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Academic Perspectives on Agribusiness: An International Survey

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Abstract

Through an international survey of agricultural economists, we shed new light on perceptions about agribusiness education, research, grantsmanship, and outreach. Results indicate that departments expect agribusiness faculty to teach more courses, yet maintain research expectations for agribusiness faculty similar to those of their non-agribusiness peers. As a result, agribusiness faculty have lowered their engagement in agribusiness extension programs. Moreover, evidence suggests an increasing trend in the amount of grant dollars obtained and the number of refereed publications reported at the time of tenure evaluation, while the number of non-refereed publications has declined. Finally, results indicate that specialized journals, such as the *IFAMR*, have improved their importance as outlets for agribusiness research.

Key Words: promotion and tenure, agribusiness, teaching, grantsmanship, research

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Introduction

Nature Publishing Group undertook a survey of higher education faculty and discussed "... a troubling reality: although scientists personally value education as much as research, they frequently align their decision making, both for themselves and on behalf of their departments, with the needs of research rather than those of education" (Savkar and Lokere 2010). In a recent interview, Gordon Gee, president of The Ohio State University, the largest public university in the U.S, noted, "The universities of the 21st century are going to be the smokestacks of the century," and "The notion of the large, massive public university that can exist in isolated splendor is dead" (Welsh-Huggins 2010). He further notes that the evaluation of professors, particularly as it relates to tenure, must change if universities are to meet the educational needs of society. This changing landscape of academia, coupled with reductions in federal funding, shifts in student credit hours from agricultural economics to agribusiness, and the need for closer ties to industry, are all likely to exert an impact on the role of agribusiness faculty in agricultural economics programs.

Many agricultural economics undergraduate programs, as a whole, have realized a loss of enrollment over time (Perry 2010). "Much of the loss in agricultural economics, however; is simply a shift of these students to degrees in agribusiness" (Perry 2010). This shift to agribusiness is interesting, given the lack of consensus within the field concerning what agribusiness specifically entails (Harling 1995). The earliest and most often accepted definition of agribusiness can be found in Davis and Goldberg (1957) (King et al. 2010). While their definition reflects that agribusiness has its foundation in agricultural economics, much has changed since this definition was introduced more than a half a century ago. In particular, agribusiness has grown so that it now encompasses the domain of management sciences. King et al. (2010) conclude that agribusiness scholarship emphasizes an integrated view of the food system that extends from input supply through production, processing, and distribution to retail outlets and the consumer. Thus faculty, who identify themselves as agribusiness faculty, likely conduct scholarship activities in one or more of the subspecializations of agribusiness (agribusiness management, agricultural chemicals, agricultural finance, biotechnology and bioenergy, food marketing, food safety, labor and human capital, nutrition, and supply chain management). While these areas all fall under the general umbrella of agribusiness, they are each unique areas of scholarship.

In this paper, we explore the perceived importance of these issues, in an effort to gain further insight into what is expected of agribusiness faculty members within agricultural economics departments. To do this we first analyze the time agribusiness professors allocate to teaching, research, extension, grantsmanship, and service relative to non-agribusiness professors. Second, we examine how agribusiness faculty perceive certain factors' influence on the promotion and tenure decision in comparison to faculty in other specialty areas within agricultural economics and where agribusiness faculty publish their work. We then turn our attention to understanding how non-agribusiness faculty members evaluate issues related to agribusiness relative to agribusiness faculty. Next, we examine the portfolio of agribusiness professors at various stages of their careers when they were promoted to associate professor with tenure. Finally, based on these results, we draw conclusions and suggest implications for agribusiness

programs and faculty, as well as provide insight into what non-tenured faculty members must do to pass successfully through the promotion and tenure process.

Goals and Objectives

The objective of this paper was to gauge the perspective of the agricultural economics profession about agribusiness as an academic subdiscipline. An international and comprehensive survey queried academics about their perceptions of agribusiness, with the following topics taken under consideration:

- the role of agribusiness education, research, and outreach
- availability of funding and time for conducting quality research in the field of agribusiness
- the perceived balance and relative importance of teaching, research, and outreach in the tenure decision

We solicited the opinions of all agricultural economic subdisciplines and appointment types in understanding the various institutional and departmental demands being placed on agricultural economists. The overriding goal of this research is to improve transparency within the profession related to the demands placed on agricultural economics faculty for tenure and promotion, as well as the impact of growing undergraduate agribusiness programs on departments and faculty across agricultural economics disciplines. We have five primary goals in conducting this research:

1. to examine whether the types of work conducted by faculty varies by primary specialty area;
2. to determine what faculty members perceive to be the most important factors and activities influencing promotion and tenure decisions;
3. to examine where faculty with agribusiness primary specialty areas publish their work;
4. to assess the perceived differences between faculty with a primary specialty in agribusiness and faculty with non-agribusiness specialty areas on teaching, research, and grantsmanship; and,
5. to determine benchmark output levels for assistant professors seeking promotion and tenure.

To address the aforementioned objectives, we choose questions (Appendix A) from the survey that explores current demands being placed upon faculty members in agricultural economics and agribusiness programs across the globe.¹ Moreover, they allow us to examine differences of faculty members with primary specializations in agribusiness relative to faculty members with non-agribusiness primary specialization areas.

¹ Appendix A contains a detailed listing of the survey questions and their potential response, analyzed in this paper.

Literature

The Growth in Agribusiness Programs

Across the agribusiness literature, one conclusion stands firm: agribusiness programs are growing in enrollment and thus, in importance to traditional agricultural economics departments (Dooley and Fulton 1999; Woolverton and Downey 1999; Heiman et al. 2002; Boland and Akridge 2004; Connor 2005). According to the brief history of agribusiness provided by Heiman et al. (2002), Agricultural Economics' beginnings as a legitimate field were founded primarily in the traditions of farm management and land economics. During the late 1960s and early 1970s, environmental and resource economics took hold as public interest in food and water safety increased. In response to declining student populations in traditional farm management based programs, many agricultural economics programs incorporated resource economics programs into their curriculum (Heiman et al. 2002). Interest in agribusiness as a discipline within agricultural economics emerged shortly thereafter, due to the increasing size and importance of food processors and agricultural inputs manufacturers, and the emergence of new fields of research with biotechnology and precision farming (Heiman et al. 2002).

