Report on Graduate Program Review
Department of Agricultural and Applied Economics
Texas Tech University
February 2008

The Department of Agricultural and Applied Economics at Texas Tech University is by all indications a highly effective academic unit. In addition to its graduate program, the department maintains a large and growing undergraduate program. Although the graduate program is relatively small, it also has grown during the past several years, and it seems to be doing an excellent job of training graduate students for employment as applied economists. The Ph.D. program, in particular, has a well-defined purpose of preparing “general applied economists” without intensive subject-matter specializations, which distinguishes the program from most other agricultural economics programs in the country. Separate interviews with the department chair, the faculty, and graduate students suggest that this purpose is well understood and accepted by all parties.

The faculty appears to be very productive, both in terms of conducting research and obtaining external funding. Research productivity, as evidenced by refereed articles, technical reports, presented papers, and other creative outputs, compares quite favorably with larger agricultural economics departments with more research FTEs. The pursuit of external funding is outstanding relative to other agricultural economics departments. Indeed, the existence of the graduate program depends on the faculty’s pursuit of external funding given that about 80 percent of the graduate research assistantships in the department are financed with funds from external sources. The level of direct support provided the department is low compared to most agricultural economics departments, which are located at land-grant universities and have access to funding from an agricultural experiment station and extension service. The department has been extremely effective in leveraging the state funds it receives and supporting a graduate program that compares favorably with those at land-grant universities.

Department Chair. The department chair was knowledgeable and enthusiastic about the department, its mission, and its programs. He stated that he leads by building consensus, views himself as working for the faculty, and sees his job as working to ensure that faculty members have the resources they need to do their jobs well. This management style appears to be effective and appropriate for the department. The chair was articulate about his vision for the department, and that vision seems to be shared by the faculty and graduate students, judging from comments made during the review committee’s meetings with those two groups.

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1 It should be noted that the level of external funding is typically much lower in agricultural economics departments than in other departments in colleges of agriculture and natural resources because the grants received by agricultural economists reflect the nature of economic research, which generally does not necessitate large investments in laboratory equipment, livestock, land, facilities, or other physical assets required in other research.
Faculty. The faculty appears to be extremely committed to the department's graduate program. Faculty members seem very open and responsive to graduate students and their needs, viewing students as working with them instead of for them. To prepare graduate students for professional employment, the faculty actively encourages them to present papers at professional meetings, participate in writing manuscripts for refereed journals, and assist in the preparation of grant proposals. Benchmarks for graduate student involvement in professional presentations and refereed articles are included in the department's strategic plan.

The faculty voiced considerable enthusiasm about the two most recent faculty hires. Undoubtedly, the existence of a Ph.D. program aids the department in the recruitment of highly qualified candidates for faculty positions because such individuals are likely to have a desire to teach and advise Ph.D. students.

Graduate Students. The eight graduate students with whom the review committee met expressed very positive feelings about the graduate program and their relationships with the faculty. The students characterized the faculty as having an open-door policy and individual faculty members as willing to help all students regardless of whether they are advisees. The students indicated that, although the faculty stresses student participation in research, it considers classes to be the top priority for students when there are conflicts with examinations and assignments.

The students appreciate the opportunities they are given to present papers at professional meetings and the travel support the department provides. They indicated they are provided occasional opportunities to participate in writing grant proposals and to teach classes as substitute or guest lecturers. Although they appreciate that all the department's courses are taught by faculty members, they believe it would be useful for Ph.D. students to have the opportunity to teach an entire course while still in graduate school.

Major concerns expressed by the students relate to the difficulty the department experiences in offering its Ph.D. courses on a regular and frequent basis and the absence of specializations in the Ph.D. program. The students indicated they wish the department offered more Ph.D. courses and suggested the faculty might consider developing special problems courses, seminar courses, or workshops on topics of interest to them, such as working with panel data. The students perceive the lack of specializations as a disadvantage to them in the employment market that is offset by their publication records.

