

**A Decade of Decline and Evolution
in Agricultural Economics
Programs: 1985-96**

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Presented at Western Agricultural Economics
Association 1997 Annual Meeting
July 13-16, 1997
Reno/Sparks, Nevada

July 1997

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by

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Abstract

This study identifies impacts of changes in the academic environment on university programs. Survey results show that enrollments in agricultural economics departments declined over the last decade. To slow the decline, many departments have changed their name and/or curriculum to attract domestic students who are not interested in production agriculture.

A DECADE OF DECLINE AND EVOLUTION IN AGRICULTURAL ECONOMICS PROGRAMS: 1985-96

The past decade has been filled with changes so significant that agricultural economists have considered changing the name of our professional associations and institutions. In his presidential address, Eidman makes the point that change is the norm, not the exception, and discusses the profession's evolution in its on-going search for continued relevance. The agricultural economics profession has a long history of self-analysis (e.g. see Armbruster; Beattie and Watts; Bishop; Broder and Ziemer; Hess; Just and Rausser; Pope and Hallam). Our search often focuses on university programs (see Thompson, Capps and Massey; Turner; Williams) because that is the level at which the future of the profession first reveals itself in the interests and attitudes of students. For example, in 1984 Blank conducted a study of agricultural economics departments in North American universities to evaluate major changes in the academic environment over the previous decade. He tested hypotheses raised in the 1970's (in Beck *et al.* and Storey and Christensen) and found that few of the underlying expectations were supported by the observed results of the 1980's. During the 1990's, the agricultural economics profession and its university programs have continued to be buffeted by change. Many of the recent changes were just emerging at the time of Blank's study and some of the changes are apparent in his data only with the hindsight we have accumulated since that time. Therefore, this paper seeks to provide context to the changes of the most recent decade by extending and expanding Blank's study to cover the intervening years and to draw implications for the future.

The general objective of this study is to measure what impacts major changes in the academic environment have had on agricultural economics programs. Specific hypotheses are tested concerning three areas of results reported by Blank: enrollment trends, composition of the

student body, and departmental programs. Also, another general hypothesis supported by Blank's data is tested in this study: that undergraduate and graduate programs are affected by different types and/or levels of change.

A mail survey was used to collect the data for this study. Questionnaires completed in 1996 by 44 academic departments spread across North America showed no obvious response bias. Respondents appeared randomly distributed in terms of size and geographic location.¹ Hypothesis tests were performed using t- and F-tests of differences in means or variances or simple comparisons, whichever was appropriate.

Enrollment Trends Results

From academic year 1984-85 to 1995-96, undergraduate enrollment in agricultural economics programs decreased significantly while graduate enrollment was virtually unchanged. Overall, average departmental undergraduate enrollment decreased 17% (Table 1). Every region had a decrease except the South which was stable.² These results contrast sharply from those of a decade earlier.

The trend of steadily increasing undergraduate enrollment reported by Blank has reversed in the past decade. Combining the results from Blank and this study shows that average enrollment in agricultural economics departments peaked in 1982-83 at 221 students and has decreased steadily since then to the 1995-96 level of 180 students. The decline was felt across the

¹ The sample for this study includes Land Grant and Non-Land Grant universities (as done by Blank). The composition of the 44 respondents is: Land Grant - 75 percent, Non-Land Grant - 25 percent. The highest degree granted by the department: Ph.D. - 52 percent, M.S. - 41 percent, B.S. - 7 percent. The 44 respondents to this survey include 23 of the 51 universities which provided data in Blank's study.

² The regions used here are identical to those used by Blank: **Northeast** - Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland. **South** - Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas. **North Central** - Ohio, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, Missouri. **Central** - North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, New Mexico,

continent (Table 1). The region with the largest percentage decline in the recent decade, the Northeast, had shown the largest percentage increase in enrollments over the 1975-84 period.

