University of Kentucky
Department of Agricultural Economics
Academic Year 2016-2017 Periodic Program Review

2016 Periodic Program Review
Department of Agricultural Economics
University of Kentucky

Self Study

June, 2016

University of Kentucky Periodic Review
Educational Unit (including Degree Programs)
Self-Study Report Checklist

Academic units and degree programs undergoing a periodic program review should make use of this checklist.

This checklist is provided as a guideline for items that should be included in a self-study, as required by the Council on Postsecondary Education (CPE) and Southern Association of Colleges and Schools, Commission on Colleges (SACSCOC), as well as by UK's *Governing Regulations*, *Administrative Regulations*, and *Senate Rules*. Additional information may be added to the reports as needed.

AR 1:4 states: "The purpose of the program review is to improve the quality and effectiveness of teaching and learning, research, public service, and operations. It does so by systematically examining missions, goals, objectives, resources, activities, processes, and outcomes of programs and services."

All data is to be collected in the unit under review unless otherwise noted in parenthesis below.

Organization of the Self-Study Report

The self-study document is the primary resource used by review committees to complete the second phase of the periodic program review process.

Cover Page

- Unit Information:
  - Unit Name (including degree programs under review)
  - Year Periodic Review Process Started
  - Name of Accreditation Agency and Last Accreditation visit (if applicable)
- Submitted by: Name of appropriate designee(s) (include titles and contact information)
- Submitted to: List the appropriate person(s) the report will be submitted to for approval (Dean/Provost)
- Date Report is Submitted:

Executive Summary

- Brief account of self-study process
- Committee member names and affiliations
- Overview of progress since last Self-Study (attention to last Implementation Plan/ current Annual Progress Reporting)
- Major recommendations and areas of concern

Copy of the Unit Self-Study Report Checklist indicating what pages of the self-study narrative or appendix the items of the checklist are addressed and can be found.

Unit Self-Study Report: This narrative must describe, analyze and synthesize information about the academic department /educational unit and associated degree programs. The report should include the components detailed below. Some documents may be tabled features within the text. Others may be featured as appendices. An electronic version of the report and supporting documentation is required for archival purposes. Please note that the structure of the narrative need not follow the structure of the checklist.

Appendices: The supporting documentation of the narrative. This is the section in which the unit provides additional materials as evidence in support of the narrative (e.g., organizational charts, tables, reports, etc.).

UKAg

College of Agriculture, Food and Environment
Educational Unit (including Degree Programs) Self-Study Report Checklist*

This narrative must describe, analyze and synthesize information about the Unit and its departments (as appropriate). The report should include the components detailed below. Some documents may be tabled features within the text. Others may be featured as appendices. An electronic version of the report and supporting documentation is required for archival purposes.

Please note that the structure of the narrative need not follow the structure of the checklist.

Part 1: Academic Department (Educational Unit)

	Academic Department (Educational) Unit Overview	Included (✓, CPE*, SACS-COC*) *Required	Narrative Page(s)	Page Number(s) of appropriate Evidence/ Supporting Documents
1	Provide the department's Mission, Vision, and Goals, and explain how they relate to the university's mission.	✓	11	11
2	Consortial Relations: The SACS accreditation process mandates that we "ensure the quality of educational programs/courses offered through consortial relationships or contractual agreements and that the institution evaluates the consortial relationship and/or agreement against the purpose of the institution." Please list any consortium or contractual relationships your department has with other institutions in Kentucky, as well as the mechanism for evaluating the effectiveness of these relationships.	SACS-COC	35	35
3	Articulate primary departmental/unit strategic initiatives for the past 3 years and the department's progress towards achieving the university and college/school initiatives (be sure to reference Unit Strategic Plan, Annual Progress Report, and most recent Implementation Plan)	✓	21	21
4	Department benchmarking activities: Provide a summary of benchmarking activities, including institutions benchmarked against and comparison results tracked against: • Promotion and tenure expectations • Annual evaluation expectations • Faculty mentoring expectations • Budget • Number of faculty	✓	22	22
	Department Faculty and Research Support			
5	Describe primary faculty contributions to the 3-4 strongest research and creative areas in the department.	✓	36	36
6	Describe primary faculty contribution to teaching and service at the department level that has enhanced college and university strategic initiatives.	✓	31	31
7	Describe the attrition (cumulative number not tenured, resigned, retired, or other) of the program faculty over the past three years. Discuss the expected effect on program(s) under review and other issues related to ability to retain	✓	12	12

	qualified faculty (5-year review). Including a table is recommended.			
8	List current number of unfilled lines and discuss current actions or plans to fill lines. Include descriptions of start-up packages.	✓	**12**	**12**
9	List current number of unfilled lines and discuss current actions or plans to fill lines. Include general descriptions of start-up packages.	✓	**12**	**12**
10	Department level GTA and GRA information: List the salary range (hourly rate or semester half-time contract) for GTAs and GRAs and estimate the number on fellowships for the current or most recent fall semester.	✓	**26**	**26**
11	Describe the reasons students reject fellowships or assistantships offered from the university, college, or department**.**	✓	**26**	**26**
12	Number of postdoctoral fellows and scholars, graduate research and teaching assistantships for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. D:2)**	**26**	**26**
13	Overview of current research program and plans for each of the last 5 years	✓	**36**	**36**
14	Number of research FTE faculty for each of the last 5 years	✓	**14**	**14**
15	List of grants and contracts for the period of review, including funding amounts from the OSPA Web site for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. D:2)**	**37**	**37**
16	Summary of research programs by topic for each of the last 5 years	✓	**14**	**14**
17	Fellowships for each of the last 5 years	✓	**26**	**26**
18	Faculty and graduate student honors and recognitions for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. D:2)**	**27**	**27**
19	Publications (such as books, book chapters, refereed journal articles, non-refereed articles, reviews) for each of the last 5 years	✓	**37**	**37**
20	Graduate student publications and presentations for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:2)**	**37**	**37**
21	Undergraduate research activities, publications, and initiatives (if applicable) for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:2)**	**34**	**34**
	Documentation of Policies and Procedures Implementation: Identify the educational policies and procedures established through faculty governance and responsible parties for implementation (e.g., admission criteria and procedure, academic performance standards, equivalency credits, course transfers, course substitutions)	**Included (✓, CPE*, SACS-COC*) *Required**	**Narrative Page(s)**	**Page Number(s) of appropriate Evidence/ Supporting Documents**
22	Evidence of adherence to educational policies and procedures established through the faculty governance process, including consistency in applying policies related to grading, probation, admissions, termination	**SACS-COC**	**32**	**32**
23	Evidence of consistent review and monitoring of course substitution, course equivalency credits, course transfers	**SACS-COC**	**32**	**32**

	toward degree completion, and vetting of exceptions, degree requirements, drop, fail and withdraw (DEW) rates			
24	Evidence of adherence to unit procedures on faculty personnel actions (e.g., appointment, promotion and tenure) and budget request preparation	✓	**12, 20**	**12, 20**
25	Evidence of course scheduling and teaching assignment	✓	**30**	**30**
26	Evaluation of course grade distribution by level and discussion of strategies to monitor grade deflation/inflation	✓	**30**	**30**
27	Dissemination and transparency of all the above	✓	**20**	**20**
Part 2: Degree Program(s) COMPLETE FOR EACH DEGREE PROGRAM (as applicable) i.e., one for Bachelor's, Master's, and Doctoral				
Academic (Degree) Program Description		***Included (✓, CPE*, SACS-COC*) *Required***	***Narrative Page(s)***	***Page Number(s) of Appropriate Evidence/ Supporting Documents***
28	Centrality to the institution's mission and consistency with state's goals: A program should adhere to the role and scope of the institution as set forth in its mission statement and as complemented by the institution's strategic plan. There should be a clear connection between the program and the institution's, college, department missions and the state goals (where applicable). Focus on each of the following: • Consistency with UK mission and priorities • How the program contributes to CPE--Stronger by Degrees • How the program aligns with the CPE statewide strategic implementation plan (Stronger by Degrees)	***CPE PR User Guide 2/19/14 (Sec. A:1, 2, 3)***	**11**	**11**
29	Primary strategic initiatives for the past 5 years and the program's progress towards achieving the university and college/school initiatives (be sure to reference Unit Strategic Plan, Annual Progress Report, and most recent Implementation Plan, as applicable)	✓	**21**	**21**
	Program Demand/Unnecessary Duplication			
30	Number of students enrolled, number of graduates, and credit hour production for each of the last 5 years, including summer, fall, and spring. Credit hour production refers to the number of credit hours produced by program faculty.	***CPE PR User Guide 2/19/14 (Sec. C: 1)***	**25, 29, 30**	**25, 29, 30**
31	Number of degrees conferred for each of the last 5 years. Number of enrollees and degrees conferred includes totals from summer, fall, and spring semesters.	***CPE PR User Guide 2/19/14 (Sec. C: 1)***	**25, 29**	**25, 29**
32	Explanation of pursuit of collaborative opportunities with similar programs at other Kentucky institutions and how collaboration will increase effectiveness and efficiency	✓	**35**	**35**
33	Program history and background/organizational structure: Critical events/background information which will help in understanding the program currently.	✓	**28, 29**	**28, 29**
34	Program uniqueness: Unique components, distinctive innovations; is the program a response to changes in the discipline or other academic necessities? How is this	***CPE PR User***	**25, 28**	**25, 28**

	program different from similar programs at other Kentucky institutions? Is access to other institutions limited?	***Guide* 2/19/14 (Sec. C: 2)**		
35	Describe how the program is administered (e.g., is there a program coordinator and/or program committee? What is their role or function? How do they operate? How are appeals handled? Etc.)	✓	**20**	**20**
36	Describe the recruitment and development plan for the program (include attention to faculty, staff, and students)	✓	**26, 29**	**26, 29**
37	Program delivery: Review of distance learning course offerings, services and outcomes to ensure compliance with best practices, SACS policies, federal rules, and University Senate and college curriculum committees. Describe flexibility of program delivery: Classes available at convenient times and in convenient formats for non-traditional students, etc.	**SACS-COC and CPE**	**32**	**32**
38	Program Contributions to undergraduate general education or UK General Education Core	✓	**31**	**31**
	Program Quality and Student Success: The curriculum should be structured to meet the stated objectives and student learning outcomes of the program.	**Included (✓, CPE*, SACS-COC*)** ***Required**	**Narrative Page(s)**	**Page Number(s) of appropriate Evidence/ Supporting Documents**
39	Student Learning Outcomes Assessment • Evidence of attainment of student learning outcomes for all program delivery methods, as applicable (e.g., traditional, online, distance education, etc.) • Current program assessment of student learning outcomes for undergraduate and graduate programs • Current program assessment mapping for student learning outcomes for undergraduate programs • Evaluation of students' post-graduate success	**CPE PR User Guide 2/19/14 (Sec. B:1)**	**76 (Appendix B)**	**76 (Appendix B)**
40	Assessment Results reports and findings for improvement (include evidence) for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:1)**	**57 (Appendix A)**	**57 (Appendix A)**
41	External awards or other recognition of the students, faculty, and/or program for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:2)**	**27**	**27**
42	Average time and credits to degree for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:3)**	**26, 30**	**26, 30**
43	Employer satisfaction with graduates as measured by surveys and/or alumni satisfaction for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:4a, 4b)**	**35**	**35**
44	Job placement (undergraduate and graduate) or graduate admission for each of the last 5 years	***CPE PR User Guide* 2/19/14 (Sec. B:5a, 5c)**	**35**	**35**
45	Pass rates on licensure/certification (if applicable) for each of the last 5 years	***CPE PR User***	**35**	**35**

		***Guide* 2/19/14 (Sec. B:6)**		
46	Describe processes used to ensure currency of curriculum (industry advisory boards, pass rates on licensure, standardized tests, etc.)	✓	**35**	**35**
47	Describe quality of orientation, advising, other student services/developmental programs, effectiveness of advising, innovations in advising and efforts to improve	✓	**33**	**33**
48	Program qualifications/standards for incoming students, program admission	✓	**28**	**28**
	Program Resources	**Included (✓, CPE*, SACS-COC*)** ***Required**	**Narrative Page(s)**	**Page Number(s) of appropriate Evidence/ Supporting Documents**
49	Cost and Funding of Program: The resource requirements and planned resources of funding of the program must be detailed in order to assess the adequacy of the resources to support a quality program. • Student credit hour per instructional faculty FTE for the past 5 years • Include Institution's definition of Instructional FTE: Student credit hour per instructional FTE is defined as credit hours taught by program faculty in a unit, department, or discipline, divided by the number of instructional FTE (as defined by the institution) of those program faculty. • Budget summary information (including extramural funding) and adequacy	**CPE PR User Guide 2/19/14 (Sec. D:1)**	**14, 23**	**14, 23**
50	Facilities summary information and adequacy	✓	**22**	**22**
51	Equipment (including IT capacity) summary information and adequacy	✓	**22**	**22**
52	Personnel summary information and adequacy (including faculty and staff numbers, salaries, demographics)	✓	**11**	**11**
53	Support from other university units (college, research, administration, office of engagement, human resources)	✓	**20**	**20**
54	Support from development and alumni affairs	✓	**20**	**20**
	Input from Affected Constituents (e.g., surveys, focus groups, interviews, etc.) Information to be gathered from accreditation visit/external reviewers and progress updates since last program review (append external review comments for accredited reviews).	**Included (✓, CPE*, SACS-COC*)** ***Required**	**Narrative Page(s)**	**Page Number(s) of appropriate Evidence/ Supporting Documents**
55	Evaluation data from faculty for each of the last 5 years	✓	**54**	**54**
56	Evaluation data from staff for each of the last 5 years	✓	**54**	**54**
57	Evaluation data from students for each of the last 5 years	✓	**31**	**31**
	Evidence of Program Quality and Productivity	**Included (✓, CPE*, SACS-COC*)** ***Required**	**Narrative Page(s)**	**Narrative Page(s)**

58	Operations: Quality of faculty and staff communications and interactions, such as awards/recognitions, opportunities for input, unit meeting schedule, unit retreat schedule, opportunities for faculty and staff to interact	✓	**21, 54**	**21, 54**
59	Instruction: Overview of current instructional program(s) and plans; describe measures of teaching effectiveness and efforts to improve (e.g., faculty development initiatives for instruction, teacher mentor programs) • Class sizes and faculty nucleus for program instruction • Instructional equipment • Faculty credentialing to support core/elective course offerings • Internships, independent study, experiential education, co-curricular student activities • Education abroad	✓	**32**	**32**
	Service, Extension and Non-Extension Programs	**Included (✓, CPE*, SACS-COC*)** ***Required**	**Narrative Page(s)**	**Page Number(s) of appropriate Evidence/ Supporting Documents**
60	Summary of quantity and quality of outreach and community service. Interrelationship of public service with research and other aspects of the program. Nature and quality of service to the university and discipline.	**CPE**	**48**	**48**
61	Summary of extension programs by topic	✓	**48**	**48**
62	Summary of county-level programs	✓	**48**	**48**
63	Summary of youth programs	✓	**51**	**51**
64	Summary of community-based programs and training	✓	**48**	**48**
65	Extension publications and videos	✓	**48**	**48**
66	Evidence of public service activities such as congressional testimony, service on boards	✓	**48**	**48**
67	Number of FTE extension faculty and extension specialists	✓	**14**	**14**
68	Number of clientele served; programs, and training opportunities	✓	**48**	**48**
	Other Areas	**Included (✓, CPE*, SACS-COC*)** ***Required**	**Narrative Page(s)**	**Page Number(s) of appropriate Evidence/ Supporting Documents**
69	Quality Enhancement Plan (Multimodal Communications Across the Discipline): Please indicate program contribution to the goals of the QEP. See http://www.uky.edu/SACS/QEP_themes.html	✓	**33**	**33**
70	University Diversity Plan: Please indicate ways in which the program contributes to the university's Diversity Plan. See http://www.uky.edu/DiversityPlan/diversity_plan.html	✓	**21**	**21**

Table of Contents

List of Tables

INTRODUCTION

The Department of Agricultural Economics is one of 14 academic departments in the College of Agriculture, Food and Environment (CAFE). The department conducts research in production economics, farm management, agricultural marketing, agribusiness management, international trade, agricultural policy, community and rural economic development, international development, equine economics, and environmental and resource economics. The department's role is defined by the University's and the College's Land Grant responsibilities to deliver instruction, research, and Cooperative Extension programming. Its mission statement is to develop and apply knowledge to aid rural and agricultural decision-makers in addressing economic issues through integrated research and educational programs that enhance incomes and quality of life in Kentucky and beyond. In terms of the Council on Postsecondary Education's Stronger by Degrees strategic goals, the department's efforts are clearly centered on preparing Kentuckians for life and work, and on benefiting Kentucky's communities and economy. A review of the departmental personnel and structure follows.

DEPARTMENT OVERVIEW

Faculty and Staff

The number of full-time faculty in the department peaked at 32 in 1981, was 25 (including one vacancy) at the time of the 2011 departmental review, and currently stands at 21 (see Table 1), consisting of nine assistant professors, three associate professors, and nine full professors. Three faculty are women; none are minorities. All faculty members are located in the Barnhart Building, except Todd Davis whose duty location is the UK Research and Education Center in Princeton, Ky. Regarding part-time faculty, Lee Meyer is in the second year of a 60% post-retirement appointment, and Marvin Batte is a soft-funded Research Professor with a 20% appointment. Jerry Skees retired in June, 2016 following a series of entrepreneurial, scholarly, and unpaid leaves in recent years. Two faculty, Roger Brown and Yuqing Zheng, are on nine-month appointments.

The on-campus staff of 14 consist of four administrative and academic support staff, two IT specialists, two business management staff, two program coordinators, an academic coordinator, and three extension associates. Of this group, 10 are women and one is a member of an underrepresented ethnicity. Not included in the staff numbers, but housed in the department, are seven professional staff who work for the Community Economic Development Initiative of Kentucky (CEDIK), the associate dean and the student affairs coordinator in the College's Office of Diversity, and a specialist with a non-UK partner organization called the Kentucky Center for Agriculture and Rural Development (KCARD). The off-campus staff of 12 consist of a director, nine specialists, and two support staff with the Kentucky Farm Business Management

program (KFBM). Of this group, eight are women and none are from underrepresented groups.

Regarding adequacy, the department is leaner since the budget cuts of FY12 and FY13, with a predictable rise in both efficiency and work-life balance concerns. There is unmet demand for KFBM services in the Ohio Valley Association, and their board has lobbied for an additional specialist. Agents request more visits from extension specialists than can be delivered. After losing three faculty to budget cuts, we rely on part-time instructors and graduate students to teach about one-third of our student contact hours. Our academic coordinator is about to take a new position, and will need to be replaced promptly. Overall, adequacy of personnel is a concern, but not a crisis.

Regarding attrition of faculty, during the three years prior to June, 2016, one tenured faculty member resigned to take a position at another university. This position was refilled with an assistant professor. Three tenured faculty members retired, and two began post-retirement appointments. One of these lines was refilled with an assistant professor. The other remains partially occupied. Three faculty lines were lost to budget cuts out of the 25 we had in 2011. One faculty member was denied tenure, and we will attempt to transition him into a lecturer position that reflects his strengths in the classroom.

One vacant line currently exists, but the funding for it resides at the College level, and we hope to be able to refill that position. Startup packages typically consist of $9,000 per year for three years. Until recently, the Vice President for Research was not funding startups, so we funded these internally from state carryforward requests.

Regarding evidence of adherence to procedures on faculty personnel actions, the College and University provide detailed guidelines for promotion and tenure dossiers, which are double-checked by the Assistant Dean for Academic Administration. Similarly, detailed procedural requirements exist for faculty searches and appointments. Items such as position advertisements, EEO statements, procedures to encourage diversity, and offer letters are scrutinized at multiple levels within the College before implementation. Budget requests are made within the constraints of the unit budget provided by the College each fiscal year. An adequate recurring funding source must exist before the Dean will approve any new hires, and faculty promotion increases are funded by the University.

Table 1. Department of Agricultural Economics Faculty Profiles

Brown, Roger, Ph.D., Assistant Professor, Special Title Series. Auburn University, 2004. Teaching.

Buck, Steven, Assistant Professor, Ph.D. University of California - Berkeley, 2011. Research/Teaching. Environmental and Natural Resource Economics.

Burdine, Kenneth, Ph.D., Associate Extension Professor, University of Kentucky, 2011. Extension/Teaching. Livestock and Meat Marketing

Davis, Alison, Extension Professor and Executive Director of CEDIK. Ph.D., N. Carolina State University, 2004. Extension / Teaching. Community Economic Development.

Davis, Todd, Assistant Extension Professor, Ph.D., Purdue, 2001, Extension. Grain Marketing.

Dillon, Carl, Professor. Ph.D., Texas A&M University, 1991. Research/Teaching. Farm Management, Mathematical Programming, Risk Management, Production Economics.

Freshwater, David, Professor. Ph.D., Michigan State University, 1977. Research/Teaching. Rural Development, Public Policy, Finance.

Greg Halich, Associate Extension Professor. Ph.D., Virginia Tech, 2005. Extension/Teaching. Farm Management.

Hu, Wuyang, Professor. Ph.D., University of Alberta, 2004. Research/Teaching. Food Systems, Agricultural Marketing and Consumer Economics.

Isaacs, Steven, Extension Professor. Ph.D., University of Tennessee, 1992. Extension/Teaching. Farm Management, Kentucky Ag Leadership Program, Kentucky Income Tax Seminar.

Kusunose, Yoko, Assistant Professor, Ph.D., University of California – Davis, 2010. Research/Teaching. Development Economics.

Mark, Tyler. Assistant Professor, Ph.D., Louisiana State University, 2010. Research/Teaching, Production Economics, Farm Management.

Maynard, Leigh, Professor and Chair. Ph.D., Pennsylvania State University, 1998. Administration/Teaching.

Reed, Michael, Professor & Director of Office of International Affairs. Ph.D., Iowa State University, 1979. Research/Teaching. International Trade and Agricultural Marketing.

Saghaian, Sayed, Associate Professor, Ph.D., University of Kentucky, 1992. Research/Teaching. Food and Agribusiness Management.

Schieffer, John (Jack), Assistant Professor, Ph.D. The Ohio State University, 2009. Research/Teaching. Environmental and Natural Resource Economics.

Shockley, Jordan, Assistant Extension Professor, Ph.D., University of Kentucky, 2010. Extension/Teaching. Farm Management.

Snell, William, Extension Professor. Ph.D., University of Kentucky, 1989. Extension/Teaching. Tobacco Economics, Agricultural Policy, Kentucky Ag Leadership Program.

Christina (Jill) Stowe, Associate Professor. Ph.D. Texas A&M University, 2002. Research/Teaching. Equine Economics.

Woods, Timothy, Extension Professor. Ph.D., Michigan State University, 1996. Extension/Teaching. Agribusiness Management and Marketing, Horticultural Marketing.

Zheng, Yuqing, Assistant Professor. Ph.D., Auburn University, 2006. Research/Teaching. Ag and Food Marketing.

Table 2 shows the aggregate Distribution of Effort (DOE) across the three land grant missions during the review period, measured in full-time equivalents (FTE). For reference, a typical three-hour course with fewer than 40 students would be considered 10% of a FTE.

Table 2. Distribution of Effort, Aggregate

	11/12	12/13	13/14	14/15	15/16
Teaching FTE	5.8	6.0	5.4	5.6	5.6
Research FTE	8.9	9.7	8.7	6.9	7.0
Extension FTE	5.4	5.5	6.6	6.9	7.8

The table above includes active faculty, and does not include post-retirement appointments, extension associates, KFBM specialists, or part-time instructors. Accounting for three extension associates and the 10% extension effort allocated to each of 10 KFBM specialists would increase the extension FTE accordingly.

Table 3 shows the Distribution of Effort for each faculty member during the review period.

Table 3. Distribution of Effort, Individual Faculty

(In the chart below, T is teaching, R is research, E is Extension, and A is administration.)

			11/12	12/13	13/14	14/15	15/16
Roger	Brown	T	100	100	100	100	100
		R	0	0	0	0	0
		E	0	0	0	0	0
		A	0	0	0	0	0
Steven	Buck	T					17
		R					83
		E					0
		A					0
Kenneth	Burdine	T			3	12	13
		R			0	0	0
		E			97	88	88
		A			0	0	0
Alison	Davis	T	30	26	17	16	38
		R	7	0	0	0	0
		E	43	44	69	70	62
		A	20	31	15	20	0
Todd	Davis	T				0	0
		R				0	0
		E				100	100
		A				0	0
David	Debertin	T	20	20	20		
		R	80	80	80		
		E	0	0	0		
		A	0	0	0		
Carl	Dillon	T	31	39	39	37	44
		R	69	62	62	64	56
		E	0	0	0	0	0
		A	0	0	0	0	0
David	Freshwater	T	29	24	24	31	42
		R	71	77	77	69	59
		E	0	0	0	0	0
		A	0	0	0	0	0
Gregory	Halich	T	12	14	14	13	12
		R	0	0	0	0	9
		E	88	87	87	87	78
		A	0	0	0	0	0
Wuyang	Hu	T	29	29	29	31	26
		R	56	72	72	69	74
		E	16	0	0	0	0

		A	0	0	0	0	0
Steven	Isaacs	T	38	32	32	31	32
		R	0	0	0	0	0
		E	62	69	69	69	68
		A	0	0	0	0	0
Ani	Katchova	T	23	0	0	23	
		R	72	99	99	77	
		E	5	1	1	0	
		A	0	0	0	0	
Yoko	Kusunose	T	30	34	34	28	40
		R	70	67	67	72	60
		E	0	0	0	0	0
		A	0	0	0	0	0
Tyler	Mark	T				47	46
		R				53	0
		E				0	54
		A				0	0
Leigh	Maynard	T	0	21	21	15	16
		R	40	19	20	31	42
		E	40	40	39	34	22
		A	20	20	20	20	20
Alfonse	Meyer	T	17	17	17	19	0
		R	10	10	10	0	0
		E	63	63	63	81	100
		A	10	10	10	10	0
Lia	Nogueira	T		31	31		
		R		69	69		
		E		0	0		
		A		0	0		
Angelos	Pagoulatos	T	22	22			
		R	78	78			
		E	0	0			
		A	0	0			
Michael	Reed	T	39	24	24	21	22
		R	15	29	37	49	63
		E	26	32	24	15	15
		A	20	15	15	20	0
Lynn	Robbins	T	8	17	17		
		R	92	83	83		
		E	0	0	0		
		A	0	0	0		
Sayed	Saghaian	T	24	30	30	23	25
		R	76	70	70	27	75
		E	0	0	0	0	0

		A	0	0	0	0	0
John	Schieffer	T	43	39	39	42	34
		R	57	61	61	59	66
		E	0	0	0	0	0
		A	0	0	0	0	0
Jordan	Shockley	T					0
		R					0
		E					100
		A					0
Jerry	Skees	T	5	5	5	0	0
		R	95	95	95	100	100
		E	0	0	0	0	0
		A	0	0	0	0	0
William	Snell	T	13	15	15	14	14
		R	0	0	0	0	0
		E	82	86	86	86	87
		A	5	0	0	5	0
Christina	Stowe	T	42	40	12	21	14
		R	58	60	38	29	36
		E	0	0	0	0	0
		A	0	0	50	50	50
Cory	Walters	T	20	21	21		
		R	5	5	5		
		E	75	74	74		
		A	0	0	0		
Timothy	Woods	T	23	23	23	25	22
		R	17	8	8	14	0
		E	46	55	55	62	79
		A	15	15	15	15	0
Yuqing	Zheng	T				31	30
		R				69	70
		E				0	0
		A				0	0

During the years shown, the number of undergraduate students grew by 50%, with no increase in faculty teaching resources. Accordingly, the department relies more upon part-time instructors and graduate students to teach undergraduate courses. Table 4 lists the part-time instructors and graduate student instructors with classes in the Spring and Fall semesters of 2016. These account for 47 of the 140 undergraduate credit hours offered in calendar year 2016.

Table 4. Part-Time and Graduate Student Instructors, 2016

Part-Time Instructors

Simona Balazs, AEC 300, Special Topics: Rural Spatial Economics, 3 cr.
Timothy Capps, AEC 300, Special Topics: Equine Marketing, 3 cr.
William Gorton, AEC 326, Environmental Law, 3cr.
Clint Quarles, AEC 324, Ag Law, 3 cr.
Jonathan Shepherd, AEC 302, Ag Management Principles, 4 cr.
Brian Thomas, AEC 324, Ag Law, 3 cr.
Walt Robertson, AEC 325, Equine Law, 3 cr.
Holly Weimers, AEC 320, Ag Product Marketing and Sales, 3 cr.

Graduate Student Instructors

Shaheer Burney, AEC 303, Microeconomic Concepts in Ag Economics, 3 cr.
Bo Chen, AEC 300, Special Topics: Applications with Excel, 1 cr.
Abdelaziz Lawani, AEC 309, International Ag, Food Needs, and U.S. Trade, 3 cr.
Abdelaziz Lawani, AEC 300, Special Topics: Social Entrepreneurship in Africa, 1 cr.
Mehdi Nemati, AEC 300, Special Topics: Energy Economics, 1 cr.
Jerrod Penn, AEC 300, Special Topics: Science / Economics of Insects, 2 cr.
Jerrod Penn, AEC 580, Special Problems: AEC Competition Team, 1 cr.

The Department employs ten Farm Business Analysis Specialists in six locations around the state to conduct the Kentucky Farm Business Management Program (KFBM). All of these extension specialists have M.S. degrees in agricultural economics. This extension program began with one specialist in 1962 and now serves 374 farmer-members in four associations. This compares to 376 cooperators in 2011, and 460 cooperators in 2003. The objective is to provide intensive farm management assistance to farmers and generate data for use in extension and research programs in the College. Approximately 90% of the specialists' effort is directed towards KFBM and 10% of their time is spent on general farm management extension education. Jerry Pierce serves as the KFBM Program Coordinator. A listing of specialists and locations appears in Table 5.

Table 5. Kentucky Farm Business Analysis Specialists

Michael Forsythe, Pennyroyal Farm Analysis Group, Hopkinsville (M.S., University of Kentucky, 2007)

Tarrah Hardin, Lincoln Trail Farm Analysis Group, Elizabethtown (M.S., University of Kentucky, 2013)

Suzy Martin, Ohio Valley Farm Analysis Group, Owensboro (M.S., Purdue University, 2000)

Rush Midkiff, Pennyroyal Farm Analysis Group, Hopkinsville (M.S., University of Kentucky, 1987)

Lauren Turley, Ohio Valley Farm Analysis Group, Henderson (M.S., University of Tennessee, 2009)

Laura Powers, Pennyroyal Farm Analysis Group, Hopkinsville, (M.S., University of Kentucky, 2002)

Jerry Pierce, Coordinator Kentucky Farm Business Management Program, Elizabethtown, (M.S., Auburn University, 1986)

Jennifer Rogers, Purchase Area Farm Business Management Association, Mayfield (M.S., University of Kentucky, 2003)

Jonathan Shepherd, Lincoln Trail Farm Analysis Group, Elizabethtown, (M.S. University of Kentucky, 2009)

There are currently seven administrative and technical staff located in Lexington, and two administrative staff located at KFBM offices. In addition, the Department employs six Extension Associates, Specialists, and Program Coordinators funded mainly through grants and income accounts. The Department houses the interdisciplinary Community Economic Development Initiative of Kentucky (CEDIK), which employs eight professional staff. The Department also houses the College's Office of Diversity (two personnel), one specialist employed by the Kentucky Center for Agriculture and Rural Development (KCARD), and one staff member employed by The Food Connection. Currently, there are no post-docs, and the Department hosts several visiting scholars at any given time.

The Department provides administrative oversight of the Kentucky Small Business Development Center (KSBDC), which operates 16 offices throughout the state. Aside from IT support for the Lexington, Louisville, and Elizabethtown offices, KSBDC does not require financial or managerial resources from the Department. We are proud to be associated with KSBDC, and benefit from the collaborative opportunities provided by our partnership.

Departmental Organization

The Department is organized into four standing committees: Departmental Support Committee, Graduate and Research Committee, Undergraduate Program Committee, and the Extension Advisory Committee. There is a rotation process in place which alters committee membership at the beginning of each fiscal year for all committees except the Extension Advisory Committee (which operates as a "committee of the whole"). The Chairperson of each of the major committees serves on the Executive Committee that is consulted as needed. The Director of Undergraduate Studies chairs the Undergraduate Program Committee, and the Director of Graduate Studies chairs the Graduate and Research Committee. These directors perform or coordinate almost all tasks relating to their programs, and with their committees, develop policy as motions brought to the faculty. Faculty meetings occur monthly, and are regularly attended by the KFBM Director, the Graduate Student Organization representative, and the Academic Coordinator.

The College provides substantial support in terms of procedural guidance, business management, student services, legal guidance, pre-award grant proposal assistance, and overall leadership. Other service units in the College and University, particularly HR, OSPA, and Accounts Payable, focus more on procedural compliance than assistance. Frequently changing procedures and systems do not allow staff to acquire the efficiencies borne of experience. The complexity of administrative compliance and reporting grew during the last several years, requiring more expenditures on personnel at all levels of the University, and demanding higher skill levels of staff, but with few visible benefits to the units that deliver teaching, extension, and research. The department has little interaction with the College development and alumni affairs unit, consisting mostly of email notifications of donations received. Faculty personnel actions such as appointments, performance evaluations, and promotions are heavily regulated by University procedures, with multiple checkpoints to ensure adherence to policies. Guidelines for all procedural aspects of departmental administration are available online, ranging from the University's administrative and governing regulations, to College-level instructions, to the Department's faculty handbook and statement on evidences of activity.

Based on results from a 2015 university-wide survey of faculty and staff, open communication among the department's faculty and staff is a strength, with ample recognition of skills and accomplishments. The department routinely has strong entries in the College's outstanding staff awards competition, and a long series of high-performing extension associates and program coordinators have been recognized for excellence in the department's extension programs. Increasing staff communication was a recommendation of the last unit retreat in 2011, and we now have monthly staff meetings that follow the monthly faculty meetings. Concerns are openly and constructively expressed, and staff professional development is encouraged. With the trend toward increasing integration of professional staff and faculty duties, interaction is the norm.