The graduate students also expressed concern about the amount of faculty turnover the department has experienced recently and would like to be assured that the department's culture will be passed onto new faculty members. Although the students welcome a strengthening of the theoretical foundations for the graduate program, they believe the applied nature of the program is what distinguishes it from other agricultural economics programs, and they do not want that lost because of an influx of new faculty members with different interests.
The students indicated the faculty is good at both providing and anticipating the resources they need. One student, however, suggested that the department might consider providing additional software, such as MATHLAB, in the computer laboratory and wished the university library could provide access to more online journals. When asked about the department’s graduate student association, the students indicated that it was essentially inactive, an impression contrary to what is suggested by the program self-study document.

**Resources.** The department considers the amount of classroom and office space available to it as only marginally adequate, and the lack of additional space may be a limiting factor in terms of future growth of the graduate program. The current assignment of office space does not include an office for emeritus faculty, who can serve as an important resource both to graduate students and current faculty members. Although the review committee was not provided a tour of the physical facilities, it heard several comments regarding the inadequacy of the classrooms, offices, and restrooms. One faculty member suggested that the quality of the physical facilities signaled a lack of respect for the department and its programs.

Although the faculty has been very effective in leveraging the department’s operating funds through external funding, supporting graduate students in this manner can present challenges because of differences in the timing of grants and students’ programs of study. Faculty members indicated that they are usually able to devise creative strategies to bridge funding from grants but there have been instances when they were unable to fully take advantage of grant funding for students because of problems with timing. The availability of additional bridge funding from state-allocated operating funds could be useful in minimizing these problems.

**Issues and Recommendations**

Several issues of particular concern follow, along with any related recommendations.

1. **Sustainability of Ph.D. Program.**

   The department’s Ph.D. program is relatively small. It produced 11 Ph.D. graduates during the seven-year period beginning with the 2000–01 academic year. Of the nine graduates who accepted academic positions, five were placed in assistant professor positions at other universities, one is an assistant professor at Texas Tech, and three assumed post-doctoral positions (two of them at Texas Tech). Of the five assistant professor positions at other universities, two were at land-grant universities and described as extension positions. The other three positions were at two smaller institutions with limited graduate programs. None of the academic positions outside Texas Tech were in programs that offer Ph.D. degrees in agricultural economics or agribusiness.2

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2 Both North Dakota State University and the University of Tennessee, Knoxville, have M.S. programs in agricultural economics and/or agribusiness although neither has a Ph.D. program in those fields. Both have
The department's Ph.D. program seems to serve a niche market by supplying agricultural economists without specialized training to fill positions in industry, extension, and smaller programs that must rely on a few generally trained agricultural economists to meet a broad range of teaching needs and other responsibilities. It is unclear whether there is a demand for the department's Ph.D. graduates in larger research-oriented universities for which more specialized training is important.

The greatest problem associated with the Ph.D. program appears to be the department's inability to offer its Ph.D. courses on a regular and frequent basis because of insufficient enrollment. In a typical year during the six-year period starting with the 2000–01 academic year, only two of the five 6000-level courses required for the Ph.D. degree (AAEC 6302, AAEC 6305, AAEC 6308, AAEC 6310, and AAEC 6311) were available to students. On average, each of the five courses was offered 2.6 times, or 43 percent of the time. There were five instances during the period when particular courses were not offered for two consecutive years. This issue was raised by both the faculty and the graduate students during separate interviews with the review committee, and, understandably, it appears to be a source of some frustration for the students.

It is difficult to imagine that the department will not continue to struggle with this problem. There has been gradual growth in the number of students in the Ph.D. program in recent years. Indeed, the enrollment of 15 students reported for the 2005–06 academic year represents an approximate doubling in the size of the program since the 2000–01 academic year. One of the department's goals is to stabilize enrollment in the Ph.D. program at about 15 students. However, it is not clear that this target enrollment is sufficient for alleviating the problems associated with offering the 6000-level courses on a regular basis.