The 1989 National Agribusiness Education Commission (NAEC) Report highlighted the need for properly trained leaders to navigate and manage the growing and ever-changing agribusiness industry. Within their report, the NAEC made six primary recommendations to meet this need through agribusiness education, which included incorporating agribusiness MBA programs into agricultural economics departments, expanding post university agribusiness education, building agribusiness Ph.D. programs, increasing agribusiness research, and reallocating institutional resources to further the development of agribusiness programs. Ten years after the report was released, Woolverton and Downey (1999) surveyed individuals who had served on the commission, as well as members of the WCC-72 committee, related to the success of meeting the proposed courses of action. From this assessment, they reported that for most of the proposals, the progress made was low to moderately satisfactory over the ten-year period. Of particular note, although student enrollment in undergraduate and M.S. programs had greatly increased, the reallocation of resources to the development of agribusiness programs was not proportionate to the growth in students experienced across departments. For example, one respondent in their study indicated that there were 10 times more Agribusiness students compared to traditional agricultural economics students in their department; however, the number of agricultural economics faculty was three times larger than the agribusiness faculty. Furthermore, although the majority of respondents felt, satisfactory progress had been made to increase agribusiness research efforts; there was approximately one-third who believed sufficient resources were not being dedicated to the cause.

In its 2006 report, the National Food and Agribusiness Management Education Commission suggested that agribusiness curricula be reviewed, industry ties be strengthened, and graduate programs be improved among six recommendations (Boland and Akridge 2006). Consequently, this shift in the focus of agribusiness teaching, combined with the need for tighter industry alignment will influence the future direction and definition of agribusiness research. Ng and Siebert thoroughly outlined the challenges of conducting research in the field of agribusiness (2009). One of the foremost challenges they noted for academics in agribusiness is the lack of agreement related to what exactly agribusiness research encompasses.

Agribusiness Faculty: What Do They Do?

Harling (1995) noted that a majority of agricultural economists saw agribusiness as a subdiscipline. Furthermore, the responsibilities of faculty within the agribusiness specialization appear to differ markedly from those of their peers within agricultural economics. In exploring academics' use of time, Harling discovered that for academics in agricultural economics, on average, the teaching/ research/extension split, was divided 30%/36%/21%, respectively, with the remaining 11% of time being spent in administrative or other responsibilities. Conversely, those who identified themselves as specializing in agribusiness indicated that, on average, they devoted 36% of their time to teaching, 19% to research, 31% to outreach, and 13% to administrative and other responsibilities (Harling 1995). From this research, it appears that academics specializing in agribusiness spend a disproportionate amount of time on teaching and outreach when compared to peers in other specializations within agricultural economics departments.

Such differences in responsibilities between agribusiness faculty and other agricultural economics faculty should be of concern given that the majority of agribusiness specialists are still tenured in agricultural economics departments of some kind. Dooley and Fulton (1999) further discussed the state and role of agribusiness within agricultural economics programs. They indicated that despite the importance of agribusiness education, since agribusiness faculty commonly have split appointments, there have been impacts on research and extension in agribusiness as well. Their survey of 39 department heads in agricultural economics revealed that when agribusiness programs were offered within departments, agribusiness students made up approximately 69% of the student population. At the time the survey was administered, the majority of department heads believed that this would increase over the following five years. Dooley and Fulton concluded that at the time of their study, agribusiness was the leading degree in the majority of programs surveyed. Their findings related to the growth and importance of agribusiness was supported by Heiman et al. (2002) and Connor (2005).

With such growth in undergraduates pursuing degrees in agribusiness, one would assume that the number of agribusiness faculty would also be increasing. Heiman et al. (2002) note that, "One of the challenges facing the agricultural economics profession is to adjust its research and personnel to changes in the demand for its product." To analyze the situation within departments, Dooley and Fulton (1999) explored the distribution of faculty full time equivalent (FTE's). On average, the department heads reported that less than one third of teaching FTE's were allocated to agribusiness. They found that the overall distribution within agricultural economics departments allocated 36.4% to teaching, 39% to research and 24.6% to extension and outreach. They determined that these averages were quite different when the appointments of agribusiness faculty were assessed. The distribution for agribusiness faculty allocated nearly half to teaching, less than one-third to research, and less than 20% to extension and outreach activities. Heiman et al. (2002) likewise explored faculty trends, but from a new hire perspective. They reported that for assistant professor positions posted during spring 2001, approximately 40% were advertised in agribusiness, with another 23.5% advertised in a management related field with an emphasis in agribusiness. They also indicated that during 2001, approximately 70% of new teaching positions carried an emphasis in agribusiness.

Studies in this area have cited that it is often more difficult for agribusiness faculty to seek competitive research grants than more traditional agricultural economics faculty (Dooley and Fulton 1999; Woolverton and Downey 1999; Heiman et al. 2002). Despite the disadvantage in obtaining public funding, Heiman et al. (2002) reported that 50% of recent articles published in *American Journal of Agricultural Economics (AJAE)* were devoted to either agribusiness and/or resource economic issues, indicating a shift in importance of manuscripts targeting issues facing agribusiness. Woolverton and Downey (1999) indicated that it might be difficult for agribusiness faculty to obtain funding for research and/or dedicate time to research, even if they have funding, due to the nature of agribusiness teaching appointments. Dooley and Fulton (1999) found some agreement among department heads related to the difficulties faced by agribusiness faculty when attempting to publish in traditional agricultural economics journals. However, responses likewise suggested that agribusiness faculty were finding publication outlets outside the realm of traditional agricultural economics journals. Thus, there was no perceived problem with publishing in general for agribusiness faculty.

Although no general problem with publishing exists for agribusiness research, some notable differences in impact exist between traditional and less traditional agricultural economics journals. For example, many agribusiness outlets are not included in citation reports. Information from the Journal Citation Reports Social Science Edition (2009) indicates traditional outlets such as the *AJAE* and the *Applied Economic Perspectives and Policy (AEPP)* currently have impact factors of 1.047 and .523, respectively (Table 1). Agribusiness journals, such as the *International Food and Agribusiness Management Review (IFAMR)* and *Journal of Agribusiness (JOA)* are not included in citation reports; thus, no impact factor is reported. In order for departments to assess comparability of less traditional outlets, they must review databases such as *Cabell's Journal Directories* or rely on journal reports from the respective journals' editorial boards to determine the impact of publishing in such journals on the profession.

Both Woolverton and Downey (1999) and Dooley and Fulton (1999) question whether agribusiness faculty are evaluated for tenure differently from their counterparts due to the heavier teaching loads. Woolverton and Downey (1999) suggest that due to the teaching load for agribusiness faculty, it may be difficult to meet the established criteria for promotion and tenure in traditional agricultural economics departments. They draw questions related to how agribusiness faculty members are evaluated for tenure and promotion relative to their peers. Connor (2005) likewise addressed this problem, and concluded that departments will likely have to face imbalances in teaching and research responsibilities, which may lead to difficulties for young faculty in obtaining tenure and promotion.

Table 1. 2009 Impact Factors for Agricultural Economics Journals and Other Journals Included in this Study (Thomson Reuters 2009).