The overall results concerning graduate enrollments for the 1985-96 period are similar to those for the 1975-84 period, but regional trends nearly all reversed between the two periods. Total graduate enrollments were virtually unchanged, but every U.S. region reversed its trend in the recent decade. Only Canada's trend of increasing average enrollments continued over the two decades. The South was the only region to have decreased graduate enrollments over the past decade, whereas it had shown an increase of 92% in the previous decade (Blank).

The third enrollment trend evaluated here involves the relationship between average enrollments in colleges of agriculture and in agricultural economics departments. Blank found that average college of agriculture enrollments decreased, causing agricultural economics majors to represent a higher percentage of college enrollments. Over the last decade, the reverse is found. Combining the average undergraduate and graduate enrollments for all regions (Table 1) gives a net *decrease* of 14% for agricultural economics programs from 1984-85 to 1995-96. Over the same period, average college of agriculture enrollments for those universities *increased* 15%. Therefore, both enrollment trends have reversed and agricultural economics departments now represent about 14% of average agriculture college enrollment, whereas they represented 18% in 1983-84 and 10% in 1975-76 (Blank). The survey results show that average college of agriculture enrollments decreased each year until bottoming at 1172 during 1987-88 and have increased every year since to reach 1536 during 1995-96.

The combined results concerning undergraduate and graduate enrollments raise some perplexing questions. In Table 1 every region shows opposite results in the percentage change of

Colorado, Wyoming, Montana. **West** - Idaho, Utah, Arizona, California, Nevada, Oregon, Washington, Alaska,

its undergraduate and graduate programs (i.e., one decreased, the other increased or was stable). Why are agricultural economics departments expanding their graduate programs in the face of declining demand for undergraduate programs? Is it an effort to utilize idled resources (i.e. teaching faculty)? Or is it evidence in support of the hypothesis that different markets are served by the two types of program? Results in the next section address some of the issues related to these questions.

Composition Changes

The composition of the student body in agricultural economics departments continues to change. In general, the survey results indicate that the demographic changes found by Blank are on-going. First, a decreasing percentage of agricultural economics majors have a farm background. In 1975, 54% of agricultural economics departments indicated that more than half of their students came from farms, in 1984 it was 37% (Blank), and in 1996 only 17% of departments responded that over half their students had a farm background. The results from 1984 (from Blank) and 1996 are:

<u>Students w/farm background</u>	<u>1984 Universities responding (%)</u>	<u>1996 Universities responding (%)</u>
0-10%	22	24
11-25%	20	24
26-50%	20	36
51-75%	28	7
76-90%	7	10
91-100%	2	0
	----- 100%	----- 100%

Second, women represent an increasing percentage of majors in agricultural economics. Overall, the survey results indicate that 32% of undergraduate majors and 36% of graduate

students are women. Compared to Blank's results, women now represent a higher proportion of more departments' programs. Potential explanations for this continued trend range beyond the obvious. It could be due, in part, to the long-observed trend of more women entering the work force. However, an alternate explanation is that part of the change reflects the increased appeal to women of the new curriculum options being offered by departments.

A third demographic factor evaluated in this study is the hypothesis that the declining farm population in the U.S. will lead to an increasing percentage of agricultural economics majors being foreign students, especially in graduate programs (Gempesaw and Elterich). The survey data show that 4% of undergraduates and 36% of graduate students are foreign. These results imply that the ability to attract foreign students may explain why average graduate enrollments have not declined while undergraduate programs, which have been less successful in foreign recruiting, have enrollments falling with the U.S. farm population.

Department Programs

Academic departments of agricultural economics have faced significant changes over the past decade. In the face of falling enrollments and shifts in the composition of their student body, departments have reacted voluntarily, and sometimes involuntarily, to their changing environment. Some of the reactions are discussed here.

