

## Veterinary and Animal Sciences

A department in the College of Natural Sciences offering the A.S. in Equine Industries, the B.S. in Animal Science, the B.S. in Pre-Veterinary, and the M.S. and Ph.D. in Animal Biotechnology and Biomedical Sciences.

### ■ The Review Process

This was a standard AQAD review. Reviewers were:

Avery August, Cornell University  
Harvey Florman, University of Massachusetts Medical School  
Deborah Kochevar, Tufts University  
Joy Pate, Pennsylvania State University

### ■ Main Issues

The team identified strengths in research and teaching across the department and was particularly impressed with the sense that, as expressed by one faculty member, “everyone is building toward a common ground.” Departmental leadership was praised, with the team noting that the department “demanded collegiality” and “set a tone of professionalism and respect.” The team also found that “the department maintains outstanding research productivity that yields consistently high rankings among peer departments.”

The team’s findings and recommendations focused on facilities, the undergraduate program, the graduate program, and research:

#### **Facilities:**

Facilities strengths included the “well-configured laboratories” in the new Integrated Sciences Building and “hands-on student learning experiences” at the Hadley Farm. While the ISB labs were found to be effective and conducive to collaboration, the team noted that there is little room for growth, and recommended consideration of expansion of Vet and Animal Science into the new Laboratory Science Building. In terms of farm facilities, the team concurred with the decision to close the dairy and focus on small ruminants and horses, but noted that the animals should be better used for research purposes. The team also noted that the Hadley Farm, while “picturesque,” requires some attention to maintenance.

#### **Undergraduate programs:**

The faculty were found to be “highly regarded” for the quality of student advising, and “should be commended for their support of the undergraduate program.” The team reported that students expressed strong interest in better integrating the Animal Science and Pre-Vet tracks, and that “suggestions of separating the animal science based groups from the department were not supported by the students or faculty.” The team concurred with this view, and called for greater efforts to integrate the two groups, including a freshman integrative seminar.

The team recommended that the development of a Veterinary Technology program now under consideration be continued, and that strong consideration be given to a laboratory animal medicine track within that program. The team felt that such a move “would leverage the research strength of the department, as well as go toward satisfying demand in this area in the pharmaceutical and biotechnology industry in Massachusetts.” In terms of the existing undergraduate curriculum, the team urged reorganization of the introductory courses, better integration and reduced redundancy of courses within CNS, and greater access for VAS students to courses in other colleges, especially management.

### **Graduate Program:**

The team noted a high level of student satisfaction and the commitment of faculty to student advising. They also made note of the “robust” applicant pool, and the department’s “holistic” evaluation of non-traditional students for admission. The diversity of graduate program emphases (and faculty research foci) was cited as a strength, but also as a situation requiring greater opportunities for “cross-talk” among students. In this regard, the team encouraged steps identified by the department to “mitigate fragmentation,” including the Animal Biotechnology/Biomedical Sciences seminar series, first-year journal club, and common research ethics course.

The team observed that the number of graduate students in the department had fallen by roughly 20% since the last AQAD review in 2004, but found that applications had remained strong and that “the drop in student numbers may not necessarily indicate a decline in the vitality” of the program. In fact, despite the drop, the team found the graduate program to be “thriving.”

### **Research:**

The department’s research program was found to be “highly competitive” nationally in terms of both quantity and quality of publications in high-impact journals and “sustained funding despite the competitive climate and national constraints for support of biomedical research.” The team found that “the department has garnered exceptional national and international recognition for its research. This is unusual for an Animal Science department, particularly one at a school this size.” Much of this success was attributed to the “productive and collaborative environment” for investigators. In the view of the team, “the challenge going forward will be to sustain and expand this productivity.” Toward this end, the team endorsed the department’s “well-conceived proposal” for refocusing, including selected faculty recruitment and development of a new research effort in animal models of disease.

One area of concern cited by the team was access to core research facilities, especially in the areas of animal handling facilities, bioinformatics, and confocal microscopy. The team also urged greater CVIP support in identifying projects with licensing potential.

## **■ Results of the Review**

Both the department and the Dean expressed general agreement with the findings of the review team, and indicated a number of steps planned to implement recommendations made by the team:

- Joint investment by the College and the MCB program to fund program grants in developmental biology.
- Strategies to improve infrastructure, including confocal microscopy and bioinformatics.
- Continued attention to animal care issues.
- Better integration of the undergraduate tracks, and exploration of a laboratory animal medicine track.

- Exploration of a business minor for VAS students.
- Better integration of graduate students.
- Development of research clusters that would give VAS faculty access to the new laboratory science building.
- A faculty hiring plan coordinated with the development of new courses.

## ■ Student Outcomes Assessment

The Department of Veterinary and Animal Sciences has established student learning outcomes for its undergraduate program, addressing the areas of scientific awareness, quantitative analytical skills, critical thinking, ethical thinking with problem solving, communication skills, and subject area knowledge in animal biology and food animal production/biotechnology. The department is still developing its strategy for assessing achievement of these outcomes.

The visiting team observed that “currently undergraduate teaching evaluation is heavily dependent upon student evaluations. Consideration should be given to inclusion of peer review as an additional formative measure of teaching excellence.”