The Department benefits greatly from its contributions to diversity and the University's Diversity Plan. By housing the College's Office of Diversity, we have frequent interaction with Associate Dean Quentin Tyler and Natasha Saunders, who often recommend the ag economics major to students looking for a supportive atmosphere. The Department contributes financially to Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS), and especially to its youth component, Jr. MANRRS. This student group is a four-time defending national chapter of the year, it does an excellent job of preparing its members for the professional world and for life, and we are so proud to have a connection with MANRRS. Employers have reported some great successes with our alumni who first learned of us through the Diversity Office or MANRRS. Another contribution to diversity goals is Leigh Maynard's membership in the College's Diversity Advisory Committee.

Early in the review period, the prior strategic planning process, which used metrics defined and refined over years by the department, was replaced by a process in which the recommendations of the prior periodic review committee became the department's strategic goals for the next five years. Of the 50 recommendations delivered in the prior period review, we selected eight for our Implementation Plan that were not yet fully achieved:

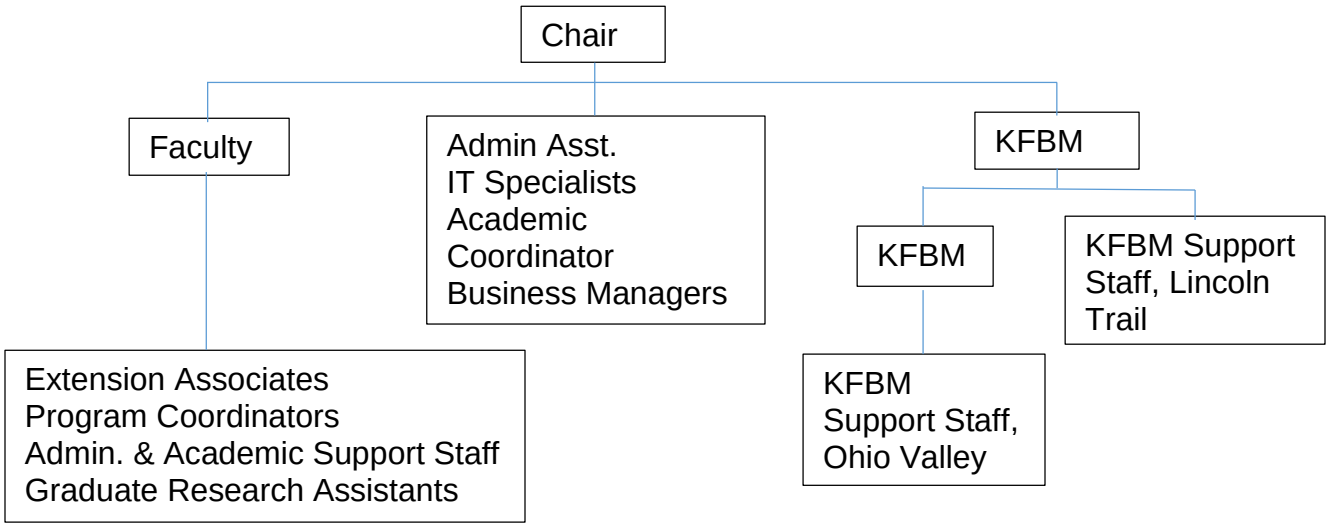
1. Maintain a strong department seminar series to enhance all mission areas.
2. Recruit undergraduate students who want to be in the program, with emphasis on increasing freshman numbers, excelling in racial and ethnic diversity, and addressing a gender imbalance.
3. Redesign the department's website to enhance its recruiting potential for graduate and undergraduate students.
4. Make conscious strategic decisions about involvement in distance learning.
5. Enable students to have experiential education and education abroad opportunities.
6. Enhance graduate student opportunities to work in extension via applied research, and increase the extension faculty role in the graduate program.
7. Increase grant funding.
8. Track and reward research impact

Appendix A contains the annual strategic planning (old system) and implementation plan (new system) reports filed during the review period.

Our national and regional professional associations allow informal opportunities for benchmarking, through department head meetings at conferences, a biannual meeting of the National Association of Ag Economics Administrators (NAAEA), and electronic conversations among the NAAEA members. As this is being written, for example, department heads nationwide are responding to a member's question about typical teaching loads. Discussions often revolve around budgets, number and type of personnel, and graduate and undergraduate programs. The external letters gathered in the promotion process offer ongoing input regarding expectations for promotion throughout the discipline, and hiring/retention actions provide knowledge of salary and assistantship norms. Our peer group consists of agricultural economics departments in the U.S. and Canada, particularly the 28 departments that grant PhD degrees. There is

considerable uniformity in our discipline concerning departmental structure and expectations for professional accomplishment, though departments have distinct features. UK has more integration among extension and research faculty than most, our extension faculty teach more than most, and our research and PhD program rankings are currently below average (see, e.g., https://ideas.repec.org/top/top.agecon.html).

The organizational chart requested for this report appears below. The Kentucky Small Business Development Center (KSBDC), with its 16 offices statewide, is not shown, as it operates independently. Technically, however, the department chair is the supervisor of the KSBDC Director.



Facilities

The department occupies two floors of the C.E. Barnhart Building on the Lexington Campus, space in four county extension offices (Christian, Graves, Daviess, and Henderson Counties), and rented offices in Elizabethtown and Bowling Green. The Lexington facilities include offices, two conference rooms, and supporting infrastructure (kitchen, copying, and storage space). For most faculty and staff, the facilities are more than adequate. However, some staff share an office, we struggle to provide office space for all graduate students, and we are unable to provide office space for most visiting scholars. Climate control is chronically inadequate in some offices. Off-campus facilities appear to be adequate.

Equipment mainly consists of personal computers and laptops, printers, copiers, projectors, and a poster printer. Compared to many departments, we have excellent IT hardware, software, and (particularly) support. We hope to modernize the equipment in our large conference room during the next year.

Departmental Budget

The Department is funded through College of Agriculture, Food and Environment budget funds (summarized in Table 6), external grant funds, revenue from income-generating programs, and unrestricted gifts. The main sources of internal funding are the state and federal (US Department of Agriculture) funds that flow through the Agricultural Experiment Station for research, resident instruction funds (teaching), and extension funds (off-campus educational programs). Total federal and state funds allocated to the department in fiscal year 2016 were $3.70 million. For comparison, this total was $3.56 million in FY 2010, and $3.66 million in FY 2007. In real terms, using U.S. CPI data as a measure of inflation, the current budget is 96% of its FY 2012 value (the first year of the review period), and 86% of its FY 2007 value.

Despite budget cuts during the review period, annual per student state funding for teaching, adjusted for inflation, fluctuated within a range of $2,236 - $2,553, with a negligible trend. Aside from state and federal funding, the Department receives fluctuating amounts of extramural funding (the most recent KAES Annual Report lists grants of $610,680 in 2014), and as of this writing the Department is carrying $438,891 in restricted accounts, and $445,395 in income accounts.

Table 6. Departmental Budget

	Teaching	Research	Extension	Total	
2011-12					
State	$ 712,391	$ 1,035,876	$ 1,222,983	$ 2,971,249	81%
Federal		$ 518,005	$ 184,060	$ 702,065	19%
Total	$ 712,391	$ 1,553,881	$ 1,407,042	$ 3,673,314	100%
	19%	42%	38%	100%	
2012-13					
State	$ 751,448	$ 981,838	$ 1,084,987	$ 2,818,273	81%
Federal		$ 518,215	$ 164,240	$ 682,454	19%
Total	$ 751,448	$ 1,500,053	$ 1,249,227	$ 3,500,728	100%
	21%	43%	36%	100%	
2013-14					
State	$ 781,133	$ 1,013,028	$ 1,149,153	$ 2,943,314	81%
Federal		$ 527,458	$ 150,955	$ 678,413	19%
Total	$ 781,133	$ 1,540,486	$ 1,300,109	$ 3,621,728	100%
	22%	43%	36%	100%	
2014-15					
State	$ 798,087	$ 883,728	$ 1,253,077	$ 2,934,892	82%
Federal		$ 512,694	$ 144,610	$ 657,304	18%
Total	$ 798,087	$ 1,396,422	$ 1,397,687	$ 3,592,196	100%
	22%	39%	39%	100%	
2015-16					
State	$ 690,097	$ 881,187	$ 1,456,190	$ 3,027,473	82%
Federal		$ 521,287	$ 148,270	$ 669,557	18%
Total	$ 690,097	$ 1,402,474	$ 1,604,460	$ 3,697,030	100%
	19%	38%	43%	100%	

Relative to some departments in the discipline, little fundraising or development activity occurs at the departmental level. Factors include tight control over such activities by the College and University offices of philanthropy, and compared to the Midwest states, few large agribusiness companies with headquarters or major operations in Kentucky. The exception is the Kentucky Ag Leadership Program (KALP), where Steve Isaacs, Will Snell, and Phyllis Mattox have done an excellent job of raising endowment funds from sponsors and alumni, who are often among the most influential people in Kentucky's ag community.

TEACHING PROGRAMS

Graduate Program

The MS and PhD graduate programs in agricultural economics are the only such programs in Kentucky. Some regional universities offer a master's degree in agriculture, which is a much broader curriculum with some emphasis on agribusiness, but little emphasis on economics.

The department continued to expand and improve its graduate program over the past several years. The past five years has seen an average of 28 PhD students and 22 MS students in the program at a given point in time.

Table 7. Enrollment, AEC Graduate Program

Academic Year	(IRAA Data, below)	(Graduate School Data)	
2010-2011	Ph.D., 23 – M.S., 24	Fall 2010	Ph.D., 17 – M.S., 12
		Spring 2011	Ph.D., 18 – M.S., 13
2011-2012	Ph.D., 28 – M.S., 21	Fall 2011	Ph.D., 26 – M.S., 18
		Spring 2012	Ph.D., 26 – M.S., 19
2012-2013	Ph.D., 32 – M.S., 22	Fall 2012	Ph.D., 33 – M.S., 24
		Spring 2013	Ph.D., 32 – M.S., 20
2013-2014	Ph.D., 32 – M.S., 20	Fall 2013	Ph.D., 30 – M.S., 22
		Spring 2014	Ph.D., 27 – M.S., 29
2014-2015	Ph.D., 27 – M.S., 23	Fall 2014	Ph.D., 28 – M.S., 24
		Spring 2015	Ph.D., 29 – M.S., 19

Table 8. Degrees Conferred, Graduate Program

Academic Year	
2010-2011	Ph.D., 1 – M.S., 9
2011-2012	Ph.D., 4 – M.S., 6
2012-2013	Ph.D., 6 – M.S., 5
2013-2014	Ph.D., 1 – M.S., 12
2014-2015	Ph.D., 2 – M.S., 6

AEC has seen a trend of stable to slightly increased enrollment with funding from agencies outside the University of Kentucky gaining importance. In recent years, several of our graduate students have funding from their governments (including China, Iraq and Saudi Arabia) and international agencies (USAID and Fulbright) for the entirety

or almost their entire graduate program. Regarding departmental funding, the preponderance of the 23 assistantships are research assistantships (RAs at 21) with two teaching assistantships (TAs at 2), with none currently on post-doctoral fellowships. During the review period, the number of students on graduate research assistantships fluctuated from FY 2011 to FY 2016 as follows: 17, 14, 21, 21, 22, and 21. Teaching assistantships were not used in the Department until recently, and only one post-doc, who was grant-funded, has been associated with the Department during 2013-15. While almost all assistantships are for a $14,150 annual stipend, a few are higher, ranging up to $22,000. Tuition and health insurance are additional benefits at no cost to the RA/TA. When tendered an offer, potential students who decline cite better assistantship package from another university or a preference for another program due to faculty, sub-disciplinary focus, institutional prestige or location. Despite delayed growth in stipend levels, we consistently attract some outstanding graduate students each year. In many cases, these high-performing students were recruited by, or sought out, individual faculty to train and work in specific areas.

Admissions is processed through an online process and evaluated by two faculty members and the Director of Graduate Studies (DGS). Selectivity has averaged about 72% annually over the past seven years for doctoral admission. Of those admitted, about 26% have entered the program. During the last three years AEC has had 11 Ph.D. graduates (six in academic jobs, one post doc, four in private sector) and over twice as many M.S. graduates (nine enrolled in PhD programs, others in the private sector, at academic institutions or governmental organizations such as USDA or other countries' governments). Time to degree in recent years has seen a median of five years for PhDs and 2.25 for MS students. Despite this seemingly not unreasonable time in program on average, concern that the program is overly lengthy exists coupled with a desire to reduce time to degree for doctoral students.

Table 9. Time and Credits to Degree, Graduate Programs

Academic Year		#	Years	Credits
2010-2011	M.S.	9	2.24	30
	Ph.D.	1	5.00	68
2011-2012	M.S.	6	2.10	38
	Ph.D.	4	4.83	67
2012-2013	M.S.	10	2.76	38
	Ph.D.	6	4.44	59
2013-2014	M.S.	10	2.83	43
	Ph.D.	1	14.33	93
2014-2015	M.S.	3	2.27	43
	Ph.D.	2	5.17	65

Among the many research accomplishments of our graduate students, first authorship of a refereed article in *AJAE* in 2015 by a MS student is particularly outstanding. Another UK AEC student was awarded the Outstanding PhD dissertation by AAEA in 2014 (the first in 35 years for UK). After several rounds of budget cuts, we no longer have enough administrative staff to maintain annual records of awards, but these

examples serve as partial evidence of the department's growing emphasis upon research experience prior to the MS thesis and PhD dissertation through class term papers, research assignments and the departmental seminar series. This is partially contributory to the success in graduate student refereed publications. In 2015, UK AEC graduate students were first author on nine refereed journal articles (including the AJAE discussed above) and coauthors on two more. This follows and strengthens a successful 2014 with five first or coauthored refereed articles. Five doctoral students engaged as visiting graduate student researchers at top-ranked UC-Berkeley where they developed dissertation prospectuses, participated in grant projects, attended classes, partook of workshops and presented research findings.

Nurturing the development of teaching skills has also been a recent focus with substantial benefits observed. One of our graduate students teaching resulted in two 2015 awards: University of Kentucky Provost's Outstanding Teaching Assistant Award and the AAEA Graduate Teaching Award. This may have been helped by the implementation of a teaching development path wherein graduate student begin by taking the Graduate School's TA training; they then engage in grading papers, holding office hours, and conducting help sessions; they participate in teaching workshops at UK and other places; and finally they teach a one-hour module. This has opened opportunities with many of our graduate students having taught eleven courses in our department in the last three years. In seven of these instances these are courses that they developed as one credit hour courses. After succeeding at such, some have taught existing three credit hour courses in our department. Three of our PhD students in the past two years leveraged this experience into full time paid teaching experience for one or two semesters at Eastern Kentucky University and the Ohio State University prior to returning to complete their dissertation.

Extension and applied international research projects also accentuate the continued direction we wish to take our graduate program. One doctoral student founded a Youth Entrepreneurs Project in Benin and served as Project Manager in helping to create more than 100 jobs for previously unemployed youth. Food security economics in West-African countries is also being strengthened by this student's collaborative work with AfricaRice. Both a PhD and a MS student are involved in a wildlife preservation project using drones for monitoring of wildlife preserves in West Africa. Other PhD and MS students have engaged in extended applied humanitarian economic research efforts in places such as Haiti, Benin and the Dominican Republic.

Since the last periodic review, the number of faculty with research / teaching (R/T) appointments declined from 13 to 11, and the number of tenured faculty who are full members of the graduate faculty dropped from nine to seven. The University requires that dissertation committees be chaired by a full member of the graduate faculty, and contain a certain number of full members. Sometimes faculty whose work is unrelated to a dissertation are included on committees, or even co-chair committees, merely to comply with this historical requirement. While they are not allowed to chair dissertation committees, recent R/T hires are active in advising graduate students, publishing with grad student co-authors, seeking grants that employ grad students, and adding to graduate teaching capacity in econometrics, production economics, international development, ag marketing, and environmental and resource economics.

Extension faculty members contribute to graduate advising. Terminal MS students regularly look to extension faculty as advisors and committee members. Extension faculty members are often well-suited to helping graduate students identify decision-relevant topics for analysis, agricultural data, contacts within Kentucky, and in many cases, employment opportunities. A portion of the extension faculty are involved in research projects that produce refereed journal articles, and extension faculty continue to generate the majority of external funding for the department.

In most respects, the graduate program's structure and history resemble those of peer ag economics programs nationwide. Kentucky's unusually intact Cooperative Extension system, however, allows the Department to distinguish itself. Since the last departmental review, progress occurred in creating opportunities for graduate students in extension-related careers. Carl Dillon launched a successful MS-level Advanced Farm Management course that may be extended to the county agent audience that is seeking MS program options for career advancement. The popular Summer Ag Tour exposes graduate students to Kentucky agriculture through hands-on site visits. KFBM personnel are engaged with grad students seeking data and research projects, and use the MS program as a pipeline for prospective specialists.

A departmental meeting was held in January, 2016 to informally discuss the departmental graduate program (suggestions for improvement, concerns, future, structure). Priority areas to pursue next include: 1) students finishing soon and finishing well, 2) research assistantship (RA) stipend levels, 3) travel support procedure, and 4) math preparation.

The pervasive, primary threats facing the graduate program are unchanged from the prior departmental review: difficulty in maintaining the number of budgeted research assistantships, low and inconsistent levels of grants employing graduate students, and substantially lower assistantship stipends relative to our peer institutions. A recent challenge emerged in Fall, 2015 when two graduate courses had to be cancelled due to low enrollment, and three graduate courses continued with three or fewer students.

Undergraduate Program

The Department offers an undergraduate degree with two tracks: Agribusiness Management and Food Marketing, and Agricultural Economics. Any student who gained admission to the University has access to the ag economics major. This is the only such degree offered in Kentucky; regional universities offer a major in agriculture that typically includes an agribusiness concentration. Each structure has advantages, and the advantage of UK's structure is a larger course offering that allows for a deeper understanding of the agricultural economics discipline. The large majority (~85%) of the students enroll and graduate with the Business Minor and a smaller share will couple the Agricultural Economics Degree with minors including political science, a foreign language, or a minor within the College of Agriculture, Food, and Environment. The Agricultural Economics Degree was designed for those who were interested in pursuing graduate school, but this has not proven to be a clear strategy. Instead the students who enroll in this option tend to do so for a few reasons including: a) they transfer into

the program with a significant number of elective hours that can count towards the major and doing the business minor would delay graduation b) they choose a minor that complements hopeful career options or c) they just prefer Ag Econ courses over the more analytical options in Gatton. Recruitment mainly occurs through events organized by the College, through the efforts of student Ag Ambassadors who visit high schools, and by word of mouth.

Table 10. Enrollment, AEC Undergraduate Program

Academic Year	(SAP Data)	
2010-2011	B.S.	F-2010, 260
		S-2011, 279
2011-2012	B.S.	F-2011, 261
		S-2012, 282
2012-2013	B.S.	F-2012, 299
		S-2013, 288
2013-2014	B.S.	F-2013, 292
		S-2014, 276
2014-2015	B.S.	F-2014, 264
		S-2015, 261

Table 11. Degrees Conferred, Undergraduate Program

Academic Year	
2010-2011	67
2011-2012	71
2012-2013	87
2013-2014	107
2014-2015	77

Average time to degree for the undergraduate program appears below. This number, while required, is of limited use in a program containing mostly transfer students.

Table 12. Time to Degree, Undergraduate Program, Years

2010-2011	2.62
2011-2012	2.58
2012-2013	2.50
2013-2014	2.55
2014-2015	2.79

Total credit hour production by AEC faculty, including both undergraduate and graduate courses, appears below. The stable percentage of hours earned vs. attempted suggests that grade distributions are similarly stable, with no trend in grade inflation.

Table 13. Credit Hour Production by Term for AEC

		Total Hours	% Earned
2010-2011	F-2010	2,241	85.3%
	S-2011	2,234	90.6%
2011-2012	F-2011	2,129	87.7%
	S-2012	2,012	88.0%
2012-2013	F-2012	2,810	87.7%
	S-2013	2,206	89.1%
2013-2014	F-2013	2,296	88.6%
	S-2014	2,006	89.5%
2014-2015	F-2014	2,302	88.9%
	S-2015	2,024	90.3%

The number of undergraduate degrees conferred ranged from 67 (2010-2011) to 107 (2013-2014). The number of students peaked between 2012-2014 (~300) and has begun to fall as some colleges and departments have chosen to ease their degree requirements, reducing the number of transfer students into Ag Econ. Over the last six years of graduating classes, 51 students entered as freshmen and 496 entered the program after transferring from another program or another institution. On average, freshmen graduated just under 4 years after entering the program. On average transfer students could graduate within 2.5 years after entering the program. Of the 547 students that entered the program, 21.5% didn't graduate.

The University and College request course and instructor schedules months before each semester begins. The chair, Director of Undergraduate Studies, and Director of Graduate Studies jointly plan the schedules. A faculty member's teaching load is determined by her appointment, experience teaching certain courses, academic interests and expertise, and departmental need.

The Department does not currently offer any courses in the UK Core curriculum, partly because so few of our students are freshmen, and partly because there are no slack

teaching resources. Several courses are required or suggested by other majors within the College; these include AEC 302, AEC 305, AEC 320, and AEC 445G. The Equine Science and Management major contributes many students to the AEC class roles, as does the Natural Resource and Environmental Sciences (NRES) major. One faculty member teaches and advises in the NRES program, another helps administer the Sustainable Ag program, and faculty on occasion teach honors courses and courses in the Martin School of Public Policy.

Most courses are offered face-to-face, with scheduling to avoid conflicts where possible, and with consideration of substitute courses where conflicts cannot be avoided. A core course (AEC 305) has long been offered in a hybrid format with online materials but face-to-face interaction available as desired. A writing-intensive course (AEC 306) will follow a similar format. Lab material for one core course (AEC 302) has been effectively offered in an online format to supplement or replace live labs. An online course for AEC 303 was developed for a summer offering to relieve a curriculum bottleneck, but was not popular, and has not been offered in recent years. As in all academic programs, these courses undergo intensive reviews in multiple committees before being approved by the University, and the highly-structured assessment process required by the University ensures compliance with all policies.

The table below contains departmental averages for the overall value of courses, and the overall quality of teaching, during the review period. The averages reflect both undergraduate and graduate courses. The Department averages are usually about the same as the College averages, and 0.1-0.2 higher than the University averages.

Table 14. Course Evaluation Departmental Averages, 2011-2016, 4-Point Scale

	Value of Course	Quality of Teaching
Fall 2011	3.4	3.5
Spring 2012	3.5	3.6
Fall 2012	3.5	3.6
Spring 2013	3.5	3.6
Fall 2013	3.5	3.6
Spring 2014	3.3	3.4
Fall 2014	3.4	3.5
Spring 2015	3.3	3.5
Fall 2015	3.3	3.5
Spring 2016	3.4	3.5

Note: evaluations switched from paper to online in Spring 2014

Most undergraduate class sections contain 15-45 students; class sizes are not a major concern. Instructional equipment is adequate for most needs, with computer lab space for teaching being the most common constraint. Faculty credentialing is strictly regulated by the University and administered at the College and University levels, as

are probation, admissions, and termination decisions. Faculty have much autonomy in grading, but as noted below, the distribution of grades has been stable during the review period. Grade data are collected and maintained at the University level, but problems with individual instructors are handled within the department. In one recent extreme example, students' academic concerns resulted in an instructor being removed from a course mid-semester and replaced by the Director of Undergraduate Studies. Similarly, most course transfers and equivalency credits are handled at the Registrar's level, but the chair and Director of Undergraduate Studies are often requested to make course substitution decisions, and as well as decisions about requests for exceptions to degree requirements. In such cases, we balance the welfare of the student, the spirit of curricular requirements, and consistency of treatment across students.

Over the last five years the average GPA has remained consistent, between 2.72 and 2.79. Roughly 20 to 25% of the graduates earn a GPA greater than 3.0. Of those who have a higher GPA (greater than 3.5, half of those are Ag Econ majors (not Agribusiness Management). In addition, approximately 50% of the highest-achieving students are not from Kentucky.

Over the last five years, there has been an effort to modify the Ag Econ program to improve the learning outcomes for the students. Several changes have been implemented including the following:

- Require students to earn a C or better in MA 123 and ECO 201 (changed from D)
- Require all students to take a least 3 hours of 400+ in AEC
- Only allow one Ag Econ law course to count towards the major
- Require all students to take AEC 306, a course to satisfy the Communication and Composition graduation requirement at UK
- Require all students to enroll in AEC 395, AEC 396, or AEC 399 (independent research study, study abroad or internship)
- Require all students to take AEC 301, a 1-hour credit devoted to career preparation

The purpose of the first change was to attempt to have all students starting from at least a baseline level of knowledge before entering the Ag Econ program and the courses that require MA 123 (AEC 303 and 400 level courses). In addition, the department felt strongly that students be exposed to more rigorous material so as a result we implemented a 400+ level requirement and enforced that only one Ag Econ law course could count towards the major. The University of Kentucky changed its graduation writing requirement and as a result our department created AEC 306 that emphasizes written, oral and digital communication skills. AEC 306 is a hybrid distance-based course but still requires substantial involvement and time by the instructor. The last two changes above were designed to assist students in being more career ready and focused both on soft-skill development as well as hands on experience in the field.

Unlike many departments, undergraduate advising duties are shared among almost all faculty. As many other departments and colleges have moved towards professional advising, the Ag Econ faculty agree that student interaction through advising provides substantial benefits for both parties. The College provides several opportunities

throughout the year to train advisors. Janene Burke has an effective system of maintaining equitable advising allocations. Within the department we have tried to institute some standard advising practices to ensure students are taking classes at the optimal time, however, there are times this is not successful.

Perhaps the most apparent change to the program has been the creation of the Academic Coordinator position within the department. Ms. Erica Flores took this position in 2013 and had a tremendous impact on student success and career readiness. Ms. Flores was responsible for student advising, the coordination of Ag Econ's Experiential Learning requirement, creating and leading a new UK NAMA chapter, assisting the UK Agribusiness Club, as well as teaching two courses: AEC 301 and AEC 320. In addition, Ms. Flores was a co-lead on a new France-Switzerland Study Abroad tour, hosted through Ag Econ. As a result, student engagement is perceived to be at its highest level. Students are participating in the College Career Fair, Education Abroad opportunities, and the Ag Econ Symposium (an annual showcase of all students who participated in AEC 395, AEC 396 and AEC 399). Ms. Flores also created new relationships with employers who now actively recruit UK Ag Econ students.

Events such as the 2014 Ag Econ Centennial celebration, the annual experiential education Symposium, and careful coaching prior to the autumn Ag Career Fair are all conscious efforts to foster professional networks by connecting students with employers, alumni, other friends of the department, and even themselves.

The department emphasized and subsidized Ag Econ faculty-led study abroad opportunities for students. Through the department, students have had opportunities to travel to Panama, Dominican Republic, France/Switzerland, China, and Argentina for one- to three-week education abroad experiences.

Many of the new initiatives during the review period contribute to one or more themes of the University's Quality Enhancement Plan (QEP). The push for internships and education abroad experiences, for example, fosters engaged citizenship and global awareness. Roger Brown's innovative hybrid teaching methods, which he also teaches at University workshops, contribute to advancing teaching and learning. Our writing-intensive course (AEC 306) and our career readiness course (AEC 301) enhance effective communication.

The Agribusiness Club (ABC) has served as the primary student organization serving undergraduate students who are seeking professional development and networking in the agribusiness industry. Students are primarily a part of the agricultural economics departments, however the students represent other majors including animal science, plant science, agricultural education, and equine science. In 2013, the Agribusiness Club chartered a collegiate chapter of the National Agri-Marketing Association. A UK delegation of six students attended the 2014 National Conference and competed in the Ag Marketing Contest. The NAMA chapter has not sustained, and efforts have been focused on competing in the National Food Distribution Research Society Case Study (FDRS) competition which is held annually in the fall. This national activity is better aligned with the focus of our faculty and timing of the fall semester for our students.

Additionally, in 2015, students competed in a Diversity Case Study Competition at the University of Alabama.

Jerrod Penn and Wuyang Hu provided leadership to the Department's Quiz Bowl team over the last several years. The team now competes strongly at our southern regional and national ag economics conferences, and was the 2015 national runner-up. Jerrod Penn also teaches a one-credit course to all interested students using the quiz bowl format, which helps students synthesize concepts and analytical tools across the curriculum.

Linked to the Quiz Bowl team is a Consulting Practicum course in which undergraduate students perform market research for an external client, earning income that supports the Quiz Bowl team's travel to conferences. Clients include a cooperative of egg producers, the University's student fitness enter, the UK/Lexington arboretum, and the University's Student Sustainability Council. These and other independent undergraduate research projects have been presented at conferences, presented at the annual Posters-at-the-Capitol event directed at state legislators, and even reported on by the media. Few undergraduates undertake research projects, but those who do are good candidates for graduate study, and are successful in MS programs that recently include UK, Kansas State, and Purdue.

Despite concerns about low average academic performance, graduates of the AEC program compete strongly in the area job market, and each year a sizable number continue to some form of graduate study. Several students each year are hired by large agribusiness employers at starting salaries of $50,000 and above. Internships are becoming the dominant pathway for landing a full-time position upon graduation with many employers. In the future, the Department will be asked to increase its tracking of graduates' employment, and created a departmental LinkedIn account in May, 2016 for this purpose. Based on informal records, the following information was gathered in response to a January, 2016 Provost request:

Table 15. Job Placement, Undergraduate Program

	Employed	Further Ed	Seeking Emp.	Unknown
AY 2012-13	26	1	0	65
	28%	1%	0%	71%
AY 2013-14	49	0	0	58
	46%	0%	0%	54%
AY 2014-15	46	4	0	28
	59%	5%	0%	36%

We regularly receive informal feedback from employers and alumni. The alumni who stay in touch are, as one would expect in a self-selected sample, highly supportive of the program. Employer feedback depends entirely on the individual employee being evaluated, but in general, employers want new graduates to have better professional writing skills, better communication and behavioral skills in professional interactions, and less restrictive geographical preferences for workplace locations.

The primary advantages of an AEC major are practical, hands-on training in agribusiness management, a systematic approach to critical thinking provided by economic theory, and a supportive faculty and staff who create a positive environment. Even employers outside the farm and food industries often associate an agricultural economics major with strong applied analytical skills. Few high school students are aware that the major exists, or that it is a promising entry point for many careers. Thus, most of our students come to us as transfers, and we would like to recruit more students as freshmen. One approach we have discussed is visits by the Academic Coordinator, faculty, and/or students to area high schools, though fitting this activity into persistently busy schedules has been challenging.

The Department has no consortial relationships or contractual arrangements with other institutions. Likewise, the program involves no accreditation, licensure, or certification requirements. Collaborative activities with similar programs at other Kentucky institutions include cooperation in recruiting and transporting students to an annual ASFMRA professional development opportunity called Summer Education Week, and an informal Quiz Bowl Invitational during the Department's centennial events, which strengthened ties among the region's faculty and allowed students to meet peers who they later interacted with at conference quiz bowl competitions. Regarding evidence of course scheduling and teaching assignment, several months in advance, the College provides records from the prior relevant semester, and requests notification of changes. The Chair, in consultation with the DUS and DGS, prepares the course schedule, accounting for staffing changes and availability of part-time instructors. Teaching assignments are determined by faculty members' appointments, areas of expertise and interest, historical teaching patterns, and departmental need. All faculty are asked to review drafts of the teaching schedule, after which it is submitted to the College.

RESEARCH PROGRAMS

The department conducts application focused, decision-making based inquiry to contribute to the academic body of knowledge empirically, methodologically and theoretically. Areas of research focus broadly cover the following: 1) Agricultural Policy and Risk Management, 2) Quantitative Methods, 3) Agribusiness, 4) Production Economics and Farm Management, 5) Rural Economic Development and International Development, 6) Natural Resource and Environmental Economics, and 7) Agricultural Marketing and International Trade. The research areas that attract the most faculty attention are marketing and consumer behavior (Wuyang Hu, Yuqing Zheng, Mehdi Saghaian), production economics (Carl Dillon, Tyler Mark), and international trade and price analysis (Mehdi Saghaian, Mike Reed). Faculty have almost complete autonomy in designing a research program consistent with their appointment; there has never been a coordinated research planning process.

Refereed journal articles published by the department averaged over 23 during the past five years and includes the *American Journal of Agricultural Economics* (two articles), the *Journal of Agricultural and Resource Economics*, *Agricultural Economics,* the *Journal of Environmental and Resource Economics*, *World Development*, *Economic Inquiry*, *Precision Agriculture*, *Applied Economics*, and more. The quantity and quality of research productivity should be evaluated in light of the number of active faculty with primary research appointments (currently five assistant professors, two associate professors, and four full professors), and the number of extension faculty who are active in publishing refereed and applied research. Assistant extension professors in particular are incentivized to publish refereed journal articles.

Many journal articles are co-authored with graduate students, greatly aiding their success in the job market. We are increasingly being asked to document impacts of research, with the most common measures being internal to the academy: RePEc and Google Scholar citations, h- and i10-index values, AgEcon Search downloads, ResearchGate scores, etc. The faculty are gradually enrolling in and reporting information from these sources more frequently. Some research is reported in the mass media and in industry websites and magazines, which is one of the categories of accomplishments we publicize on the Department's Facebook page. Many faculty are approached for consulting assignments based on their publication record. Only a small portion of research achieves the Land Grant ideal of directly informing Cooperative Extension programming, but collaborations among research and extension faculty are common, and represent a comparative advantage for the Department. One faculty member (Jerry Skees) has been partially or entirely on leave in recent years, developing a large-scale social venture regarding catastrophic risk management in developing countries that is poised to deliver tremendous humanitarian benefits. This work grew out of his research program.

Unlike research in many disciplines, and unlike the majority of extension programming, much economic research can be performed with modest funding. The main resource constraints are typically data availability and the PI's time, not money. Even a research project that outsources primary data collection may cost as little as several thousand

dollars. The largest portion of grant funding is often devoted to paying graduate students, in which case the primary objectives may be student training and maintenance of a healthy graduate program, not necessarily the completion of specific research. Our promotion criteria tend to reward refereed journal articles most highly, with grants being a secondary criterion. As noncompetitive state and federal funding declines, however, we are now placing more emphasis on external funding. Obtaining grant funding to sustain the graduate program is increasingly being treated as a research responsibility, and the department chair plays a role in ensuring that grantsmanship is appropriately rewarded.