Further growth in enrollment may be constrained by several factors. These include: (1) a scarcity of qualified graduate students due to a continued strong job market for undergraduate students in agricultural economics and agribusiness, (2) limits on the ability of faculty members to indefinitely increase their support for additional graduate students through grants, (3) the availability of classroom and office space, and (4) the relative static demand for Ph.D. agricultural economists. ³

If the Ph.D. program were to be expanded substantially beyond its current size, continued placement of graduates could become a problem. Since the 2000–01

academic year, the department has placed 73 percent of its Ph.D. graduates in permanent positions (i.e., non-postdoctoral positions). With a continued static demand for Ph.D. agricultural economists, the capacity of smaller academic programs to absorb an increase in the department’s production of Ph.D. graduates is probably severely limited.

It is also unlikely that the department could improve this situation by beginning to produce Ph.D. graduates with fields of specialization. Increased specialization would probably necessitate additional courses without eliminating the need for those courses currently offered. In addition, such a strategy would place the department’s graduates in a different market in which they would be exposed to increased competition from larger, more established programs.

2. **Masters-Level Degree Programs.**

At the masters level, the department offers an M.S. degree in agricultural and applied economics, with both thesis and non-thesis options, and a Master of Agribusiness degree. The department also contributes to the Master of Agriculture program offered by CASNR, the MBA with an agribusiness concentration offered by the Rawls College of Business, and the joint M.S./J.D. offered by the School of Law. Placement data in the program self-study document suggest that only one student has graduated under the M.S./J.D. program since May 2000 although faculty members indicated there has been more recent involvement and interest.

The Master of Agribusiness degree was recently developed in part to strategically position the department’s graduate program to increase enrollment. Before implementation of the Master of Agribusiness degree, students interested in agribusiness already had two degree options at the masters level, the M.S. in agricultural and applied economics with an agribusiness and trade option and the MBA with an agribusiness concentration. The addition of a third agribusiness option could raise questions about the necessity of the Master of Agribusiness degree and how it differs from the M.S. and MBA degrees.

Using the M.S. degree, a student could construct a degree program very similar to the Master of Agribusiness degree as long as the student is willing to take ECO 5311 and ECO 5312, which are the only economics courses permitted as AAEC and/or ECO electives under the MAB program. AAEC 5312 and AAEC 5318, which are required under the MAB program, could be taken as AAEC electives under the M.S. program. The only remaining differences, aside from the internship requirement, are that six hours of general electives under the MAB program would be AAEC electives under the M.S. program and the general electives under the MAB program must be from outside AAEC and from at least three disciplines.
Although the Master of Agribusiness degree provides students additional flexibility and a more diverse education (by substituting general electives in at least three disciplines for AAEC electives), the similarities between the MAB and M.S. degrees suggest that some of the impetus behind the MAB degree must come from the expected advantages of being able to promote the degree by differentiating it from the traditional M.S. degree. The MAB also appears to represent an emphasis on "practical business knowledge" at the expense of economic analysis in the M.S. program (as represented by AAEC 5321, ECO 5311, ECO 53112, and the thesis option) or business knowledge in the MBA program (as represented by 36 hours of requirements and 12 hours of electives).

The department believes that the Master of Agribusiness program will make a significant contribution to students and it represents the best strategy for increasing graduate enrollment. Although current enrollment in the program is small, the department anticipates that from 12 to 15 students will be enrolled in the program within the next three years. A recent report of the National Food and Agribusiness Management Education Commission concludes that there is a continuing need for masters-level agribusiness graduates, particularly those with analytical skills.4

The report also describes a bifurcated market for graduate agribusiness programs, consisting of employees of agribusiness firms, who will prefer part-time executive programs, and recent college graduates, who will continue directly into traditional residential programs. The report suggests that most faculty members will be unable to teach effectively in both types of programs given the difference in missions and faculty members who teach in executive programs will need to be actively engaged in industry to be able to understand the needs of those students.5 The Master of Agribusiness program appears to have its roots in the traditional residential type of program. As the MAB program evolves and grows, it will be advantageous for the department to have a clear concept of the program's purpose and mission.