Curriculum Options

It appears that the future of university departments of agricultural economics involves diversifying their curricula away from "traditional" topics. The direction in which the curricula are going varies between undergraduate and graduate programs, but both programs are moving

away from the farm. A summary of the current national curriculum is in Table 2. It shows how many respondents listed curriculum options from the 13 topics used by Blank.³

Undergraduate programs in agricultural economics have moved toward agribusiness curricula. This trend began in the 1980's and has received much attention (see Larson; Lee; Litzenberg, Gorman and Schneider; Vandever and Guedry; Wallace, Smith and Hagen). Currently, about three-quarters of the departments responding to the survey (32 of 44) offer agribusiness subject matter options. That is more than double the number of departments which indicated that they still offer the "traditional" agricultural economics option of Ag price-income-policy analysis. Also, the average number of students in the agribusiness option (93) is higher than that in all other options except for those departments offering general economics or business administration.⁴ Another traditional option being left behind is farm management-production economics. Few departments still offer it as a major option and student numbers are low.

Graduate programs still focus primarily on traditional agricultural economics and/or economics topics, but there has been a significant shift toward resource/environmental economics. Resource economics is second only to Ag price-income-policy analysis in number of departments offering it and student numbers are strong. On the other hand, farm management-production economics is disappearing as a graduate option. Concerning agribusiness, it appears that the mixed feelings expressed during the 1980's regarding its prospects for graduate programs (see Biere and Robbins) foreshadowed the on-going refinements of the 1990's aimed at improving the appeal of those programs (see Akridge, Dobson and Holschuh; Phillips *et al.*).

³ Not all universities provided this data. Only those respondents who listed student numbers per topic are included in Table 2. Thus, the results should be used in *relative* terms, not in *absolute* terms.

⁴ Combined departments of econ-ag econ or business-ag econ often had large numbers of students, hence the high average number of students for those options.

The results show that, in general, agricultural economics departments made good forecasts in 1984 about what their future held. Blank reported the expectations of respondents regarding whether each subject matter in Table 2 would be an area of enrollment growth over the following decade. In 1984, 76% of departments expected agribusiness to be an area of growth in undergraduate enrollments, with 54% of departments expecting it to be their greatest area of growth. The 1996 results in Table 2 indicate that growth in undergraduate agribusiness programs did in deed occur. For graduate programs, expectations in 1984 were spread fairly evenly across the first seven topics listed in Table 2, but the traditional agricultural economics option was a slight leader. Actual graduate enrollments in 1996 are also spread across the first seven topics.

Table 3 presents current expectations concerning future enrollment potential. The table uses the same format used by Blank to facilitate comparison of results between the two time periods. Two differences in the data from 1996, compared to 1984, are quite apparent. The first is that far more responses of “no growth” or “decline” are reported in the 1996 data. The second difference in enrollment expectations reported a decade apart is the shift between topics. For undergraduate programs, agribusiness is still the area of greatest growth expected over the next decade, but resource economics is a strong second. For graduate programs the shift is more dramatic with resource economics now being the area of greatest anticipated growth and very little growth expected currently in several areas formerly considered strong, such as Ag price-income-policy analysis.

Name Changes

The changes in curriculum that have occurred over the past decade in many agricultural economics departments have been so significant that 41% of the survey respondents (18 of 44) have changed the name of their department. This dramatic step signals a shift in our profession

with wide implications for the future. Department name changes have been made most likely to (1) reflect curriculum changes already made and/or to (2) strengthen future enrollment. In other words, departments change their curriculum in response to the demands of current and expected future students and a name change follows when the department expects to pursue a path in the future which is significantly different than that followed in the past. The motivation for the change is survival: to survive in the market, university departments must continue to offer products which satisfy consumer demand (i.e., survival requires maintaining enrollments).

The new names departments have chosen to give themselves signal that survival necessitates diversifying away from agriculture. A couple departments dropped the word “agriculture” from their name entirely, but most of the changes reported in the survey involved changing or adding another word to their name. Most of the 18 departments reporting a change used the name “agricultural economics” originally. After the change, seven departments had the word “resource” in their name, six names included “applied”, three used “agribusiness”, and two departments used other specialty names.