Journal	Impact Factor	5 Year Impact Factor
Agricultural Economics	0.673	0.983
American Journal of Agricultural Economics	1.047	1.642
Applied Economic Perspectives and Policy (formerly Review of Agricultural Economics)	0.523	0.975
Australian Journal of Agricultural and Resource Economics	1.055	1.244
Canadian Journal of Agricultural Economics	0.552	0.787
European Review of Agricultural Economics	0.86	1.885
Food Policy	1.606	2.044
Journal of Agricultural and Resource Economics	0.474	0.827
Journal of Agricultural Economics	1.155	1.493
Journal of Soil and Water Conservation	1.033	1.386
Management Science	2.227	4.125
Marine Resource Economics	0.492	-
Review of Environmental Economics and Policy	3.645	3.645
Water Resources Management	2.013	2.218

Although much less prevalent, discussion regarding the relationship between agribusiness and extension/outreach was explored by Dooley and Fulton (1999). They measured department heads' perceptions of agribusiness extension activities via three questions. Findings indicate that department heads perceived agribusiness extension and outreach programs to be less likely to move research results to their constituent base than other areas. They also did not perceive extension activities in agribusiness to be more successful in determining suitable research topics than their counterparts. Furthermore, the department heads were neutral in their opinion of the success of agribusiness extension programs in building contacts for undergraduate recruitment. Overall, Dooley and Fulton concluded that Department Heads were not convinced agribusiness faculty made solid contributions to extension and outreach within their respective departments. Perry (2010) notes that while agricultural experiment station funding has increased the share of the pie for economists continue to decrease. Although these dollars are not broken down to a level that makes it possible to identify the share for agribusiness research, it does indicate that grantsmanship are likely to increase in importance for agribusiness faculty if they are going to have funding for their teaching, research, service, and extension programs.

Researchers agree that over time, the majority of agricultural economics departments have seen a shift in undergraduate enrollment from majors in traditional agricultural economics to agribusiness. With this shift in the environment, agribusiness faculty have undoubtedly faced unbalanced splits in their teaching, research, and extension loads. The current teaching, research, and extension portfolios of agribusiness and other agricultural economics faculty inform how resources should be allocated and performance evaluated. If a disconnect remains among assignments, resources and evaluation, the transition continues to lag.

The Omission of Agribusiness in Studies on Salaries and Departmental Rankings

Few researchers in agricultural economics have explored incentives, other than tenure and promotion, which are important to faculty (Simpson and Steele 1985; Beilock and Polopolus 1988; Kinnucan and Traxler 1994; Hilmer and Hilmer 2005). The interesting phenomenon across these articles is that they focus entirely on peer-reviewed research output and fail to consider teaching or extension in their discussion. Although not all relevant variables can be included in such analyses, one might still question the omission of teaching and extension outputs in such research.

When considering individual salaries of faculty members, research indicates that the primary incentive is to publish alone in high quality journals (Hilmer and Hilmer 2005). This might seem daunting for agribusiness faculty since many journals with a primarily agribusiness focus are not considered “high quality” journals by their peers. When considering departmental rankings, the focus has clearly been on journal article production, specifically articles published in the *AJAE* (Beilock and Polopolus 1988; Kinnucan and Traxler 1994). To date, no research has been undertaken to update these lists to include agribusiness journals and other sub-discipline journals as important and appropriate research outlets.

Methodology

Prior to survey distribution, the survey instrument was pretested in the Louisiana State University Agricultural Center’s Department of Agricultural Economics and Agribusiness, the Food and Resource Economics Department at the University of Florida, and the Department of Agricultural Economics at Purdue University. Faculty who pretested the survey represented primary specializations in both agribusiness and non-agribusiness areas.

A copy of the survey instrument, along with a rationale related to why the survey was needed and its potential for influencing the profession was sent to the Agricultural and Applied Economics Association (AAEA) Board of Directors. Upon their approval, the survey was distributed to the AAEA membership list via email. In addition to the AAEA, the International Food and Agribusiness Management Association (IFAMA) Board of Directors also approved the survey to be electronically distributed to its membership list. The total AAEA and IFAMA membership population was 2,047 individuals. These represented only the members holding an academic position in an agricultural economics and/or agribusiness department and who were registered members of the AAEA and/or the IFAMA in 2010.

The first e-mail sent out by both the AAEA and IFAMA offices to the aforementioned individuals on their 2010 membership roster informed them that that they would be getting a survey, along a description of the survey, and contact information for the investigators. The next e-mail sent out by both the AAEA and IFAMA offices contained a hyperlink to the survey, a short letter that described the purpose of the survey, and contact information for the investigators. The survey was administered through Zoomerang, an Internet-based survey site. Approximately two weeks later, both of the aforementioned offices sent a reminder e-mail. Again, this e-mail contained a hyperlink to the survey, a short letter that described the purpose of the survey, and contact information for the investigators (Dillman 2000).

The survey was received by faculty who have appointments in Land Grant, American Association of State Colleges of Agriculture and Renewable Resources (AASCAR), and regional universities in the US, as well as by faculty outside the US involved in programs of agribusiness and/or agricultural economics. The survey contained questions that focused on the role of agribusiness education, research, and outreach, specifically with the perceived importance of the activities to the promotion and tenure process.

Moreover, we wanted to be able to test for differences across academic rank and specialization type. To do this we queried the respondents on their current rank. In addition, we utilized the AAEA's specialization database to allow academics to classify themselves according to one primary area of specialization and any number of secondary specializations.

To test for differences related to responses across primary specialization type, we first conducted a statistical analysis to determine whether the responses were normally distributed. Since many statistical analyses rely on the assumption of normality for comparing two data series, if the normality assumption is violated the interpretation of the results may not be valid and/or reliable. We use the *Shapiro-Wilks* and *Anderson-Darling* tests to test for normality. The null hypothesis (H_o) for both tests is that the data are normally distributed. These two tests were conducted on all sample responses for each question, by primary specialization area (agribusiness versus non-agribusiness). For all samples and for both tests, the computed p-value is less than the significance level ($\alpha=0.05$); thus, we reject the null hypothesis H_o , and fail to reject the alternative hypothesis H_a (the sample does not follow a normal distribution). Since the samples are not normally distributed, we conduct a *Mann-Whitney* test (U-statistic) to determine if the samples can be considered identical based on their ranks (Lehmann 1975). The Mann-Whitney test is a nonparametric test corresponding to the parametric *Student's t* test, which serves as an appropriate method of analysis under these conditions.

Results and Managerial Implications

We received 287 fully completed surveys (74 with a primary specialization in agribusiness and 213 with a primary specialization that was non-agribusiness). We considered four broad areas: time allocation, factors influencing tenure and promotion decisions, demand for academic agribusiness outputs, and realized academic agribusiness outputs at time of promotion to associate professor.