Extramural grants are listed in Table 16. Direct grants have an agricultural economist as the PI, though there might be investigators from other departments. Collaborative grants are projects where the PI is in a department outside AEC, but there is an agricultural economist as an investigator.

Table 16. Extramural Grant Support, 2011-2015

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Direct	$996,986	$849,692	$1,453,710	$719,675	$681,135
Collaborative	$2,668,738	$2,836,332	$10,388,875	$2,993,731	$5,340,939
Expenditures	$867,860	$796,810	$1,644,550	$1,250,818	$1,030,319

Below is a listing of research publications during the review period, as reported in the Kentucky Ag Experiment Station's Annual Reports. Graduate student co-authors (53) are indicated with an asterisk, and undergraduate co-authors (1) are denoted by two asterisks. The checklist for this report also requests a list of graduate student presentations, but those are so numerous that such a listing is impractical. We have approximately 15 graduate students presenting at each of our annual national and regional conferences alone.

Table 17. Research Publications, 2011-2015

2011

Collier, B.*, A.L. Katchova, and J. Skees. Loan Portfolio Performance and El Nino, an Intervention Analysis. Agricultural Finance Review 71:98-119.

Dillon, C.R. and J.M. Shockley*. The Value of Suitable Working Time for Crop Production Machinery Activities. Journal of International Farm Management 5,4: 1-11.

Durguner, S. and A.L. Katchova. Repayment Capacity of Farmers: A Balanced Panel Data Approach. Journal of Applied Economics and Policy 30:14-30.

Fernandes da Costa, P. M.*, W. Hu and M. Pan. Consumption of Ahi Poke in Hawaii: A Demand Analysis. Aquaculture Economics and Management 15(4): 302-315.

Hao, J.*, A. Bathke, J. R. Skees, and H. Dai. Weather Risks, Ratemaking, and Modeling the Tail. International Journal of Ecological Economics and Statistics 20:51–68.

Hu, W., M.T. Batte, T. Woods, and S. Ernst. Consumer Preferences for Local Production and Other Value-Added Label Claims for a Processed Food Product. European Review of Agricultural Economics doi: 10.1093/erae/jbr039.

Hu, W., T. A. Woods, S. Bastin and L. J. Cox. Analyzing the Demand for New Value-Added Product: Case of Pure Blueberry Sweetener. Journal of International Food and Agribusiness Marketing 23(1):56-72.

Hu, W., T. Woods, S. Bastin, L. Cox, and W. You. Assessing Consumer Willingness to Pay for Value-Added Blueberry Products Using a Payment Card Survey. Journal of Agricultural and Applied Economics 43(2):243-258.

Jette-Nantel, S.*, D. Freshwater, A.L. Katchova, and M. Beaulieu. Farm Income Variability and Off-Farm Diversification in Canadian Agriculture. Agricultural Finance Review 71:329-346.

Johnson, R.*, W. Hu, A. Pagoulatos and D. Debertin. Response to General Health Information in the Food Industry: A Panel Case Study in the Domestic Cracker Market. Journal of Food Products Marketing 17(1): 91-109.

Kropp, J., and A.L. Katchova. The Effect of Direct Payments on Liquidity and Repayment Capacity for Beginning Farmers. Agricultural Finance Review 71:347-365. (lead UK author: A. Katchova)

Liu, Z.*, A. Pagoulatos and W. Hu. Health Risk of Heating Fuel Choice: A Simultaneous Causality Analysis. International Journal of Humanities and Social Science 1(14): 95-104. (major professors: W. Hu and A. Pagoulatos)

Maynard, L.J. and X. Wang*. Context-Dependent BSE Impacts on Canadian Fresh Beef Purchases. Journal of International Food and Agribusiness Marketing 23,1: 32-55.

Meyer, L., J. Hunter, A.L. Katchova, S. Lovett, D. Thilmany, M. Sullins, and A. Card. Approaching Beginning Farmers as a New Stakeholder for Extension. Choices 26,5:1-7.

Shockley, J.M.*, C.R. Dillon and T. Stombaugh. A Whole Farm Analysis on the Influence of Auto-Steer Navigation on Net Returns, Risk, and Production Practices. Journal of Agricultural and Applied Economics 43,1:57-75.

Walters, C.G., and D. L. Young. Landlord Influence on Soil Conservation Practice Adoption Environmental Economics 3:111-122.

Wang, X.*, L.J. Maynard, J.S. Butler, and E. Goddard. Using Linked Household-Level Datasets to Explain Consumer Response to BSE in Canada. Journal of Toxicology and Environmental Health, Part A 74:1536-1549.

Ward, R., A. Wysocki, and T. Woods. Agribusiness Extension: The Past, Present, and Future? International Food and Agribusiness Review 14,5: 125-139

Woods, T., J. Schieffer, and S. Saghaian. Winery Integration Strategies in the Mid-South and Mid-Atlantic States. Journal of Agribusiness 29,1: 1-13.

2012

Ahrendsen, B.L., and A.L. Katchova. 2012. "Financial ratio analysis using ARMS data." Agricultural Finance Review 72(2012):262-272.

Czech, B., Mills Busa, J. H. and Brown, R.M*. 2012. “Effects of economic growth on biodiversity in the United States.” Natural Resources Forum. 36: 160–166.

Collier, B.* and J. Skees. 2012. Increasing the resilience of financial intermediaries through portfolio-level insurance against natural disasters. Natural Hazards. Published online June 6, doi: 10.1007/s11069-012-0227-0.

da Costa, Pedro M. Fernandes*, Wuyang Hu, Angelos Pagoulatos, and Jack Schieffer, 2012. "Participation in government cost-share conservation programs in the Kentucky river watershed: a county level analysis," Environmental Economics 3(1): 122-130.

Davidson, K.*, M. Pan, W. Hu and D. Poerwanto*. 2012 “Consumers’ willingness to pay for aquaculture fish products vs. wild-caught seafood: a case study in Hawaii” Aquaculture Economics and Management 16(2): 136-154.

Diekmann, F. C. Loibl, M.T. Batte, and M.-F. Yen. 2012. Judging farmers’ willingness to trade distance and taxes for extension services. applied economic perspectives and policy. Advance Access published February 7, doi:10.1093/aepp/pps001.

Emunu, J. P., D. McCann-Hiltz and W. Hu. 2012. “Canadian consumer willingness to pay for omega-3 enhanced meat” Journal of Food Products Marketing 18(4): 287-305.

Freshwater, David. 2012. Corporate farms: should they be a concern? Farm Policy Journal. 9:2. pp. 1-12.

Hu, W., M. Batte, T. Woods and S. Ernst. 2012. “Consumer preferences for local production and other value added label claims for a processed food product” European Review of
Agricultural Economics 39(3): 489-510.

Jeffcoat, C.*, A. Davis, and W. Hu. 2012. Willingness to pay for broadband access by Kentucky farmers. Journal of Agricultural and Applied Economics 44,3: 323-334.

Katchova, A.L., and S.J. Enlow*. 2012. "Financial performance of publicly-traded agribusinesses." Agricultural Finance Review.

Lim, K.H.*, W. Hu, L.J. Maynard, and E. Goddard. 2012. U.S. Consumers’ preference and willingness to pay for country-of-origin-labeled beef steak and food safety enhancements. Canadian Journal of Agricultural Economics. Published online June 19, doi: 10.1111/j.1744-7976.2012.01260.x

Nogueira, Lia, Richard R. Barichello, Kathy Baylis and Hayley H. Chouinard. 2012. “Policy
risk in the Canadian dairy industry.” Applied Economic Perspectives and Policy 34(1):147-
166.

Shockley, J.M.*, C.R. Dillon, T. Stombaugh and S. Shearer. 2012. Whole farm analysis of automatic section control for self agricultural machinery. Precision Agriculture. 13,4(2012):411-420.

Shockley, J.M.*, C.R. Dillon and T. Stombaugh. 2012. The influence of auto-steer on machinery selection and land acquisition. Journal of the American Society of Farm Managers and Rural Appraisers. 75,1(2012):1-7.

Vassalos, M.*, C.R. Dillon and P. Childs. 2012. Empirically testing for the location-scale condition: a review of the economic literature. Journal of Risk Model Validation. 6,3(2012):51-66.

Vassalos, M.*, C.R. Dillon and A. Pagoulatos. 2012. A hedonic price analysis of corn and soybean herbicides. Food Economics. 9,1&2(2012):117-128.

Walters, C.G., C.R. Shumway, H. Chouinard, and P. Wandschneider. 2012.
“Crop insurance, land allocation, and the environment” Journal of Agricultural
and Resource Economics, 37(2):301-320.

Walters, C.G., F.L. Young, and D.L. Young. 2012. Economics of alternative management practices for jointed goatgrass in winter wheat in the Pacific Northwest. Crop Management. Published online February 27, doi: 10.1094/CM-2012-0227-01-RV.

Wood, Benjamin D.K., Carl H. Nelson and Lia Nogueira. 2012. “Poverty effects of food price escalation: the importance of substitution effects in Mexican households.” Food Policy 37(1):77-85.

Yang, S.-H.*, W. Hu, M. Mupandawana*, and Y. Liu. 2012. “Consumer willingness to pay for fair trade coffee: A Chinese case study” Journal of Agricultural and Applied Economics 44(1): 21-35.

Yang, S.-H.*, P. Qing, W. Hu, and Y. Liu. 2012. Using a modified payment card survey to measure Chinese consumers' willingness to pay for fair trade coffee: considering starting points. Canadian Journal of Agricultural Economics, Published online December 27, doi: 10.1111/j.1744-7976.2012.01266.x

Zheng, Z. S.* Saghaian, and M. Reed. 2012. Factors affecting the export demand for U.S. pistachios. The International Food and Agribusiness Management Review. 15(3): 139-154.

2013

Asgari, M.*, and S. Saghaian. Oligopolistic market structure in the japanese pistachio import market. Journal of Agricultural and Food Industrial Organization 11:1-13.

Hu, W., P. Qing, M. Batte, T. Woods and S. Ernst. What is local and for what foods does it matter? Agricultural Economics 59: 454-466.

Katchova, A.L., and S.J. Enlow*. Financial performance of publicly-traded agribusinesses. Agricultural Finance Review 73:58-73.

Lamie, R.D., R. Dunning, E. Bendfeldt, J. M. Lelekacs, M. Velandia, and L. Meyer. Local food systems in the south: A call for a collaborative approach to assessment. Choices 28: http://www.choicesmagazine.org/choices-magazine/theme-articles/developing-local-food-systems-in-the-south/local-food-systems-in-the-south-a-call-for-a-collaborative-approach-to-assessment.

Li, X.*, and S. Saghaian. The dynamics of price transmission in the presence of a major quality differential: the case of colombian milds and vietnamese robusta coffee beans. Journal of Agribusiness 31:181-192.

Li, X.*, S. Saghaian, and M. Reed. The impact of HACCP on U.S. seafood exports: The case of fish, mollusks and shellfish other than mollusks. Journal of International Agricultural Trade and Development 8:111-123.

Palma, M.A., K. Morgan, T. Woods, and S. McCoy. Response of land grant universities to the increase in consumer demand for local foods in the South, Choices 28:

http://www.choicesmagazine.org/choices-magazine/theme-articles/developing-local-food-systems-in-the-south/response-of-land-grant-universities-to-the-increase-in-consumer-demand-for-local-foods-in-the-south.

Robbins, L.W., and M.R. Reed. Twelve-month and nine-month agricultural economics faculty salaries**.** Agriculture and Resource Economics Review 42:561-570.

Roe, B.E., M.T. Batte, and F. Diekmann. Competition between local dealerships and internet markets: The role of local relationships, risk tolerance and trust in used farm machinery markets. Agribusiness: An International Journal doi: 10.1002/agr.21359.

S. Saghaian, G. Ozertan, and H. Tekguc. Beef and milk price links in Turkey. Economics Bulletin 33:2607-2616.

Shahnoushi, N., S. Saghaian, M. Reed, A. Firoozzare, and M. Jalerajabi. Investigation of factors affecting consumers' bread wastage. Journal of Agricultural Economics and Development 6:246-254.

Shahnoushi, N., S. Saghaian, M. Reed, and F. Hayatgheibi. Value of water in an arid area of central Iran. Journal of Basic and Applied Scientific Research 3:401-407.

Stowe, C.J. Breeding to sell: A hedonic price analysis of leading Thoroughbred stud fees. Applied Economics 45:877-885.

Tan, T., J. Shen, M. Reed, S. Saghaian, and C. Chen. "The impact of GMO safety regulations on Chinese soybean exports. Journal of Basic and Applied Scientific Research 3:164-171.

Thilmany, D., D. Conner, K. Curtis, K. Liang, K. Mulik, J. O'Hara, M. Sullins, and T. Woods. Researching market and supply chain opportunities for local foods systems: Setting priorities and identifying linkages. Journal of Agriculture, Food Systems, and Community Development 3:131-137.

Vassalos, M.*, C.R. Dillon (major professor), and T. Coolong. Optimal land allocation and production timing for fresh vegetable growers under price and production uncertainty. Journal of Agricultural and Applied Economics 45:683-699.

Williamson, J.M., and A.L. Katchova. Tax-exempt bond financing for beginning and low-equity farmers. Journal of Agricultural and Applied Economics 45:485-496.

Woods, T., L. Noguiera, and S.-H. Yang*. Linking wine consumers to the consumption of local wines and winery visits in the northern Appalachian states. International Food and Agribusiness Management Review 16:181-204.

Woods, T., M. Velandia, R. Holcomb, R. Dinning, and E. Bendfeldt. Local food systems markets and supply chains. Choices 28: http://www.choicesmagazine.org/choices-magazine/theme-articles/developing-local-food-systems-in-the-south/local-food-systems-markets-and-supply-chains.

Yang, S.-H.*, P. Qing, W. Hu (major professor), and Y. Liu. Using a modified payment card survey to measure Chinese consumers' willingness to pay for fair trade coffee: considering starting points. Canadian Journal of Agricultural Economics 61: 119-139.

2014

Allen, J., S. Bowker, C. Stamper, E. Owusu-Amankwah*, and A.F. Davis. Resident valuation of Kentucky's Extension Fine Arts Program, Journal of Extension 52(2).

Allen, J., A.F. Davis, W. Hu and E. Owusu-Amankwah*. Residents' willingness-to-pay for attributes of rural healthcare facilities, Journal of Rural Health. Published online: doi 10.1111/jrh.12080.

Arthur, B.* and A.L. Katchova. Accrual anomaly for agribusiness stocks. Agribusiness: An International Journal. Published online: doi 10.1002/agr.21409.

Brown, R.M.* and T. Stephenson. Guiding principles for teaching with technology. North American Colleges and Teachers of Agriculture (NACTA) Journal 58: 174-175.

Burdine, K.H. and G. Halich. Payout analysis of Livestock Risk Protection insurance for feeder cattle. Journal of the American Society of Farm Managers and Rural Appraisers 2014:160-173.

Burdine, K.H., Y. Kusunose, L.J. Maynard, D.P. Blayney, and R. Mosheim. Livestock Gross Margin-Dairy: An assessment of its effectiveness as a risk management tool and its potential to induce supply expansion. Journal of Agricultural and Applied Economics 46:245-256.

Burdine, K.H., L.J. Maynard, G.S. Halich, and J. Lehmkuhler. Changing market dynamics and value-added premiums in southeastern feeder cattle markets. The Professional Animal Scientist 30:354-361.

Freshwater, D. and R. Trapasso. The Disconnect Between Principles and Practice: Rural Policy Reviews of OECD Countries. Growth and Change 45:477-498.

Griffin, T.W. T.B. Mark, D.L. Dobbins, and J.M. Lowenberg-DeBoer. Estimating whole farm costs of conducting on-farm research on Midwestern US corn and soybean farms: A linear programming approach. International Journal of Agricultural Management 4: 21-27.

Hancock, A.**, J. Penn and W. Hu. Augmenting electricity output of ellipticals through behavioral change. Sustainability: The Journal of Record 7:255-261.

Kuethe, T., N. Paulson, B. Briggeman, and A.L. Katchova. A comparison of data collected through farm management associations and the Agricultural Resource Management Survey. Agricultural Finance Review 74:492-500.

Kusunose, Y. and T. Lybbert. Coping with drought by adjusting land tenancy contracts: a model and evidence from rural Morocco. World Development 61:114-126.

Lim, K. H.*, W. Hu, L.J. Maynard and E. Goddard. A taste for safer beef? how consumers' perceived risk influence willingness to pay for country-of-origin labeled beef. Agribusiness: An International Journal 30: 17-30.

Liu, Y., W. Hu, S. Jetté-Nantel*, and Z. Tian. The influence of labor price change on agricultural machinery usage in Chinese agriculture. Canadian J. of Agricultural Economics 62: 219-243.

Liu, Z.*, A. Pagoulatos, W. Hu, and J. Schieffer. Valuing the benefit of reducing adverse effects from polluting heating fuels. Social Science Quarterly 95: 868-891.

Mark, T.B., K.H. Burdine, and G. Halich. How sensitive are the frequencies and magnitudes of MPP-Dairy indemnities? Journal of Agribusiness 32:145-163.

Mark, T.B., J.D. Detre, P.M. Darby, and M.E. Salassi. Energy cane usage for cellulosic ethanol: estimation of feedstock costs. International Journal of Agricultural Management 3:89-98.

Meas, T.*, W. Hu, T. Woods, M. Batte, and S. Ernst. Substitutes or complements? Consumer preference for local and organic food attributes. American Journal of Agricultural Economics, Published online: doi 10.1093/ajae/aau108.

Najarzadeh, R., M. Soleimani, and M. Reed. Measuring social capital using the Position Generator Model (a case study of elite individuals in Tehran Province – Iran). International Journal of Humanities and Social Science 4: 165-177.

Özertan, G., S. Saghaian, and H. Tekguc. Market power in the poultry sector in Turkey. Bogazici Journal: Review of Social, Economic & Administrative Studies 28(2): 19-32.

Robert M., W. Hu, M.K. Nielsen, C.J. Stowe. Attitudes towards implementation of surveillance-based parasite control on Kentucky Thoroughbred farms – current strategies,
awareness, and willingness-to-pay. Equine Veterinary Journal. Published online: doi 10.1111/evj.12344.

Roe, B.E., M.T. Batte, and F. Diekmann. Competition between local dealerships and internet markets: The role of local relationships, risk tolerance and trust in used farm machinery markets. Agribusiness: An International Journal 30: 225-243.

Qing, P., W. Hu and Y. Liu. The interaction between consumer preference and product ethics: Implications on coffee trade in China. Journal of International Business and Economy 15: 1-22.

Qing, P., A. Xi and W. Hu. Consumer preference for meat in China: A case study of Beijing. Emerging Markets Finance and Trade 50: 143-152.

Saghaian, S., G. Ozertan, and H. Tekguc. Market power in the poultry sector in Turkey. Bogazici Journal of Review of Social, Economics & Administrative Studies 28,2.

Saghaian, S. and M. Reed. The impact of the recent Federal Reserve large-scale asset purchases on agricultural commodity prices: A historical decomposition. International Journal of Food and Agricultural Economics 2: 1-16.

Salassi, M.E., K. Brown, B.M. Hilbun, M.A. Deliberto, K.A. Gravois, T.B. Mark, and L.L. Falconer. Farm-scale cost of producing perennial energy cane as a biofuel feedstock. Bioenergy Research 7: 609-619.

Schieffer, J. and C.R. Dillon. The economic and environmental impacts of precision agriculture and interactions with agro-environmental policy. Precision Agriculture. Published online: doi 10.1007/s11119-014-9382-5.

Yan, Y. and M. Reed. Price discovery in the Chinese corn futures market, with comparisons to soybean futures. Agribusiness: An International Journal. Published online: doi 10.1002/agr.21376.

Yang, B., P. Qing, W. Hu and Y. Liu. Product information and willingness-to-pay: A case study of fair trade coffee in the Chinese market. China Agricultural Economics Review 6: 278-294.

Yang, S-H.*, S. Saghaian, and M. Reed. International pork trade and foot-and-mouth disease. Journal of International Agricultural Trade & Development 9:1-20.

2015

Batte, M. T. and D. L. Forster. 2015. Old is new again: The economics of agricultural gypsum use. Journal of the American Society of Farm Managers and Rural Appraisers 2015: 56-74.

Breazeale, N., M. W-P Fortunato, J. Allen IV**,** R.J. Hustedde, H. Pushkarskaya, Constructing a multi-dimensional measure of local entrepreneurial culture. Community Development 46: 516-540.

Brown, R.M.*, C.R. Dillon, J. Schieffer, and J. Shockley, 2015. The carbon footprint and economic impact of precision agriculture technology on a corn and soybean farm. Journal of Environmental Economics and Policy. Published online: doi: 10.1080/21606544.2015.1090932.

Burdine, K. and C.J. Stowe. Kentucky equine market continues to show improvement. Equine Disease Quarterly 24(2), 5.

Chen, B.* and S. Saghaian. (2015). Price linkages in the Brazilian sugarcane-ethanol industry in the post 2008 financial and economic crisis. Journal of Agribusiness 33: 83-97.

Freshwater, D. Vulnerability and Resilience: Two Dimensions of Rurality. Socioloogia Ruralis 55: 497-515.

Griffin, T.W., G. Ibendahl, and T.B. Mark. 2015. How spatially clustered are state-level farmland values? Journal of the American Society of Farm Managers and Rural Appraisers 2015:103-112.

Hu, W., P. Qing, J. Penn*, M. Pelton* and A. Pagoulatos. Rider preferences and economic values for equestrian trails. Journal of Environmental Planning and Management 58: 1154-1172.

Li, X.L.*, and S. Saghaian. (2015). Price adjustment and market power in the Columbian milds coffee market. Journal of Agribusiness 33: 1-15.

Najarzadeh, R., M. Reed, A. Khoshkohoo, and A. Gallavani. Trade and energy consumption in OPEC countries. Journal of Economic Cooperation and Development 36: 89-102.

Özertan, G., S. Saghaian, and H. Tekguc. (2015). Dynamics of price transmission and market power in the Turkish beef sector. Turkish Journal of Economics, Business & Finance 30(349):53-76.

Qing, P., A. Xi and W. Hu. Self-consumption, gifting, and Chinese wine consumers. Canadian Journal of Agricultural Economics 63: 601-620.

Saghaian, S. and M. Reed. (2015). Spillover effects of U.S. Federal Reserve's recent quantitative easing on Canadian commodity prices. International Journal of Food and Agricultural Economics 3:33-43.

Salassi, M.E., L.L. Falconer, T.B. Mark, M.A. Deliberto, B.M. Hilbun, and T.L. Cooper. Economic potential for energy cane production as a cellulosic biofuel feedstock in the Southeastern United States. AIMS Energy 3: 25-40.

Stowe, C. Jill and Michelle Kibler*. Characteristics of adopted Thoroughbred racehorses in second careers. Journal of Applied Animal Welfare Science 19:81-89.

Shepherd, J.* and S. Saghaian. Risk perception and trust interaction in response to food safety events across products and their implications for agribusiness firms. Journal of Food Distribution Research 46(3):91-112.

Subramaniam, V.* and M. Reed. Issues in biotechnology regulation and its effects on industrial structure. AgBioForum 18: 1-10.

Sujarwo, J.*, M. Reed and S. Saghaian. (2015). Production efficiency of small-scale shallot producers in East Java, Indonesia. Journal of Global Economics, Management and Business Research 2(2):59-71.

Sujarwo, J.*, M. Reed, and S. Saghaian. Changing technical, allocative, and economic production efficiency of small-scale farmers in Indonesia: The case of shallot production. Journal of International Agricultural Trade & Development 10:1-20.

Vassalos, M.*, W. Hu, T. Woods, J. Schieffer and C. Dillon. Risk preferences, transaction costs, and choice of marketing contracts: Evidence from a choice experiment with fresh vegetable producers. Agribusiness. Published online: doi: 10.1002/agr.21450.

Wu, L., G. Xu and W. Hu. Factors affecting farmers' coping strategies for diseased hogs: An experimental approach. Journal of Nanjing Agricultural University (Social Science) 15: 1-18.

Wu, L., S. Qin, D. Zhu, Q. Li and W. Hu. Consumer preferences for pork product origin and traceability. Chinese Rural Economy 2015(6): 47-73.

Wu, L., S. Wang, D. Zhu, W. Hu and H. Wang. Chinese consumers' preferences and willingness to pay for traceable food quality and safety attributes: The case of pork. China Economic Review 35:121-136.

Zheng, Y., & H.M. Kaiser. Submission demand in core economics journals: A panel study. Economic Inquiry. Published online: doi: 10.1111/ecin.12277.

EXTENSION PROGRAMS

Current Extension Educational Programs

A major portion of the Extension human resources in Ag Economics are devoted to the areas of farm management and marketing - two areas that have been identified on multiple occasions by clientele groups as important areas for the Kentucky farm economy. Other traditional areas of expertise within the department include policy, agribusiness management, rural economic development, and natural resource economics. Recently, significant resources have also been devoted to expanding the clientele base with expansion of programs in the areas of economic development, entrepreneurship, and leadership. The Department Extension faculty have an excellent relationship with agricultural leaders in the state, including the KY Department of Agriculture, the Governor's Office of Ag Policy, the Kentucky Farm Bureau, the Kentucky Council of Cooperatives, the various commodity group organizations, and other producer and agribusiness interest groups. Some extension faculty such as Will Snell and Alison Davis are often sought for state- and federal-level testimony, and almost all of the extension faculty are a frequent resource for the mainstream and ag industry media. Many serve on a wide range of boards, examples being Kenny Burdine on the Kentucky Ag Finance Commission board, and Leigh Maynard on the Kentucky Center for Ag and Rural Development board. Each year, extension faculty lead and participate in disciplinary conferences, multistate committees, and research collaborations. It is impractical to provide a full list of extension publications during the review period; for example, our website lists 87 publications during 2011-16 in the Management category alone. Rather, we direct the reader to the Extension page of the Department's website: http://www.uky.edu/Ag/AgEcon/extension.php. With extension programs targeting broad segments of the agricultural community, and the community economic development community, the number of clientele directly served is certainly many thousands per year, with indirect impacts reaching far more people. A brief summary of the major efforts by Extension faculty within the department follows:

Livestock Marketing (Kenny Burdine)

The livestock Extension program covers a wide range of marketing and management areas affecting beef and dairy cattle, equine, and forage producers. Much of Kenny's efforts have been focused on price risk management including the use of futures and options trading, as well as Livestock Risk Protection Insurance. Basic profitability and cost control have also been stressed as producers have continue to deal with price variability in production costs and commodity markets.

Rural Economic Development (Alison Davis)

The Community and Economic Development Initiative of Kentucky (CEDIK) is the primary Extension economic development program within the College's Cooperative Extension Service, and the Department's primary intersection with community-based programs. Dr. Davis is the Executive Director of this Initiative. CEDIK provides technical assistance in leadership development, facilitation, strategic planning, and economic development. Dr. Davis' economic development strategies focus on targeted attraction, business retention and expansion, entrepreneurship, and cluster analysis. CEDIK works with Extension Agents, state and local agencies, and grass roots

organizations. Dr. Davis is also the Director of the Rural Health Works program. RHW is a program designed to assist communities and health care professionals to better understand the role the health care sector plays in the local economy.

Farm Management Economics (Greg Halich)

Farm Management Economics is a broad subject area that covers the areas of decision making, optimization in production decisions, enterprise budgeting, partial budgeting, risk management, financial analysis, investment analysis, and general profitability analysis. Much of Greg's work is collaborative with other disciplines (agronomists, soil scientists, and animal scientists for example) and often evaluates the practices they are prescribing in answering the following farmer question: "But will the practice pay?" Dr. Halich's concentrations are: 1) Livestock and forage management (e.g. optimal nitrogen use in forage production, pasture-based beef finishing, biofuel production) 2) Grain crop management (e.g. profitability analysis, farm bill evaluation, leasing structures), and 3) General farm management programs (e.g. custom machinery rate database and publications, FSA borrower training, fixed costs estimation training).

Leadership and Management (Steve Isaacs)

Dr. Isaacs' Extension DOE is directed toward leadership development and farm management. Dr. Snell and Dr. Isaacs are co-directors of the Kentucky Agricultural Leadership Program and are charged with program development and delivery as well as fund raising which has led to the creation of a $2 million endowment to fund KALP into the future. Additional Extension activities include involvement in the Beginning Farmer and Farm Transitions projects, and he serves as the state director for the UK Income Tax Seminar Program – a 50-year old program that provides annual continuing education for 1,500-2,000 tax practitioners. Dr. Isaacs continues to be engaged in the farm finance world with roles in lenders training at the state and regional levels. Steve also serves as the Department's Extension group coordinator.

Sustainable Agriculture and Marketing (Lee Meyer)

Dr. Meyer is currently on a 60% post-retirement contract with primary responsibilities in food systems and sustainable ag. He continues to serve as the liaison between the Southern Region SARE program and the 1862 land grant universities in the region. Additional responsibilities include the Beginning Farmer Program, direct food marketing, and the Power of Food, a food systems project focused on Eastern Kentucky. Dr. Meyer also serves as the Chair of the College's Undergraduate Sustainable Ag program.

Tobacco/Ag Policy/Leadership (Will Snell)

Dr. Snell's works with policy makers, farm groups leaders, Extension Agents, farmers and others on tobacco policy issues including financial management and outlook. He often provides lay groups, media, and others with information on the overall financial status and changes in Kentucky agriculture. A significant portion of his time is devoted to serving as the co-director of the Kentucky Agricultural Leadership Program (KALP). KALP is an intensive two-year program designed for young agricultural producers and agribusiness individuals from Kentucky who want to be on the cutting edge of decisions that affect agriculture, rural communities, and society. The program attracts national speakers to address important/timely agricultural issues, and to improve participant's communication, leadership, and management skills. The 11th class is

under way. In addition to developing and delivering seminars, considerable effort is devoted to fund-raising to maintain and grow the $2 million endowment that will allow the program to run in perpetuity.

Farm Management (Jordan Shockley)

Dr. Shockley is the most recent hire in the Department Extension faculty, coming on board in July 2015. His early work has focused on post-harvest transportation and storage of grain crops, poultry economics (a previously unserved area), biofuels, and precision agriculture. His grain hauling decision aid that has been developed into a phone/table app has been well received.

Grain Marketing (Todd Davis)

Dr. Davis' is another recent hire (July 2014) in the AEC Extension Faculty. He is the only Department faculty based at the KREC at Princeton. His Extension program focuses on educating grain producers on private and public risk management tools including insurance, marketing, and government programs. His initial work in Kentucky was on the high-demand educational needs of producers and land owners surrounding the provisions of the 2014 Farm Bill.

Agribusiness and Horticultural Marketing (Tim Woods)

Dr. Woods' Extension program focuses on agribusiness development, horticulture marketing, and agricultural market development. He works closely with the Kentucky Department of Agriculture, the Governor's Office of Ag Policy, the Kentucky Horticultural Council, and UK's Horticultural Department in programs that help with evaluating opportunities for new markets for horticultural products. His work with the Center for Crop Diversification includes cooperative development work with the Kentucky Center on Cooperative Development, farmers' markets, and training for agricultural and horticultural agents. His program also includes administrative and market research work with the MarketReady educational program, and food consumer cooperatives. Dr. Woods also works closely with emerging producer groups on new commodities or business ideas in the areas of strategic planning or feasibility studies, farm diversification and entrepreneurship.

Kentucky Farm Business Management Program (Michael Forsythe, Tarrah Hardin, Amanda Jenkins, Suzy Martin, Rush Midkiff, Jerry Pierce, Laura Powers, Jennifer Rogers, Jonathan Shepherd, and Lauren Turley)

KFBM has been in place since 1962 and is a cooperative educational effort between the Department of Agricultural Economics, the College of Agriculture, and 374 farmers in four Farm Management Associations. Nine area specialists work with farming operations on a fee basis to provide them with accurate data about their own operations and objective counseling to aid them in making sound business decisions. In addition, Area Specialists also produce general farm and financial management educational programs and materials. The Program Coordinator maintains a data base for cooperators and faculty, generates timely and useful reports, assists in farm management educational programs with other Extension faculty, supervises Area Specialists, and develops training programs for Area Specialists.

Issues Facing Department Extension Programs

The Extension component of Agricultural Economics remains robust and well recognized regionally and nationally for achievements and program activities. However, there are significant issues facing the Department relative to the Extension function:

Human Resources

Extension faculty perceive that human resources available for state-wide educational programming have been reduced in recent years and may face additional significant reduction in the coming years. The primary reason for this is related to the increased undergraduate teaching load on Extension faculty and the ability to fill vacancies. This pressure to assume more teaching responsibility will continue. Extension DOE has declined from 9.5 FTEs in 2004 to 7.3 currently. Recent losses include retirements of Trimble, Williamson, Infanger, and Meyer (rehired post-retirement 60%) and the departure of Walters. Two positions have been filled based on departmental priorities (Todd Davis at Princeton and Shockley at Lexington); however, there has been a significant loss of Extension programming experience in addition to the net loss in FTEs. Responsibility for some ongoing programs like KY Ag Leadership, American Private Enterprise System (APES), and the Income Tax Seminars formerly led by Jones, Williamson, and Infanger have been assumed by remaining faculty or, in the case of APES (the Department's only youth program), have been transferred mostly out of the department.

Programs such as the Community and Economic Development Institute of Kentucky (CEDIK), the Food Systems Innovation Center (FSIC), and the Center for Crop Diversification (CCD) have succeeded in bringing non-tenured positions to the department to help meet staffing needs. These are generally soft-funded positons and lack the permanence to address long-term staffing needs, particularly in teaching. The department continues to enjoy a good working relationship with the KY Center for Ag and Rural Development (KCARD) and provides office space for Nathan Routt, KCARD staff member who works closely with Woods and others on agribusiness development projects. The faculty resources to lead these and other efforts in the future are very thin.

Several temporary Extension Associates have been hired with soft funding over the last decade and have provided substantial assistance for departmental Extension efforts. They are used to assist with the activities of FSIC, CCD, KY FarmStart, Annie's Project, and CEDIK, and other grant-supported programs. These individuals help conduct economic budget analysis, feasibility studies, and market research in addition to assisting faculty members with development, logistics, and delivery of Extension educational. Extension faculty have done an admirable job bringing quality personnel onto the various projects; however, this is usually a temporary staffing solution and requires faculty to continue to seek external resources to meet internal needs.