Other Department Issues

Budgets of university departments are linked to enrollment. In periods of declining enrollments, such as the past decade, departments are often faced with budget cuts. This, in turn, has implications for faculty numbers and composition, class sizes, and student advising. Although this study evaluated each of these related issues, space limitations require dropping the discussion here, but the issues will be dealt with during the presentation of this paper.

Concluding Comments

The past decade has been one of decline and evolution for university departments of agricultural economics. The changes observed over this period are, arguably, some of the most dramatic and important in our profession's history. A few of the changes are summarized here.

First, undergraduate enrollments in agricultural economics departments declined over the last decade while graduate enrollments remained remarkably stable for the past two decades. These results support the hypothesis that two separate markets are served by graduate and undergraduate programs. Also, there is no reason to expect the long-run decline in undergraduate enrollments to end soon. To slow the decline, many departments have changed their name and/or curriculum to attract domestic students who are not interested in production agriculture. Similarly, many colleges of agriculture have expanded their curriculum into areas such as agribusiness, resource and environmental issues, and other topics of interest to an increasingly urban student body. Based on comments received in this survey, this is a trend expected to continue for the foreseeable future.

The evolving curricula in agricultural economics appears to be succeeding in attracting more women. Possible explanations offered by survey respondents are that new curriculum topics like resource and environmental economics appeal to women more than did the traditional offerings related to agriculture.

Finally, the declining student base observed over the past decade is leading to reduced resources in departments of agricultural economics. Lower budgets per faculty member, fewer faculty positions, and growing average class sizes are all trends observed across the academic segment of our profession. These trends indicate that continued evolution is being demanded by the changing markets we serve.

References

- Akridge, J., W. Dobson and M. Holschuh, "Positioning Agricultural Economics Departments to Serve Agribusiness Graduate and Professional Education Markets," American Journal of Agricultural Economics 76(1994): 1193-1198.
- Armbruster, Walter J., "The Future of Land Grant Universities and Agricultural Economists," Review of Agricultural Economics 15(1993): 591-602.
- Beattie, B. and M. Watts, "The Proper Preeminent Role of Parent Disciplines and Learned Societies in Setting the Agenda at Land Grant Universities," Western Journal of Agricultural Economics 12(1987): 95-103.
- Beck, L., A. Bordeaux, Jr., T. Davis, H. Brannon and L. Mather, "Undergraduate Programs in Agricultural Economics: Some Observations," American Journal of Agricultural Economics 59(1977): 766-8.
- Biere, Arlo W., "Involvement of Agricultural Economics in Graduate Agribusiness Programs: An Uncomfortable Linkage," Western Journal of Agricultural Economics 13(1988): 128-133.
- Bishop, C., "Reorientation of the University," American Journal of Agricultural Economics 56(1974): 706-710.
- Blank, Steven C., "A Decade of Change in Agricultural Economics Programs: 1975-84," Western Journal of Agricultural Economics 10(1985): 375-381.
- Broder, J. and W. Taylor, "Teaching Evaluation in Agricultural Economics and Related Departments," American Journal of Agricultural Economics 76(1994): 153-162.
- Broder, J. and Ziemer, R., 1980. "Research Productivity and Selected Characteristics of Agricultural Economics Research and Teaching Faculty in the Southern Region," Southern Journal of Agricultural Economics 12: 157-160.