Time Allocation

The first question we examine is the percent of time faculty members allocate to selected activities. The time allocation of faculty by specialty type (agribusiness versus non-agribusiness) shows that teaching and research take up approximately two-thirds of their time for both groups (Table 2). Of particular interest for these two categories is that while teaching consumes the most time for agribusiness faculty (38.01%) followed by research at (27.95%), the order is reversed for non-agribusiness faculty with research taking the top spot (36.37%) and teaching second (28.04%). According to our results, which are statistically significant at the 1% level, academics specializing in agribusiness devote more time to teaching and less time to research. For non-agribusiness faculty, the results are nearly identical to those found by Harl-

ing (1995) with respect to teaching and research time allocations. When comparing his results to ours for agribusiness faculty, teaching time allocation is similar, but the allocation to research activities has increased. In particular, time allocated to research has increased by approximately 9%, while time allocated to extension has fallen by almost 22%. This indicates that in order to bolster their research output, those who identify themselves as specializing in agribusiness, have sacrificed extension output. The result may also suggest that newly hired agribusiness faculty, have appointments, which are predominately teaching/research, rather than research/extension or teaching /extension.

Table 2. Percent time allocation of selected activities: a comparison between faculty who indicated primary specialization in agribusiness vs. those with primary specializations in other areas

	Agribusiness Specialization		Non-Agribusiness Specialization			P-Value
	Actual Time Allocation		Actual Time Allocation			
	Average	Standard Deviation	Average	Standard Deviation	Difference in Means	
Research	27.95%	21.61%	36.37%	21.84%	-8.42%***	0.0027
Teaching	38.01%	24.82%	28.04%	19.02%	9.98%***	0.0020
Extension	9.96%	18.53%	12.28%	22.04%	-2.32%	0.4637
Grantsmanship	4.79%	8.59%	5.32%	6.74%	-0.53%	0.1805
Service	7.94%	7.16%	9.00%	9.59%	-1.06%	0.7254
	N=74		N=213			

*** Denotes statistical significance at the 1 percent level

Factors Influencing Tenure and Promotion Decisions

The next area we examine is how seven factors influence promotion and tenure. As with the previous question, we will also draw a comparison between agribusiness and non-agribusiness professors. Respondents were asked to indicate the perceived impact each factor poses on promotion and tenure (5 = Strongly Affects to 1 = Does Not Affect). Research was perceived as the primary factor influencing tenure for both groups, followed by university assigned appointment (i.e. does the faculty member’s university assign specific appointment percentages for teaching/extension/research for his/her position and then teaching (Table 3).

These results support the findings for the time allocation question, in which two-thirds of the time for both groups was spent on research and teaching. The only factor for which the groups differed significantly in a statistical sense was research. Agribusiness faculty gave research an average score of 4.42 while non-agribusiness faculty gave an average score of 4.73. Thus, while research is highly valued by agribusiness faculty, as evidenced by the increased amount of time they allocate to research activities over the last 15 years, research is even more valued by non-agribusiness faculty.

Table 3. Factors influencing promotion and tenure: a comparison between professors who select agribusiness as their primary specialization and professors with other primary specialization areas

Agribusiness Specialization							
(number of respondents by importance level)							
Importance Level	Actual Appointment	Grantsmanship Overall	Extension/Outreach Overall	Research Overall	Teaching Overall	Service Overall	Administration Overall
1 (Least Important)	0	0	0	0	0	0	0
2	4	10	15	4	6	20	20
3	12	14	17	4	15	22	20
4	33	24	11	14	23	14	7
5 (Most Important)	0	0	0	0	0	0	0
NA	4	6	10	4	5	4	11
Average	3.91	3.54	2.97	4.42	3.88	2.91	2.58
Standard Deviation	0.90	1.17	1.26	0.97	1.02	1.02	1.05
Non-Agribusiness Specialization							
(number of respondents by importance level)							
Importance Level	Actual Appointment	Grantsmanship Overall	Extension/Outreach Overall	Research Overall	Teaching Overall	Service Overall	Administration Overall
1	6	7	13	2	6	10	36
2	20	29	44	3	20	64	51
3	35	47	41	6	38	68	51
4	64	60	31	24	79	35	16
5	59	51	30	159	38	9	3
NA	13	8	38	8	20	8	41
Average	3.82	3.61	3.13	4.73	3.68	2.83	2.36
Standard Deviation	1.10	1.13	1.24	0.69	1.03	0.96	1.01
Agribusiness Specialization vs. Non-Agribusiness Specialization							
	Actual Appointment	Grantsmanship Overall	Extension/Outreach Overall	Research Overall	Teaching Overall	Service Overall	Administration Overall
Differences in the Means	0.10	-0.08	-0.17	-0.31**	0.20	0.07	0.22
P-value	0.8132	0.7115	0.4304	0.0309	0.1921	0.6278	0.6278

** Denotes statistical significance at the 5% level

Although not statistically different, agribusiness faculty do value teaching higher (3.88) than non-agribusiness faculty (3.68). This result is intuitive, given higher teaching loads of agribusiness faculty relative to non-agribusiness faculty. These results provide a conflicting message for agribusiness faculty, i.e. we expect you to spend the largest portion of your time on teaching yet research is what is most important for promotion and tenure. These results support the findings of Woolverton and Downey (1999), Dooley and Fulton (1999), and Connor (2005). Departments must find ways to reward teaching as much as research responsibilities, perhaps even changing the way they evaluate agribusiness faculty for tenure, especially in light of the results in this research and the aforementioned comments by Gordon Gee, president of The Ohio State University (Welsh-Huggins 2010). If not, difficulties could arise for untenured agribusiness faculty as they work towards tenure and promotion.

Academic Agribusiness Research Outlets

This section examines the responses from agribusiness faculty related to their perceptions of which journals are most likely to publish their research, journals in which they should publish to meet departmental promotion and tenure requirements, and the top three journals in which they would seek to publish their research. A graphical representation of the top ten responses to each of these questions is presented in Figures 1, 2, and 3, respectively. The top three journals in which agribusiness faculty typically publish their work are the *JOA*, *IFAMR*, and *AJAE* (Figure 1). This result supports previous research by Dooley and Fulton (1999) and Heiman et al. (2002). The top two journals are directly related to agribusiness, and are not traditional agricultural economics journals, while the third is considered the preeminent journal in agricultural economics.

