

Neuroscience and Behavior

An interdisciplinary graduate program housed in the College of Social and Behavioral Sciences offering the M.S. and Ph.D. in Neuroscience and Behavior.

■ The Review Process

This was a standard AQAD review. Reviewers were:

Robert J. Contreras, chair (Florida State University)
H. Elliott Albers (Georgia State University)
Gregory F. Bal (Johns Hopkins University)
Jane E. Clark (University of Maryland)

■ Main Issues

The team cited the NSB program as a “recognized pioneer in the inter-disciplinary approach to research and graduate education in the neurosciences” which has “recruited an outstanding group of faculty members who have highly productive and well-funded research programs.” A “highly interactive and collaborative” environment gives NSB a “substantial advantage” in meeting the multi-disciplinary expectations of granting agencies such as NIH and NSF. Faculty are organized in five focal areas: Molecular and Cellular Neuroscience; Neuroendocrinology; Neural and Behavioral Development; Animal Behavior and Learning; and Sensorimotor, Cognitive and Computational Neuroscience. All five were found to be strong, especially neuroendocrinology, which has “obtained national and international prominence.” The team found “much strength” in the graduate program, and observed that several recently hired faculty “made it clear that their decision to accept the offer to join the faculty was dependent on the existence of the NSB Program.”

The team identified three main challenges facing the program:

- **“Structural barriers to interdisciplinary cooperation.”** The team observed that faculty participating in NSB come from departments located in several different colleges, and that “at present, no mechanism exists to allow for coordinating the broader goals and aspirations in the Program outside the departments and schools. As a result, there appears to be little strategic planning for initiatives to garner new extramural funding.” In addition, the “straddling” of four schools and colleges “places the NSB Program at a competitive disadvantage because resource allocations at the university fall within the fault lines of these separate schools.” The team observed that this structural disadvantage is exacerbated by the absence of a medical school on campus, which leaves NSB “without a natural ally.” To help overcome these structural barriers, the team recommended that the four interdisciplinary life sciences programs cooperate more closely around common interests, perhaps pursuing the model of a “life sciences steering committee” in place on campus for a period in the 1990s. The team also recommended establishment of formal mechanisms to interact with the upper administration to discuss the program’s state of affairs.

- **“Elevate the quality of faculty through careful and judicious recruitment.”** Noting that “achieving national prominence rests primarily on the quality of the faculty,” the team recommended several steps to strengthen recruitment: 1) provide resources for the hiring of a new director in a way that “does not cost any department;” 2) anticipate likely faculty turnover so as to be “prepared to select the next generation of scholars;” 3) provide resources (such as funding for course buyouts) to eliminate barriers that discourage faculty from participating in NSB; and 4) provide a pool of start-up funds directly to the program “to offset financial constraints of the departments and reward them for their cooperation.”
- **“Provide rewards to the program for successful innovative funding efforts and training initiatives.”** The team found that NSB had enjoyed “huge success” in winning highly competitive training grants from NIH, and suggested that the campus reward this success by providing some institutionally funded fellowships, as well. In general, the team recommended that NSB receive sufficient funds to allow instructional and administrative buyouts and support a full-time support staff person.

The team also examined the graduate curriculum, and noted that “important changes” had been made since the last review, including streamlining of comprehensive examinations and development of a new year-long course. Lab rotations, the “supportive and open environment,” and teaching and mentoring were cited as strengths. While the team found “no significant problems in the graduate program,” some suggestions were offered to improve sequencing of requirements and give students greater exposure to current literature and research topics.

■ Student Outcomes Assessment

The NSB program offers graduate degrees only, and therefore does not employ the kinds of student outcomes assessment tools appropriate to undergraduate education. NSB 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 NSB faculty monitor students’ progress first through a team-taught core sequence in the students’ first year, which provides common grounding and cohesiveness before they move on to greater specialization. The program has identified teaching experience to be a universal learning outcome for its graduate students, with all students given what the program deems to be “meaningful experience in teaching”. Students’ research training is developed and assessed with the assistance of a three-member Guidance Committee, yearly evaluations (comprised of evaluations from every faculty member who has had contact with each student), and individualized training in the laboratory of each student’s mentor.

■ Response to the Review

The program reported general agreement with all of the team’s recommendations. The absence of a mechanism “for coordinating the life sciences” was noted, as was the importance of finding ways for the program to “make its case” to the administration. The program reported that the search for

a new director from outside the institution had failed following unsuccessful negotiations with two candidates, and that the previous director had been reappointed. This experience “brought up a number of issues related to the structure of the interdisciplinary programs on campus,” particularly the lack of independent funding and the complexities of directing a program that spans four colleges. The program expressed the view that “the candidates identified by the search committee saw the limitations of the current structure, and that this played an important role in their decision not to accept our offer.” The team’s recommendations related to increasing the program’s influence over departmental hiring decisions were endorsed. The program also reported on several curricular improvements consistent with suggestions made by the team.