3. **Diversity Issues.**

The department appears to lag behind both the college and university in terms of the diversity of its undergraduates. The percentage of the department’s undergraduate students who are American Indian, Asian, black, or Hispanic is about half that of CASNR (3.4 percent compared to 7.2 percent).6 There is even

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6 Computed from Fall 2006 data for the department on p. 52 of the program self-study document and data for CASNR from the Fact Book, Total Enrollment—Fall 2006, from Institutional Research and Information Management (http://www.irim.ttu.edu/NEWFACTBOOK/2006/Enrollment/NEWINDEX.htm).
more disparity with respect to gender. The proportion of female undergraduate students in the department is 14 percent, compared to 39 percent for the rest of CASNR. Recent data indicate that nationally about 35 percent of undergraduate students in agricultural economics programs are female. The absence of female faculty members in the department is striking. Indeed, the absence of females on the faculty was an issue raised by one of the graduate students with whom the review committee met. In addition to addressing a fundamental equity issue, hiring female faculty members would provide important role models for both undergraduate and graduate students and help the department in recruiting students, especially female students.

Recruiting female faculty members can be difficult, especially when there is not an existing cohort to provide a support network for potential newcomers. The review committee understands that only a few female candidates have applied for recent faculty openings. It seems the department must make a concerted effort to use its contacts at other universities to identify potential applicants and actively encourage them to apply for future openings. The department also should redouble its efforts to recruit both female and minority students consistent with its strategic plan.

4. Distance Education Programs.

Online distance education is an important area for future growth in higher education, and the department is encouraged to expand its activities in this area. There appear to be several obstacles to further development of online courses by the department, including the fact that the faculty is already fully committed to other activities, limited resources, and the absence of an incentive system to reward faculty members for incurring the substantial start-up costs associated with developing online courses and teaching them for the first time.

The department’s strategic plan mentions development of a distance-based Master of Agribusiness degree program, and the review committee understands that some progress has been made in developing three courses required for the degree so they can be delivered online. The MAB degree would seem to be a good choice for focusing the department’s current efforts in online education because it is a

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7 Both values are computed from Institutional Research and Information Management data. The CASNR value is exclusive of the department.

8 Based on baccalaureate degrees awarded in 2003–04 by agribusiness management, agricultural economics, and natural resource management and policy programs, according to Perry, op. cit.

9 “The Strategic Case for Online Learning: Access, Engagement and Success,” live webcast, Feb. 27, 2008, produced by the American Distance Education Consortium (ADEC) in cooperation with the National Association of State Universities and Land Grant Colleges (NACLGC) and the Sloan Consortium (Sloan-C) at http://www.nasulgc.org/NetCommunity/Page.aspx?pid=871#srcid=870.
relatively new program with a well-defined focus, it is a non-thesis degree based on coursework, and online delivery could help enrollment, which is a primary objective for the program.

It is unlikely that the MAB program will be able to achieve the same level of online enrollment as other programs that are available in their entirety. The National Food and Agribusiness Management Education Commission concludes that, "Many opportunities exist for distance programs in food and agribusiness management. However, given the niche market for agribusiness management programming, especially at the M.S. and Ph.D. levels, the profession does not need many such programs." Its report suggests alternatives, including the creation of "virtual programs," by which courses taught at several universities can be combined, and credit-sharing, by which a program accepts for credit courses taught at other universities. The department may want to explore these types of arrangements in an effort to increase the viability of its distance-based MAB program.

More generally, given current obstacles to the development of online classes, individual faculty members are encouraged to use available course management systems such as WebCT or Blackboard in ways that can help them teach or manage their face-to-face courses. In this way, the department can increase the level of skills necessary for the development of online classes and some courses can be developed for online delivery gradually over time.