- Centra, J., 1982. Determining Faculty Effectiveness, Jossey-Bass Publishers: San Francisco, chapter 6.
- Eidman, Vernon R., "The Continuing Search for Relevance in Agricultural Economics," American Journal of Agricultural Economics 77(1995): 1083-1095.
- Gempesaw II, C. and G. Elterich, "The Importance of International Students in the Academic Market for Agricultural Economists," American Journal of Agricultural Economics 71(1989): 275-9.
- Hess, C., "Major Trends and Issues in Higher Education Today - Implications for Improved Instruction," Journal of Farm Economics 49(1967): 260-271.
- Just, R. and G. Rausser, "An Assessment of the Agricultural Economics Profession," American Journal of Agricultural Economics 71(1989): 1177-1190.
- Larson, Ronald B., "Agricultural Business Management Curricula," Journal of Agribusiness 14(1996): 143-155.
- Lee, Linda K., "Developing Undergraduate Small Business Programs in Agricultural Economics Departments: Lessons from the Northeast," American Journal of Agricultural Economics 76(1994): 1186-1192.
- Litzenberg, K., W. Gorman and V. Schneider, "Academic and Professional Programs in Agribusiness," American Journal of Agricultural Economics 65(1983): 1060-4.
- Perry, Gregory M., "Exploring the Role of Mentoring in Agricultural Economics Ph.D. Training," Journal of Agricultural and Resource Economics 21(1996): 18-30.
- Phillips, T., W. Couvillion, Z. Daughtrey, and D. Burckel, "Designing Graduate Education for Agribusiness Students," Southern Journal of Agricultural Economics 24,1(1992): 27-30.

- Pope, R. and A. Hallam, "A Confusion of Agricultural Economists?-A Professional Interest Survey and Essay," American Journal of Agricultural Economics 68(1986): 572-594.
- Robbins, Lynn W., "A Positive Role for Graduate Agribusiness Programs in Agricultural Economics," Western Journal of Agricultural Economics 13(1988): 121-7.
- Storey, D. and R. Christensen, "Graduate Programs in Agricultural Economics: Results of a Survey," American Journal of Agricultural Economics 55(1973): 61-4.
- Thompson, R., O. Capps and J. Massey, "Demand for an Undergraduate Education in the Agricultural Sciences," American Journal of Agricultural Economics 76(1994): 303-312.
- Turner, Steven C., "Remembering the Role of Research in Developing a University Student," Review of Agricultural Economics 17(1995): 7-11.
- Vandever, L. and L. Guedry, "Educating the Undergraduate Agribusiness Major," Southern Journal of Agricultural Economics 24,1(1992): 17-26.
- Wallace, H., D. Smith, and J. Hagen, "Agribusiness Programs in Non-Land-Grant Schools of Agriculture: Requirements for Success," American Journal of Agricultural Economics 76(1994): 1199-1204.
- Williams, F. Wen, "Agricultural Economics Undergraduate and Graduate Curricula: Are We Competitive?," Southern Journal of Agricultural Economics 19(1987): 49-54.

Table 2. Number of Agricultural Economics Students in Subject Matter Options

Undergraduate	<u>Number of Depts</u>	<u>Average # of students</u>	<u>Min # of students</u>	<u>Max</u>
Farm management/production econ	6	27	9	60
Agricultural marketing	4	60	15	80
Agribusiness management	32	93	14	346
Ag price/income/policy analysis	14	39	5	200
Intl ag trade/development	6	17	7	50
Agricultural finance	3	27	25	30
Natural resource/environmental econ	12	32	2	100
Community Resource econ	2	11	4	17
Human Resource econ	0	0	0	0
Consumer economics	2	78	15	140
General/applied economics	5	117	20	389
Quantitative methods	3	6	3	9
Business administration	5	117	20	380
Other	9	82	5	375
Graduate	<u>Number of Depts</u>	<u>Average # of students</u>	<u>Min # of students</u>	<u>Max</u>
Farm management/production econ	2	8	5	10
Agricultural marketing	5	17	10	21
Agribusiness management	9	11	2	20
Ag price/income/policy analysis	19	22	3	40
Intl ag trade/development	5	15	12	20
Agricultural finance	2	14	8	20
Natural resource/environmental econ	12	19	1	65
Community Resource econ	3	3	1	7
Human Resource econ	0	0	0	0
Consumer economics	1	20	20	20
General/applied economics	2	24	7	40
Quantitative methods	1	4	4	4
Business administration	0	0	0	0
Other	5	10	2	35

The first column shows how many departments indicated that they offer the subject matter option. The second column shows the average number of students majoring in the option for those departments offering it. The third and fourth columns show the range of student numbers in the departments offering the option.

