External Review of Animal and Food Science Graduate Program at Texas Tech University

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Executive Summary:

Prior to the visit I was supplied with the self study materials, the one component that was lacking was the syllabi of the graduate courses but this was supplied during the visit. During the on-site visit the review team met as a group and then met with the Department Chair, Dr. Leslie Thompson. After the initial meeting we were taken on a tour of the laboratory and farm facilities. We then met with a group of the faculty to discuss the graduate program in general, the Departmental Graduate Coordinator to discuss specifics on how graduate students are accepted and mentored, and finally with a group of graduate students to get their impressions of the department. On the following day we had an exit interview with Dr. Thompson and shared our initial impressions and made some initial suggestions.

Overall, this department is well known for its meat science and food safety research, faculty, and graduate students throughout both the Animal Science and Food Science communities. The other components of Animal Science (ruminant nutrition, reproductive physiology, equine science, and animal welfare) are considered solid. The laboratory facilities and equine center are large and impressive while the other farms are adequate but could be updated to match the quality of the labs and equine center. There is a good complement of graduate level courses offered within the department and new faculty members plan to add to the existing graduate course offerings.

Graduate Student Handbook: I complement the authors of the Graduate Student Handbook on the excellent job they did with this thorough document. One suggestion was to add a section on sexual harassment. Specifically, the review team suggested that a procedural description about reporting sexual harassment be included in the Graduate Student Handbook and included in the Graduate Student Orientation in response to one comment in the graduate student survey in the self study materials. Another suggestion would be to include a section on all the University required trainings for employment, teaching and research that a graduate student needs to take during their graduate career.

Program Overview and Vision (Excellent):

The Department of Animal and Food Science has clearly stated its vision and goals and a means of achieving these goals. The vision and goals is well thought out and encompasses what the Department is all about. They have also demonstrated that these goals are attainable and are showing progress towards reaching them. The Department knows that if it is to attract more graduate student numbers it needs to look at diversifying the disciplines of the new faculty it hires to both fill positions left by former faculty and make strategic hires aligned with new missions at the University and have clearly stated this. Another part of their plan is to add a PhD program in Food Science and seek Institute of Food Technologists (IFT) accreditation which will help their graduates in seeking positions in the food industry and allow graduate students access to large scholarships through IFT.
Curriculum and Programs of Study (Good):

The program of study and path (proposal presentation, candidacy exam, etc.) that the graduate students take towards graduation is common in Animal Science Departments. While the Graduate Program has a large number of classes, not all are taught every year which is the norm in most Animal and Food Science Departments; there are still some areas that could be addressed. When examining the graduate level courses offered, there are four production courses, five meat science/muscle biology courses, three reproductive physiology courses, four nutrition courses, one course in animal breeding, two courses in food chemistry, and three courses in food microbiology. Additionally there are courses that address scientific research, societal issues, and seminar. In discussions with the faculty it was also brought out that new faulty will be offering new courses in the graduate curriculum. For faculty research emphasis there are five in Food Science, five in Meat Science/Muscle Biology, three in Physiology, and three in Nutrition. The obvious hole in the Food Science curriculum is in Food Engineering since the sensory course is being taught by another department. This course will be important as the Department works to accreditation by the Institute of Food Technologists which considers the cornerstones of the Food Science to be Food Chemistry, Food Microbiology, Food Engineering, and Sensory. For Animal Science, unless the Department plans on hiring a faculty member in the area of breeding and genetics, I would recommend getting rid of that graduate level course and looking for that information to be taught by another department such as Plant Science. Also, the Department might consider adding a Non-ruminant Nutrition course to round out the Nutrition curriculum even though there is not a non-ruminant nutritionist on staff. I make this suggestion because there are numerous industry jobs in non-ruminant nutrition and not enough applicants trained in that specific area. The graduate students mentioned that they’d like more formal training in grant and manuscript writing so I am suggesting that one of the required seminars might be a professional development seminar focusing on those areas.