Following the spate of recent retirements, the near-term outlook is relatively steady. However, younger faculty are often more mobile than senior faculty and the threat of losing early and mid-career professionals is ever-present. Further, as recent experience has shown, the current budget environment for hiring is obviously difficult, in spite of the significant Extension programming opportunities.

Statewide Visibility

An important measure of the viability of AEC Extension programming is the physical presence of state specialists in the Extension offices, meeting halls, and on the farms of the Commonwealth. The travel budgets of many specialists suggest that every attempt is being made to meet those statewide needs. The 2014 hiring of Todd Davis helped meet a departmental priority to maintain an AEC Extension presence at the WKREC at Princeton. The renewal in 2015 of the Economic Subject Matter (ESM) in-service training for agents was well received and will be retained.

However, as Extension faculty assume larger on-campus administrative, teaching and advising roles, it becomes more difficult to be in two places at the same time. To illustrate, students complain that Extension faculty are never in their office while county Extension Agents simultaneously complain that specialists are always in the classroom. Technology skills and tools and the increasing needs of non-traditional audiences are changing the emphasis on how Extension education is delivered. Distance delivery offers hope, but it's been offering hope for twenty years now. There remains no good substitute for "being there."

The KFBM program is currently fully staffed and is one of the Department's most visible programs in the four regions where they reside. While KFBM staff have been helpful with things like Tax Seminars, Farm Bill training, and Lenders Schools (in addition to their direct work with clients) there is limited capacity to lead major programs from the department.

AEC Extension faculty have historically demonstrated a successful record of collaboration with other departments in the College and with researchers in and out of the department. Burdine and Halich have extensive and fruitful relationships with Animal Science and Plant Science faculty. Tim Woods works with the horticultural faculty and the FSIC and CCD. Alison Davis has useful relationships with CLD and Public Health. Shockley is developing good relationships with Biosystems and Ag Engineering. These collaborative efforts are becoming better recognized and rewarded. However, in economic terms, the demand for collaboration exceeds the supply of resources to meet those collaborative needs.

Funding and Regional Programming

Grant funding has improved for Extension programming, but tighter budgets and fewer Extension FTEs are making the delivery of traditional county-based programs more challenging. As neighboring states continue to reduce their Extension funding, the pressure to be involved in regional programming, and even lead programming from Kentucky, increases. This creates new multi-state opportunities, but it also requires a different approach to how AEC Extension programs are delivered. Kentucky has a strong history of Extension leadership within the Southern and North Central regions. New multi-state programming opportunities are emerging, but will likely change the way faculty work.

Extension FTEs being Drawn into the Classroom

Extension faculty and their Extension programming carry a substantial part of the cost of increased undergraduate and graduate enrollment. While Extension education and undergraduate classroom teaching are highly complementary in subject matter and delivery, they are not at all complementary in time. Extension faculty do a good job in the classroom and often receive some of the Department's highest teaching evaluations; however, the Department will need to be intentional about protecting Extension resources from being further pared by increases in demand for teaching.

DEPARTMENTAL ISSUES

Discussions were held during faculty and staff meetings to gather perceptions of the strengths and concerns for the Department.

Strengths

The morale of the department is good overall, as indicated by the University's 2015 survey of work-life issues. Faculty and staff feel they are doing meaningful work, they generally enjoy interacting with their co-workers, the College administration is viewed as supportive of the Department's people and missions, people feel respected, and people have a productive level of autonomy in their work and flexibility in their schedules. One potential contributor to this productive culture is that the Department is less hierarchical than many parts of the University. Another potential factor is open lines of communication, which were prioritized after the previous departmental review and strategic planning retreat. Results from the work-life survey of faculty and staff show the Department is doing well relative to the University as a whole.

Table 18. 2015 Work-Life Survey Results, Scores Range from 0 to 100

Category	University	Ag Econ
Career Development	59	73
Communication	62	73
Diversity and Inclusion	67	80
Empowerment	67	88
Engagement	82	93
Leadership	56	74
Operating Effectively	57	70
Pay and Benefits	58	53
Performance Evaluation	73	92
Retention	66	63
Stress, Balance, Workload	64	72
Supervision	78	89
University Culture	64	82
Work Relationship	69	90

The presence of many successful, motivated junior faculty members is a source of hopefulness for the Department. Similarly, the graduate students are involved in a wide array of impressive activities, are a cohesive group that supports each other, and are generally viewed as "punching above their weight."

The extension program in the department continues to be one of its strengths. The Department has been able to maintain core "traditional" programming areas (e.g., marketing, management, policy, community and international economic development). This compares to most other ag economic extension programs across the nation that have experienced a significant reduction in both programs and personnel. The

extension group is responsive to clientele needs, and well connected with a diverse clientele base which includes producers, policy makers, agents, media, ag businesses, farm organizations, and community leaders. Based on a 2016 survey, the KFBM program and its specialists are highly valued by the participating cooperators. CEDIK continues to grow in terms of staffing and scope of activities, fueled by tremendous effort and success in grantsmanship. The American Private Enterprise System, the Department's only youth program, is reinvigorated under the leadership of Quentin Tyler and Natasha Saunders, regaining the trust and support of its primary sponsors.

A noteworthy strength of the undergraduate program is a productive emphasis on experiential education, and strengthened employer relations during Erica Flores' tenure as Academic Coordinator. The job market is strong for ag econ graduates who are willing to work hard and be flexible. Strong academic performance always helps, but we have witnessed notable recent successes among graduates who were in the middle of the pack academically. The presence of extension faculty in the classroom produces important benefits for our undergraduate students, though this comes at the cost of disruptions to extension programming.

The Department's administrative support, program coordination, and technical support are excellent. In the last year, marketing of the Department's activities and people advanced dramatically, and Ag Econ now has a leading social media presence within the College. The most recent addition is a departmental LinkedIn page that will allow us to maintain contact with and track employment of our graduates.

Concerns

The University's state and/or federal budget was cut in every year but one during this review period, and cuts were substantial in the preceding review period. Retaining faculty resources is a challenge, because vacant positions are the first item to go in each budget cut. UK offers salaries that are competitive with some peer institutions in the South (e.g., Arkansas, Auburn, Tennessee, Mississippi, Clemson), but UK is not competitive with most of the land grant universities in the rest of the country.

In the previous periodic review, the highest priority of the extension group was to re-establish a presence at the Princeton facility. While this has been accomplished, the location does not lend itself to integration of a remote faculty member with the rest of the department, and the threats to retention must be balanced against the benefits to our clientele. A persistent but diminishing faculty concern is the usefulness of KFBM data and reports for applied research activities, but the dialog has been productive, several collaborative efforts exist, and a standardized procedure now exists for giving students and others access to KFBM data.

The Department's research assistantship stipends are not competitive with those of most peer ag econ programs. Most concerns about the graduate program remain the same as those expressed in the prior review, and are typical of smaller programs that cannot offer a diverse range of courses without unacceptably low enrollment.

For the undergraduate program, the biggest concerns are low average academic performance, low retention of knowledge from one course or semester to the next, a high proportion of the student body made up of transfer students who only spend a couple years in the program, and a gender gap in which a large majority of ag. economics students are male. The major produces many high-performing graduates who go on to become Kentucky's agricultural leaders. Other students are academically unprepared for college-level work, but put in sincere efforts and overcome challenges to graduate. Yet other students feel forced to complete a college degree that they view as an arbitrary barrier to the job market, and the ag econ major is the fastest path to graduation for many transfers from business programs. For decades, a "D for diploma" mindset among many students has been a de-motivator for the ag econ faculty, and even a retention threat.

The concerns most often expressed by staff relate to University-level procedures for business and personnel actions. While staff are quick to acknowledge the good intentions and helpfulness of individuals in the service units, overall the staff perceive a systematic distrust; barriers to getting the best prices and value from vendors; a willingness to demand inordinate amounts of staff time to accomplish routine actions without considering the damage to productivity in our core missions; systematic chastisement of staff for errors that are often out of their control coupled with unwillingness to take responsibility for errors made in the service units; wastage of staff time due to failures to update procedural guidance documents; lack of concern for cash flow problems imposed on students and employees by restrictive and/or delayed reimbursements; arbitrarily rigid personnel procedures that undermine the University's strategic goal of attracting and retaining top talent; ever-escalating reporting demands with no recognition that it cannibalizes time from the University's core missions; unnecessarily frequent overhauls of administrative systems that do not allow staff to develop efficiencies from experience; a lack of avenues for expressing concerns; and a sense that no action would result even if such avenues existed.

In the aggregate, the strengths and optimistic aspects of the department far outweigh the concerns discussed above. There is every reason to expect a bright future for this department with capable, motivated people doing meaningful work for supportive stakeholders.

APPENDIX A. IMPLEMENTATION PLAN REPORTS

UK Goal 1. Prepare Students for Leading Roles in an Innovation-driven Economy and Global Society		**Results**	
Ag Goal 1. Prepare Students for Leadership in an Innovation-Driven Economy and Global Society	**Goal**	**2011-12**	**2012-13**
AEC Goal # 1 Prepare Students for Leadership in an Innovation-Driven Economy and Global Society			
AEC Metric 1-1 Entering MS students' average GRE's will be 292 or higher (corresponding to 950 under old scoring)	950	1048	301
AEC Metric 1-2 At least 50% of M.S. students should have a paper or poster by the time they graduate	50%	83%	100%
AEC Metric 1-3 75% of our full-time M. S. students should finish in 2 years.	75%	73%	11%
AEC Metric 1-4 Track Grad Student Employment	Track	100%	100%
(eliminated, no longer considered a strategic goal)	25 or less	25	N/A
AEC Metric 1-6 Keep PhD enrollment at more than 25 high quality students	25 +	31	32
AEC Metric 1-7 The PhD GRE score GOAL is 297 or above (corresponding to 1052 under old scoring)	1052+	1063	299
AEC Metric 1-8 100% of our PhD students will have a presentation at a professional meeting or, publication submitted or published before they graduate	100%-	100%	100%
AEC Metric 1-9 Our PhD's will be candidates (have finished the agriculture qualifying exam) 30 months into the program	75%	44%	29%
AEC Metric 1-10 80% of our PhD students will graduate from the program within four years	80%	0%	0%

AEC Metric 1-11 We will have completed the PhD program curriculum revision and have the new 700-level classes in place	by 2014	progressing	progressing
AEC Metric 1-12 Seventy five % or more of entering freshmen and transfers will graduate within five years of entering AEC	75%	50%	55%
AEC Metric 1-13 10% or more of undergraduates will have an internship or independent study by the time they graduate	10%	18%	18%
AEC Metric 1-14 Obtain an exit survey from at least 50% of our seniors	50%	52%	63%
AEC Metric 1-15 The Learning Outcomes Assessment process will be fully implemented	by 2014	fully implemented but improving	fully implemented
UK Goal 2. Promote Research and Creative Work to Increase the Intellectual, Social, and Economic Capital of Kentucky and the World beyond its Borders.			
Ag Goal 2. Promote Research and Creative Work to Increase the Intellectual, Social and Economic Capital of Kentucky and the World Beyond its Borders			
AEC Goal # 2 Promote Research and Creative Work to Increase the Intellectual, Social and Economic Capital of Kentucky and the World Beyond its Borders			
AEC Metric 2-1 Publication of at least three refereed journal articles per research FTE per year	3	2.08	2.41
AEC Metric 2-2 Grant expenditures will be $700,000 or more each year	$700,000+	$ 849,692	$1,453,710
UK Goal 3. Develop the Human and Physical Resources of the University to Achieve the Institution's Top 20 Goals.			

Ag Goal 3. Develop the Human and Physical Resources of the College to Achieve Top 20 Stature			
AEC Goal # 3 Develop the Department's Human and Physical Resources to Achieve Top 20 Stature			
AEC Metric 3-1- Two student papers submitted for awards each year	2+	3	3
AEC Metric 3-2 We will maintain active mentoring committees for all non-tenured faculty	100%	100%	100%
AEC Metric 3-3 We will have teaching, research, and extension awards received by faculty annually		5	4
UK Goal 4. Promote Diversity and Inclusion			
Ag Goal 4 Promote Diversity and Inclusion			
AEC Goal # 4 Promote Diversity and Inclusion			
AEC Metric 4-1 30% of faculty will participate in some international experience each year	30%	45%	36%
AEC Metric 4-2 Emphasize faculty ethnic (1 or more) and gender diversity (2 or more female faculty)	1 & 2	1 & 4	1 & 5
AEC Metric 4-3 Attract and maintain a graduate student enrollment from underrepresented groups that is equal to or greater than the average at the University (7.8%)	8%	4%	5%
AEC Metric 4-4 Maintain African American BS enrollment at or above the 6.6% (state's population)	7%	10%	9%
AEC Metric 4-5 Maintain or surpass international undergraduate enrollment of 2%	2%	1%	1%
AEC Metric 4-6 10% of students will have an international academic experience	10%	1%	4%
AEC Metric 4-7 Female enrollment will reach 30%	30%	17%	19%

UK Goal 5. Improve the Quality of Life of Kentuckians through Engagement, Outreach, and Service			
Ag Goal 5 Improve the Quality of Life for Kentuckians through Extension, Outreach and Service			
AEC Goal # 5 Improve the Quality of Life for Kentuckians through Extension, Outreach and Service			
AEC Metric 5-1 Sustained Extension contacts at or above 2009 levels as measured by KERS reports, county meetings, and in-service trainings	12,896	15,956	31,335
AEC Metric 5-2 Extension faculty will attract $100,000 of grant plus gift support per FTE/year	$ 100,000	$ 187,788	$217,648
AEC Metric 5-3 Extension faculty will present at one professional or regional meeting per FTE/year	1	3.4	3.8
AEC Metric 5-4 Extension faculty members will publish one refereed journal article per FTE/year	1	2.4	1.0
AEC Metric 5-5 Extension faculty will develop, expand or maintain at least three outreach partnership agreements related to joint programming as measured by grant collaborations or board service per FTE/year	3	4.6	5.2
AEC Metric 5-6 Farm analysis (FA) specialists will publish four documents based on farm analysis data yearly	4	9	8
AEC Metric 5-7 FA specialists will carry enough cooperators to maintain the farm analysis database	30	40	40
AEC Metric 5-9 FA specialists will contribute 10 articles to the “Blue Sheet" yearly	10	11	11
AEC Metric 5-10 FA specialists will prepare and present 20-30 programs to non-cooperators annually	20	41	20

2014 Agricultural Economics Implementation Plan Report

Of the 50 recommendations contained in the Agricultural Economics 2011 Periodic Review, many involved one-time events that already occurred, or are naturally part of ongoing departmental activities without being explicitly strategic in nature. Following Lisa Collins' suggestion, eight recommendations were selected that were deemed most important to the department's strategic direction. In several cases, they represent desirable goals that are persistently challenging to meet. Even when little progress occurs over the span of a year, using the strategic planning process as a tool for visiting and revisiting difficult goals is productive. Other strategic goals on the list are ones where substantial progress is occurring. Some goals are combinations of recommendations from the review report.

The eight recommendations selected for emphasis are listed below, in the order they appeared in the Periodic Review report.

1. Maintain a strong department seminar series to enhance professional development in all mission areas.

Assessment method

We maintain a spreadsheet of department seminars to track this goal. Information includes dates, speaker name and host, speaker affiliation, and topic. Goals are to have an appropriate frequency of seminars, a productive blend of external and internal speakers, and adequate coverage of mission areas and sub-fields within the discipline.

Results

In the 2013-14 academic year, 21 seminars were held during the fall and spring semesters. Six seminars featured internal speakers, and 15 were from outside UK. A grad student and a faculty member volunteer or are recruited to coordinate the series each year. In the previous 2012-13 academic year, there were 20 seminars, only eight of which involved speakers from outside UK.

In 2014-15 the coordinators are Shaheer Burney and Mike Reed. The coordinators' role is to solicit seminar invitations and to manage seminar logistics. Many speakers are invited by faculty members, and the faculty member is the main contact for hosting their visitor. Some seminars are dedicated as practice sessions for graduate students prior to major conferences or competitions; others are training seminars for graduate students (e.g., how to develop a thesis prospectus). All graduate students on assistantship are required to attend seminars, and other graduate students and faculty are encouraged to attend. The coordinators are given a $3,000 per year budget.

Analysis of results and reflection

The series was mostly successful in meeting our strategic needs during the last year, with appropriate frequency, a good mix of external and internal speakers, and a broad mix of topics. Success depends heavily on how active the coordinators are in soliciting speaker ideas. Areas for improvement are as follows:

a. Increase faculty attendance – often only three to six faculty attend

b. Include more extension-oriented seminars in the schedule (teaching-oriented seminars would also be welcome, but are abundant within other college and university venues)
c. Increase engagement by grad students during Q&A.

Ongoing improvement actions
At the September faculty meeting, faculty were urged to attend the seminars. Similar statements can be included in faculty annual performance reviews. As with all activities that have no real bearing on performance reviews, mixed results are expected. As the chair, I will talk to extension faculty about contributing as speakers. I will also encourage students and attending faculty to make sure students are actively engaged instead of passively attending.

2. Recruit on and off campus to attract undergraduate students who want to be in the program, with emphasis on increasing freshman numbers, excelling in racial and ethnic diversity, and addressing the current gender imbalance.

Assessment method
Our primary source of information on undergraduate enrollment is the roster periodically distributed by the College. The most recent one was released in September, 2014.

Results
In Fall, 2014, AEC has 30 freshmen enrolled, a record number and 12% of the student body. As of September, 2014, 25% of the major's 251 undergraduates are women, versus 17% - 20% in the previous five years. Almost 13% of AEC undergrads are African American, Latino or Hispanic, or multi-racial. In the 2013-14 academic year, the Agribusiness Club officer team was almost entirely comprised of women, and many of AEC's academically accomplished women are active in Ag Ambassadors and Ag Student Council, which sets a good example for other students. Many of our minority students are members of UK's repeat national championship MANRRS chapter, and several participated in education abroad courses in the Dominican Republic, Panama, and France and Switzerland.

Analysis of results and reflection
The presence of Erica Flores as our academic coordinator is one of the biggest factors in the increased numbers of freshmen, women, and minority students in our program. Erica engaged in explicit recruiting efforts on and off campus, and takes ownership of this strategic goal in a way that no faculty member has (or would be formally expected to). The department houses the CAFE Diversity Office, is one of the major sponsors of the annual Jr. MANRRS conference, subsidizes student travel to regional and national MANRRS conferences, and its chair is on the Diversity Advisory Council. These are additional factors that encourage minority students to enroll in AEC. We expect the B&E College to lower its GPA threshold due to declining student numbers and in response to the new budget model. This will reduce the portion of involuntary transfers into AEC.

Ongoing improvement actions

Continuing our current activities, enthusiasm, and financial support is expected to bring further progress. Repeat recruiting visits to the Chicago High School for Agricultural Sciences is building our reputation and will be encouraged with funding. Recent requirements that students earn a C or better in MA 123, ECO 201, and four core courses may inadvertently shift the gender balance, given national trends in academic performance. If teaching resources permit, one faculty member plans to offer a freshman-level course that may be an effective recruiting tool, but this plan is not yet well-developed.

3. Redesign the department's website to enhance its recruiting potential for graduate and undergraduate students.

Assessment method
Current and prospective student feedback is the primary means of assessment.

Results
Both current and prospective students consistently tell us that our website is decidedly not a recruiting asset. Two years ago, a departmental committee that included engaged graduate students, staff, and faculty collected examples of websites at peer institutions. Our IT staff created a new architecture and were ready to launch a renovation. This activity was halted by efforts at the College level to create an updated and consistent College platform for departmental websites. Little progress has occurred since.

Analysis of results and reflection
The College-level effort is moving slowly, and involves an architecture that does not allow for easy updating of materials by non-specialists. We recently confirmed that we have the latitude to use our own platform, as long as it maintains consistency with CAFE formatting.

Ongoing improvement actions
Subject to branding requirements and the reasonable requirements for a consistent look and feel across departments' front pages, we will move ahead with web page designs that meet our needs for timely updating, recruiting, and communication to stakeholders. In the case of promotional materials and events, we have had good experiences with combining undergraduate student marketing teams and private sector creative design professionals (as opposed to technical expertise, which we have in-house). This option will be considered, among others.

4. Make conscious strategic decisions about involvement in distance learning.

Assessment method
Course schedules, enrollment numbers, student evaluations, and discussions in undergraduate committee and faculty meetings are the main items used for assessment.

Results
For several years, Roger Brown has delivered a hybrid course in Ag Marketing (AEC 305) that is one of the major's core courses. Online laboratory exercises are used as

an option in some sections of Ag Management (AEC 302), and a fully online version was offered once in Summer, 2013. Likewise, a fully online version of Microeconomics (AEC 303) was offered in Summer, 2013. Ani Katchova developed PhD-level online econometrics teaching modules that are portable. The department is in the early stages of designing a master's-level course in ag management targeted mainly to extension agents; this course will be mostly delivered online.

Analysis of results and reflection

The distance learning courses developed so far allowed more students to be served at more flexible times. The additional capacity helped break a pattern where seniors were taking foundational core courses last in their programs, because they couldn't get access as juniors.

Specific factors other than just the live vs. distance format seem to determine the success of these courses. The hybrid AEC 305 course has innovative elements that encourage interaction, including abundant opportunities for face-to-face interaction, and seems to be reasonably well-received. The online AEC 302 labs let students replay detailed instructions about Microsoft Excel, and seems to be superior to the live experience in some ways. The AEC 303 distance learning version was a basic talking head / PowerPoint delivery that was not received well by students, despite being taught by the only instructor who has ever (in recent memory) received high student evaluations in the live version of this class.

Ongoing improvement actions

Faculty must be personally interested and committed to developing distance learning courses for them to launch and succeed. Roger Brown continually offers to help faculty learn the tools he tests and uses. As chair, I am promoting the creation of the MS-level ag management course for agents as a way to move the dial on a future MS degree in Agriculture that is accessible to agents for their career ladder. Discussions at the faculty level always contain a reassuring commitment to delivering quality education as the top priority.

5. Enable students to have experiential education and education abroad opportunities.

Assessment method

Track enrollment in ISP 599 for education abroad activities, assess career preparation potential of internships during approval of AEC 399 learning contract, discuss progress with employers.

Results

All entering AEC undergraduates are now required to fulfill an experiential education requirement. Four education abroad courses or activities were offered in 2014: agritourism in Panama, diverse communities in the Dominican Republic, agribusiness in France and Switzerland, and agricultural economics in China. We also encourage students to participate in an internship through Maejo University in Thailand, and in independently arranged activities (one 2014 example being a summer internship in

South Africa). Education abroad participation rates in AEC are below 10%, but are climbing slowly. We provided $500 - $2,000 subsidies for many students to remove financial barriers.

The first annual symposium in which students give presentations or posters about their internships or other experiential education is November 20, with several employers invited to attend. Our Academic Coordinator has developed strong working relationships with several employers, with demonstrated results. For example, last year several undergraduate students were hired at $50,000 salaries by a company that did not previously recruit at UK.

Two AEC courses involve consulting projects, with or without compensation, for agribusinesses and other clientele. These are Ag Marketing and Sales (AEC 320), and Competition Team and Consulting Practicum (AEC 300). Combined with the newly required Career Readiness module (AEC 301), many students are getting training in professional and soft skills desired by employers. Student participation in academic competitions and activities has increased during the last four years, and now includes quiz bowl teams at a regional and a national conference, a case study team at the Food Distribution Research Society meetings, a National Agri-Marketing Association (NAMA) team, and an annual trip to the ASFMRA Summer Education Week for students interested in ag finance careers. Graduate students also participate in case study and extension competitions at higher rates during the last few years.

Analysis of results and reflection

The decision to subsidize students was an experiment to determine how much resistance to education abroad was due to financial barriers, and there were several cases in which students afterward said that they would not have been able to participate without the subsidy. Given the impact of education abroad on student development, and the high regard with which employers hold international experiences, we intend to continue prioritizing these subsidies, budget permitting.

Faculty coordination of education abroad courses is immensely time consuming and expensive, and fall outside of regular teaching assignments where we are chronically short-staffed. Faculty are willing to offer international courses on a bi-annual, but not annual, basis. However, faculty-led short-term courses are the most successful means of encouraging student participation.

The consulting projects, academic competitions, and new emphasis on professional soft skills are producing encouraging results and meaningful educational opportunities.

Much improvement has resulted from making experiential education a budgeting priority. College-wide requirements are a major factor, and other major factors include the presence of an enthusiastic Academic Coordinator, and peer leadership among undergraduate and graduate students.

Ongoing improvement actions

As the new experiential education requirement affects increasing numbers of AEC students, the challenge will be scaling up the advising component and the annual

showcase. Most of this responsibility falls on our Academic Coordinator. Experiential education, education abroad, and elements such as competition teams and consulting opportunities will continue to be a budgeting priority. The next highest use of those funds is graduate funding. Strategically, there are many opportunities to fund graduate students through grants that faculty are expected to pursue, while there are few ways of funding experiential education priorities.

6. Enhance graduate student opportunities to work in extension via applied research, and increase the extension faculty role in the graduate program.

Assessment method

Maintain contact with employers, KFBM being a prime example, who offer extension or related career opportunities to ensure that we are meeting their workforce development needs. Discuss outreach-related career opportunities during prospective student visits, reiterate those opportunities to new and continuing graduate students during the orientation process and when distributing position announcements, encourage participation with funding for the AAEA graduate student extension competition, and provide financial support for the departmental Summer Ag Tour for graduate students.

Results

The extension faculty are consistently willing to advise graduate students and be members of thesis and dissertation committees. The leading employer of graduate research assistants is an extension faculty member. In the last two years, four MS students have gone directly into careers related to extension, outreach, or ag finance, with more on a similar path.

Analysis of results and reflection

Encouraging students to target an area of applied economics with abundant career potential is a way to differentiate our graduate program for terminal master's students. Some of our PhD students are also strong candidates for extension faculty positions, and with so few programs nationwide encouraging doctoral students to get extension programming experience, this strategy appears to be a good match with our comparative advantage in the discipline. Promoting extension and outreach activities as part of the graduate program is also consistent with our Land Grant mission. The biggest difficulty arises when students have high potential for success in careers that require a MS in ag economics, but struggle with the math and theory that is an unavoidable component of a largely research-based graduate program in economics.

Ongoing improvement actions

As mentioned in item #4, a faculty member is planning to develop a MS-level course in ag management that is accessible to extension agents as well as our own students. We will continue promoting the Summer Ag Tour, and using KFBM as a vehicle to introduce graduate students to extension-related data analysis. Recently, collaborative relationships between research and extension faculty have become more frequent due to the mix of people on the faculty, and this will encourage grad student exposure to extension applications.

7. Increase grant funding.

Assessment method
Track grant expenditures, graduate students funded on grants, and the mix of grants among extension and research faculty, and among junior and senior faculty.

Results
According to OSPA, realized income for AEC in FY13 was $1,644,550, up from $796,810 in FY12, $867,860 in FY11, and $657,295 in FY10. The FY13 total included $613,793 of salaries and wages, $858,642 of current expenses, and $172,115 of indirect expenses. In FY14, sponsored project awards received through UKRF (a subset of grants, contracts, and income) totaled $719,675. Of that amount, 43% was obtained by three research faculty PIs, and 57% was obtained by three extension faculty PIs. Assistant professor PIs accounted for 33% of the total, associate professor PIs accounted for 57%, and full professor PIs contributed 10% of the department's grants.

Wethington Awards totaled $66,253 in FY14, $76,729 in FY13, and $61,625 in FY12, with extension faculty receiving 79% of the FY14 awards.

Analysis of results and reflection
The majority of grants, contracts, and income are obtained by extension faculty. The large gap between OSPA's realized income number and its sponsored project award number is likely income dominated by the Income Tax Program, the Kentucky Ag Leadership Program, and the Kentucky Farm Business Management Program.

External funding for graduate students comes either directly from grants, or from salary savings freed up by grants. Extension faculty contribute the vast majority of both sources. Research faculty have consistently obtained unrestricted gifts during the last several years, which often support at least one graduate student at any given time, and are not recognized in OSPA's numbers. As of this writing, however, the entire department's faculty are supporting just one student on grant funds.

The department is fortunate to have budgeted internal funding for approximately nine graduate research assistants. The standard assistantship stipend is low relative to many of our peer institutions, and grants offer the most effective way to offer higher stipends that will recruit high-potential students to the graduate program.

The department traditionally places low grantsmanship expectations on assistant professors (especially those with research appointments), because grant applications compete with publications for time, and publications are used as the primary measure of productivity. While full professors generated only 10% of the FY13 grants, the three programs listed above that contribute large income amounts are all coordinated by full professors.

Despite grantsmanship supporting the graduate program being a specific expectation listed in every research faculty position description and offer letter, overcoming a culture from years when public funding was more abundant is a challenge. The most common

objections are that research-oriented grants are hard to get, and that grants are "an input" that should not affect performance evaluations. The "4" category in the performance evaluation system is so broad that it allows little distinction among varying grantsmanship performance, and the financial difference across rating categories is also so modest that faculty have few incentives to pursue grants that will primarily aid graduate students. This differs from the incentives extension faculty face, where external funding is needed to operate their own extension programs.

There seems to be some truth to the argument that funding agencies direct more of their increasingly scarce resources to extension activities, presumably because of an expectation of higher potential to deliver public goods. While research faculty could do more to participate in integrated grants where economic analysis is required, a further disincentive exists in that much of the analysis needed does not lend itself to publication in refereed journals, where a major criterion is methodological sophistication.

Ongoing improvement actions

Encouragement of newer faculty, consistent efforts to highlight the graduate program's reliance on faculty grantsmanship, and efforts to recognize that MS and PhD graduates are important research "outputs" are the main improvement actions that will be pursued.

8. Track and reward research impact

Assessment method

As of this faculty APR cycle, AEC research faculty were asked to document research impacts using whatever criteria they deemed reasonable. This is appropriate since we are starting from a position of no formal tracking of research impacts.

Given the Land Grant intent that publicly funded research contributes to the wellbeing of society, a hierarchy of impacts that progresses from internal disciplinary recognition to external public benefits seems reasonable. One example of such a hierarchy might be as follows:

1. Journal impact factors (disciplinary recognition, potential for more visibility in well-known journals)
2. Grant funding supporting research (recognition by external sponsor that research is expected to have value that justifies financial investment)
3. Citations and downloads from RePEc, Google Scholar, ResearchGate, and AgEcon Search (documented use of research within the discipline)
4. Presentation of research results to extension audiences, incorporation of results in extension programming, presentation to private or public sector decision makers, and coverage of results in the professional and/or public media (evidence of relevance beyond academia)
5. Demonstrated impacts on private or public decisions
6. Demonstrated impacts on private or public outcomes

Graduate advising has a multiplier effect in that our graduates are "outputs" who go on to impactful careers that would not have been possible without the formative training and advising. A starting point is to simply track faculty activity as thesis / dissertation chairs or committee members. This information is available at the Graduate School

website. Next steps involve recognizing conference presentations and research publications by graduate students, and applying the hierarchy above to graduate students' achievements.

Results

Currently, only a few faculty have registered for accounts with RePEc, Google Scholar, and/or ResearchGate, so it is difficult to measure citations and downloads accurately. Grant funding is much easier to track and is concentrated among a minority of the faculty, although the newer faculty are showing especially promising results. Journal articles published in journals with high impact factors are rare, but a MS student recently senior-authored an article with AEC faculty co-authors in our discipline's flagship journal. This is the first time a member of AEC senior-authored an article in this journal since 2002. Recent collaborations between research and extension faculty will produce research used for extension programming and for delivery to policy makers. Evidence of research impacts on decisions or outcomes outside academia might be submitted during the upcoming APR process.

Analysis of results and reflection

This strategic goal is likely to be contested by some, as would the above hierarchy example that does not give disciplinary recognition supremacy. Definitions of what constitutes "applied" research vary considerably, with some believing it is research using data, while others believe it is research that is applied by decision makers. Letting faculty define impacts using their own criteria in this year's APR process will be a way to both introduce the expectation that impacts should be measured, and to begin a discussion about the most productive expectations to hold for faculty.

Ongoing improvement actions

Currently the measurement of research impacts is at an early stage, and will be refined through discussions and developing metrics.

2015 Agricultural Economics Implementation Plan Report

Many of the 50 recommendations contained in the Agricultural Economics 2011 Periodic Review involved one-time events, or are part of ongoing activities, so the eight most important goals were selected for reporting.

1. Maintain a strong department seminar series to enhance all mission areas.

Assessment method

We maintain a spreadsheet including dates, speaker name and host, speaker affiliation, and topic. Goals are to have an appropriate frequency of seminars, a productive blend of external and internal speakers, and adequate coverage of mission areas and sub-fields within the discipline.

Results

In the 2014-15 academic year, 26 seminars were held. Nine featured internal speakers, and 17 were from outside UK. In the previous 2013-14 academic year, there were 21 seminars, 15 of which involved speakers from outside UK. In 2014-15 the coordinators were Shaheer Burney and Mike Reed. The coordinators' role is to solicit seminar invitations and to manage seminar logistics. All funded grad students are required to attend seminars, and other students and faculty are encouraged to attend. The coordinators are given a $3,000 per year budget.

Analysis of results and reflection

The series is meeting our needs, with appropriate frequency mix of external and internal speakers, and mix of topics. Success depends on how active the coordinators are in soliciting speaker ideas. Areas for improvement remain: (a) Increase faculty attendance – often only three to six faculty attend, (b) Include more extension-oriented seminars in the schedule, and (c) Increase engagement by grad students during Q&A.

Ongoing improvement actions

At the August faculty meeting, faculty were again urged to attend the seminars. Similar statements will be included in faculty annual performance reviews. At the next extension committee meeting we will discuss contributing as speakers. I have been steadily encouraging students to be active participants.

2. Recruit undergraduate students who want to be in the program, with emphasis on increasing freshman numbers, excelling in racial and ethnic diversity, and addressing a gender imbalance.

Assessment method

Our primary source of information on undergraduate enrollment is the roster periodically distributed by the College. The most recent one was released in September, 2015.

Results

In Fall, 2015, AEC has 21 entering freshmen, which is 8% of the student body, similar to last year. In September, 2015, 20% of the major's 256 undergrads are women, down from last year but on the high end of previous years. Over 12% of AEC undergrads are from minority groups, about the same as last year. Men are under-represented in student leadership roles and on the Dean's List. Many of our minority students are

members of UK's three-time national championship MANRRS chapter, and several participated in education abroad courses. Several landed excellent positions with major employers.