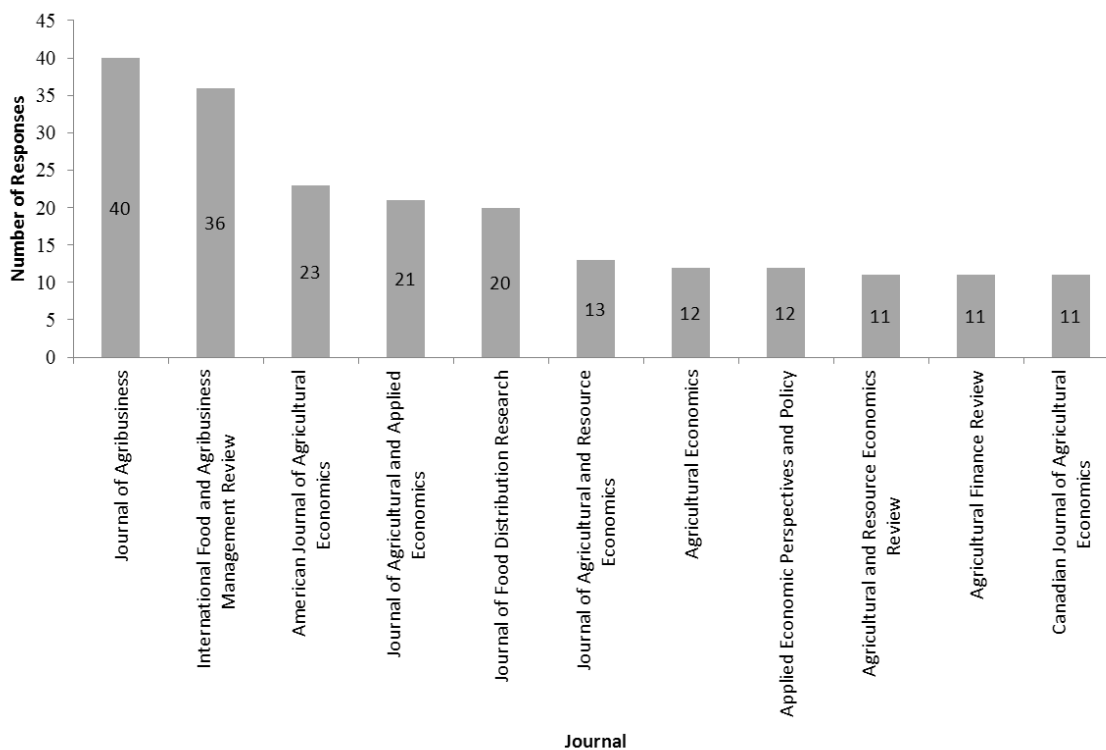


Figure 1. Agribusiness primary specialization respondents' perceptions related to the journal most likely to publish their research

Results also show that many departments do not have a journal list detailing the journals in which they are required to publish (42 responses) (Figure 2). Such a result suggests that some departments keep an open mind regarding outlets in which agribusiness faculty must publish to obtain tenure. For agribusiness faculty in departments that do require publication in specific journals, the number one journal is the *AJAE* (29 votes), followed by the *IFAMR* (16 responses), and the *Journal of Agricultural and Applied Economics* (*JAAE*) (15 votes). For those agribusiness faculty who reside in these departments, two of the top three are traditional agricultural economics journals. On an encouraging note, the *IFAMR* (Figure 2) is being recognized as the leading journal for agribusiness in terms of promotion and tenure. The top three choices where agribusiness faculty members want to publish their work are the *AJAE*, the *IFAMR*, and the *JOA* (Figure 1). The fact that the *AJAE* is ranked highest is likely the result of its position of prominence in the field of agricultural economics, as well as desires to meet departmental expectations. Both the *IFAMR* and the *JOA* are agribusiness related, which indicates that agribusiness faculty value having their work published in peer reviewed journals specific to their area of specialization.

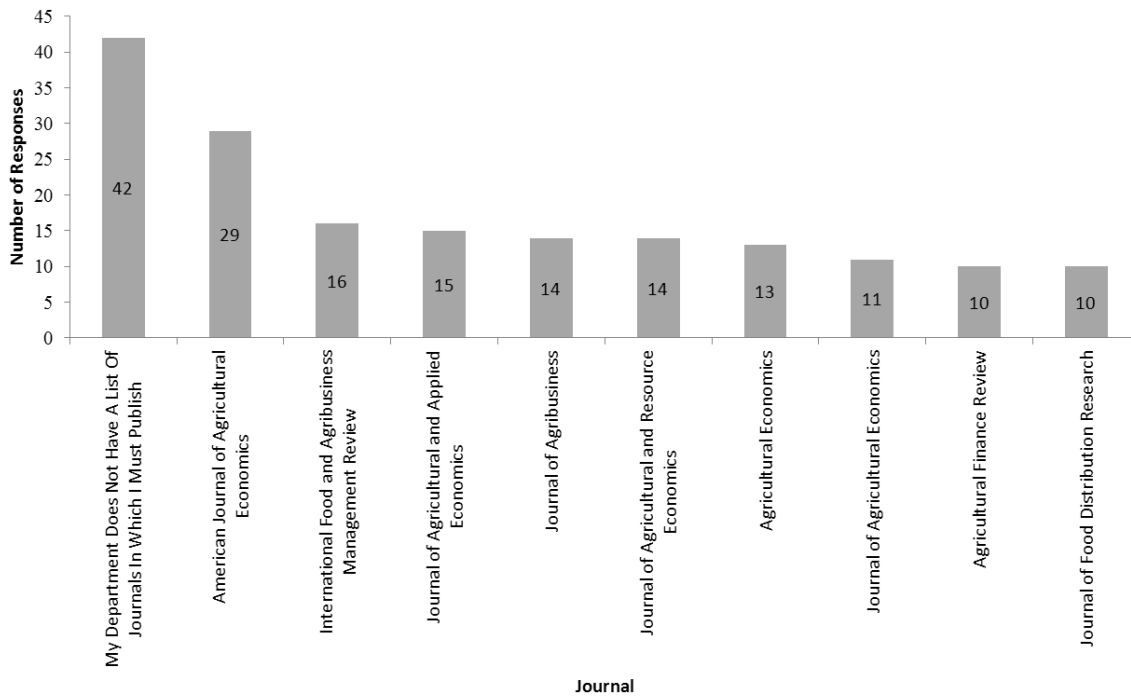


Figure 2. Agribusiness primary specialization respondents' perceptions related to journals in which they should publish to meet departmental promotion and tenure requirements

