and Behavior

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:

Edward M. Stricker, chair (University of Pittsburgh)

John Kuwada (University of Michigan)

Cheryl L. Sisk (Michigan State University)

### ■ Executive Summary

In general, the team found that the NSB program “has succeeded impressively... [and] assembled a strong group of faculty into a functional community with productive collaborative interactions in research and teaching.” In particular, the team noted the “training faculty have published many scientific reports together and competed successfully for joint research grants and training grants, they have established a Center for Neuroendocrine Studies (CSN) that has attained national and international prominence, and they have generally become important players on campus in the life sciences.”

The team suggested several areas in which the program could be supported and improved:

1. With respect to NSB's role within the University, the team noted that UMass Amherst seems to have lower funding across the board than comparable state universities, and that NSB has difficulty competing for funds that are available because of the absence of a medical school at Amherst that would create a larger cohort of colleagues and advocates. The team recommended that NSB and the administration “work together to identify creative solutions that do not depend on large amounts of additional resources in the foreseeable future.” The NSB action plan agreed with that observation (and noted that it had been pursuing “creative solutions” throughout its thirteen-year existence).

2. In terms of administrative structures, the team found that, although the campus administration has been generally supportive of NSB and similar programs, the program's operating budget is insufficient. The team suggested that one solution would be to allow the program to retain a greater share of its indirect costs on research grants. The team also suggested that NSB report at all times to the Dean of Natural Sciences and Mathematics, rather than to the Dean of whichever College houses the department in which the Director's appointment resides. Finally, the team observed that the interdisciplinary programs "compete with departments and with one another for precious faculty time, but they have few 'carrots' or 'sticks' with which to encourage faculty participation." As partial remedy, the team suggested that the NSB Director comment on contributions to the NSB in each participating faculty member's Annual Faculty Report (AFR).

The NSB action plan endorsed the proposal for greater RTF allocations to the program, and the Dean noted that this would require a change in campus policy already proposed by the interdisciplinary programs. There was no consensus within the NSB faculty with respect to the reporting line issue, and the action plan calls for further discussion with the campus administration. The action plan concurred with the recommendation regarding NSB participation in the AFR, but the Dean observed that the current system allows for this kind of involvement, and urged that this opportunity should be more widely utilized.

3. With respect to faculty, the team noted the generally strong reputation of senior faculty, but also warned of a "remarkable absence of youth" within the NSB tenure-stream faculty. The team also noted the faculty's success at winning prestigious NIH career development ("K") awards which allow faculty to buy out most teaching obligations, but observed that this success had led to a situation in which some senior faculty were too far removed from the core of the curriculum. Finally, the team recommended that the behavioral component of the program be strengthened.

The action plan embraced the recommendation on additional hiring at the junior level, but noted that NSB must compete with other interests within the relevant departments and the Life Sciences Steering Committee. With respect to buy-out of teaching, the NSB argued that the contributions of the K-awardees were essential to the program; that teaching responsibilities are covered through replacement faculty; and that several of the awards will be ending in the next few years, with recipients returning to the teaching faculty. The action plan affirmed interest in building the behavioral component of the program, noting two recent hires in behavioral biology, and plans to adopt synaptic plasticity/neuroplasticity (which encompasses a strong behavioral component) as the NSB's focus for growth and development in the near term.

4. The team made a number of suggestions for improving the graduate curriculum in the NSB. They suggested that the Ph.D. made greater course-work demands than similar programs, and should include more team-teaching; and that the doctoral comprehensive exam is also more demanding than necessary. These issues were discussed extensively at an NSB faculty retreat following the review, with the result that a new proposed curriculum would reduce course-work and introduce new team-taught courses. With respect to the comprehensive exam, the Graduate Committee of the NSB will explore several suggestions for improvement.
5. Finally, the team made several suggestions related to the organization of the program itself. Noting that the position of Director will become vacant at the end of this year, the team recommended that NSB plan for succession with an eye toward recruiting a director with international prominence. It was also noted that, although the NSB faculty are drawn primarily from two departments (Psychology and Biology), both the Director and the Associate Director have appointments in the same department. The team recommended that, in the future, each of the departments should contribute one of the two leadership positions. The team suggested that the University should consider whether the NSB program should become a department of Behavioral Neuroscience, in part because of the concentration of resources in departments. And, the team noted the difficulty of promoting collaboration among faculty in two departments physically quite distant from each other on the campus.

The NSB action plan embraced the need for succession planning, and undertook the discussions which resulted in the choice of the synaptic plasticity/neuroplasticity focus in part so as to be able to identify the field in which to recruit a new Director. The action plan agreed with the recommendation to appoint the Director and Associate Director from different departments, but also noted that this had proved difficult in the past. The NSB faculty took no position on the question of departmental status; the Dean did not support this idea, and suggested that it might create more problems than it solved. Finally, the action plan strongly concurred with the recommendation regarding facilities, and noted that planning now underway for an Integrated Sciences Building (and subsequent reconfigurations of existing space) might offer an opportunity to address this problem.

#### ■ 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 discussion of the degree requirements for the Ph.D. did involve re-examination of the program's intended learning objectives.