Table 3. Areas of Anticipated Enrollment Growth in Agricultural Economics Over the Next Decade.

<u>Program options</u>	<u>Percent of Responding Universities Specifying Each Category^a</u>				
	<u>Greatest Growth</u>	<u>Second</u>	<u>Third</u>	<u>No Growth</u>	<u>Decline</u>
Undergraduate					
Farm mgmt/prod econ	0	5	11	43	18
Agricultural marketing	9	20	25	18	2
Agribusiness management	39	32	9	5	0
Ag price/income/policy analysis	0	2	18	34	9
Intl ag trade/development	7	25	25	18	0
Agricultural finance	2	9	18	30	5
Nat res/environ econ	27	27	14	0	0
Community Resource econ	2	5	14	34	9
Human Resource econ	2	2	9	39	2
Consumer economics	0	7	7	32	5
General/applied economics	0	5	11	36	5
Quantitative methods	0	0	14	36	7
Business administration	14	2	5	30	2
Other	2	0	2	2	0
Graduate					
Farm mgmt/prod econ	5	2	0	9	2
Agricultural marketing	0	7	9	2	0
Agribusiness management	18	0	5	5	0
Ag price/income/policy analysis	0	0	11	9	0
Intl ag trade/development	5	16	2	0	0
Agricultural finance	0	7	2	7	2
Nat res/environ econ	27	5	5	0	0
Community Resource econ	2	2	7	7	2
Human Resource econ	0	2	0	7	2
Consumer economics	2	0	7	2	0
General/applied economics	2	2	7	7	0
Quantitative methods	0	7	5	7	5
Business administration	0	2	0	9	0
Other	0	0	0	2	0

^a Columns do not total to 100 percent due to multiple answers, or no answers, given by respondents and due to rounding.

Table 1. Average Enrollment in Agricultural Economics Departments by Regions

Academic Year	<u>Northeast</u>	<u>South</u>	<u>North Central</u>	<u>Central</u>	<u>West</u>	<u>Canada</u>	<u>All Regions</u>
Undergraduate							
1984-85	125	122	445	290	245	237	217
1985-86	125	119	426	273	252	233	208
1986-87	114	112	398	262	251	235	214
1987-88	120	107	344	251	232	222	202
1988-89	109	106	319	241	237	210	197
1989-90	135	115	303	233	256	155	198
1990-91	123	119	304	209	229	136	184
1991-92	93	123	328	220	224	148	188
1992-93	72	129	336	230	203	137	184
1993-94	58	123	331	227	195	170	182
1994-95	45	123	321	230	211	145	182
1995-96	44	123	313	228	195	171	180
Percent Change (1984 to 1996)	-65	+1	-30	-21	-20	-28	-17
Graduate							
1984-85	14	50	67	31	38	24	37
1985-86	14	45	77	28	37	27	35
1986-87	12	44	96	30	37	30	37
1987-88	12	38	105	34	40	32	37
1988-89	15	41	125	31	39	37	39
1989-90	15	40	112	30	40	36	38
1990-91	14	41	138	30	39	37	39
1991-92	10	45	146	31	40	35	40
1992-93	16	43	120	33	40	34	39
1993-94	20	42	114	34	38	37	39
1994-95	19	44	95	34	38	38	39
1995-96	16	42	95	33	38	34	38
Percent Change (1984 to 1996)	+14	-16	+42	+6	0	+42	+3