Analysis of results and reflection
Having Erica Flores as our academic coordinator is one of the biggest factors in the increased numbers of freshmen and minority students in our program. The department houses the CAFE Diversity Office, is one of the major sponsors of the annual Jr. MANRRS conference, subsidizes student travel to regional and national MANRRS conferences, and its chair is on the Diversity Advisory Council.

Ongoing improvement actions
Continuing our current activities, enthusiasm, and financial support is expected to bring further progress. Recent requirements that students earn a C or better in MA 109, MA 123, and ECO 201 may inadvertently shift the gender balance, given national trends in academic performance. Recent salary surveys indicate that Ag Econ graduates earn higher average starting salaries than most majors.

3. Redesign the department's website to enhance its recruiting potential for graduate and undergraduate students.
Assessment method
Current and prospective student feedback is the primary means of assessment.

Results
Both current and prospective students consistently told us that our website was not a recruiting asset. Two years ago, a departmental committee collected information, and our IT staff prepared a renovation. This activity was halted by College efforts to create an updated and consistent College platform for departmental websites. Much time passed.

Analysis of results and reflection
The College-level effort continued to move slowly, and involves a platform that does not allow for easy updating non-specialists. Karen Pulliam constructed a website that is consistent with CAFE formatting, and meets our needs well. The finished product went live in July, 2015, and is a big improvement.

Ongoing improvement actions
Aside from maintenance, this portion of the implementation plan has been achieved. We will continue to seek feedback from users and visitors.

4. Make conscious strategic decisions about involvement in distance learning.
Assessment method
Course schedules, enrollment numbers, student evaluations, and discussions in undergraduate committee and faculty meetings are the main items used for assessment.

Results

Roger Brown has long taught a hybrid core course in Ag Marketing (AEC 305). Online lab exercises are used in some sections of Ag Management (AEC 302), and a fully online version was offered once in Summer, 2013. A fully online version of Microeconomics (AEC 303) was offered in Summer, 2013. Recently, our enrollment stabilized, and an RCM budget model is much less likely.

Analysis of results and reflection
The distance learning courses allowed more students to be served. The additional capacity helped keep seniors from taking core courses late in their programs. The hybrid AEC 305 course encourages interaction, allows face-to-face interaction, and seems well-received. The online AEC 302 labs let students replay instructions, and seems superior to the live experience in some ways. The AEC 303 distance learning version was a basic talking head / PowerPoint delivery that was not received well.

Ongoing improvement actions
With diminished need, we are not pursuing further online course development at this time. Faculty must be personally interested and convinced it will not reduce quality of learning. Roger Brown continually offers to help faculty learn the tools he tests and uses.

5. Enable students to have experiential education and education abroad opportunities.

Assessment method
Track enrollment in ISP 599 for education abroad activities, assess career preparation potential of internships during approval of AEC 399 learning contract, discuss progress with employers.

Results
All entering AEC undergraduates now fulfill an experiential education requirement. After offering many education abroad courses in 2013-14, few were offered in 2014-15. However, in 2015-16, we are planning courses in Argentina, the Dominican Republic, France and Switzerland, China, and northern Thailand. Education abroad participation rates in AEC are below 10%, but are climbing slowly. We provided $500 - $2,000 subsidies per student. The annual symposium in which students present their experiential education is high-impact, with several employers attending. Our Academic Coordinator works closely with several employers. Last year, several undergrad students were hired at $50,000 salaries by one such company. Two AEC courses involve consulting / service projects for external clientele. A highlight is student leadership regarding renovation of the Cooper House. Student participation in academic competitions increased in recent years. UK's ag econ teams won the 2014 Food Distribution Research Society case study competition, and were finalists in our discipline's national quiz bowl competition. Nate Trull placed third in our national undergraduate research paper contest.

Analysis of results and reflection
Subsidizing education abroad students allowed several students to participate. Given its impact on student development, and the high regard of employers, we intend to continue these subsidies. The consulting projects, academic competitions, and

emphasis on professional soft skills are producing encouraging results. Major factors are college-wide experiential education requirements, an enthusiastic Academic Coordinator, and peer leadership among students.

Ongoing improvement actions
As the experiential education requirement now affects almost all AEC students, scaling up is a challenge. Experiential education, education abroad, and supporting competition teams and consulting opportunities will continue to be a funding priority. The next highest use of funds is graduate funding.

6. Enhance graduate student opportunities to work in extension via applied research, and increase the extension faculty role in the graduate program.
Assessment method
Maintain contact with employers who offer extension-related opportunities. Discuss outreach-related opportunities during prospective student visits, reiterate opportunities to graduate students, encourage participation with funding for the AAEA graduate student extension competition, and provide financial support for the departmental Summer Ag Tour for graduate students.

Results
In Fall, 2015, we have several new MS students with extension-related interests. The extension faculty are willing to advise graduate students and be members of thesis committees. The leading employer of grad research assistants is an extension faculty member. In the last two years, four MS students have gone directly into careers related to extension, outreach, or ag finance.

Analysis of results and reflection
Encouraging students to target an area of applied economics with abundant career potential is a way to differentiate our graduate program, and is consistent with our Land Grant mission. Difficulty arises when students with high potential struggle with math and theory in the research-based grad program.

Ongoing improvement actions
A faculty member is now teaching an MS-level ag management course that can be made accessible to both extension agents and students. We will continue promoting the Summer Ag Tour and using KFBM to introduce grad students to extension-related data analysis. Collaborations between research and extension faculty are now frequent, and this serves grad students well.

7. Increase grant funding.
Assessment method
Track grant expenditures, graduate students funded on grants, and the mix of grants among extension and research faculty, and among junior and senior faculty.

Results
Per OSPA, realized income for AEC in FY14 was $1,250,818, down from $1,644,550 in FY13, but up from $796,810 in FY12, $867,860 in FY11, and $657,295 in FY10. The FY14 total included $601,161 of salaries and wages, $477,554 of current expenses, and

$172,103 of indirect expenses. In FY15, sponsored project awards received through UKRF (a subset of grants, contracts, and income) totaled $681,135, down slightly from $719,675 in FY14. Of that amount, 15% was obtained by two research faculty PIs, and 85% was obtained by four extension faculty PIs, implying that over two-thirds of the faculty attracted no grant funding during the year. Wethington Awards totaled $126,008 in FY15, up sharply from $66,253 in FY14, $76,729 in FY13, and $61,625 in FY12, with extension faculty receiving 79% of the FY15 awards.

Analysis of results and reflection

External funding for grad students comes from grants or salary savings freed up by grants. Extension faculty contribute the vast majority. Research faculty have obtained gifts that often support at least one graduate student. The department has budgeted internal funding for approximately 9 graduate research assistants. The standard assistantship stipend is low relative to many peer institutions, and grants offer a way to offer higher stipends. Despite grantsmanship supporting the graduate program being a specific expectation listed in every research faculty position description, overcoming a culture from years when public funding was more abundant is difficult. Research faculty face few personal incentives to pursue grants, relative to extension faculty.

Ongoing improvement actions

Two research faculty were recently hired who are expected to bring in much grant funding, and one junior research faculty member is showing promise in grantsmanship. Highlighting the graduate program's reliance on faculty grantsmanship, and efforts to recognize that MS and PhD graduates are important research "outputs" are the main improvement actions that will be pursued.

8. Track and reward research impact

Assessment method

As of the last faculty APR cycle, AEC research faculty were asked to document research impacts using whatever criteria they deemed reasonable. This is appropriate since we started from a position of no formal tracking of research impacts. A detailed hierarchy appears in last year's report.

Results

Compared to last year, slightly more faculty have registered with RePEc, Google Scholar, and/or ResearchGate, but it remains difficult to measure citations and downloads accurately. Grant funding is easier to track and concentrated among a minority of the faculty. Journal articles with high impact factors are rare, but new faculty are expected to hit these occasionally. Recent collaborations between research and extension faculty will produce research used by policy makers. Some faculty submitted evidence of research impacts as part of the APR process last fall.

Analysis of results and reflection

Letting faculty define impacts using their own criteria in the APR process will raise awareness and achieve the goal without overly constraining varying definitions of what constitutes "applied" research.

Ongoing improvement actions

Currently the measurement of research impacts is only slightly more advanced than it was last year, and it will be refined through discussions and developing metrics.

APPENDIX B. ASSESSMENT REPORTS, GRADUATE AND UNDERGRADUATE PROGRAMS

College/Unit:	Agricultural Economics
Program/Unit:	Agricultural Economics - Bachelor
Improvement Project:	May 2011 AgEcon Outcomes 1 and 2

Outcome

Linked to Student Learning Outcomes:

- agecon.b: 1. Disciplinary Knowledge

At the conclusion of this program, all students will at minimum be able to analyze basic applied social science questions using economic knowledge and theories following generally accepted standards of professional communication and personal responsibility.

Disciplinary Knowledge

At the conclusion of their program, all students at minimum should be able to:

1) Define terms and concepts (see topics below),
2) Convey information graphically (again, see topics below),
3) Perform mathematical calculations, and
4) Recall financial relationships.

Disciplinary knowledge topic area may include a) supply and demand, b) equilibrium price and quantity, c) cost concepts, d) input-output optimization, e) elasticity, f) market structure, g) consumer choice, h) production and resource use, and/or i) risk evaluation.

Methods:

We have identified four learning outcomes (Appendix A) that we have mapped to the Agricultural Economics undergraduate curriculum (Appendix B). This improvement project examines Learning Outcome #1 that deals with disciplinary knowledge. Disciplinary knowledge was directly assessed using a battery of multiple choice questions targeted at the following subset of learning outcomes: “At the conclusion of their program, all students at minimum should be able to: 1) Define terms and concepts (see topics below), 2) Convey information graphically (again, see topics below), 3) Perform mathematical calculations, and 4) Recall financial relationships. Disciplinary knowledge topic area may include a) supply and demand, b) equilibrium price and quantity, c) cost concepts, d) input-output optimization, e) elasticity, f) market structure, g) consumer choice, h) production and resource use, and/or i) risk evaluation.” In addition to the direct assessment in which answers were either correct or incorrect, an indirect self-assessment of career preparedness was administered concurrently. The indirect assessment consisted of Likert scale questions on a scale of 1 (strongly disagree) to 5 (strongly agree).

Appendix E contains the direct and indirect assessments used in the post-test. Pre- and post-measures were taken, allowing comparisons of responses to identical questions. The pre-test occurred early in the Fall, 2010 offering of AEC 305, which is the typical entry point of most students into the AEC major. The pre-test was administered electronically by the AEC 305 instructor, who also participated in the design of the assessment tools. Analysis reported here is restricted to AEC majors, of whom 43 were enrolled in AEC 305. The post-test occurred late in the Fall, 2010 semester and was delivered to graduating AEC majors, only 7 of whom returned the post-test, self- assessment, and senior exit survey. In future years as the methodology becomes established, the post-test will be delivered as a required assignment in the senior capstone course, AEC 422.

Benchmark/Target:

Given that the learning outcomes are minimal levels that all students should attain, the target is 100% correct responses on the post-test version of the direct assessment.

Results:

See Appendix C for the percentage of correct responses to “disciplinary knowledge” questions in the pre- and post- direct assessments. Appendix D contains average ratings on the indirect self-assessment questions.

Analysis:

The Director of Undergraduate Studies analyzed the raw data to calculate whether questions from the direct assessment were correct, to calculate the percentage of correct responses from the pre- and post-tests, to filter the results for AEC majors only, and to compare pre- and post-test results for comparable questions. The outcome of the analysis is shown in Appendix C. Similar analysis was performed to obtain the average pre- and post- ratings for the indirect self-assessment of career preparedness shown in Appendix D. The main finding is that the percentage of correct responses in the post-test (63%) is far below the target value of 100%. No questions resulted in greater than 80% correct responses, and one question received only 27% correct responses. While this finding is not necessarily a surprise, it indicates a need for improvement. The secondary finding was that the average percentage of correct responses improved by 20% among AEC majors between the entering vs. graduating groups. We have no baseline to judge whether this a typical improvement, but in future years we will be able to compare performance over time. A third finding was that the indirect self-assessment showed substantial evidence of perceived self-efficacy in career preparation, with the post-test ratings being higher than the pre-test ratings for most questions. One should be cautious in interpreting the results, because the number of post-test observations was so low (see Improvement Action below). In this first iteration of the Assessment process where we were first designing the entire process, it is doubtful that the instruments used are valid measures of learning, and much improvement will occur in subsequent years.

Improvement Action:

This was the first year of implementation for this assessment process, so the methods will improve over time. Specific plans include: 1. Incorporate assessment instruments in AEC 305 and AEC 422 as required assignments to ensure the data are representative and that we have enough observations to do reliable analysis. Implementation will be during the Fall, 2011 semester. 2. Refine the questions used to assess learning outcomes to obtain the most valid measures possible. In the case of disciplinary knowledge, for example, the current questions focused almost exclusively on economic theory, whereas much of our curriculum is about agribusiness. Implementation will be during the Fall, 2011 semester, and this will be an ongoing, incremental process. 3. Make our intermediate microeconomic theory course, AEC 303, a prerequisite for almost all 400- and 500-level courses. Students will now take this required course earlier in their program, which should improve learning outcomes related to both disciplinary knowledge and analytical abilities. The minor course change forms are being prepared now. 4. The department is conducting a strategic planning retreat in August, 2011. One major topic of discussion will be the undergraduate curriculum and ways to deliver improved learning outcomes to an expanding enrollment.

Graphic/Tabular Data Attached:

IAP learning outcome 1 Appendices.pdf

College/Unit:	Agricultural Economics
Program/Unit:	Agricultural Economics - Bachelor
Improvement Project:	May 2011 AgEcon Outcomes 1 and 2
Assessment Date:	Feb 28, 2011 12:22 PM

Outcome

Linked to Student Learning Outcomes:

- agecon.b: 2. Analytical Abilities At the conclusion of this program, all students will at minimum be able to analyze basic applied social science questions using economic knowledge and theories following generally accepted standards of professional communication and personal responsibility.

  Analytical Abilities

  At the conclusion of their program, all students at minimum should be able to:

  1) Frame social science questions appropriately for applied economic analysis,
  2) Identify, gather, and sort necessary information and data,
  3) Form logical hypotheses based on economic concepts and theories,
  4) Select appropriate tools and conduct analysis (see examples below), and
  5) Form and defend reasonable conclusions, predictions, and policy prescriptions.

  Analytical tools may include a) inference/deduction, b) summary statistics, c) correlation, d) regression, e) graphical analysis, and/or f) marginal analysis.

Methods:

We have identified four learning outcomes (Appendix A) that we have mapped to the Agricultural Economics undergraduate curriculum (Appendix B). This improvement project examines Learning Outcome #2 that deals with analytical abilities. Analytical abilities were directly

assessed using a battery of multiple choice questions targeted at the following subset of learning outcomes: “At the conclusion of their program, all students at minimum should be able to: 1) Frame social science questions appropriately for applied economic analysis, 2) Identify, gather, and sort necessary information and data, 3) Form logical hypotheses based on economic concepts and theories, 4) Select appropriate tools and conduct analysis (see examples below), and 5) Form and defend reasonable conclusions, predictions, and policy prescriptions. Analytical tools may include a) inference/deduction, b) summary statistics, c) correlation, d) regression, e) graphical analysis, and/or f) marginal analysis.” In addition to the direct assessment in which answers were either correct or incorrect, an indirect self-assessment of career preparedness was administered concurrently. The indirect assessment consisted of Likert scale questions on a scale of 1 (strongly disagree) to 5 (strongly agree). Appendix E contains the direct and indirect assessments used in the post-test. Pre- and post- measures were taken, allowing comparisons of responses to identical questions. The pre-test occurred early in the Fall, 2010 offering of AEC 305, which is the typical entry point of most students into the AEC major. The pre-test was administered electronically by the AEC 305 instructor, who also participated in the design of the assessment tools. Analysis reported here is restricted to AEC majors, of whom 43 were enrolled in AEC 305. The post-test occurred late in the Fall, 2010 semester and was delivered to graduating AEC majors, only 7 of whom returned the post-test, self-assessment, and senior exit survey. In future years as the methodology becomes established, the post-test will be delivered as a required assignment in the senior capstone course, AEC 422.

Benchmark/Target:

Given that the learning outcomes are minimal levels that all students should attain, the target is 100% correct responses on the post-test version of the direct assessment.

Results:

See Appendix C in the "Graphic/Tabular Data section" for the percentage of correct responses to “analytical abilities” questions in the pre- and post- direct assessments. Appendix D contains average ratings on the indirect self-assessment questions.

Analysis:

The Director of Undergraduate Studies analyzed the raw data to calculate whether questions from the direct assessment were correct, to calculate the percentage of correct responses from the pre- and post-tests, to filter the results for AEC majors only, and to compare pre- and post-test results for comparable questions. The outcome of the analysis is shown in Appendix C. Similar analysis was performed to obtain the average pre- and post- ratings for the indirect self-assessment of career preparedness shown in Appendix D. The main finding is that the percentage of correct responses in the post-test (50%) is far below the target value of 100%. No questions resulted in greater than 88% correct responses, and one question received only 12% correct responses. While this finding is not necessarily a surprise, it indicates a need for improvement. The secondary finding was that the average percentage of correct responses improved by only 8% among AEC majors between the entering vs. graduating groups. Even without a historical baseline for comparison, this level of improvement is unacceptably low. A third finding was that the indirect self-assessment showed substantial evidence of perceived self-efficacy in career preparation, with the post-test ratings being higher than the pre-test ratings for most questions. One should be cautious in interpreting the results, because the number of post-test observations was so low (see Improvement Action below). In this first iteration of the Assessment process where we were first designing the entire process, it is doubtful that the instruments used are valid measures of learning, and much improvement will occur in subsequent years.

Improvement Action:

This was the first year of implementation for this assessment process, so the methods will improve over time. Specific plans include: 1. Incorporate assessment instruments in AEC 305 and AEC 422 as required assignments to ensure the data are representative and that we have enough observations to do reliable analysis. Implementation will be during the Fall, 2011 semester. 2. Refine the questions used to assess learning outcomes to obtain the most valid measures possible. In the case of analytical abilities, for example, the current questions focused almost exclusively on implications of economic theory, whereas questions focusing on data analysis and agribusiness decision making would be more appropriate and consistent with our curriculum. Implementation will be during the Fall, 2011 semester, and this will be an ongoing, incremental process. 3. The department is conducting a strategic planning retreat in August, 2011. One major topic of discussion will be the undergraduate curriculum and ways to deliver improved learning outcomes to an expanding enrollment.

Graphic/Tabular Data Attached:

IAP learning outcome 2 Appendices.pdf

Appendix A. Learning Outcomes

University of Kentucky, Agricultural Economics, Approved 3-2-2011

At the conclusion of this program, all students will at minimum be able to analyze basic applied social science questions using economic knowledge and theories following generally accepted standards of professional communication and personal responsibility.

1. Disciplinary Knowledge

At the conclusion of their program, all students at minimum should be able to:
1) Define terms and concepts (see topics below),
2) Convey information graphically (again, see topics below),
3) Perform mathematical calculations, and
4) Recall financial relationships.

Disciplinary knowledge topic area may include a) supply and demand, b) equilibrium price and quantity, c) cost concepts, d) input-output optimization, e) elasticity, f) market structure, g) consumer choice, h) production and resource use, and/or i) risk evaluation.

2. Analytical Abilities

At the conclusion of their program, all students at minimum should be able to:
1) Frame social science questions appropriately for applied economic analysis,
2) Identify, gather, and sort necessary information and data,
3) Form logical hypotheses based on economic concepts and theories,
4) Select appropriate tools and conduct analysis (see examples below), and
5) Form and defend reasonable conclusions, predictions, and policy prescriptions.

Analytical tools may include a) inference/deduction, b) summary statistics, c) correlation, d) regression, e) graphical analysis, and/or f) marginal analysis.

3. Professional Communication

At the conclusion of their program, all students at minimum should be able to:
1) Deliver information clearly and professionally in various forms and styles (see categories below), and
2) Select appropriate forms and styles of communication.

Professional communication categories may include a) formal and informal writing, b) formal and informal speech, and c) presentation.

4. Personal Responsibility

At the conclusion of their program, all students at minimum should be able to:
1) Demonstrate independence,
2) Work cooperatively in groups,
3) Practice and support ethical standards, and
4) Show sensitivity and tolerance of human differences.

Table 1 AEC 305 Assessment Results (Subjective)

	AEC 305	AEC 422
1. I feel confident that I can write a clearly organized essay or paper that includes thesis development, testable hypotheses, use and interpretation of evidence, and effective	3.24	3.52
2. I feel familiar with and able to use BOTH the tools and resources	3.29	3.26
3. I feel confident that I understand when and how to cite other people's work when I write an academic paper.	3.24	3.16
4. I feel confident that I can orally deliver information clearly and professionally to my peers.	3.22	3.23
5. I feel confident that I can engage my peers effectively in oral presentations by using visual tools.	3.05	3.13
6. I feel confident that I can engage my peers in oral presentations	3.17	3.03
7. The college courses I have taken up until now have helped me to develop the ability to work independently (e.g., writing a	3.21	3.39
8. The college courses I have taken up until now have helped me to	3.15	3.32
9. The college courses I have taken up until now have allowed me	3.12	3.39
10. The college courses I have taken up until now have prepared me to practice and support ethical standards in my career after leaving UK.	3.29	3.32
11. The college courses I have taken up until now have taught me	3.17	3.19

Assessment Results – Fall 2011 AEC 422

Strongly Disagree = 1, Disagree = 2, Agree = 3, Strongly Agree = 4

1. I feel confident that I can write a clearly organized essay or paper that includes thesis development, testable hypotheses, use and interpretation of evidence and effective paragraphing and transitions.
   Average: 3.51
2. I feel familiar with and able to use the tools and resources of an academic library in addition to Internet resources.
   Average: 3.26, 1 disagree and 1 strongly disagree
3. *I feel confident that I understand how to cite resources correctly when including quotes or paraphrasing someone else's work.*
   Average: 3.16, 1 disagree and 2 strongly disagree
4. I feel confident that I can orally deliver information clearly and professionally to my peers.

Average: 3.23, 1 disagree and 1 strongly disagree

5. *I feel confident that I can engage my peers effectively in oral presentations by using visual tools.*

   Average: 3.13, 1 disagree and 1 strongly disagree

6. *I feel confident that I can engage my peers in oral presentations by the appropriate enthusiasm, body language, and use of time.*

   Average: 3.03, 4 disagree and 1 strongly disagree

7. The courses I have taken to complete my degree in AEC have helped me develop the ability to work independently.

   Average: 3.39

8. The courses I have taken to complete my degree in AEC have helped me to work cooperatively in groups.

   Average: 3.32, 1 disagree

9. The courses I have taken to complete my degree in AEC have allowed me or encouraged me to assume leadership roles within a group project.

   Average: 3.39

10. My AEC degree has prepared me to practice and support ethical standards in my career after leaving UK.

    Average: 3.32

11. My AEC experience has helped me show sensitivity and tolerance for human differences.

Average: 3.19, 2 disagree

Objective Evaluation of AEC 422 Presentations (Fall 2011)

Select AEC Learning	Assessment Item	**Excellent**	**Average**	**Below Average**
	Preparation			
Demonstrate Independence & Work Cooperatively in Groups	• Material • Organization	22 24	5 3	1 1
	Presentation			
Deliver information clearly and professionally & select appropriate forms and styles of communication	• Personal • Group • Presentation	13 12 20	11 9 7	4 7 1

Dr. Davis observed 6 group presentations. Overall the groups did a really nice job. They appeared to work well with one another and they also appeared to have prepared for their portion of the presentation by preparing note cards.

Evaluated based on the following criteria:
Personal Presentation Skills (body language, diction, grammar, filler words, flow, enthusiasm, eye contact, etc)

On the first day of presentations, half of the students were polished in their presentation delivery. They were enthusiastic, make good eye contact, spoke with an audible voice, used appropriate hand gestures and were overall engaged with the audience. The other half of the students were disengaged, too quiet, not confident and used filler words. Interestingly, women appeared to be less engaged and less confident than the men.

On the second day of presentations, the overall quality of the presentations rose dramatically. This could have been because students were able to evaluate their peers the day prior and make changes to their presentation style (perhaps practice more). Only one individual appeared to be very uncomfortable presenting.

Overall thoughts for AEC to consider when helping to prepare students for the future:

1) Work on engaging the audience, this means not looking at the screen, relying less on notecards, and making eye contact with the audience
2) Provide more opportunities for students to present.
3) Be better prepared to answer questions or to deviate from the presentation

Presentation Assessment Form

Presenter:_____ Assessor: _____
Subject:_____ Date: _____

ASSESSMENT OF SKILL PRESENTATION

Assessment	+	=	-	Comment
Preparation				
• Presentation				
• Organization				
• Materials				
• Rehearsal				
Presentation				
Personal				
• Body Language				
• Diction				
• Grammar				
• Filler Words				
• Flow				
• Enthusiasm and				
• Use of neutral				
• Visible to				
• Use of hands				
• Volume/Varied				
• Eye contact				
Group				

• Control				
• Involvement				
• Awareness of				
Presentation				
• Content				
• Staying on				
• Use of Visual				
• Use of Time				

TEACHING EDGE ASSESSMENT

Assessment Item	+	=	-	Comment
Presentation Preparation Component				
• Materials assembled in advance of				
• Presenter identified learning				
"Explain" Component				
• Captures attention of learners				
• Explains concept being explained				
• Uses media (whiteboard, flipchart,				
• Interacts via questions and				
"Demonstrate" Component				
• Presenter clearly demonstrates				
• Presenter identifies steps needed				
• Presenter identifies areas of				
"Guide" Component				
• Assists learner in applying the skill				
• Provides feedback during guiding				
"Enable" Component				
• Learners are able to apply skill				
• Presenter evaluates learner's				

SENIOR EXIT INTERVIEW **December 2011** **May 2012** **(please circle)**
Ag Econ **Agribusiness Program**
Program **(please circle)**

DEPARTMENT OF AGRICULTURAL ECONOMICS

Name _____

Permanent Address:

Permanent Phone:

1. Plans for next year:
   _____ Job with a food/agribusiness firm
   _____ Job with a non agribusiness firm
   _____ Work for a public or private agency
   _____ Go to graduate or professional school
   _____ Plan to farm
   _____ Start my own business (what type?_____)
   _____ Other: _____

2. I have accepted

   employment with:

   Organization/Company

Name: Type of job

assignment:

Location:

Starting Salary** ( ) Under $20,000
( ) $30,000-35,999 ( ) $35,000-39,999 ( ) $40,000-$49,999 ( ) $50,000-59,999 ( ) $60,000 and over

This information is optional but will be kept confidential and will be used only as a part of salary ranges and averages for different types of work. It is useful information to have available for prospective students. **Your name and salary will not be revealed.

Benefits: (please describe)

How did you make first contact with your employer?
_____ Through Career Planning and Placement
_____ Through the department
_____ Other (please specify)

3. If you are seeking employment, what type of employment are you looking for and in what geographical area?

4. If you are planning to attend graduate or professional school, please indicate which school and your area of study._____

5. What is your background?
_____ Raised on a farm
_____ Urban/suburban
_____ Small town/city
_____ Rural-Nonfarm

6. Please answer the following concerning your Agricultural Economics courses and courses outside the department:

a. What was your best class?

b. Least beneficial class?

c. Best professor?

7. General quality of instruction: (please circle) (1=Poor; 5=Excellent)

Ag Econ
Non-Ag Econ

a. University	1	2	3	4	5
b. College	1	2	3	4	5
c.	1	2	3	4	5

8. Who is your academic advisor? _____

9. Overall rating of your advisor: (please circle) (1=Poor; 5=Excellent)

1	2	3	4	5

10. How active were you in the Agribusiness Club?

____ Active ____Not very active

11. Did you have an internship? ____Yes ____No
If yes, with what company or agency?

12. Please indicate any minor or double major that you are completing.

13. Evaluation of courses: (are additional courses needed, should existing courses be revised)

14. In your opinion, what could the department do to improve the Agricultural Economics B.S. degree program?

Your responses to this survey will be held confidential Revised Oct. 2011

This improvement project examines Learning Outcome #1 (Disciplinary Knowledge). Disciplinary knowledge was directly assessed using a previously tested multiple- choice questionnaire targeted at the subset of learning outcomes: 1) Define terms and concepts,
2) Convey information graphically, 3) Perform mathematical calculations and 4) Recall financial relationships. Typically disciplinary knowledge topics include supply and demand, equilibrium price and quanittiy, cost, input-output optimization, elastictiy, market structure, consumer choice, production and resource use and risk evaluation. The answers to the multiplie questions were either correct or incorrect. If an answer was left blank, this was considered incorrect. In addition the to the direct assessment, the students were asked eleven questions to self-assess their preparation and plans for their post-college career.

The assessment tool (provided in the appendix) was administered to AEC 305 as a pre-assessment. AEC 305 is one of the first classes students are advised to take. The prerequisite for this course is only ECO 201. A total of 47 students completed the assessment, however we only report the results from the 28 students who listed their major as Ag Econ. The assessment tool was also administered to AEC 422 during the late spring of 2013 as the post-assessment
tool. AEC 422 is the senior capstone course for Agribusiness Majors and the course requires ECO 201, AEC 305, AEC 303, AEC 302, FIN 300, and MKT 300 as prerequisites. A total of 35 students completed the assessment, all of whom were Ag Econ majors.

Direct Assessment Target: On average ag econ students will answer each question related to disciplinary knowlege more correctly in the post-test than they did in the pre-test. Thus there should be a positive improvement. In addition, it is expected that in the post-test, the average correct response rate would be 90% per question.

Indirect Assessment Target: On average students will feel more confident in the post-assessment about their job prospects and how the course work they completed at UK prepared them for the job market. It is the hope that students would have an increased interest in agriculture and business, but this is not a necessary indicator of success.

The results provided in the appendix detail the percentage of correct responses to "disciplinary knowledge" questions in the pre- and post-direct assessments. There were a total of 8 questions used in the assessment to test disciplinary knowledge. In 4 of the 8 questions, there was an improvement in the average percentage of students who answered the question correctly between the pre- and post- period. Improvement was least successful for question 9. During further review, this question is not worded well and does not test the principles of input-output optimization in a clear manner.

The Director of Undergraduate Studies analyzed the raw data to calculate whether questions from te direct assessment were correct, to calculate the percentage of correct responses from the pre- and post-tests, to filter the results for AEC majors only, and to compare pre- and post-test results for comparable questions. The outcome of the analysis is provided in the
appendix. During the pre-test, only one question was answered with more than 80% correct responses, and only one question was answered more than 70% correctly. In

the post-test, two questions were answer with more than 80% correct responses and one question was answered more than 70% correctly. For 4 of the 8 of the questions, fewer than half of the students answered the question correctly. This falls below the target and indicates a need for improvement.

Our goal was to compare the improvement of the students over the years between pre- and post- testing. The last column of the Table 2 describes if the change in scores was better in 2012-2013 students than 2010-2011 students. This was the case in only one instance. 89% of the students answered question 8 correctly and the increase between pre- and post-testing was 21%.
Furthermore, this increase between pre- and post- was better than the increase in the 2010-2011 students.

Specific plans include:

1) Requiring students to earn a C or better in ECO 201 before entering any AEC courses. The majority of the questions where the students did not fare well were related to basic economic principles discussed in ECO 201. This prerequisite was recently implemented for new students entering the Spring 2013 semester and as a result it might take a few years to see measurable improvement in outcomes.

2) Refine question 9 to better measure the student's knowledge of input-output maximization. In addition, we will include several questions related to agribusiness as many of our courses focus predominarnly on more applied material.

3) AEC advisors are being reminded to advise their students to enroll in AEC 303 (intermediate microeconomic theory) soon after entering the program. In AEC 303, students review many of the tested principles and it is important to minimize the time between taking ECO 201 and AEC 303 so that ECO 201 principles are not forgotten. We now offer several more sections of AEC 303 to ensure students can access this course early in the program.

Overview of 2012-2013 Assessment – Analytical Abilities (Outcome #2)

Pre-Program Assessment, distributed to AEC 305 beginning spring 2013, 48 students completed (28 AEC majors)

Post Assessment, distributed to AEC 422 end of spring 2013, 35 students completed (All AEC majors)

Table 1 Self-Assessment of 2012-2013 AEC Undergraduate Students Job Market Preparedness

	Pre-Program	Post-Program	Post-Pre
My current knowledge of business and economics makes me competitive in the job	3.39	4.11	0.72
My analytical and learning abilities make me competitive in the job market.	3.82	4.31	0.49
The courses I took at UK gave me useful job skills	4.10	4.11	0.01
I expect to get a job related to my major.	3.64	3.57	-0.07
I have a strong interest in Ag.	3.53	3.51	-0.02
I am interested in the global food system.	3.32	3.49	0.17
I have a strong interest in careers related to	4.11	4.34	0.23
During college, I worked at a job that often interfered with	2.68	3.51	0.83
I am reasonably satisfied if I get a C in a class	2.25	2.69	0.44
I know what types of jobs I can get with my major	3.46	3.83	0.35
I will mostly look for jobs that are close to my	2.89	2.74	-0.15

Table 2 Direct Assessment of 2012-2013 AEC Undergraduate Students, Learning Outcomes 2, Analytical Abilities

	Pre Correct	Post Correct	Change	Outcome	Improvement from 2010-
Question 3	61%	77%	16%	2	Yes
Question 4	64%	54%	-10%	2	No
Question 6	57%	89%	32%	2	Yes
Question 7	21%	26%	5%	2	Yes
Question 10	39%	51%	12%	2	No
Question 11	57%	57%	0%	2	Yes
Question 13	7%	23%	16%	2	Yes
Question 16	39%	31%	-8%	2	No
Question 17	21%	51%	30%	2	Yes
Question 18	75%	74%	-1%	2	No

Pre and Post-Program Assessment in Agricultural Economics and Agribusiness

What is this? Every department at UK assesses its undergraduate program to help guide decision making. We are trying to get a "before and after" picture of students' knowledge and analytical skills. This is the "after" piece of the picture. Your answers are anonymous.