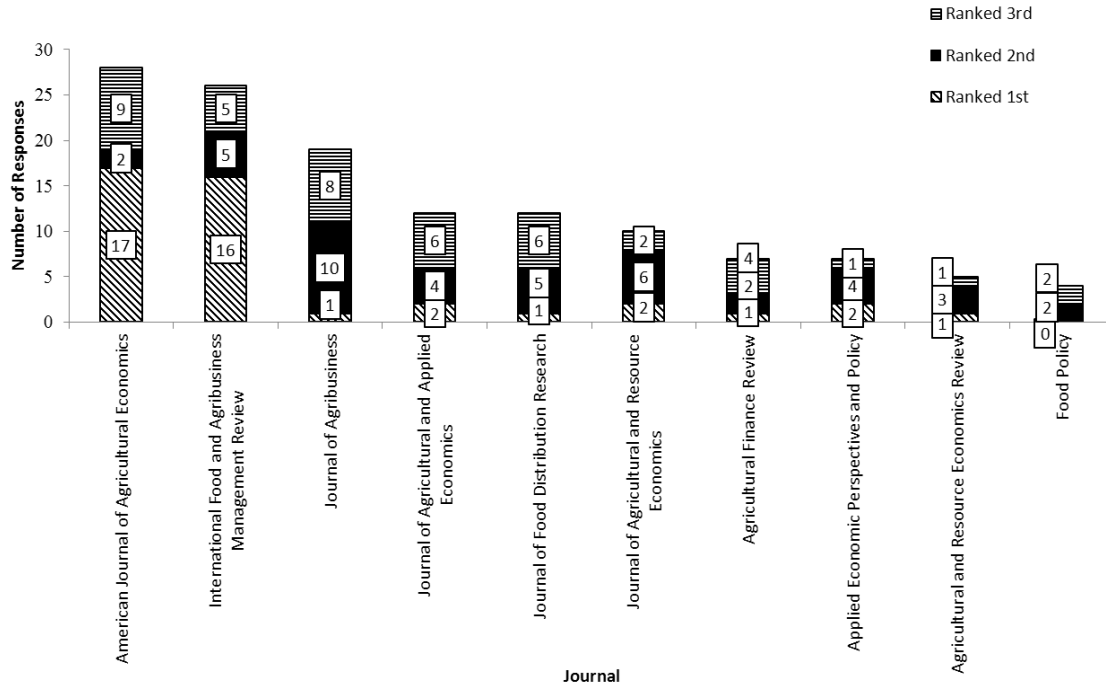


Figure 3. Agribusiness primary specialization respondents' ranking of the top three journals in which they would want to publish their Research.

Demand for Academic Agribusiness Outputs

The fourth set of questions we examined revolves around several common aspects of general concern for agricultural economics programs, particularly as they relate to agribusiness. Respondents were asked to indicate their level of agreement (5 = Strongly Agree to 1 = Strongly Disagree) to the following three statements:

1. Compared to other agricultural economics specializations, it is more difficult to obtain grant funding for agribusiness research.
2. Agribusiness faculty members have heavier undergraduate teaching loads than other faculty.
3. It is difficult to publish agribusiness manuscripts in the traditional agricultural economics journals.

First, the results find no statistical difference between agribusiness and non-agribusiness faculty related to the difficulty of obtaining grant funding for agribusiness research. Both groups scored the question at a level consistent with a choice of Neither Agree or Disagree (Table 4). These results appear to disagree with previous studies by Dooley and Fulton (1999), Woolverton and Downey (1999), and Heiman et al. (2002), all who found that it was more difficult for agribusiness faculty to seek competitive research grants than more traditional agricultural economics faculty. Most likely, all agricultural economists, irrespective of specialization, feel that all grantsmanship is difficult; thus, providing no distinction based on specialization. Alternatively, funding especially from the USDA has moved towards a multi-disciplinary and/or multi-institution integrated approach. This approach may favor agribusiness faculty relative to other

agricultural economists. In particular agribusiness faculty, have their core training in economics, but also utilize in management, finance, accounting, human resources, and marketing methodologies in their research programs. These skills might appeal to collaborators from other disciplines.

Second, a statistical difference exists between agribusiness and non-agribusiness faculty with respect to their perceptions about heavier undergraduate teaching loads for agribusiness faculty, with agribusiness professors having a stronger belief in the statement (Table 4). The agribusiness faculty members' beliefs may reflect the time allocation differences between agribusiness and non-agribusiness faculty. Perhaps, non-agribusiness faculty are unaware of how much time is spent by agribusiness faculty in the undergraduate classroom.

Table 4. Perceived differences agribusiness and non-agribusiness faculty for teaching, grantsmanship, and research

Agribusiness Specialization			
(number of respondents by level of agreement)			
Agreement Level	Grant Funding¹	Undergraduate Teaching Loads²	Publishing Agribusiness Journal Articles³
1 (strongly disagree)	9	6	5
2	16	10	3
3	17	17	14
4	18	19	25
5 (strongly agree)	8	15	23
NA	4	4	2
Average	3.00	3.40	3.83
Standard Deviation	1.23	1.24	1.15
Non-Agribusiness Specialization			
(number of respondents by level of agreement)			
Agreement Level	Grant Funding¹	Undergraduate Teaching Loads²	Publishing Agribusiness Journal Articles³
1 (strongly disagree)	23	35	15
2	34	26	25
3	49	46	40
4	38	39	55
5 (strongly agree)	14	22	28
NA	45	36	39
Average	2.91	2.92	3.34
Standard Deviation	1.18	1.32	1.20
Agribusiness Specialization vs. Non-Agribusiness Specialization			
	Grant Funding¹	Undergraduate Teaching Loads²	Publishing Agribusiness Journal Articles³
Differences in the Means	0.09	0.48***	0.49***
P-value	0.6350	0.0149	0.0035

¹Compared to other agricultural economics specializations, on average, agribusiness faculty perceive it as more difficult to obtain grant funding for their research projects.

²On average, agribusiness faculty members report being assigned heavier undergraduate teaching loads than other faculty. ³Agribusiness researchers perceive, on average, that it is more difficult to publish agribusiness manuscripts in traditional agricultural economics journals than their non-agribusiness counterparts are.

Third, a statistical difference also exists for publishing, with agribusiness faculty agreeing more strongly than non-agribusiness faculty that it is more difficult to publish agribusiness work in traditional agricultural economics journals (Table 4). Our findings related to the difficulty of publishing agribusiness manuscripts in traditional agricultural economics journals supports the prior findings of Dooley and Fulton (1999). Perhaps it is the case that agribusiness faculty members have sought other refereed outlets for publishing their work. While agribusiness faculty in general might not have trouble publishing their work in refereed journals, non-agribusiness faculty may not recognize or reward these publications as they would publications in traditional agricultural economics journals due to the lack of citation reports for such journals (table 4). Although journals, such as IFAMR are improving review processes, visibility, rigor, and relevance, the lack of citation reports associated with the impact of publishing in such outlets, makes assessing such contributions more difficult at the department level and at subsequent levels during the promotion and tenure process.

