Food Science

A department in the College of Natural Sciences offering the B.S., M.S., and Ph.D. in Food Science

The Review Process

This was a standard AQAD review.

Reviewers were:

P. Michael Davidson (University of Tennessee)
E. Allen Foegeding (North Carolina State University)
Liangli (Lucy) Yu (University of Maryland)

Main Issues

The Visiting Team praised the Department of Food Science's standing at or near the top in rankings for the field of food science, despite the relatively small faculty size. The Team also acknowledged that since their 2001-2002 AQAD review, the department had implemented numerous changes to address the concerns of that first review team.

The reviewers characterized the faculty as being strongly collegial, with the younger faculty members especially evincing a "contagious enthusiasm" and working within a positive departmental culture that provides informal mentoring and an "open lab" policy. The team expressed approval of the strategic hiring of young faculty that had been done, in covering both traditional and emerging areas within the field and thus "securing a bright future" for the department.

In the area of teaching, the reviewers praised the department's increases in enrollment, recruiting system, contributions to the university as a whole through service classes, and especially the high level of student satisfaction expressed by both undergraduates and graduate students. They surmised that the positive, collegial climate amongst faculty extends to the students' experiences. The team did identify the teaching assistant experience offered by the department as an area in need of greater attention, together with a shortage of TA support for undergraduate instruction.

The Visiting Team gave strong endorsement to the department's strategic areas of research and expressed encouragement for their continued growth. They noted that the emerging integration of three areas – Physical-Chemical Properties for Food Quality and Function, Food Safety, and Health and Wellness – around nanotechnology research would have positive effects on the department's competition for grant and industrial funding and on multidisciplinary training of students at both the undergraduate and graduate levels. The team also acknowledged that the department has forged numerous collaborative relationships with other UMass departments as well as on the national and international levels; has developed a strong track record for obtaining external research grants; and is "extraordinary" in its overall research productivity.

The team observed that the department has several productive areas of outreach, with an active alumni board that has contributed to fundraising, membership with Strategic Research Alliance with attendant benefits for faculty and students alike, and workshops and symposia. It was noted by the team that the department's plans to hire an Extension Food Safety faculty member, the first in many years, was unclear in that "there seems to be some question as to what this position will do."

The team noted that the department is strong in the areas of research instrumentation and other equipment for all program areas, but that the facilities "are the weakest element of the Department," with many needs: renovation for labs; inadequate laboratory space for the growing research program; office space for new faculty, students and professional staff; a food processing pilot plant; and common areas, wireless access and computer laboratory space for students.

The Visiting Team concurred with the department's stated goals for the next year as well as the next five years. They also offered following suggestions:

- Increase undergraduate advising capacity if enrollment increases beyond the current numbers.
- Conduct a comprehensive curriculum review to identify overlaps, gaps, and key learning objectives.
- Establish a clear teaching assistant policy for M.S. and Ph.D. programs and consider making classroom teaching experience a requirement for doctoral students.
- Concentrate future faculty hiring in either Health and Wellness or Physical and Chemical Properties.

Results of the Review

The department expressed its agreement with the Visiting Team's recommendations, and reported the following:

Space. The department is continuing to work with the University on the issue, but desires a long term comprehensive plan for Chenoweth, which cannot sustain the research of both Food Science and Nutrition. The department advocated moving Nutrition out of Chenoweth into its own renovated space, enabling incorporation and renovation of a greater portion of Chenoweth space by Food Science.

Teaching assistants. To alleviate the shortage of TAs, the department is attempting to expand the one year terminal M.S. degree and develop a five year B.S./M.S. program. However, the department remains unclear about what they could expect to receive financially from such a program.

Maintenance of faculty lines. The department acknowledged that the Provost has agreed to replace retiring faculty, but the department would also like to expand the faculty to be more in line with competing universities. The department is exploring different ways of taking advantage of the Provost's Endowed Chair Program, working with their Advisory Board and industrial partners.

The Dean expressed his understanding that improved and enlarged research space would be the key for Food Science to expand its research program, commenting on the successful beginning of Phase I of the Foods for Health and Wellness Center, and noting that the department understands that its own proposal to utilize current Nutrition space is dependent upon the development of new space for Nutrition. The Dean noted that the department would see a distribution of revenues in the coming years that would accurately reflect the establishment of new programs such as their 5-year BS/MS program. Regarding faculty hiring, the Dean expressed his support in working with the department to take advantage of the Provost's matching plan for endowed professorships and chairs, at the same time noting that the department's multi-field makeup is already consonant with the University-wide plan to strengthen multidisciplinary research.

■ Outcomes Assessment

The Department of Food Science has an established set of student learning objectives for the undergraduate major. The department assesses student attainment of these objectives by gathering information from several sources: an in-house Junior Year Survey, group and individual exit interviews with graduating seniors, feedback from employers and feedback from the Departmental Advisory Board. As a direct assessment method, senior capstone projects in product development are evaluated by a team of three faculty members.