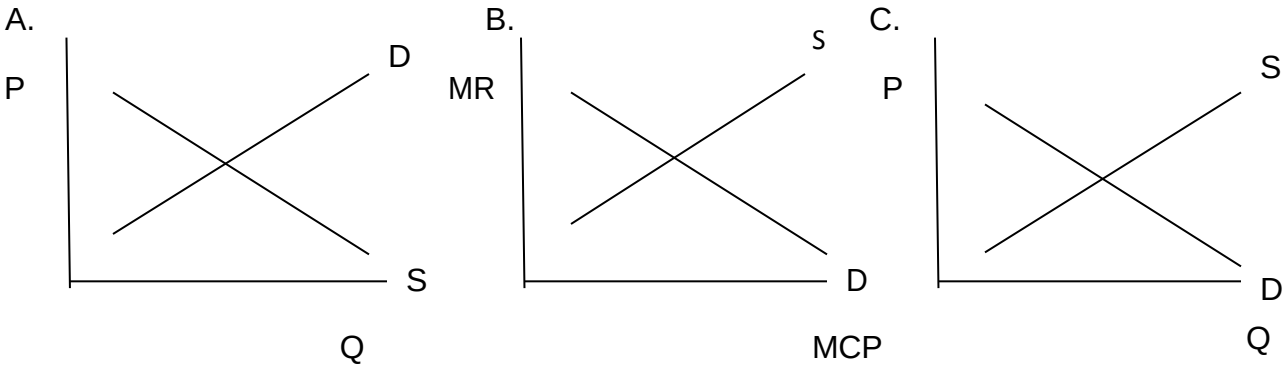
Don't feel uncomfortable if you cannot answer a question, we just want to get an accurate picture of what students know strictly from memory. Remember, it's anonymous!

Please do not look up answers if you do not know them. That will not help us measure which concepts and tools our students are familiar with when they complete our program.

BEFORE **AFTER**

Thanks for your help!

1. Which of these supply-demand graphs is correct?



2. What is the price elasticity of demand?

   A. % change in quantity demanded for each 1% increase in price
   B. the slope of the demand curve
   C. the change in quantity demanded for each one-unit increase in price
   D. I am not sure

3. If the price elasticity of demand for my product is -1.3 and I want revenue to increase, I should

   A. raise the price
   B. keep the price the same
   C. lower the price
   D. I am not sure

4. I will definitely make a profit if …

   A. price is higher than average total cost
   B. price is higher than marginal cost
   C. price is higher than average variable cost
   D. I am not sure

5. A market is in equilibrium when …

   A. price equals marginal revenue
   B. quantity demanded equals quantity supplied
   C. the fairest allocation of the scarce product is attained
   D. all of the above

6. What trends are typical of U.S. agricultural markets during the last 30 years?

A. narrowing farm-retail margins, and decreasing international trade
B. higher concentration, fewer farms, and higher food production
C. higher real farm prices, and lower real costs of food manufacturing labor
D. I am not sure

7. The consumer demand curve for a food should shift outward when …

A. cost of production falls
B. the price of a substitute product rises
C. the price of the product falls
D. all of the above

8. The opportunity cost of obtaining more of a scarce good is …

A. zero
B. not likely to influence the amount of it purchased
C. the value of the next best alternative sacrificed to obtain it
D. determined by the dollar sum necessary to purchase it

9. The factors that most directly determine a firm's demand for inputs are …

A. input prices, the output price, and the firm's production function
B. own price, price of substitutes and complements, and income
C. tastes and preferences, number of firms, and output quantity
D. I am not sure

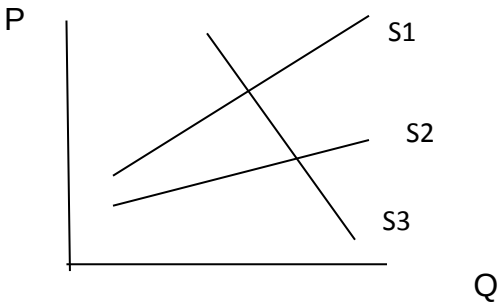
10. If a risk averse crop farmer were choosing among different marketing strategies that produced the following outcomes, which strategy is preferred …

A. average price = $3.10/bu, standard deviation of price = $0.40/bu
B. average price = $2.90/bu, standard deviation of price = $0.45/bu
C. average price = $3.00/bu, standard deviation of price = $0.50/bu
D. I am not sure

11. An increase in both equilibrium price and quantity will occur when …

A. demand decreases
B. demand increases
C. supply decreases
D. supply increases

12. Which of these supply curves is more elastic at any given price?



A. Supply curve S1
B. Supply curve S2
C. Supply curve S3
D. I am not sure

13. Suppose a total cost function is $TC = 400 + 30Q + 2Q^2$, where *TC* denotes total cost and *Q* denotes quantity. What is true about this function when $Q = 10$?

A. Marginal cost equals 400 and fixed costs equal 900
B. Marginal cost equals 70 and fixed costs equal 400
C. Marginal cost equals 900 and fixed costs equal 400
D. I am not sure

14. The rule for maximizing profits is to keep buying each input up to the point where the next unit costs more than …

A. that input's average cost
B. the output price
C. that input's contribution to revenue
D. I am not sure

15. Much market research loosely follows the scientific method, which involves …

A. using general theory to generate specific hypotheses, gathering data, and using it to either reject or not reject the hypotheses
B. using logic and data analysis to prove theories about economic behavior
C. generating the most reasonable hypotheses, and gathering data to show that they are correct
D. I am not sure

16. Suppose market research showed that the distribution of willingness-to-pay for a new product was heavily skewed toward low values, with a small number of people willing to pay very large amounts. For business planning purposes, what would be the most reasonable measure of typical willingness-to-pay?

A. mean
B. median
C. mode
D. I am not sure

17. The price spread between farm prices and retail prices has been growing for many products. This logically implies …

A. food retailers are gaining more monopoly power
B. farming is becoming less profitable
C. the nominal value of marketing inputs has been increasing
D. I am not sure

18. Which of the following concepts best explains why Kentucky is known for horses?

A. comparative advantage
B. the law of diminishing marginal productivity
C. the law of demand
D. none of the above

Post-Program Self-Assessment in Agricultural Economics and Agribusiness

1. Please rate how strongly you agree with each of the following statements.

	Strongly Disagr	Disagree	Neither Agree nor Disagr	Agree	Strongly Agre	I Do Not Kno
My current knowledge of business and economics makes me competitive in	O	O	O	O	O	O
My current analytical and learning abilities make me competitive in the job	O	O	O	O	O	O
The courses I took at UK so far gave me general skills that should be	O	O	O	O	O	O
I expect to get a job closely related to my major	O	O	O	O	O	O
I have a strong interest in careers related to	O	O	O	O	O	O
I am interested in the global food system	O	O	O	O	O	O
I have a strong interest in careers related to business	O	O	O	O	O	O
During my college years, I worked at a job that often interfered with my academic performance	O	O	O	O	O	O
I am reasonably satisfied if I get a C in a class	O	O	O	O	O	O
I know what types of jobs I can get with my major	O	O	O	O	O	O
I will mostly look for jobs that are close to my hometown	O	O	O	O	O	O

Overview of 2012-2013 Assessment – Outcome #1 (Disciplinary Knowledge)

Pre-Program Assessment, distributed to AEC 305 beginning spring 2013, 48 students completed (28 AEC majors)

Post Assessment, distributed to AEC 422 end of spring 2013, 35 students completed (All AEC majors)

Table 1 Self-Assessment of 2012-2013 AEC Undergraduate Students Job Market Preparedness

	Pre-Program	Post-Program	Post-Pre
My current knowledge of business and economics makes me competitive in the job	3.39	4.11	0.72
My analytical and learning abilities make me competitive in the job market.	3.82	4.31	0.49
The courses I took at UK gave me useful job skills	4.10	4.11	0.01
I expect to get a job related to my major.	3.64	3.57	-0.07
I have a strong interest in Ag.	3.53	3.51	-0.02
I am interested in the global food system.	3.32	3.49	0.17
I have a strong interest in careers related to	4.11	4.34	0.23
During college, I worked at a job that often interfered with	2.68	3.51	0.83
I am reasonably satisfied if I get a C in a class	2.25	2.69	0.44
I know what types of jobs I can get with my major	3.46	3.83	0.35
I will mostly look for jobs that are close to my	2.89	2.74	-0.15

Table 2 Direct Assessment of 2012-2013 AEC Undergraduate Students, Learning Outcomes 1, Disciplinary Knowledge

	Pre Correct	Post Correct	Change	Outcome	Improvement from 2010-
Question 1	71%	80%	9%	1	N/A
Question 2	32%	57%	25%	1	No
Question 5	57%	46%	-11%	1	No
Question 8	68%	89%	21%	1	Yes
Question 9	61%	40%	-21%	1	No
Question 12	46%	43%	-3%	1	N/A
Question 14	18%	26%	8%	1	No
Question 15	82%	71%	-11%	1	No

Pre and Post-Program Assessment in Agricultural Economics and Agribusiness

What is this? Every department at UK assesses its undergraduate program to help guide decision making. We are trying to get a "before and after" picture of students' knowledge and analytical skills. This is the "after" piece of the picture. Your answers are anonymous.

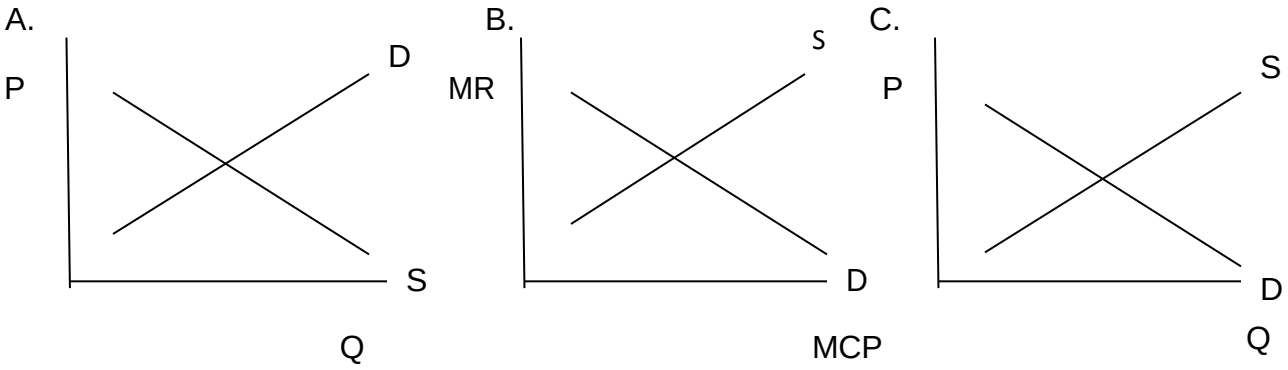
Don't feel uncomfortable if you cannot answer a question, we just want to get an accurate picture of what students know strictly from memory. Remember, it's anonymous!

Please do not look up answers if you do not know them. That will not help us measure which concepts and tools our students are familiar with when they complete our program.

BEFORE **AFTER**

Thanks for your help!

1. Which of these supply-demand graphs is correct?



2. What is the price elasticity of demand?

   A. % change in quantity demanded for each 1% increase in price
   B. the slope of the demand curve
   C. the change in quantity demanded for each one-unit increase in price
   D. I am not sure

3. If the price elasticity of demand for my product is -1.3 and I want revenue to increase, I should

   A. raise the price
   B. keep the price the same
   C. lower the price
   D. I am not sure

4. I will definitely make a profit if …

   A. price is higher than average total cost
   B. price is higher than marginal cost
   C. price is higher than average variable cost
   D. I am not sure

5. A market is in equilibrium when …

   A. price equals marginal revenue
   B. quantity demanded equals quantity supplied
   C. the fairest allocation of the scarce product is attained
   D. all of the above

6. What trends are typical of U.S. agricultural markets during the last 30 years?

A. narrowing farm-retail margins, and decreasing international trade
B. higher concentration, fewer farms, and higher food production
C. higher real farm prices, and lower real costs of food manufacturing labor
D. I am not sure

7. The consumer demand curve for a food should shift outward when …

A. cost of production falls
B. the price of a substitute product rises
C. the price of the product falls
D. all of the above

8. The opportunity cost of obtaining more of a scarce good is …

A. zero
B. not likely to influence the amount of it purchased
C. the value of the next best alternative sacrificed to obtain it
D. determined by the dollar sum necessary to purchase it

9. The factors that most directly determine a firm's demand for inputs are …

A. input prices, the output price, and the firm's production function
B. own price, price of substitutes and complements, and income
C. tastes and preferences, number of firms, and output quantity
D. I am not sure

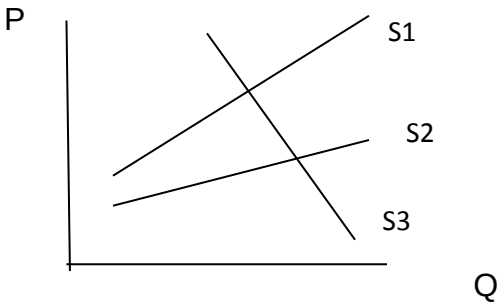
10. If a risk averse crop farmer were choosing among different marketing strategies that produced the following outcomes, which strategy is preferred …

A. average price = $3.10/bu, standard deviation of price = $0.40/bu
B. average price = $2.90/bu, standard deviation of price = $0.45/bu
C. average price = $3.00/bu, standard deviation of price = $0.50/bu
D. I am not sure

11. An increase in both equilibrium price and quantity will occur when …

A. demand decreases
B. demand increases
C. supply decreases
D. supply increases

12. Which of these supply curves is more elastic at any given price?



A. Supply curve S1
B. Supply curve S2
C. Supply curve S3
D. I am not sure

13. Suppose a total cost function is $TC = 400 + 30Q + 2Q^2$, where *TC* denotes total cost and *Q* denotes quantity. What is true about this function when $Q = 10$?

A. Marginal cost equals 400 and fixed costs equal 900
B. Marginal cost equals 70 and fixed costs equal 400
C. Marginal cost equals 900 and fixed costs equal 400
D. I am not sure

14. The rule for maximizing profits is to keep buying each input up to the point where the next unit costs more than …

A. that input's average cost
B. the output price
C. that input's contribution to revenue
D. I am not sure

15. Much market research loosely follows the scientific method, which involves …

A. using general theory to generate specific hypotheses, gathering data, and using it to either reject or not reject the hypotheses
B. using logic and data analysis to prove theories about economic behavior
C. generating the most reasonable hypotheses, and gathering data to show that they are correct
D. I am not sure

16. Suppose market research showed that the distribution of willingness-to-pay for a new product was heavily skewed toward low values, with a small number of people willing to pay very large amounts. For business planning purposes, what would be the most reasonable measure of typical willingness-to-pay?

A. mean
B. median
C. mode
D. I am not sure

17. The price spread between farm prices and retail prices has been growing for many products. This logically implies …

A. food retailers are gaining more monopoly power
B. farming is becoming less profitable
C. the nominal value of marketing inputs has been increasing
D. I am not sure

18. Which of the following concepts best explains why Kentucky is known for horses?

A. comparative advantage
B. the law of diminishing marginal productivity
C. the law of demand
D. none of the above

Post-Program Self-Assessment in Agricultural Economics and Agribusiness

1. Please rate how strongly you agree with each of the following statements.

	Strongly Disagr	Disagree	Neither Agree nor Disagr	Agree	Strongly Agre	I Do Not Kno
My current knowledge of business and economics makes me competitive in	O	O	O	O	O	O
My current analytical and learning abilities make me competitive in the job	O	O	O	O	O	O
The courses I took at UK so far gave me general skills that should be	O	O	O	O	O	O
I expect to get a job closely related to my major	O	O	O	O	O	O
I have a strong interest in careers related to	O	O	O	O	O	O
I am interested in the global food system	O	O	O	O	O	O
I have a strong interest in careers related to business	O	O	O	O	O	O
During my college years, I worked at a job that often interfered with my academic performance	O	O	O	O	O	O
I am reasonably satisfied if I get a C in a class	O	O	O	O	O	O
I know what types of jobs I can get with my major	O	O	O	O	O	O
I will mostly look for jobs that are close to my hometown	O	O	O	O	O	O

Please complete this form for the program's 2013-2014 academic year student learning outcomes assessment. If you conducted multiple assessments, please fill in as needed by starting a new section. If you have documents relevant to the assessment conducted, please add them as an appendix. Add hyperlinks to websites as necessary. For our records, please save the file as Program Name and Level (e.g. English_Master).

College: Agriculture
Department: Agricultural Economics
Program Name: Agricultural Economics
Level (Bachelor, Master, Doctorate, Certificate, or Other): Bachelor

	Assessment #1
Outcome (s)	**Professional Communication and Personal Responsibility**
Assessment Method/Too	Survey (see appendix) distributed to both new Ag Econ students and those students in the Capstone class. Questions #1, 2, 4, 5, 6 address professional communication and questions #3, 7, 8,9 10, and 11 address personal responsibility.
Benchmark/ Target	No more than 1 respondent would answer "disagree" or "strongly disagree" to any of the survey questions. In addition, the average for each individual question should be no lower than 3.33 (for
Results	We exceed expectations with the exception of three areas: 1) I feel confident that I understand how to cite resources correctly when including quotes or paraphrasing someone else's work (Average 3.19). 2) I feel familiar with and able to use the tools and resources of an academic library in addition to Internet resources (Average 3.31). 3) Two individuals answered disagree for the following question: My AEC degree has prepared me to practice and support ethical standards in my career after leaving UK. The rest of the results are in the appendix. But in every other instance the average was greater than 3.33 and there was no more than 1 person answering disagree to any of the questions.

Interpretation of Results	There were some very positive results that suggest our efforts have paid off. Most notably there was a significant increase (both in questions #4, 5, and 6 both between AEC 305 students and Capstone students as well as from the last time the assessment was done. The department has put emphasis on improving professional communication and it appears that these efforts have begun to pay off. Students are still not sure how to use library and internet resources as well as knowing how to correctly cite, or even when to cite, people's work. In addition, two students suggested that they didn't agree with the fact that the college course they had taken had prepared them to practice and support ethical
Improvement Action	a. Implement the Ag Econ Academic Enrichment Requirement which requires each student to participate in an internship, study abroad, or independently led research project. By doing this, students will have the opportunity to participate in a real workplace where teamwork is essential and leadership is likely rewarded. Students will witness or possibly have to make decisions that do or do not support ethical standards. They will keep a weekly diary where this question is specifically addressed. When students travel abroad they will be forced into a culture they may not be familiar with. This will force students to think differently about how they communicate when others don't necessarily understand their language. Those that choose the independent research project will learn how to use library resources and how and when to cite other's work through their advisor, who will be overseeing the project. b. Ag Econ has created a new requirement that meets the new GCCR. AEC 306 is a 2-hour course that must be taken with AEC 305. Each student will have to write a 15-page paper and provide a 6-minute digital presentation. Dr. Roger Brown will be teaching this course. Dr. Brown has extensive writing experience and does an excellent job helping students understanding the library, internet resources, citing work, and plagiarism. We expect that this course will be a great asset to students and will help them better understand the resources available to them and how to make sure credit is

	Assessment #2
Outcome (s)	**Professional Communication**
Assessment Method/Too	Dr. Davis (Ag Econ DUS) evaluated the students in AEC 320 (primarily seniors) as they presented their semester projects to firms they had been working with as well as the entire Ag Econ faculty. Dr. Davis used the presentation assessment form provided in the appendix. In total thirty students (6 groups) presented
Benchmark/ Target	At least 75% of the individuals received an "excellent" for each metric under "Preparation" and "Presentation".
Results	For each metric, 75% of the individuals did receive an excellent. For three of the metrics, 76.7% received an excellent score. While we surpassed the benchmark, there is still work to do. A full set of results is provided in the appendix as well as a narrative describing the observation of the presentations.
Interpretation of Results	Overall the students have really improved their communication skills. Ms. Flores taught AEC 320 and really emphasized the value of teamwork and communication. The students practiced and practiced. Their efforts paid off. This was the first semester that Ms. Flores taught this course and she recognized the need to do even more. In addition, other courses need to incorporate communications pieces, both oral and written. Currently there are only two courses that require presentations: AEC 320 and AEC 422.
Improvement Action	a. Faculty who do no currently require oral presentations or written papers in their classes are encouraged to pursue initial activities which will enhance the students' communications skills. b. Implement AEC 306 (see Assessment #1). The digital presentation will allow the students to review and critique their own skills. c. Encourage more students to participate in the new UK student NAMA (National Agri-Marketing Association) chapter. Students are exposed to some of the best student presentations in the country and must improve their own skills to be competitive. In addition, it is an excellent team building exercise. d. Encourage more students to participate in the UK Agribusiness club. Students are meeting with firms and potential employers. Students are required to ask questions at each event and are asked to network before and after each meeting. e. Consider asking those firms who participated in AEC 320 to provide a written evaluation of the team they worked with. While there was a representative from each firm at the presentation who asked

University of Kentucky, Agricultural Economics, Approved 3-2-2011

At the conclusion of this program, all students will at minimum be able to analyze basic applied social science questions using economic knowledge and theories following generally accepted standards of professional communication and personal responsibility.

1. Disciplinary Knowledge

At the conclusion of their program, all students at minimum should be able to:

1) Define terms and concepts (see topics below),
2) Convey information graphically (again, see topics below),
3) Perform mathematical calculations, and
4) Recall financial relationships.

Disciplinary knowledge topic area may include a) supply and demand, b) equilibrium price and quantity, c) cost concepts, d) input-output optimization, e) elasticity, f) market structure, g) consumer choice, h) production and resource use, and/or i) risk evaluation.

2. Analytical Abilities

At the conclusion of their program, all students at minimum should be able to:

1) Frame social science questions appropriately for applied economic analysis,
2) Identify, gather, and sort necessary information and data,
3) Form logical hypotheses based on economic concepts and theories,
4) Select appropriate tools and conduct analysis (see examples below), and
5) Form and defend reasonable conclusions, predictions, and policy prescriptions.

Analytical tools may include a) inference/deduction, b) summary statistics, c) correlation, d) regression, e) graphical analysis, and/or f) marginal analysis.

3. Professional Communication

At the conclusion of their program, all students at minimum should be able to:

1) Deliver information clearly and professionally in various forms and styles (see categories below)
2) Select appropriate forms and styles of communication.

Professional communication categories may include a) formal and informal writing, b) formal and informal speech, and c) presentation.

4. **Personal Responsibility**

At the conclusion of their program, all students at minimum should be able to:

1) Demonstrate independence,
2) Work cooperatively in groups,
3) Practice and support ethical standards, and
4) Show sensitivity and tolerance of human differences.

Table 1 Assessment Results (Subjective)

	AEC 305	AEC 422
1. I feel confident that I can write a clearly organized essay or paper that includes thesis development, testable hypotheses, use and interpretation of evidence, and effective paragraphing	3.22	3.50
2. I feel familiar with and able to use BOTH the tools and resources of an academic library and Internet resources.	3.31	3.31
3. I feel confident that I understand when and how to cite other people's work when I write an academic paper.	3.07	3.19
4. I feel confident that I can orally deliver information clearly and professionally to my peers.	3.18	3.46
5. I feel confident that I can engage my peers effectively in oral presentations by using visual tools.	3.19	3.38
6. I feel confident that I can engage my peers in oral presentations with appropriate enthusiasm, body language,	3.17	3.35

7. The college courses I have taken up until now have helped me to develop the ability to work independently (e.g., writing a paper, preparing a presentation, studying for an exam).	3.14	3.46
8. The college courses I have taken up until now have helped me to work cooperatively in groups.	3.15	3.54
9. The college courses I have taken up until now have allowed me or encouraged me to assume leadership roles	3.08	3.42
10. The college courses I have taken up until now have prepared me to practice and support ethical standards in my	3.26	3.38
11. The college courses I have taken up until now have taught me to show sensitivity and tolerance for human d	3.17	3.38

Assessment Results – Spring 2014 AEC 422

Strongly Disagree = 1, Disagree = 2, Agree = 3, Strongly Agree = 4

1. I feel confident that I can write a clearly organized essay or paper that includes thesis development, testable hypotheses, use and interpretation of evidence and effective paragraphing and transitions.
   Average: 3.50
2. I feel familiar with and able to use the tools and resources of an academic library in addition to Internet resources.
   Average: 3.31, All strongly agree or agree
3. *I feel confident that I understand how to cite resources correctly when including quotes or paraphrasing someone else's work.*
   Average: 3.19, 1 disagree
4. I feel confident that I can orally deliver information clearly and professionally to my peers.
   Average: 3.46, 1 disagree
5. *I feel confident that I can engage my peers effectively in oral presentations by using visual tools.*
   Average: 3.38, 1 disagree
6. *I feel confident that I can engage my peers in oral presentations by the appropriate enthusiasm, body language, and use of time.*
   Average: 3.35, 1 disagree
   In 2011-2012, the average for this question was 3.06. The department has added a number of new opportunities for oral presentations.
7. The courses I have taken to complete my degree in AEC have helped me develop the ability to work independently.
   Average: 3.46, all agree or strongly agree
8. The courses I have taken to complete my degree in AEC have helped me to work cooperatively in groups.
   Average: 3.54, all agree or strongly agree
9. The courses I have taken to complete my degree in AEC have allowed me or encouraged me to assume leadership roles within a group project.

   Average: 3.42, 1 disagree
10. My AEC degree has prepared me to practice and support ethical standards in my career after leaving UK.
    Average: 3.38, 2 disagree

11. My AEC experience has helped me show sensitivity and tolerance for human differences.

Average: 3.38, 1 disagree

Objective Evaluation of AEC 320 Presentations (Spring 2014)

Select AEC Learning	Assessment Item	**Excellent**	**Average**	**Below Average**
	Preparation			
Demonstrate Independence & Work	• Material • Organization	23 24	6 5	1 1
	Presentation			
Deliver information clearly and professionally & select appropriate	• Personal • Group • Presentation	23 23 25	8 7 5	

Dr. Davis observed 6 group presentations at the end of AEC 320. The majority of the students in AEC 320 were graduating seniors. Each group selected a real firm or agency and presented a marketing presentation or assisted the firm in developing a new product. Ms. Erica Flores taught this course.
Overall the groups did a really nice job. Compared to the presentations that Dr. Davis observed 2 years ago, these presentations were significantly improved. The student groups had to practice at least 5 times before their final presentation. The final presentation was delivered to over 60 individuals including Ag Econ faculty, representatives from the firms or agencies they were working for, and other students. The students appeared to work very well with one another. Some students had prepared note cards, others had memorized their presentations.

Evaluated based on the following criteria (see assessment form below):

Personal Presentation Skills (body language, diction, grammar, filler words, flow, enthusiasm, eye contact, etc)

In every instance, each team member presented for at least 1 minute. For the most part, the students were enthusiastic, made good eye contact, spoke with an audible voice, used appropriate hand gestures and were overall engaged with the audience. A handful of students were a bit bashful and nervous but they delivered the necessary material. Interestingly, women appeared to be more engaged and more confident than the men this year, which is opposite from the last time students were observed several years ago.

One of the groups had the opportunity to travel to Florida and participate in the student NAMA (national Agri-Marketing Association) competition. The students walked away understanding that while they did a nice job, they were far from the most polished and most prepared. It was refreshing to see that when they returned home they were eager to do better.

Presentation Assessment Form

Presenter:_____Assessor: _____

Subject: _____

Date: _____

ASSESSMENT OF SKILL PRESENTATION

Assessment Item	+	=	-	Comment
Preparation				
Presentation Plan				
Organization				
Materials				
Rehearsal				
Presentation				
Personal				
Body Language				
Diction				
Grammar				
Filler Words				
Flow				
Enthusiasm and				
Use of neutral				
Visible to audience				
Use of hands and				
Volume/Varied tone				
Eye contact				
Group				
Control				
Involvement				

Awareness of				
Presentation				
Content				
Staying on Subject				
Use of Visual Aids				
Use of Time				

TEACHING EDGE ASSESSMENT

Assessment Item	+	=	-	Comment
Presentation Preparation Component				
Materials assembled in advance of presentation				
Presenter identified learning objectives				
"Explain" Component				
Captures attention of learners				
Explains concept being explained in more than one way				
Uses media (whiteboard, flipchart, etc.) to organize info				
Interacts via questions and answers with learners				
"Demonstrate" Component				
Presenter clearly demonstrates skill				
Presenter identifies steps needed to complete skill				
Presenter identifies areas of difficulty in mastering skill				
"Guide" Component				
Assists learner in applying the skill				
Provides feedback during guiding				
"Enable" Component				
Learners are able to apply skill independently				
Presenter evaluates learner's ability to apply skill				

Please complete this form for the program's 2013-2014 academic year student learning outcomes assessment. If you conducted multiple assessments, please fill in as needed by starting a new section. If you have documents relevant to the assessment conducted, please add them as an appendix. Add hyperlinks to websites as necessary. For our records, please save the file as Program Name and Level (e.g. English_Master).

College: Agriculture
Department: Agricultural Economics
Program Name: Agricultural Economics
Level (Bachelor, Master, Doctorate, Certificate, or Other): Bachelor

	Assessment #1
Outcome(s) Assessed	**Disciplinary Knowledge**
Assessment Method/Tools	Survey (see appendix) distributed to both new Ag Econ students and those students in the Capstone class. Questions #1, 2, 5, 8, 12, 14, 15 address disciplinary knowledge. In addition, we asked students to self-report their preparedness for the job market based on the material they learned through classes.
Benchmark/ Target	On average ag econ students will answer each question related to disciplinary knowledge more correctly in the post-test than they did in the pre-test. Thus there should be a positive improvement. In addition, it is expected that in the post-test, the average correct response rate would be 75% per question.

Results	For the most part there was an increase in the percentage of students who answered these questions correctly in the post- assessment (improvement in 5 of the 8 questions, no change in 1 of the 8 questions, and a decline in 2 of the 8 questions. In addition, students appeared to feel more confident in their level of preparation for the job market during the post-assessment.
Interpretation of Results	While there has been some progress, the students in Ag Econ are still not meeting the threshold of 75% correct for each question. In some instances, there were questions where less than 40% of the students answered correctly. However it does appear that students are beginning to feel more confident about the job opportunities and their preparation for the job market. Self-assessment questions 1 and 2, and the significant increase in the average response, really speak to the work we have be doing in the department over the last two years.
Improvement Action	Students who enter the program are now required to take AEC 301 (career preparation) and either AEC 395, 396, or 399. We continue to ask our academic coordinator to focus more of her energies to ensuring our Ag Econ student body is prepared for the job market. Erica Flores will increase her efforts towards the following: 1) Meeting with employers to determine the skills they are looking for in recruiting students as well as sell the talents and potential of our student body to the employers; 2) Continue to host a student symposium annually highlighting the experiential learning each of our students is now required to participate in. We will continue to invite industry partners, employers, and alumni. The students spend months preparing for the symposium and this event has been incredibly successful for showcasing the talent of our students. 3) Provide smaller class sizes of AEC 301 and change the schedule so that students intensively prepare for the Career Fairs on campus.

	Assessment #2
Outcome (s)	**Analytical Abilities**
Assessment Method/Too	Survey (see appendix) distributed to both new Ag Econ students and those students in the Capstone class. Questions #3, 4, 6, 7, 10, 11, 13, 16, 17, 18 address analytical abilities
Benchmark/ Target	At least 75% of the individuals score each question correctly.
Results	The results were inconsistent across questions. The average ranged from 25% correct for a question to 89% correct. There was an improvement in scores (post-pre) for 6 of the 10 questions. A full set of results is provided in the appendix.
Interpretation of Results	Overall, the results suggest that our students are stronger in certain analytical areas than others. One of the largest increases was the change in question number 13 which is a calculus-based question. Although it's impossible to suggest that the results are because of a certain action we took, it's important to note that several years ago (Spring 2013) we did insist that all students received at least a C in calculus and we are now strict about adhering to the calculus prerequisite to AEC 303 (where the material for question #13 is
Improvement Action	Over the last several years the DUS and the Ag Econ program have undergone a lot of changes to improve the student experience and quality of Ag Econ graduates. These changes include changing prerequisites for several courses, changing minimum grade requirements to advance to higher level courses, creating the GCCR for the department, training advisors to better advise their students so that the students are taking courses at the most appropriate time, introducing new study abroad programs, launching the student symposium, and most importantly hiring an academic coordinator to allow for one-to-one face time with our students. Thus we are already implementing our improvement action plan from 2 years ago and don't want to diverge from our original plan. Many of the students who took the post-assessment were grandfathered into the old program requirements (except for the C prereq in MA 123) so we can't expect significant changes to occur for at least another year. Our improvement plan includes:

	assessment tool should better reflect the values we (and employers) place on different tools. 2) AEC advisors are being reminded to advise their students to enroll in AEC 303 (intermediate microeconomic theory) soon after entering the program. In AEC 303, students review many of the tested principles and it is important to minimize the time between taking ECO 201 and AEC 303 so that ECO 201 principles are not forgotten. We now offer several more sections of AEC 303 to ensure students can access this course early in the program. 3) Students will be required to take more upper-level hours as part of their degree. This should enhance analytical skills and students should be exposed to higher levels of critical thinking.

Appendix Learning Outcomes

University of Kentucky, Agricultural Economics, Approved 3-2-2011

At the conclusion of this program, all students will at minimum be able to analyze basic applied social science questions using economic knowledge and theories following generally accepted standards of professional communication and personal responsibility.

1. Disciplinary Knowledge

At the conclusion of their program, all students at minimum should be able to:

1) Define terms and concepts (see topics below),
2) Convey information graphically (again, see topics below),
3) Perform mathematical calculations, and
4) Recall financial relationships.

Disciplinary knowledge topic area may include a) supply and demand, b) equilibrium price and quantity,
c) cost concepts, d) input-output optimization, e) elasticity, f) market structure, g) consumer choice, h) production and resource use, and/or i) risk evaluation.

2. Analytical Abilities

At the conclusion of their program, all students at minimum should be able to:

1) Frame social science questions appropriately for applied economic analysis,
2) Identify, gather, and sort necessary information and data,
3) Form logical hypotheses based on economic concepts and theories,
4) Select appropriate tools and conduct analysis (see examples below), and
5) Form and defend reasonable conclusions, predictions, and policy prescriptions.

Analytical tools may include a) inference/deduction, b) summary statistics, c) correlation, d) regression,
e) graphical analysis, and/or f) marginal analysis.