Realized Academic Agribusiness Outputs at Time of Tenure

The last portion of the results section examines research output (grants, non-referred publications, and referred publications), at the time of promotion from assistant to associate professor with tenure for professors with a primary specialization in agribusiness. Table 5, contains a summary of the results, grouped by current faculty rank. The results in this section will be especially useful to non-tenured assistant professors as they prepare to navigate the promotion and tenure process. In particular, the results are in line with the changing allocation dynamic we observe between Harling’s (1995) study and the present study. For example, there has been a decline in extension publications from current Department Heads/Chairs to current Full Professors to current Associate Professors, while the opposite trend exists for journal articles and grant dollars. These trends are likely the result of the time at which current Associate Professors went up for tenure (2005 on average) versus when current Full Professors went up for tenure (1988 on average), i.e. more time is being allocated to research and considerably less time to outreach. Compared to Harling’s 1995 study time allocated to research by agribusiness has increased by approximately 9%, while time allocated to extension has fallen by almost 22%.

Table 5. Output, at the time of promotion from assistant to associate professor with tenure, for professors with a primary specialization in agribusiness by current rank.

	Associate Professor		Full Professor		Department Head/Chair	
	Average	Standard Deviation	Average	Standard Deviation	Average	Standard Deviation
Refereed Articles	15.06	8.86	13.32	7.82	9.40	7.40
Non-Refereed Articles	20.31	14.26	25.81	37.73	32.00	30.54
Grants	\$1,014,417	\$1,075,808	\$477,062	\$644,005	\$240,000	\$181,108
Year Promoted to Associate Professor	2005	3.40	1988	10.86	1988	12.48
		N=16		N=30		N=5

Agricultural economics departments largely determine promotion by research and some difficulty has been noted on behalf of agribusiness faculty related to the difficulty that exists concerning publishing agribusiness articles in traditional agricultural economics journals. Thus, senior agribusiness faculty must mentor junior faculty in balancing research demands with heavier teaching responsibilities. In addition, the increasing amount of grant dollars being awarded, combined with decreased reliance on public funding (especially in the U.S.), have already and will continue to spur more heated departmental debates on the importance of grantsmanship in the promotion and tenure process. In particular, this revolves around the classification of grants, i.e. should they be classified as an input or an output.

Conclusions

The results of this research has shed new light on the perceived state of agribusiness education, research, grantsmanship, and outreach, as well as the balance of these activities in the work of academics currently specializing in agribusiness. In light of growing agribusiness programs and increased demands on agribusiness faculty, this research highlights the need for additional resources and consideration for agribusiness faculty as they move towards tenure.

Progress on the 1989 NAEC report recommendations appears to be slow on at least two fronts. First, the reallocation of resources towards agribusiness research, commensurate with the allocation of resources to agribusiness teaching, is lacking. This means that the research component of agribusiness programs is being underfunded. Research is an important component of the Land Grant mission, as it serves as the bedrock for developing faculty expertise in teaching and outreach. Departments expect agribusiness faculty to teach more courses, yet perceived research expectations are similar to their non-agribusiness peers. As a result, agribusiness faculty have less engagement in agribusiness extension programs (industry engagement), despite the importance of agribusiness extension programs in identifying contemporary problems ripe for agribusiness research.

This result is of particular importance to junior agribusiness faculty members as they attempt to navigate the promotion and tenure process. In particular, there is evidence to suggest an increasing trend in the amount of grant dollars and refereed publications necessary at the time of tenure, with relatively fewer non-referred publications. Furthermore, junior faculty must do this while allocating less time to research and extension, and more to teaching relative to their non-agribusiness peers. The impact is not limited to junior faculty, as associate professors are also affected by this shift, as they progress toward promotion to full professor, and although full professors have achieved the highest academic rank, they must deal with both department head and other upper level administrator expectations that determine pay raises. The adjustment of faculty lines is a difficult issue for any department for at least two reasons. First, many departments have shrunk over time; it is difficult to reallocate a smaller pie. In addition, our profession faces broad issues in many other subject matter areas. Second, any change to a faculty is made one hire at a time.

Second, the training of agribusiness Ph.Ds. those that have training in both economic and management theory, for delivering agribusiness courses has only slowly gained traction. The creation of a joint program at Texas A&M University between the Department of Agricultural Economics and the Mays School of Business is one workable model. The Morrison School of Agribusiness

at Arizona State University resides in the W. P. Carey School of Business, making its Ph.D. program structure another working model. These two programs represent significant departures from the traditional model of training future agribusiness faculty as agricultural economists with a few management courses added to their program of study. Not unrelated to this, is the reduction in funding of Ph.Ds. in genuine agribusiness. For example, the 2011 USDA National Needs Fellowship request for applications notes Agricultural Management and Economics as “Targeted Expertise Shortage Areas,” but goes on to further define that area as “agricultural trade policy, resource economics, and economics of alternative energy.” One cannot argue that these are not important, growing areas for research, but as prior research shows, they hardly appear to be the source of growing undergraduate enrollment demands across departments.

Limitations

Admittedly, we took classifications from the AAEA with which members could identify for the purposes of the survey. It is obvious, though, that even our professional associations (AAEA, IFAMA, Southern Agricultural Economics Association, Western Agricultural Economics Association and others) are struggling to determine their identity and retain membership. For example, some programs, such as those at the University of Illinois, Virginia Tech, and Texas Tech, have found success in offering a personal financial planning major. These specializations are even further removed from the distant core, farm management, than many of other specializations offered. After an AAEA name change, some longtime members felt alienated. Others could finally determine where their research fit into the organization.

Despite the difficulties with identity in the profession, the flagship journal remains the *AJAE*. However, many members of the AAEA, including some with agribusiness specialty areas, have difficulty determining the relevance of their research to the premier journal in our field. Fortunately, new outlets are growing in acceptance for agribusiness researchers. The IFAMA Board of Directors and the Editorial Board have placed a continual focus on improving the rigor and relevance of the *IFAMR*. Other agribusiness journals would be wise to place similar focus on these issues so these outlets become valued in tenure and promotion decisions. These journals will need to adhere to the criteria, especially those that determine impact factors and other measures of journal quality. Inclusion in Citation Indices and Scholarly Search Engines, along with vocal support of senior level agribusiness faculty during promotion and tenure reviews is critical for their acceptance and emergence as well-respected research outlets.

Future inquiry should consider whether differences exist among specific subspecializations of agribusiness, such as agribusiness management, food safety, etc. Although the terms agribusiness and agribusiness management are often used interchangeably there are important differences that should be examined. Agribusiness management programs, clearly focus on the agribusiness sector, but require some level of management theory education, whereas agribusiness programs are generally career-oriented with a broader focus on practical application of business principals to the agriculture sector.