Faculty Productivity (Good)

The faculty in this department have brought in over $15 million in external funding and published 519 refereed articles and abstracts in the six years reported in the self study. That amounts to approximately $150,000/faculty member/year in funding and 5 refereed articles and abstracts which is on par with other Animal and Food Science Departments. In addition, the faculty have provided stipends for between 82 and 85% of the graduate students in the Department for the last three years. The faculty that I know personally have received numerous awards related to teaching and research efforts and provide service to the discipline’s professional society but the award and service records for the whole department was not given in the self study. For each year addressed in the self study document the faculty exceeded the average faculty workload for the University and until 2010 exceeded the average faculty workload for the College.

Quality and Quantity of Graduate Students and Graduates (Very Good):

The number of graduate students is very robust and there are more graduate students then are desks to house them indicating the Department’s desire to reach the goals set out by the University. The contributions of alumni in form of donations for scholarships and endowments is so impressive and the envy of most animal science and food science departments in the nation. In my personal experience, the loyalty of the students from this particular department has always been inspirational and something to strive for. The graduates have been placed in a good compliment of industry and academia.
The graduate students seem to be very happy with their decision to attend Texas Tech and told us that they made their decisions based on the variety and amount of research being conducted, the enthusiasm of the faculty, the use of new technologies, and to work with certain faculty. When we asked them what was the best part of their graduate experience they said the number of students to interact with, top of the line facilities, interaction between faculty and graduate students, and the family atmosphere within the Department. Areas for improvement included a devoted time for graduate students to meet aside from departmental seminar such as a revitalization of the Graduate Student Association, having more grant and manuscript writing included in the curriculum or possibly through a Professional Development Seminar series, more graduate level courses in food science and food engineering, more funding and uniformity of stipends, and more interaction with the industry as it now seems limited to specific research groups when industry representatives visit.

The entry level GRE scores reported in the self study are a little bit lower than most of the Animal and Food Science departments I am familiar with. In addition, a majority of the students in the Graduate Program are from Texas with a lot of those students being retained from the Undergraduate Program. Because of the current facility limitations on graduate student space the Department should consider being more selective with respect to GRE scores before they increase in number. Another consideration with the number of the graduate students is that while currently the majority of graduate students do receive stipends and scholarships the stipends are from grant sources and not “hard money” for teaching assistant lines; this may be another reason to increase the standards for admission. Also, since the Department has the “family” atmosphere that was applauded by the graduate students it may be more neutral if departmental awards and scholarships were reviewed by faculty members outside of the department.

Facilities and Resources (Very Good):

The laboratory and classroom facilities are excellent and would make faculty members at most institutions envious. The equine center is one of the most impressive in the nation. The other farms, while adequate for their purpose are not as updated in their appearance. The department has a good compliment of horses, swine and beef cattle for teaching and research purposes and is one of a shrinking number of universities to have sheep. It is lacking dairy cattle but that was a departmental decision made decades ago not to focus in that area of animal production. The main livestock industry in the Texas Panhandle is beef cattle so the needs of the region are being met by the Department. While there has been a recent influx of dairy cattle into the region the costs associated with having a University supported dairy may not justify meeting that segment of the livestock industry in the region. One other area of facilities that was lacking was office space for graduate students. Providing office space is part of making the graduate student feel integrated into the Department and there are approximately 80 graduate students and approximately 60 desks. If the graduate student population is to grow as described as a University goal this aspect needs to be considered.

It was discovered over the course of the review that the Departmental web site was not up to date with regard to the graduate level courses in Food Science. As we all know, in the current technological age we live in this is an important way to deliver information to current students as well as being an important recruiting tool. I would suggest getting the current courses on the web site and consider posting the graduate student handbook on the web site as well.

One resource that is missing is that of a statistician at the college level to teach courses and consult with faculty and graduate students. This position is imperative for the Department, College and University to
meet their goals of increased graduate student numbers and higher research stature as was described to the review team.