3. Professional Communication

At the conclusion of their program, all students at minimum should be able to:

1) Deliver information clearly and professionally in various forms and styles (see categories below)
2) Select appropriate forms and styles of communication.

Professional communication categories may include a) formal and informal writing, b) formal and informal speech, and c) presentation.

4. Personal Responsibility

At the conclusion of their program, all students at minimum should be able to:

1) Demonstrate independence,
2) Work cooperatively in groups,
3) Practice and support ethical standards, and
4) Show sensitivity and tolerance of human differences.

Overview of 2014-2015 Assessment – **Disciplinary Knowledge (Outcome #1)**

Pre-Program Assessment, distributed to AEC 305 beginning spring 2015, 43 students completed (29 AEC majors)

Post Assessment, distributed to AEC 422 end of spring 2015, 39 students completed (All but 3 AEC majors)

Table 1 Self-Assessment of 2012-2013 AEC Undergraduate Students Job Market Preparedness

	Pre-Progra	Post-Progra	Post-Pre
My current knowledge of business and economics makes me competitive in the job market	3.39	4.11	0.72
My analytical and learning abilities make me competitive in the job market.	3.82	4.31	0.49
The courses I took at UK gave me useful job skills	4.10	4.11	0.01
I expect to get a job related to my major.	3.64	3.57	-0.07
I have a strong interest in Ag.	3.53	3.51	-0.02
I am interested in the global food system.	3.32	3.49	0.17
I have a strong interest in careers related to business	4.11	4.34	0.23
During college, I worked at a job that often interfered with my academic performance	2.68	3.51	0.83
I am reasonably satisfied if I get a C in a class	2.25	2.69	0.44
I know what types of jobs I can get with my major	3.46	3.83	0.35
I will mostly look for jobs that are close to my hometown.	2.89	2.74	-0.15

Table 2 Direct Assessment of 2014-2015 AEC Undergraduate Students, Learning Outcomes 1, Disciplinary Knowledge

	Pre Correct	Post Correct	Chang	Outcome	Improvement from 2012-
Question 1	56	64	9%	1	Yes
Question 2	32	64	32%	1	Yes

Question 5	57	78	21%	1	Yes
Question 8	48	50	2%	1	Yes
Question 9	61	61	0%	1	Same
Question 12	46	39	-7%	1	No
Question 14	18	25	7%	1	Yes
Question 15	82	58	-	1	No

Overview of 2014-2015 Assessment – **Analytical Abilities (Outcome #2)**

Pre-Program Assessment, distributed to AEC 305 beginning spring 2015, 43 students completed (29 AEC majors)

Post Assessment, distributed to AEC 422 end of spring 2015, 39 students completed (All but 3 AEC majors)

Table 3 Direct Assessment of 2014-2015 AEC Undergraduate Students, Learning Outcomes 2, Analytical Abilities

	Pre Correct	Post Correct	Change	Outcome	Improvement from 2014-
Question 3	61	56	-5%	2	No
Question 4	64	39	-25%	2	No
Question 6	57	25	-32%	2	No
Question 7	21	89	68%	2	Yes
Question 10	39	69	30%	2	Yes
Question 11	57	28	-29%	2	No
Question 13	7%	72	65%	2	Yes
Question 16	39	58	19%	2	Yes
Question 17	21	39	18%	2	Yes
Question 18	75	83	8%	2	Yes

UNIVERSITY OF KENTUCKY®

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Master

Program Goal	Assessed in
agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory	2007-2009 Ag Economics Master_Research and Value of ECO 601 2007-2010 Ag Economics Doctor_Research Performance and Pre-program Requirements 2007-2010 Ag Economics Master_Research and AEC 503 Spring 2012 Agricultural Economics -Master
agecon.m: Generate knowledge Use appropriate methods to generate new knowledge in agricultural economics	
agecon.m: Problem solving Apply economic theory and econometric techniques to solve problems in agricultural economics	2007-2010 Ag Economics Master_Research and AEC 503 Spring 2012 Agricultural Economics -Master
agecon.m: Research, outreach, and presentation skills Possess evolving research, outreach, and presentation skills	

UNIVERSITY OF KENTUCKY

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Master
2007-2009 Ag Economics Master_Research and Value of ECO 601

Student Learning Outcome(s) Assessed

agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory

Assessment Methods and Tools

Data were collected from student files, discussions with faculty members and MS students

Data from graduate student performance were from 2007 to 2009; discussions with faculty members and graduate students were mostly in 2007-2009

Data were collected on publications and presentations by current MS students from 2007/8 to 2009/10.

The data on student performance came from SIS listings for ECO 601

We were mostly concerned with how valuable the ECO 601 course (which is required in our MS program) was to our students. The Economics Department said that they were changing the course so that it would be taken exclusively by PhD students. Thus, given our MS students' past performance (which was an average GPA of 2.92), we knew we needed to make some adjustments to our program.

Results

MS students presented two papers in 2007/8, three papers in 2008/09, and three papers in 2009/10. They had no refereed journal publications in 2007/8, and two in 2008/9 and 2009/10. These numbers are too low for our students.

The department has a microeconomics course that it has been teaching to help students prepare for ECO 601. The Graduate Program Committee decided that the course would be upgraded a bit and substitute as the microeconomic theory requirement for our MS students. This recommendation was passed by the Agricultural Economics faculty members.

Interpretation of Results

The Graduate Program Committee decided that AEC 503 should be upgraded slightly and serve as a substitute for ECO 601 (the microeconomic theory requirement for our MS students). This recommendation was passed by the Agricultural Economics faculty members.

Improvement Action

In order to increase the number of presentations and publications by MS students, we encouraged faculty members to work with students to move their term papers into presented papers or published articles. We also made it clear to students that their expenses for professional meetings would be covered if they presented a paper.

The data on MS student performance during 2007-2009 reinforced the comments to graduate students and faculty concerning ECO 601. A meeting with the Economics Department was also helpful in discovering the enhanced mathematical prerequisites of the course -- making it inaccessible to our MS students.

Michael Reed, Director of Graduate Studies in Agricultural Economics.

Reflection

The upgrading of AEC 503 (in order to replace ECO 601) has been going well. Students seem to be better prepared for the applied aspects of our program when they take AEC 503.

Furthermore, enforcing the calculus prerequisite is working well.

Attachments

No Attachments

UNIVERSITY OF KENTUCKY®

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Master
2007-2010 Ag Economics Master_Research and AEC 503

Student Learning Outcome(s) Assessed

agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory

agecon.m: Problem solving Apply economic theory and econometric techniques to solve problems in agricultural economics

Assessment Methods and Tools

Data were collected on publications and presentations by current MS students from 2007/8 to 2010/11.

Data were collected from student files, discussions with faculty members and MS students about performance in AEC 503 and other courses. Information was from 2007 to 2010; discussions with faculty members were also from 2007-2010. Data on student performance came from SIS. Data on student presentations and publications came from a survery of faculty members and students.

We were mostly concerned with student performance in research and AEC 503 and other MS level courses in AEC.

Results

Research output is an important measure of student learning. MS students presented two papers in 2007/8, three papers in 2008/09, three papers in 2009/10, and two papers in 2010/11. They had no refereed journal publications in 2007/8, two in 2008/9, two in 2009/10, and two in 2010/11. These numbers are too low for our students.

It was generally felt that we needed to do a better job of advising students before taking AEC 503 (and entering our MS program). All students need to have MA 113 before they enter. This pre-program requirement is essential for success in AEC 503.

Interpretation of Results

The data and discussions with the faculty members (specifically the teacher of AEC 503) indicated that we need to do a better job of advising students before they take AEC 503 (and before they enter our MS program). All students need to have MA 113 before they enter our MS program and this needs to be made clear in all communications with prospective students. This pre-program requirement in essential for success in AEC 503

Improvement Action

In order to increase the number of presentations and publications by MS students, we encouraged faculty members to work with students to move their term papers into presented papers or published articles. We also made it clear to students that their expenses for professional meetings would be covered if they presented a paper.

It was decided that no student would be allowed to enter AEC 503 without the MA 113 prerequisite. Students will be required to show that they have taken a formal calculus course before they are allowed to enroll in AEC 503.

Michael Reed, Director of Graduate Studies in Agricultural Economics.

Reflection

The enforcement of the calculus prerequisite for AEC 503 is improving student performance. The two offerings of the course before the enforcement there were three "C"s from the 18 students taking the course. During last year's offering there were no "C"s among the eight students in the class.

Attachments

No Attachments

UNIVERSITY OF KENTUCKY

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Master
Spring 2012 Agricultural Economics -Master

Student Learning Outcome(s) Assessed

agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory

agecon.m: Problem solving Apply economic theory and econometric techniques to solve problems in agricultural economics

Assessment Methods and Tools

The ability to use economic theory and appropriate statistical methods to solve problems is challenging for our MS students. The department has stressed that tackling specific agricultural economic problems in an analytical way, and presenting findings through presentations at professional meetings and journal publications, is the best measure of student learning. Thus, we track the number of publications and presentations by MS students.

The ultimate measure of success for our MS program is whether our students are able to find a good job upon graduation. We assess this by tracking the number of students who find a job after graduation (or are enrolled in a PhD program).

Results

Fifty-five percent of our graduating MS students during 2009 to the present have made a presentation at a regional or national professional meeting.

All of our MS students who have graduated in the last three years are employed on a full-time basis.

Interpretation of Results

None of these findings have an impact on our curriculum or pedagogy

Improvement Action

The Graduate Program Committee needs to discuss whether the desire to graduate MS students within two years is a legitimate goal.

We are doing much better in having our student make presentations at professional meetings, but it appears this might cause them to take longer for their degree. We need to discuss whether this trade-off exists and whether we need to adjust expectations on time-to-degree given this emphasis on presentations and publications.

Data were collected on all of the major indicators that the Department has assigned to the MS program. These data were reviewed by the DGS as part of the annual review process.

Michael Reed, Director of Graduate Studies in Agricultural Economics

Reflection

We are beginning to discuss changes in our student learning objectives for the MS program (specifically adding an objective about communication skills).

The graduate program committee and the faculty members who teach required courses within the MS program are discussing improved ways to document progress for students in the current two SLOs -- knowledge of economic theory and ability to apply it. We are thinking of assessing MS students in one or two of the required MS courses as a baseline (through current home work or quizzes in those courses) and then designing an assessment device for the final oral MS defense. This will take some time, but it is felt that such measures might be worthwhile supplements to the current measures.

Attachments

No Attachments

UNIVERSITY OF KENTUCKY®

Annual Student Learning Outcomes Report

Agricultural Economics
Agricultural Economics - Master
MS Assessment for 2012/13

Student Learning Outcome(s) Assessed

agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory

agecon.m: Problem solving Apply economic theory and econometric techniques to solve problems in agricultural economics

agecon.m: Research, outreach, and presentation skills Possess evolving research, outreach, and presentation skills

agecon.m: Generate knowledge Use appropriate methods to generate new knowledge in agricultural economics

Assessment Methods and Tools

Faculty members assessed individual students in the required MS level class for the Fall 2013 semester (AEC 503) using the assessment form and the rubric. All students sitting for their final oral exam at the MS level during summer and fall 2013 were also assessed. The rubric is accessible through this site, the assessment form is also accessible elsewhere in the site.

Results

We have only begun this new assessment procedure during summer 2013. We have had two MS students take their final oral exam. One received a 2.83 overall and had two items that were judged at level 2 rather than level 3. These were the categories based on ability to test hypotheses and contribution to the literature.

Five new MS students were assessed early in Fall semester through their performance in AEC 503. The results are enlightening. They received aggregate scores of 1, 2, 2, 3 and 4, which is a bit low.

Interpretation of Results

The lower rated MS final oral exam was for a Plan B (non-thesis MS degree). We do not have many of these students, but it is not good that he was evaluated at less than 3.0 and had two elements that were rated at less than 3.0 (by one professor). However, those two categories dealt with the ability to formulate and test hypotheses and the ability to make a contribution to the applied literature in Agricultural Economics. A non-thesis MS student usually does not have many skills in these two areas. They haven't been through a thesis process to develop these skills.

The higher rated MS final oral exam was for an exceptional student who is now in our PhD program. The very high rating that he received is indicative of his superior skills in all categories from the assessment instrument.

For the students in AEC 503 are mostly new to our program. The first three scores are lower than would be expected, so we will need to watch those individuals. Two of them are new international students. The one rated 4 is a second year graduate student (and one of our best).

Improvement Action

We have only begun collecting data using these new assessment procedures. At this point, developing an improvement plan seems premature. We need more data and that will take time.

Reflection

This is a new assessment plan, so we need to wait for any future improvement actions

Attachments

assess_form.docx

assess_rubric.xlsx

University of Kentucky

Annual Assessment Reporting
2013-2014

Please complete this form for the program's 2013-2014 academic year student learning outcomes assessment. If you conducted multiple assessments, please fill in as needed by starting a new section. If you have documents relevant to the assessment conducted, please add them as an appendix. Add hyperlinks to websites as necessary. For our records, please save the file as Program Name and Level (e.g. English_Master).

College: Agriculture, Food and Environment
Department: Agricultural Economics
Program Name: Agricultural Economics
Level (Bachelor, Master, Doctorate, Certificate, or Other): Master

	Assessment #1
Outcome(s) Assessed	**Articulate and motivate an economic problem by connecting theory to practice**
Assessment Method/Tools	Assessment forms completed from MS final oral exam and early in AEC 503 and 531
Benchmark/ Target	Evaluation of 3 or higher
Results	Four students took their final MS oral (thesis) and their scores averaged 4.3. Each student had a 3 or above Eight students were evaluated in AEC 503 and the average score was 2.1. Only one student had a 3 or above Ten students were evaluated in AEC 531 and the average score was 2.6. Five students had a 3 or above
Interpretation of Results	We are doing a good job in getting students through the thesis process and helping them connect theory to practice. However, it seems that students are having a difficult time connecting theory to practice early in their MS study program. Most students take AEC 503 before AEC 531 so the rests show that we are clearly improving student learning as they proceed through their program.
Improvement Action	Be more careful with admissions so that students are better prepared for AEC 503.

University of Kentucky

Annual Assessment Reporting

2013-2014

	Assessment #2
Outcome(s) Assessed	**Formulate specific, testable hypotheses that address the broader question/issue**
Assessment Method/Tools	Assessment forms completed from MS final oral exam and early in AEC 531 and 624.
Benchmark/ Target	Evaluation of 3 or higher
Results	Four students took their final MS oral (thesis) and their scores averaged 4.1. Each student had a 3 or above Ten students were in AEC 531 and the average score was 2.5. Only three had a 3 or above Nine students were in AEC 624 and the average score was 2.8. Seven students scored 3 and two students scored 2.
Interpretation of Results	We are doing a good job in getting students to formulate hypotheses that address questions in agricultural economics through their MS thesis. However, they don't come into our program with those skills and they must learn them in critical courses such as AEC 531 and AEC 624. They might not know how to formulate testable hypotheses early in those courses, but learn by the end of their program.
Improvement Action	Continue to monitor student progress in this area. We have started an orientation program that includes some presentations that address this topic indirectly.

University of Kentucky

Annual Assessment Reporting

2013-2014

	Assessment #3
Outcome(s) Assessed	**Demonstrate proficiency in oral and written communications**
Assessment Method/Tools	Assessment forms completed from MS final oral exam and early in AEC 531.
Benchmark/ Target	Evaluation of 3 or higher
Results	Four students took their final MS oral (thesis) and their scores averaged 4.5. Each student had a 3 or above (only one had 3 the others had higher scores). Ten students were in AEC 531 and the average score was 2.5. Only three had a 3 or above.
Interpretation of Results	It is clear that our students do not come into our program with good communication skills. Many of them are international students so they are operating in a foreign language. Nonetheless, by the time they defend their thesis, their communication skills have improved markedly.
Improvement Action	Continue to stress communication skills in MS level classes through presentations at professional meetings, written assignments, and other experiences.

University of Kentucky

Annual Assessment Reporting

2013-2014

	Assessment #4
Outcome(s) Assessed	**Demonstrate the ability to contribute to the analysis of economic issues/policy**
Assessment Method/Tools	Assessment forms completed from MS final oral exam
Benchmark/ Target	Evaluation of 3 or higher
Results	Four students took their final MS oral (thesis) and their scores averaged 4.5. Each student had a 4 or above.
Interpretation of Results	We are doing a good job in preparing students to contribute to economic and policy analysis.
Improvement Action	Keep going with our current program.

Faculty members assessed individual students in the required MS level class for the Spring 2014 (AEC 531 and AEC 624) and Fall 2014 (AEC 503) using the assessment form and the rubric (forms are attached). All students sitting for their final oral exam at the MS level during 2013-14 were also assessed.

The assessment form asks evaluators to rate students on their abilities for the following Student Learning Outcomes (SLOs):

1. Articulate and motivate an economic problem by connecting theory to practice
2. Understand related background literature
3. Know micro-theory foundations
4. Formulate specific, testable hypotheses that address the broader question/issue
5. Compare, choose, and apply appropriate empirical methods
6. Demonstrate proficiency in oral and written communications
7. Demonstrate the ability to contribute to the analysis of economic issues/policies
8. Contribute meaningfully to the applied economics literature

The assessment form shows the SLOs that are relevant for each course/activity. Each student is evaluated on a scale from 1-5 with five the highest and one the lowest. The rubric provides more detail on what the various levels indicate in terms of SLOs.

We would like all students to receive a 3 or above on all elements in the assessment form. However, it is more important that the elements be 3 or above for students who are further along in their program (particularly those who have sat for their final oral exam).

We began this new assessment procedure during summer 2013 so the Fall of 2013 was the first semester that students were evaluated with these new methods. This year (2013/14) is the first time that students in Spring semester courses were assessed.

We only had one MS student take a Plan B (coursework only) during this year. Their performance was 2.33 over all outcomes. The student's performance for #1 and #3 were 2 while the other categories (#4 and #6) were higher. This performance was lower than last year's but only one person completed the Plan B in each year.

We had four MS students defend their MS thesis during 2013/14.
The four students received the following averages on the components: #1 4.3; #2 4.5; #3 4.1; #4 4.1; #5 4.2; #6 4.7; #7 4.5. All of these aggregated scores are over 4, so our MS students are showing that they have met our objectives for this terminal aspect of their degree. The individual scores (averaging the six categories by student) ranged from 4.1 to 4.9 (with an average over all individuals of 4.5). This is a very promising performance with each student well above our expectation.

Eight new MS students were assessed early in Fall semester through their performance in AEC 503. These eight students received the following averages on the components: #1 2.1; #3 2.1. The scores for individuals varied from 1 to 2.5. These assessment scores are

quite a bit lower than last year for AEC 503 (when most of the scores were around 2.4. One student in 2013/14 had a particularly low score, so we may need to pay closer attention to prerequisites for the admissions process.

Students were assessed in AEC 531 and AEC 624 for the first time in 2013/14. Their scores in these classes were much higher than in AEC 503. For AEC 531 the ten students received the following averages on the components: #1 2.6; #2 2.8; #4 2.5; #6 2.5. The overall average was 2.6 and the individual student scores over all components varied from 1.5 to 4.3 (the student receiving a low score in AEC 503 also received a low score in AEC 531). For AEC 624 the nine students received an average of 2.8 in components #4 and #6. Individual averages over components ranged from 2 to 3.

We have only begun collecting data using these new assessment procedures. At this point, developing an improvement plan seems premature. We need more data and that will take time.

This is a new assessment plan, so we need to wait for any future improvement actions

Student name: _____ Program: M.S. Ph.D.

Check One:

☐ AEC 503 (A,C)
☐ AEC 531 (B,D,F)
☐ AEC 624 (D,E)

☐ MS oral exam (A,C,D,G1)
☐ MS thesis/defense (A-F,G1)

☐ AEC 606 (A,B,D,E,F)
☐ AEC 640 (A,B,C,D,F,G2)
☐ PhD 2nd year paper* (A-F,G2) *first submission

☐ PhD final defense (A-F, G2)

Student Learning Outcomes

	1	2	3	4	5
A. Articulate and motivate an economic problem by connecting theory to practice	☐	☐	☐	☐	☐
B. Understand related background literature	☐	☐	☐	☐	☐
C. Know micro-theory foundations	☐	☐	☐	☐	☐
D. Formulate specific, testable hypotheses that address the broader question/issue	☐	☐	☐	☐	☐
E. Compare, choose, and apply appropriate empirical methods	☐	☐	☐	☐	☐
F. Demonstrate proficiency in oral and written communication	☐	☐	☐	☐	☐
G1. Demonstrate the ability to contribute to the analysis of economic issues/policies	☐	☐	☐	☐	☐
G2. Contribute meaningfully to the applied economics literature	☐	☐	☐	☐	☐

(1=marginal undergraduate 3=promising graduate student 5=stellar graduate student)

Signature:_____ Date:_____

Printed Name:_____

SCORE (absolute scale)	**1 marginal undergraduate**	**2 promising undergraduate**	**3 promising graduate student, job-ready**	**4 strong graduate student**	**5 stellar graduate student**
A. articulate and motivate an economic problem by connecting theory to practice	confusion over how economics applies to this problem	some important economic concepts missing or noneconomic concepts included	able to capture the central economic issues	main economic concepts articulated but only weakly integrated	full articulation of how economics applies in an integrated manner to this problem
B. Understand related background literature	weak and incomplete literature review---no integration	at least one but no more than two key concepts missing	literature review is comprehensive but lacks sufficient integration	literature mainly complete but minor aspects missing	literature fully connected to problem
C. Know micro-theory foundations	rudimentary understanding of micro theory	basic understanding of how theory concepts are connected (AEC 303 level)	good grasp of micro theory (AEC 503 level)	some ability to make connections among various theory elements	strong and integrated grasp of micro-theory---ability to connect different ideas
D. Formulate specific, testable hypotheses that serve to address the broader question or issue.	tenuous connection between hypotheses and broader question; ignorance of extant tests	weak or no identification strategy; confuses correlation, corroboration, and causality; little connection between test and broader question	identification strategy stated; connection between broader issue and hypotheses stated; adequate understanding of methods used in existing work; correct interpretation of	identification strategy not necessarily original, but appropriate and correctly applied; good understanding of methods used in existing work; test results discussed in terms of implications for broader questions	original and defensible identification strategy; thorough understanding of strategies used in existing work; can distinguish between correlation, corroboration, and causation; explains connection between tests and broader questions
E. Compare, choose, and apply appropriate empirical methods.	haphazard choice of variables, data format, and econometric tools; no consideration of potential econometric pitfalls (ECO 391 level)	variables, data format, and econometric tools adequate; addresses some econometric pitfalls, but lacks deeper understanding of basic tools	variables, data format, and econometric tools adequate to test hypotheses; sufficient understanding of tools used	variables and data format carefully chosen; multiple methods or econometric tools used; good understanding of which tools/tests to use when and why	variables and data permit identification; data hurdles addressed thoroughly and defensibly; 'strength' of results put in perspective; empirical findings worthy of dissemination
F. Demonstrate proficiency in oral and written communication	writing/exposition lacks direction; inability to synthesize existing work; errors in writing / speech / slide; poor use of visuals; inadequate use of citations	writing / exposition is mostly clear; some synthesis; correct use of citations; but work is unpracticed/ unpolished	writing / exposition is organized, pitched at appropriate level; `narrative' is clear; correct use of citations; no technical, grammatical, or syntax errors	clear and polished exposition that is appropriate to audience / outlet; work /exposition is well integrated; helpful visuals	clear, eloquent, and highly polished exposition that is appropriate to audience / outlet; coherent narrative; thoughtful and original synthesis of existing work, effective use of tables, graphs, and other visuals
G1. Demonstrate the ability to contribute to the analysis of applied economics issues/policies. (M.S.)	little potential shown	some ability to connect issues/policies to economic theory	presentation or thesis that addresses major issue (OR shows ability to understand issues/policies through lens of economics; can articulate hypotheses)	a thorough and original thesis; professional presentations; or high profile internship (OR strong performance in oral exam)	thesis is ready for submission for publication and/or award (OR superior performance in oral exam)
G2. Contribute meaningfully to the applied economics literature. (Ph.D.)	weak dissertation	mediocre dissertation, no presentations	good dissertation with potential for eventual publication; several presentations	high-quality dissertation that is ready for submission; presentations made periodically through graduate career	several articles accepted for publication; polished presentations made periodically throughout graduate career

University of Kentucky

Annual Assessment Reporting
2014-2015

Please complete this form for the program's 2014-2015 academic year student learning outcomes assessment. If you conducted multiple assessments, please fill in as needed by starting a new section. If you have documents relevant to the assessment conducted, please add them as an appendix. Add hyperlinks to websites as necessary. For our records, please save the file as Program Name and Level (e.g. English_Master).

College: Agriculture, Food and Environment
Department: Agricultural Economics
Program Name: Agricultural Economics
Level (Bachelor, Master, Doctorate, Certificate, or Other): Master

	Assessment #1
Outcome(s) Assessed	Understand related background literature
Assessment Method/Tools	Assessment forms completed from AEC 531, AEC 606, AEC 640 and thesis defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 531: 2015 mean = 2.71 2014 mean = 2.80 AEC 606: 2015 mean = 2.00 AEC 640: 2014 mean = 2.83 Thesis Defense: 2014 mean = 4.26
Interpretation of Results	Limited results to date demonstrate a favorable 4.26 average upon completion of M.S. thesis defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 2.00 to 2.83
Improvement Action	Continue to utilize selected refereed publications in our classes and emphasize their importance in establishing solid research foundations for thesis
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome, while not formally conducted in 2013-2014, leads to the conclusion of maintaining the current successful action plan

University of Kentucky

Annual Assessment Reporting
2014-2015

	Assessment #2
Outcome(s) Assessed	Know micro-theory foundations
Assessment Method/Tools	Assessment forms completed from AEC 503, AEC 640, oral examination and thesis defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 503: 2015 mean = 3.00 2014 mean = 2.13 AEC 640: 2014 mean = 2.17 Oral Exam: 2015 mean = 3.33 2014 mean = 3.56 Thesis Defense: 2014 mean = 4.00
Interpretation of Results	Limited results to date demonstrate a favorable average ranging from 3.33 to 4.00 upon completion of M.S. oral examination and thesis defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 2.13 to 3.00
Improvement Action	Maintain thorough and repeated exposure to micro-theory in our classes while continuing demonstration of use and practical application for economic analysis and problem solving
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome, while not formally conducted in 2013-2014, leads to the conclusion of maintaining the current successful action plan

University of Kentucky

Annual Assessment Reporting
2014-2015

	Assessment #3
Outcome(s) Assessed	Compare, choose, and apply appropriate empirical methods
Assessment Method/Tools	Assessment forms completed from AEC 624, AEC 606 and thesis defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 624: 2015 mean = 2.64 2014 mean = 2.75 AEC 606: 2015 mean = 2.40 Thesis Defense: 2014 mean = 4.00
Interpretation of Results	Limited results to date demonstrate a favorable 4.00 average upon completion of M.S. thesis defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 2.40 to 2.75
Improvement Action	Continue teaching of advantages and disadvantages of a wide variety of empirical analytical methods coupled with opportunities for mastering computational capabilities
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome, while not formally conducted in 2013-2014, leads to the conclusion of maintaining the current successful action plan

UNIVERSITY OF KENTUCKY®

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Doctor

Program Goal	Assessed in
agecon.d: Economic theory Demonstrate mastery of basic principles in economic theory	Spring 2012 Ag Economics - Doctor
agecon.d: Generate knowledge Use appropriate methods to generate new knowledge in agricultural economics	
agecon.d: Problem solving Apply economic theory and other analytical methods (e.g, mathematics and econometrics) to solve problems in agricultural economics	2007-2010 Ag Economics Doctor_Research Performance and Pre-program Requirements Spring 2012 Ag Economics - Doctor
agecon.d: Research, outreach and presentation skills Possess strong research, teaching/outreach,and presentation skills	2007-2009 Ag Economics Doctor_Research and Program Length

UNIVERSITY OF KENTUCKY

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Doctor
2007-2009 Ag Economics Doctor_Research and Program Length

Student Learning Outcome(s) Assessed

agecon.d: Research, outreach and presentation skills Possess strong research,teaching/outreach,and presentation skills

Assessment Methods and Tools

Data was collected from student files, annual graduate student surveys, the Graduate School's website database, and discussions with faculty members.

Data from the Graduate School website was from 1998 to 2009; discussions with faculty members were mostly in 2007-2009.

The Graduate School collects data on date of enrollment, date of preliminary oral examination, and date of the final oral examination.

Data were collected on publications and presentations by current Ph.D. students from 2007/8 to 2009/10.

We would like all of our Ph.D. students to have a publication or presentation before they graduate.

We were mostly concerned with how long it has taken our Ph.D. students (even the very capable ones who entered the program very well prepared) to complete their research and dissertation. We have struggled for many years about ways to shorten that process and improve their research capabilities earlier in their program. So, the data we used was time from initial enrollment to the prelimary oral exam (when the student has a dissertation prospectus completed) and from the preliminary oral exam to the final defense of the dissertation.

Results

There were a total of 27 students who graduated with a Ph.D. in Agricultural Economics between January 2000 and December 2009. The average time to the preliminary oral exam was 36.5 months and the average time from the oral exam to the final defense was 32.0 months. Thus, students were getting to their research in time, but having trouble finishing their dissertations in a timely manner. The average length of a Ph.D. program was 68.7 months, so those who got to the prelim oral exam quickly often stalled after that with their research. The tables below list the findings with intervals rather than averages.

Time to Preliminary Oral

<24 months	3	11%
24-30 months	9	33%
30-36 months	5	19%
36-42 months	4	15%
>42 months	6	22%

Time from Prelim Oral to Final Defense

<18 months	5	19%
18-24 months	3	11%
24-30 months	8	29%
30-36 months	6	22%
36-42 months	1	4%
>42 months	4	15%

Total Program Length

<48 months	4	15%
48-54 months	3	11%
54-60 months	4	15%
60-66 months	4	15%
66-72 months	3	11%
72-78 months	4	15%
>78 months	5	19%

PhD students presented fourteen papers in 2007/8, nineteen papers in 2008/09, and seven papers in 2009/10. They had two refereed journal publications in 2007/8, three in 2008/9 and four in 2009/10. These numbers are improved, but the fall-off for 2009/10 is a concern.

Interpretation of Results

The Graduate Program Committee recommended a number of changes to the program aimed at helping Ph.D. students get to the prelimary oral exam faster and to complete their dissertation research faster.

Improvement Action

In order to increase the number of presentations and publications by PhD students, we continued to encourage faculty members to work with students to move their term papers into presented papers or published articles. We also made it clear to students that their expenses for professional meetings would be covered if they presented a paper.

The Graduate Program Committee recommended that the department drop its requirement that all Ph.D. students pass the macroeconomics preliminary exam at the PhD level. Instead, they suggested that students who receive a B or better in both macroeconomics graduate classes be allowed to bypass the exam. The major rationale was that microeconomics is much more important for our students.

The Graduate Program Committee recommended that the department institute a research paper requirement in lieu of a written Agricultural Economics preliminary exam, so that students get experience in performing research earlier in their program. Writing the research paper also provides a better guide on how successful the student will be in performing research. A new class was also offered that helped Ph.D. students understand the research process and how the methods they have learned can be used to solve problems. Guidelines for the research paper requirement were drafted by the Graduate Program Committee. These changes directly relate to student learning objectives 2-4.

The Department passed the recommendations of the Graduate Program Committee.

Michael Reed, Director of Graduate Studies in Agricultural Economics.

Reflection

The effects of dropping the macroeconomics preliminary requirement is still being investigated. Some of our students continue to take the prelim for their MS in Economics. However, most students don't take the prelim because they meet the requirement by obtaining "B"s in both macroeconomic classes. The effects of the research paper requirement are more clear. The number of presentations and papers by graduate students is increasing rapidly each year. Many of these papers are coming from third and fourth year students who met the research paper requirement.

Attachments

No Attachments

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Doctor
2007-2010 Ag Economics Doctor_Research Performance and Pre-program Requirements

Student Learning Outcome(s) Assessed

agecon.d: Problem solving Apply economic theory and other analytical methods (e.g, mathematics and econometrics) to solve problems in agricultural economics

agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory

Assessment Methods and Tools

Data were collected on publications and presentations by current PhD students from 2007/8 to 2010/11.

Data from student files, discussions with faculty members and PhD students about performance in ECO and AEC courses were collected. The data on graduate student performance were from 2007 to 2010 and the discussions with faculty members and graduate students was from the same period. Data on graduate student performance came from SIS for various courses.

Data on student performance and publications came from a survey of faculty members and students.

Results

Research output is an important measure of student learning. Ph.D. students presented fourteen papers in 2007/8, nineteen papers in 2008/09, seven papers in 2009/10, and six papers in 2010/11. They had two refereed journal publications in 2007/8, three in 2008/9, four in 2009/10, and three in 2010/11. These numbers are improved, but the fall-off after 2009/10 is a concern.

It was generally felt that we needed to do a better job of advising students before entering our PhD program. All entering students need to have at least two semesters of engineering calculus and one semester of linear algebra before they enter. This pre-program requirement is essential for success in the ECO theory sequence.

Our pass rate on the microeconomics preliminary exam was not as high as we wanted.

Interpretation of Results

In order to increase the number of presentations and publications by PhD students, we continued to encourage faculty members to work with students to move their term papers into presented papers or published articles. We also made it clear to students that their expenses for professional meetings would be covered if they presented a paper. Finally, the department introduced a second year paper requirement and a series of workshops to help students learn the research process earlier in their program.

It was generally felt that we needed to do a better job of advising students before entering our PhD program.
All entering students need to have at least two semesters of engineering calculus and one semester of linear algebra before they enter.
This pre-program requirement is essential for success in the ECO theory sequence.
The students were having quite a bit of trouble in keeping up with the mathematical rigor of the Economics classes.

Improvement Action

It was decided that no student would be allowed to enter the ECO theory sequence before meeting the mathematics prerequisite for the program. This means that all of our incoming PhD students must have a minimum of two semesters of engineering calculus and one semester of linear algebra.

Michael Reed, Director of Graduate Studies in Agricultural Economics.

Reflection

The effects of increasing the mathematics prerequisites seem to be positive. We had one student of five entering PhD students last year fail to pass the microeconomics exam (she tried once and decided to transfer to the MS program). An 80% success rate is higher than in some past years (three years ago we had a 50% success rate).