Implications for the Future of Agribusiness Programs

The results of this research highlight four needs for a concerted effort by those of us involved in the field of agribusiness to promote its importance in teaching/ research/ extension throughout the agricultural economics profession. One key challenge is that colleges and departments are finding it difficult to reallocate faculty positions to agribusiness, especially at the undergraduate teaching level. Second, even when agribusiness positions are approved, departments struggle to find new hires because the profession needs additional PhD programs that will provide the necessary graduate training in both economic and business theory. Third, we must continue the efforts to improve the reputation of journals that specialize in the publication of agribusiness research. These efforts should focus on seeking inclusion in citation reports and databases. Fourth, while traditional extension activities in agribusiness appear to be on the decline, outreach activities with agribusinesses at all levels of the value chain are becoming increasingly important. In particular, relationships spawned by these outreach activities often lead to additional funding opportunities for agribusiness faculty. Thus, declines in industry engagement are at odds with developing an outstanding agribusiness program because agribusiness programs (teaching/ research/ extension), are an “applied” field and geared towards teaching managerial decision-making that is informed through real world examples. An incentive structure that discourages industry engagement cannot be good for the field of agribusiness, the managers it presumes to benefit, or the students we are trying to educate. One clear implication of this finding is that if assistants, associates, and to a lesser extent full professors, have greater teaching loads, less time can be dedicated to not only dealing/responding to industry engagement activities but as a consequence reduce their abilities to conduct research that is impactful to the agribusiness field. Finally, with a greater emphasis being placed on grantsmanship, young agribusiness faculty need to build relationships with agribusinesses early in their career to develop alternative sources of funding for their program as well as a source of new research ideas and topics.

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Appendix A. Questions in the Survey Examined in This Paper

Using 100% as your total please indicate the actual percentage of time you dedicate to each of the following activities. For example, if you spend twenty percent of your time doing research, then please put the number "20" in the text box immediately to the right of the words "Percent Research."

- Percent Research
- Percent Teaching
- Percent Extension
- Percent Grantsmanship
- Percent Service (committee for department, college, university, or profession)
- Percent Administration

Please choose one primary specialization.

- Agribusiness
- Commodity Marketing
- Economic Theory
- Farm/Production
- International
- Other
- Policy
- Quantitative
- Resource/Environment
- Rural Development

Please indicate your current rank. (Select one)

- Instructor
- Continuing Lecturer
- Assistant Professor without Tenure
- Associate Professor without Tenure
- Associate Professor with Tenure
- Full Professor without Tenure
- Full Professor with Tenure
- Department Head/Chair
- If other, please specify in the text box below

Please indicate your output for the following categories at the time you were promoted from an assistant to an associate professor.

- Number of refereed articles you had written
- Number of non-refereed articles you had written (do not include published abstracts)
- Total monetary value of the grants you had been awarded

Please indicate the year that you were promoted from assistant to associate professor.

Year

Please select the journals that are most likely to publish your work. (Select up to three)

Agricultural and Resource Economics Review

Agricultural Economics
Agricultural Finance Review
American Journal of Agricultural Economics
Applied Economic Perspectives and Policy
Australian Journal of Agricultural and Resource Economics
Canadian Journal of Agricultural Economics
European Review of Agricultural Economics
Food Policy
International Food and Agribusiness Management Review
Journal of Agribusiness
Journal of Agricultural and Resource Economics
Journal of Agricultural and Applied Economics
Journal of Agricultural Economics
Journal of Environmental Management
Journal of Food Distribution Research
Journal of Natural Resources and Life Sciences Education
Journal of Soil and Water Conservation
Journal of Sustainable Agriculture
Management Science
Marine Resource Economics
Review of Environmental Economics and Policy
Review of International Economics
Water Resources Management
If others, please specify them

Please rank the top three journals, which you strive to have publish your work. If you choose other please specify the name as well as the ranking, for any other choice enter the ranking (1, 2, or 3) in the text box to the right of the journal's name.

Agricultural and Resource Economics Review
Agricultural Economics
Agricultural Finance Review
American Journal of Agricultural Economics
Applied Economic Perspectives and Policy
Australian Journal of Agricultural and Resource Economics
Canadian Journal of Agricultural Economics
European Review of Agricultural Economics
Food Policy
International Food and Agribusiness Management Review
Journal of Agribusiness
Journal of Agricultural and Resource Economics
Journal of Agricultural and Applied Economics
Journal of Agricultural Economics
Journal of Environmental Management
Journal of Food Distribution Research
Journal of Natural Resources and Life Sciences Education
Journal of Soil and Water Conservation

Journal of Sustainable Agriculture
Management Science
Marine Resource Economics
Review of Environmental Economics and Policy
Review of International Economics
Water Resources Management
If other, please specify the name as well as the ranking

Please indicate the journals in which your department wants you to publish in for promotion and tenure. (Select all that apply)

Agricultural and Resource Economics Review
Agricultural Economics
Agricultural Finance Review
American Journal of Agricultural Economics
Applied Economic Perspectives and Policy
Australian Journal of Agricultural and Resource Economics
Canadian Journal of Agricultural Economics
European Review of Agricultural Economics
Food Policy
International Food and Agribusiness Management Review
Journal of Agribusiness
Journal of Agricultural and Resource Economics
Journal of Agricultural and Applied Economics
Journal of Agricultural Economics
Journal of Environmental Management
Journal of Food Distribution Research
Journal of Natural Resources and Life Sciences Education
Journal of Soil and Water Conservation
Journal of Sustainable Agriculture
Management Science
Marine Resource Economics
Review of Environmental Economics and Policy
Review of International Economics
Water Resources Management
I Do Not Know
My Department Does Not Have A List Of Journals In Which I Must Publish
If others, please specify all that apply

Please rank the following specific factors for their impact on your tenure decision, where 5 = Strongly Affects, 4 = Affects, 3 = Moderately Affects, 2 = Slightly Affects, 1= Does Not Affect, and NA = Not Applicable. For example, if you strongly agree that grantsmanship impacts the tenure decision, but feel that service overall is taken under light consideration, you might answer "5" for grantsmanship overall, but "2" for service overall .

Actual Appointment
Grantsmanship Overall

Extension Overall
Research Overall
Teaching Overall
Service Overall
Administration Overall

Please share with us your thoughts regarding several common aspects that are of general concern to agricultural economics programs. For each statement, indicate your level of agreement by assigning 5 = Strongly Agree, 4 = Somewhat Agree, 3 = Neither Agree or Disagree, 2 = Somewhat Disagree, 1 = Strongly Disagree, NA = Not Applicable.

Agribusiness faculty members have heavier undergraduate teaching loads than other faculty

Compared to other agricultural economics specializations, it is more difficult to obtain grant funding for agribusiness research.

It is difficult to publish agribusiness manuscripts in the traditional agricultural economics journals.