5. Flow of Undergraduate Students into the Graduate Program.

The graduate students with whom the review committee met did not believe the department did a consistent job of recruiting promising undergraduate students into the graduate program. It seems that although some faculty members actively work to identify and recruit students for the graduate program, more could be done. Students who had earned baccalaureate degrees in the department also indicated they had experienced some difficulty transitioning into the graduate program. In particular, they did not have a clear idea of what would be expected of them in their graduate courses, and they did not think the first-year calculus course they had taken prepared them very well for the mathematical methods they have encountered in the graduate program (as is common in economics-based graduate programs).

10 For example, the entire MBA program at the University of Nebraska–Lincoln, including an agribusiness specialization, is available online. See http://mba.unl.edu/distance/index.aspx.

11 Boland and Akridge, op. cit., p. 62.

12 WebCT has been acquired by Blackboard and is currently being phased out according to http://en.wikipedia.org/wiki/Web_ct.
The department might benefit from adopting a more intentional approach to identifying undergraduate students for recruitment into the graduate program. One idea used by the Department of Agricultural Economics at the University of Nebraska is an annual dinner for the faculty and undergraduate students who might have an interest in the graduate program. Undergraduate advisors and instructors identify junior and senior students who may be interested in attending the dinner, which is used for networking between the students and faculty and followed by presentations for familiarizing the students with opportunities available in the program and providing information about the curriculum, entrance requirements, and application process. Recently, the department also implemented a program under which academically successful undergraduate students can earn both a baccalaureate and masters degree in five years.\(^\text{13}\)

The Texas Tech graduate students with whom the review committee met responded positively to the suggestion that the department offer a course on the fundamentals of mathematical economics for undergraduates to track students who might enter graduate school and help prepare them for graduate work. However, it is unclear how the material covered in such a course would differ from that covered during the first six weeks in AAEC 4312 (Applied Optimization Methods). Perhaps all that is necessary is for potential graduate students to be advised into AAEC 4312.

6. **Relationships with Other Departments.**

There is evidence of strong working relationships with other CASNR departments, the agricultural experiment station, and the extension service. However, close relationships do not appear to extend to the Department of Economics and Geography or the College of Business, at least to the same degree, despite curricular interconnections and the potential benefits from such relationships. In the case of the Department of Economics, a strong working relationship has not emerged although the two departments once sponsored a joint seminar series. In the case of the College of Business, a strong working relationship appears to exist but is limited primarily to a single AAEC faculty member who serves as the coordinator of the agribusiness program.

The department is encouraged to actively pursue stronger relationships with both the Department of Economics and the College of Business. Closer relationships with these two groups could be expected to create obvious synergies and improved coordination in areas of mutual interest. In particular, a closer relationship with the Department of Economics could benefit graduate students in both departments by facilitating the development of seminars or workshops that would provide them additional skills in areas of common interest, such as certain topics in the field of econometrics. A closer relationship with the College and Business could be used to increase ownership in the Master of Agribusiness and

\(^\text{13}\) See Master Scholars Program at [http://www.agecon.unl.edu/Undergraduates/masterscholar.html](http://www.agecon.unl.edu/Undergraduates/masterscholar.html).
the MBA with an agribusiness concentration, resulting in increased promotion and recruitment for both programs. It would also help ensure that prospective students are advised into the program that is best for them independent of competition for increased enrollment.

These observations and recommendations are offered only with constructive intent. My impression is that the faculty is dedicated to excellence in all aspects of the department's programs and has taken an especially thoughtful approach to charting the department's course. Consequently, it is quite possible that the faculty has already anticipated most, if not all, of the issues and concerns I have addressed. Certainly, there are 15 individuals in the department who, through their experience, know collectively much more than a review committee can learn in less than a day and a half. My only hope is that I can provide an additional perspective as someone from outside the department who has faced similar problems but benefited from a different set of experiences.

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