Attachments

No Attachments

UNIVERSITY OF KENTUCKY

Student Learning Outcomes Cycle Report

Agricultural Economics
Agricultural Economics - Doctor
Spring 2012 Ag Economics - Doctor

Student Learning Outcome(s) Assessed

agecon.d: Economic theory Demonstrate mastery of basic principles in economic theory

agecon.d: Problem solving Apply economic theory and other analytical methods (e.g, mathematics and econometrics) to solve problems in agricultural economics

Assessment Methods and Tools

The ability to use economic theory and appropriate empirical methods to solve problems is fundamental for success in the agricultural economics PhD program. The department requires that all PhD students document that they have receive PhD level skills in economics through the preliminary examination process. All agricultural economics PhD students must pass the microeconomics examination at the PhD level within two attempts. All agricultural economics PhD students must either receive a "B" grade or better in the two graduate level macroeconomics classes (ECO 602 and ECO 702) or pass the macroeconomics preliminary examination at the MS level.

The department stresses that research productivity is crucial to ultimate success after graduation with a PhD degree. The department now requires that all PhD students complete a second-year research paper that is independently prepared and evaluated by a committee of faculty members. The student has one opportunity to revise the paper based on comments from the evaluation committee.

Research capabilities and success are measured by the number of PhD students who either present a paper at a proessional meeting or publish an article in a refereed journal. We also track the total number of presentations and publications by PhD students because the profession increasingly expects multiple presentations and publications from applicants for academic and other research positions.

The time to degree is important for PhD students because it shows their ability to complete their coursework and the dissertation. We realize there is a trade-off between time to degree and the number of research publications, but the funding environment makes it important for us to get students off research assistantships and into jobs as soon as possible.

Finally, we track the number of PhD students who find a job upon graduation. This is a good measure of our ability to meet the market demands and is a reflection of what our students have learned over their tenure in our PhD program.

Results

Our student performance in the micreconomcs preliminary examination has improved tremendously. Three years ago the pass rate onf the first attempt was 50%. We have had nine students take the exam in the last three years and six have passed on the first attempt and one has passed on the second attempt. There have been only four failures among the 13 attempts (though two students have been dropped from the PhD program). In our most recent exam (which is not counted above) we had six students attempt the exam for the first time and five of them passed.

All of our students passed the macroeconomics requirements for 2011-12. The same is true for 2010-11.

All of our graduating PhD students have made a presentation at a regional or national professional meeting. Our current PhD students have made 45 presentations before professional audiences and published a total of six refereed journal articles.

All of our PhD graduates in the last two years took longer than four years to complete their requirements.

Two of our recent PhD students still don't have permanent positions. All of our other seven PhD graduates have positions; four in academic positions (only one in a tenure-track position), two are back in their native land in research positions, and two are in the private sector

Interpretation of Results

These findings indicate that we are doing a better job of preparing our students for the comprehensive exam in microeconomics. We are also doing a good job of getting our students to present and publish papers (through integrating term papers into classes and teaching more research methods in the curriculum).

Improvement Action

The Graduate Program Committee needs to discuss whether the desire to graduate PhD students within four years is a legitimate goal. This is especially important because some employers are very interested in the publication record for their new hires. More time in the program allows the student to have a better publication record and to be more prepared for the job market.
We are doing much better in having our student make presentations at professional meetings, but it appears this might cause them to take longer for their degree. We need to discuss whether this trade-off exists and whether we need to adjust expectations on time-to-degree given this emphasis on presentations and publications.

Data were collected on all of the major indicators that the Department has assigned to the PhD program. These data were reviewed by the DGS as part of the annual review process.

Michael Reed, Director of Graduate Studies in Agricultural Economics

Reflection

We are discussing whether to add a student learning outcome that would reflect communication skills in a professional environment. This would be measured through presentations and publications. However, we are also considering a rubric that would assess PhD student performance in the PhD preliminary oral exam and the final oral exam.

Attachments

No Attachments

UNIVERSITY OF KENTUCKY

Annual Student Learning Outcomes Report

Agricultural Economics
Agricultural Economics - Doctor
PhD Program Assessment Falll 2013

Student Learning Outcome(s) Assessed

agecon.m: Economic theory Demonstrate knowledge of basic principles in economic theory

agecon.m: Problem solving Apply economic theory and econometric techniques to solve problems in agricultural economics

agecon.m: Research, outreach, and presentation skills Possess evolving research, outreach, and presentation skills

agecon.m: Generate knowledge Use appropriate methods to generate new knowledge in agricultural economics

Assessment Methods and Tools

Faculty members assessed individual students in one PhD level class for the Fall 2013 semester (AEC 606) that is commonly taken by second year PhD students using the assessment form and the rubric; all students submitting their required second year research paper for the first time; and all students sitting for their final oral exam at the PhD level during summer and Fall 2013 were also assessed. The assessments were performed by the instructor of AEC 606, the committee that grades second year papers, and the committee members from the PhD final oral exam. However, there were no PhD defenses during this time period (which is shorter because the assessment methods are new). The rubric is accessible through this site, the assessment form is also accessible elsewhere in the site.

We would like all students to receive a 3 or above on all elements in the assessment form. However, it is more important that the elements be 3 or above for students who are further along in their program (particularly those who have sat for their final oral exam).

Results

We have only begun this new assessment procedure during summer 2013. We have had five students submit their second year papers. The average score for these students averaged over all categories were 2.7, 2.8, 3.0, 3.9, and 3.9.

Four PhD students were assessed in AEC 606. They received the following scores averaged over all categories: 2.8, 2.8, 3.0, and 3.0. The lowest scores (the only ones below 3.0) were in communications.

Interpretation of Results

The scores for the second year paper are disappointing for three of the students (though only two were below 3.0 on average). The weakest elements were in development of hypotheses, use of methods, and communications. This is their first opportunity to write a research paper, so the papers should improve after they are revised and resubmitted, but the results for these three students are still disappointing.

This is the first time we have collected assessment data in our graduate level classes. In general the students seem to be prepared (they received a 3 in all categories except communication). The lower communications scores might reflect cultural considerations (where foreign students are reluctant to participate in class). More data in future years will help us gauge where are students need to improve.

Improvement Action

We need to do a better job in preparing our second year PhD students for the research paper. We have talked about formal sessions covering the major elements of a research paper and conducting a series of meetings to gauge their progress on the second year paper. In the past we have relied on the graduate students to organize these, but they have not occurred. The faculty members need to make sure these meetings take place and that each second year student is mentored by a faculty member

The evaluation data from AEC 606 is new (this is the first time it has been collected), so it would be premature to establish an improvement plan with so few observations.

Reflection

This is a new assessment plan, so we need to wait for any future improvement actions

Attachments

assess_form.docx

assess_rubric.xlsx

University of Kentucky

Annual Assessment Reporting
2013-2014

Please complete this form for the program's 2013-2014 academic year student learning outcomes assessment. If you conducted multiple assessments, please fill in as needed by starting a new section. If you have documents relevant to the assessment conducted, please add them as an appendix. Add hyperlinks to websites as necessary. For our records, please save the file as Program Name and Level (e.g. English_Master).

College: Agriculture, Food and Environment
Department: Agricultural Economics
Program Name: Agricultural Economics
Level (Bachelor, Master, Doctorate, Certificate, or Other): Doctorate

	Assessment #1
Outcome(s) Assessed	**Articulate and motivate an economic problem by connecting theory to practice**
Assessment Method/Tools	Assessment forms completed from initial draft of the second year research paper and early in AEC 640
Benchmark/ Target	Evaluation of 3 or higher
Results	Six students submitted second year papers and their scores on this part of the assessment averaged 3.8. Each of the three evaluators assessed each student at 3 or above – meeting the target. Most scores were 4. This is a marked improvement from last year. Four PhD students were evaluated in AEC 640 and the average score was 3.0. Three students had a 3 or above.
Interpretation of Results	We are doing a good job in getting our PhD students to connect theory and practice. The new second year paper workshops/seminars (established in Spring 2014) could be affecting these results positively.
Improvement Action	Continue to emphasize the practical aspects of theory in our classes. Continue the second year paper workshops.

University of Kentucky

Annual Assessment Reporting

2013-2014

	Assessment #2
Outcome(s) Assessed	**Formulate specific, testable hypotheses that address the broader question/issue**
Assessment Method/Tools	Assessment forms completed from initial draft of the second year research paper and early in AEC 640
Benchmark/ Target	Evaluation of 3 or higher
Results	Six students submitted second year papers and their scores on this part of the assessment averaged 4.0. Each of the three evaluators assessed each student at 3 or above – meeting the target. Most scores were 4 or 5. This is a marked improvement from last year. Four PhD students were evaluated in AEC 640 and the average score was 1.8. No student had a 3 or above.
Interpretation of Results	We are doing a good job in getting students to formulate hypotheses that address questions in agricultural economics through their second year research paper. However, they don't come into our PhD program with those skills and they must learn them in courses such as AEC 640. All of our PhD level classes emphasize research questions and testable hypotheses. Thus the students might not know how to formulate testable hypotheses early in those courses, but learn by the end of their program. The new second year paper workshops/seminars (established in Spring 2014) could be affecting these results positively.
Improvement Action	Continue to emphasize formulation of research questions and testable hypotheses in the PhD classes. Continue the second year paper workshops.

University of Kentucky

Annual Assessment Reporting
2013-2014

	Assessment #3
Outcome(s) Assessed	**Demonstrate proficiency in oral and written communications**
Assessment Method/Tools	Assessment forms completed from initial draft of the second year research paper and early in AEC 640
Benchmark/ Target	Evaluation of 3 or higher
Results	Six students submitted second year papers and their scores on this part of the assessment averaged 3.0. Two students averaged below 3.0. Nonetheless, this is an improvement from last year. Four PhD students were evaluated in AEC 640 and the average score was 1.8. Only one student had a 3 or above.
Interpretation of Results	It is clear that our students do not come into our program with good communication skills. Many of them are international students so they are operating in a foreign language. This is particularly true early in their program (as seen in the results for AEC 640).
Improvement Action	Continue to stress communication skills in PhD level classes through presentations at professional meetings, written assignments, and other experiences. Continue the second year paper workshops.

University of Kentucky

Annual Assessment Reporting

2013-2014

	Assessment #4
Outcome(s) Assessed	**Contribute meaningfully to the applied economics literature**
Assessment Method/Tools	Assessment forms completed from initial draft of the second year research paper and early in AEC 640
Benchmark/ Target	Evaluation of 3 or higher
Results	Six students submitted second year papers and their scores on this part of the assessment averaged 3.7 Only one evaluator assessed one student as a 2. This is a marked improvement from last year. Four PhD students were evaluated in AEC 640 and the average score was 2.5. Two students had a 3 or above.
Interpretation of Results	We are doing a good job in helping students to become better researchers through the second year research paper. There is still room for improvement, though. Our PhD students don't come into our PhD program with those skills and they must learn them in courses such as AEC 640. All of our PhD level classes emphasize research applications. Thus the students might not know how to perform good research early in those courses, but they learn by the end of their program. The new second year paper workshops/seminars (established in Spring 2014) could be affecting these results positively.
Improvement Action	Continue to stress the development of research skills in PhD level classes through presentations, written assignments, and other experiences. Continue the second year paper workshops.

Faculty members assessed individual students in the required MS level class for the Spring 2014 (AEC 531 and AEC 624) and Fall 2014 (AEC 503) using the assessment form and the rubric (forms are attached). All students sitting for their final oral exam at the MS level during 2013-14 were also assessed.

The assessment form asks evaluators to rate students on their abilities for the following Student Learning Outcomes (SLOs):

1. Articulate and motivate an economic problem by connecting theory to practice
2. Understand related background literature
3. Know micro-theory foundations
4. Formulate specific, testable hypotheses that address the broader question/issue
5. Compare, choose, and apply appropriate empirical methods
6. Demonstrate proficiency in oral and written communications
7. Demonstrate the ability to contribute to the analysis of economic issues/policies
8. Contribute meaningfully to the applied economics literature

The assessment form shows the SLOs that are relevant for each course/activity. Each student is evaluated on a scale from 1-5 with five the highest and one the lowest. The rubric provides more detail on what the various levels indicate in terms of SLOs.

We would like all students to receive a 3 or above on all elements in the assessment form. However, it is more important that the elements be 3 or above for students who are further along in their program (particularly those who have sat for their final oral exam).

We began this new assessment procedure during summer 2013 so the Fall of 2013 was the first semester that students were evaluated with these new methods. This year (2013/14) is the first time that students in Spring semester courses were assessed. No course has been assessed more than once. The second year papers, though, have been evaluated for two years.

Last year's evaluation of the second year research papers indicated that the students needed more preparation on the research process as they worked on their second year papers. So we developed a series of seminars during Spring 2014 with presentations by faculty members and students who had passed the second year paper requirement. Each student presented their ideas at mid-semester and presented more refined ideas at the end of the spring. The students said that they found the sessions quite valuable.

The students have made good progress in meeting the SLOs for the second year paper during 2013/14. This year the six students received the following averages on the components: #1 3.8; #2 4.3; #3 3.5; #4 4.0; #5 4.0; #6 3.0; #8 3.7. The overall average was 3.8 and individual average assessments ranged from 3.2 to 4.8. Thus all students received over a 3.0 average. This is much better than last year's results where the overall average was only 3.0 and two individuals averaged below 3.0. We will continue the second year paper seminar series next year.

Four PhD students were assessed in AEC 640. They received the following averages on the components: #1 3.0; #2 3.3; #3 3.5; #4 1.8; #6 2.3; #8 2.5. The average scores over all components and individuals is 2.7. Individual averages ranged from 2.4 to 3.0. These scores are lower than we would like so they will be watched closely in the future. It is interesting that three of the four students in the class participated in the second year paper for 2013/14 and they did very well. The second year paper was completed after the AEC 640 class, so they certainly improved.

This is the first time we have collected assessment data in our graduate level classes. In general the students seem to be prepared (they received a 3 in all categories except communication). The lower communications scores might reflect cultural considerations (where foreign students are reluctant to participate in class). More data in future years will help us gauge where are students need to improve.

We need to do a better job in preparing our second year PhD students for the research paper. We have talked about formal sessions covering the major elements of a research paper and conducting a series of meetings to gauge their progress on the second year paper. In the past we have relied on the graduate students to organize these, but they have not occurred. The faculty members need to make sure these meetings take place and that each second year student is mentored by a faculty member

The evaluation data from all classes is new (this is the first time it has been collected), so it would be premature to establish an improvement plan with so few observations.

Despite being a new assessment plan, we added the second year paper seminar during 2013/14 and will continue that seminar in the future. Other potential improvement plans await more assessment data.

Student name: _____ Program: M.S. Ph.D.

Check One:

☐ AEC 503 (A,C)
☐ AEC 531 (B,D,F)
☐ AEC 624 (D,E)

☐ MS oral exam (A,C,D,G1)
☐ MS thesis/defense (A-F,G1)

☐ AEC 606 (A,B,D,E,F)
☐ AEC 640 (A,B,C,D,F,G2)
☐ PhD 2nd year paper* (A-F,G2) *first submission

☐ PhD final defense (A-F, G2)

Student Learning Outcomes

	1	2	3	4	5
A. Articulate and motivate an economic problem by connecting theory to practice	☐	☐	☐	☐	☐
B. Understand related background literature	☐	☐	☐	☐	☐
C. Know micro-theory foundations	☐	☐	☐	☐	☐
D. Formulate specific, testable hypotheses that address the broader question/issue	☐	☐	☐	☐	☐
E. Compare, choose, and apply appropriate empirical methods	☐	☐	☐	☐	☐
F. Demonstrate proficiency in oral and written communication	☐	☐	☐	☐	☐
G1. Demonstrate the ability to contribute to the analysis of economic issues/policies	☐	☐	☐	☐	☐
G2. Contribute meaningfully to the applied economics literature	☐	☐	☐	☐	☐

(1=marginal undergraduate 3=promising graduate student 5=stellar graduate student)

Signature:_____ Date:_____

Printed Name:_____

SCORE (absolute scale)	**1 marginal undergraduate**	**2 promising undergraduate**	**3 promising graduate student, job-ready**	**4 strong graduate student**	**5 stellar graduate student**
A. articulate and motivate an economic problem by connecting theory to practice	confusion over how economics applies to this problem	some important economic concepts missing or noneconomic concepts included	able to capture the central economic issues	main economic concepts articulated but only weakly integrated	full articulation of how economics applies in an integrated manner to this problem
B. Understand related background literature	weak and incomplete literature review---no integration	at least one but no more than two key concepts missing	literature review is comprehensive but lacks sufficient integration	literature mainly complete but minor aspects missing	literature fully connected to problem
C. Know micro-theory foundations	rudimentary understanding of micro theory	basic understanding of how theory concepts are connected (AEC 303 level)	good grasp of micro theory (AEC 503 level)	some ability to make connections among various theory elements	strong and integrated grasp of micro-theory---ability to connect different ideas
D. Formulate specific, testable hypotheses that serve to address the broader question or issue.	tenuous connection between hypotheses and broader question; ignorance of extant tests	weak or no identification strategy; confuses correlation, corroboration, and causality; little connection between test and broader question	identification strategy stated; connection between broader issue and hypotheses stated; adequate understanding of methods used in existing work; correct interpretation of	identification strategy not necessarily original, but appropriate and correctly applied; good understanding of methods used in existing work; test results discussed in terms of implications for broader questions	original and defensible identification strategy; thorough understanding of strategies used in existing work; can distinguish between correlation, corroboration, and causation; explains connection between tests and broader questions
E. Compare, choose, and apply appropriate empirical methods.	haphazard choice of variables, data format, and econometric tools; no consideration of potential econometric pitfalls (ECO 391 level)	variables, data format, and econometric tools adequate; addresses some econometric pitfalls, but lacks deeper understanding of basic tools	variables, data format, and econometric tools adequate to test hypotheses; sufficient understanding of tools used	variables and data format carefully chosen; multiple methods or econometric tools used; good understanding of which tools/tests to use when and why	variables and data permit identification; data hurdles addressed thoroughly and defensibly; 'strength' of results put in perspective; empirical findings worthy of dissemination
F. Demonstrate proficiency in oral and written communication	writing/exposition lacks direction; inability to synthesize existing work; errors in writing / speech / slide; poor use of visuals; inadequate use of citations	writing / exposition is mostly clear; some synthesis; correct use of citations; but work is unpracticed/ unpolished	writing / exposition is organized, pitched at appropriate level; `narrative' is clear; correct use of citations; no technical, grammatical, or syntax errors	clear and polished exposition that is appropriate to audience / outlet; work /exposition is well integrated; helpful visuals	clear, eloquent, and highly polished exposition that is appropriate to audience / outlet; coherent narrative; thoughtful and original synthesis of existing work, effective use of tables, graphs, and other visuals
G1. Demonstrate the ability to contribute to the analysis of applied economics issues/policies. (M.S.)	little potential shown	some ability to connect issues/policies to economic theory	presentation or thesis that addresses major issue (OR shows ability to understand issues/policies through lens of economics; can articulate hypotheses)	a thorough and original thesis; professional presentations; or high profile internship (OR strong performance in oral exam)	thesis is ready for submission for publication and/or award (OR superior performance in oral exam)
G2. Contribute meaningfully to the applied economics literature. (Ph.D.)	weak dissertation	mediocre dissertation, no presentations	good dissertation with potential for eventual publication; several presentations	high-quality dissertation that is ready for submission; presentations made periodically through graduate career	several articles accepted for publication; polished presentations made periodically throughout graduate career

University of Kentucky

Annual Assessment Reporting
2014-2015

Please complete this form for the program's 2014-2015 academic year student learning outcomes assessment. If you conducted multiple assessments, please fill in as needed by starting a new section. If you have documents relevant to the assessment conducted, please add them as an appendix. Add hyperlinks to websites as necessary. For our records, please save the file as Program Name and Level (e.g. English_Master).

College: Agriculture, Food and Environment
Department: Agricultural Economics
Program Name: Agricultural Economics
Level (Bachelor, Master, Doctorate, Certificate, or Other): Doctorate

	Assessment #1
Outcome(s) Assessed	Understand related background literature
Assessment Method/Tools	Assessment forms completed from AEC 606, AEC 640, second year doctoral paper initial submission and dissertation defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 606: 2015 mean = 3.57 AEC 640: 2014 mean = 3.00 Second Year Paper: 2015 mean = 3.33 2014 mean = 4.28 Dissertation Defense: 2014 mean = 4.36
Interpretation of Results	Limited results to date demonstrate a favorable 4.36 average upon completion of dissertation defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 3.00 to 4.28
Improvement Action	Continue to utilize selected refereed publications in our classes and emphasize their importance in establishing solid research foundations for dissertation
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome, while not formally conducted in 2013-2014, leads to the conclusion of maintaining the current successful action plan

University of Kentucky

Annual Assessment Reporting
2014-2015

	Assessment #2
Outcome(s) Assessed	Know micro-theory foundations
Assessment Method/Tools	Assessment forms completed from AEC 640, second year doctoral paper initial submission and dissertation defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 640: 2014 mean = 3.67 Second Year Paper: 2015 mean = 3.28 2014 mean = 3.67 Dissertation Defense: 2014 mean = 4.23
Interpretation of Results	Limited results to date demonstrate a favorable average of 4.23 upon completion of dissertation defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 3.28 to 3.67
Improvement Action	Maintain thorough and repeated exposure to micro-theory in our classes while continuing demonstration of use and practical application for economic analysis and problem solving
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome, while not formally conducted in 2013-2014, leads to the conclusion of maintaining the current successful action plan

University of Kentucky

Annual Assessment Reporting
2014-2015

	Assessment #3
Outcome(s) Assessed	Compare, choose, and apply appropriate empirical methods
Assessment Method/Tools	Assessment forms completed from AEC 606, second year doctoral paper initial submission and dissertation defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 606: 2015 mean = 3.43 Second Year Paper: 2015 mean = 3.17 2014 mean = 4.00 Dissertation Defense: 2014 mean = 4.36
Interpretation of Results	Limited results to date demonstrate a favorable 4.36 average upon completion of dissertation defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 3.17 to 4.00
Improvement Action	Continue teaching of advantages and disadvantages of a wide variety of empirical analytical methods coupled with opportunities for mastering computational capabilities
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome, while not formally conducted in 2013-2014, leads to the conclusion of maintaining the current successful action plan

University of Kentucky

Annual Assessment Reporting
2014-2015

	Assessment #4
Outcome(s) Assessed	Contribute meaningfully to the applied economics literature
Assessment Method/Tools	Assessment forms completed from AEC 640, second year doctoral paper initial submission and dissertation defense
Benchmark/ Target	Evaluation of 3 or higher at program end
Results	AEC 640: 2014 mean = 2.67 Second Year Paper: 2015 mean = 2.61 2014 mean = 3.67 Dissertation Defense: 2014 mean = 4.29
Interpretation of Results	Limited results to date demonstrate a favorable 4.29 average upon completion of dissertation defense at program's end providing partial evidence of educational enhancement on this student learning objective from early program abilities ranging from 2.61 to 3.67
Improvement Action	Continue to stress the development of research skills in Ph.D. level classes through presentations, written assignments, and other experiences Continue the second year paper workshops
Reflection on 2013-2014 Improvement Actions	Assessment of this student learning outcome leads to the conclusion of maintaining the current successful action plan

Department of Agricultural Economics
University of Kentucky

Program Review
External Report
October 2016

Departmental External Review Report
Department of Agricultural Economics (AEC)

Description of Review Team and Process

I. Committee membership

Name	Affiliation
Dr. Sandra Bastin, Chair	UK Dept. of Dietetics & Human Nutrition, Chair
Dr. Deacue Fields	Auburn Univ., Ag. Economics & Rural Sociology
Dr. Mark Manfredo	Arizona State Univ., School of Agribusiness
Dr. Will Snell	UK Dept. of Agricultural Economics
Dr. James Ziliak	UK Gatton College of Business & Economics
Ms. Samane Zarebanadkoki	UK Dept. of Agricultural Economics
Ms. Michelle Simon	Agriculture and Natural Resources Extension Agent
Ms. Karen Pulliam	UK Dept. of Agricultural Economics
Ms. Aleta Botts	External Stakeholder

Department Chair
Dr. Leigh Maynard

II. Review process

The program review process included:

1. Committee members were invited to provide input as a team for an on-site visit. Via http://administration.ca.uky.edu/files/aec_self_study_2016_to_post_online.pdf in an email, committee members were able to review appropriate materials including the Department of AEC Self Study.
2. Committee met with Dean to receive charge concerning responsibilities of review process.
3. Committee met with Department Chair, Associate Deans of Administration, Teaching, Research and Extension, Community & Economic Development Initiative of Kentucky, stakeholders, faculty and staff and undergraduate and graduate students to collect data for committee discussion.
4. Committee discussed information received during working sessions and determined the results of the preliminary review.
5. Committee gave a summary to the Dean concerning important issues affecting the future success of AEC and a timeline for complete review was discussed.
6. Final draft of report was sent to Dean for review.

Brief Statements on Evaluation of Quality and Productivity

The department provides evidence of the following:

I. Adherence to University policies

The University provides administrative regulations and trainings to effectively follow established policies, procedures, and responsibilities for institutional effectiveness activities. A cursory review indicates that faculty and staff collaboratively follow these guidelines.

II. Adherence to academic policies (grading, probation, & termination)

The university provides guidelines for academic student success and faculty appointment, promotion and tenure. The review team did not focus on the department's adherence but did not find anything to indicate that faculty and staff do not collaboratively follow these guidelines.

III. Quality of the collegial environment (equity and diversity)

Based on a University-wide work life survey, open communication among faculty and staff is strong with ample recognition of skills and accomplishments. AEC holds separate monthly faculty and staff meetings. There appears to be a commitment among faculty, staff, students, community partners and constituents to sustain a collaborative, positive work environment towards the goal of success in academics, research and outreach.

IV. Quality & productivity in instruction, research, public service, and operations

A. Quality of faculty, staff, department chair

Leadership by current AEC Chair Leigh Maynard is well respected and appreciated by faculty, staff, students and constituents. With his term almost completed, a new search is underway for an external candidate. Faculty are involved in excellent scholarly activities and should continue to look for ways to increase and leverage grant dollars and improve refereed journal quality.

Faculty indicate a rich and rewarding workplace, with adequate resources to meet their immediate needs. However, a loss of three faculty in recent years has caused the department to reallocate personnel, responsibilities and resources, with more efficient outcomes. Most faculty and all staff are near or over capacity, implying future hires are necessary to maintain current momentum of fulfillment of the land grant missions.

The number of full-time faculty in the department currently stands at 21, consisting of eight assistant professors, four associate professors, and nine full professors. Since the last review teaching FTEs have remained static, while Research and Extension FTEs have dropped slightly. Two faculty members are on nine-month appointments. AEC relies on part-time instructors and graduate students to teach about one-third of student contact hours, using eight part-time instructors and five graduate student instructors. Compared to bench mark institutions, AEC has more integration among Extension and research faculty and Extension faculty teach more than most. AEC's research and PhD program rankings are currently in the top 25% of the nation (https://ideas.repec.org/top/top.agecon.html).

All faculty members are located in the Barnhart Building, except one whose duty location is the UK Research and Education Center in Princeton. Climate control is often an issue. Space is limited for staffing needs and growth will present issues for the future. Visitor parking is inadequate for current needs.

The on-campus staff of 14 consists of three administrative and academic support staff, two IT specialists, two business management staff, three program coordinators, an academic coordinator, and three Extension associates. These individuals support and enhance current academic, research and outreach endeavors, but their roles should be more clearly delineated. Dedicated responsibilities for website design and enhancement, social media postings and communications with alumni and stakeholders would be important. The present academic coordinator has incorporated experiential student learning activities that have enriched overall student satisfaction and success. With the imminent departure of that coordinator, it will be imperative for AEC to replace the position with someone interested in student recruitment, advising, retention and success.

Several programs, centers and organizations are housed in AEC including: the Community Economic Development Initiative of Kentucky (CEDIK) - a director, nine professional staff and one undergraduate assistant; CAFE's Office of Diversity - an assistant dean, the student affairs coordinator, an Extension associate and a part-time program specialist; Kentucky Agriculture and Development Program (KALP) - two faculty, a coordinator and a non-UK partner organization, the Kentucky Center for Agriculture and Rural Development (KCARD) - a specialist.

Additionally, two programs are located off-campus: the Kentucky Small Business Development Center (KSBDC) and the Kentucky Farm Business Management Program (KFBM). KSBDC has 12 centers throughout the state as well as the central office in Lexington, three centers (Elizabethtown, Louisville, and Bluegrass) and a central office supported by AEC. KFBM consists of a program coordinator, nine Extension specialists, and three support staff located in six offices throughout the state. KFBM is requesting an additional specialist because of unmet demands for services in the Ohio Valley Association. Currently nine specialists serve 374 farm members in four associations. KFBM provides a visible service that benefits farm cooperators. The program is subsidized by CAFE and AEC. Efforts have been made since the last review to improve data availability for faculty within the department. However, the aggregated data is often not timely or separated out by enterprise to provide detailed analysis, causing some frustration from AEC personnel.

These individuals are great partners. They provide a rich research opportunity for interactions among undergraduate and graduate students, but efforts must be more intentional on both sides. Organizations, such as KALP, CEDIK and SBDC contribute to the department's mission, enhance the image of the department across the state and interact with faculty on a wide variety of agricultural economic issues. CEDIK is facing space and personnel issues as a result of grant funding success.

B. Quality of orientation & advising programs for students

a. Programs for undergraduate students

Recruitment for the undergraduate program has two tracks: Agribusiness Management and Food Marketing or Agricultural Economics. Recruitment efforts are usually organized by CAFE through the efforts of student Ag ambassadors who visit high schools and word of mouth. Most undergraduates are transfer students who chose AEC after not meeting Gatton's GPA requirement, not meeting chemistry or other requirements in life science majors or completing an associate's degree at a community college. This often presents cohort issues, GPA issues and course sequencing challenges. Enrollment is around 260 with a retention rate consistent with the rest of CAFE. Class size is generally 15-45 students per class section. Instructional equipment is adequate, but lab space is the most common constraint.

Although AEC maintains an academic coordinator, undergraduate advising duties are shared among almost all faculty and are not consistent. Standard advising practices to ensure students are taking classes at the optimal time is sporadic. Advising materials, including course sequencing, need to be developed and faculty trained to provide students with clear academic and graduation expectations. Currently, the academic coordinator is responsible for student advising, the coordination of AEC's experiential learning requirement, assisting the UK Agribusiness Club and teaching two courses. Students can also participate in AEC's Quiz Bowl Team and Agribusiness Case Study Competition. Education abroad opportunities have been added in the recent years but need to be marketed better and sooner among all students. These activities have greatly contributed to the visibility of experiential learning and student engagement which has enhanced the undergraduate experience. Jobs for graduates are plentiful but tracking is a challenge. A hope for tracking improvement is a recently launched LinkedIn page.

b. Programs for graduate students

The number of MS (19) and PhD (29) students are almost the same as the last program review. Students are satisfied with first year courses but complain of feeling lost the second year. The graduate faculty handbook guidelines are not always followed,

leading to slow assignments of major professors and research opportunities. Sporadic and low graduate assistantship stipends, difficulties in integrating graduate students in grant funding and Extension projects, slow orientation of internationally-funded students and assistance with job placement are some of the challenges facing the department. Another issue is low enrollment in multiple graduate courses, such as AEC 545 and 661, which have rarely filled or serve low numbers of students. Students who are interested in teaching should have that opportunity, but only in non-core academic courses.

C. Quality of stakeholder/client satisfaction

The department provides numerous services and partnerships with other stakeholders both within the University system and external to it. Extension Agents, organizations working in Kentucky agriculture, policymakers and other entities benefit from the programming, publications and partnerships generated by the department. These constituents seem to be satisfied with the department but open communication should be maintained to ensure a flow of information. Due to the breadth of the department's reach both with these constituent groups and its student alumni, the potential to develop a more engaged clientele base to cultivate additional support and input for the department should be explored further. AEC should continue to effectively reach existing stakeholders in meaningful ways, while also identifying new stakeholders and evaluating how new partnerships can be established. Collaborations with stakeholders can amplify the department's impact, expand its reach, increase its visibility and help secure additional resources.

D. Quality of business & operating procedures, including budgetary oversight

Faculty and staff indicate that policies within the department are streamlined. But inconsistent. University interpretations and instruction of policies and procedures often take additional time to find the correct way to implement. As a result, submittals are returned multiple times, even with expert advice, causing loss of productivity and frustration.

E. Quality of Extension programming

The Extension program in the department continues to be one of its strengths. AEC has been able to maintain core "traditional" programming areas (e.g. marketing, management, policy, community and rural economic development). This is comparable to most other ag economic Extension programs across the nation. The Extension faculty are responsive to clientele needs and well connected with a diverse clientele base which includes producers, policy makers, agents, media, ag businesses, farm organizations and community leaders. The presence of Extension faculty in the classroom produces important benefits for undergraduate students, though this sometimes causes disruptions to Extension programming. Extension faculty must continue to look for ways to support the research mission and incorporate graduate students in these endeavors.

F. Quality of research programming

The department conducts application focused, decision-making based inquiry to contribute to the academic body of knowledge empirically, methodologically and theoretically. Faculty have almost complete autonomy in designing a research program consistent with their appointment; there has never been a coordinated research planning process. Although little money is traditionally needed to conduct data collection in agricultural economics, funding is needed to enhance interactions with the graduate students, in particular with respect to increasing assistantship stipends. Refereed journal

articles published by the department are high but, publishing in quality journals may be an issue. Many journal articles are co-authored with graduate students. Currently, AEC rewards refereed journal articles most highly, with grants a secondary emphasis. But to sustain the graduate program, obtaining grant funding may become an important responsibility of the researcher. Access to KFBM data and writing graduate students into CEDIK grants for additional funding resources would enhance collaborative efforts.

Analysis of Strengths and Recommendations for Quality Enhancement

I. Opportunities for quality enhancements in terms of programs and services

Teaching Suggestions

After a discussion with available faculty and graduate and undergraduate students, the review team offers the following suggestions. These suggestions are intended to strengthen majors offered by AEC.

- Continue to use part-time instructors and graduate students as appropriate for teaching non-core academic courses. Specifically, AEC 303 is a challenging core course and should be taught by core faculty with that expertise, with a possible tutoring lab or recitation, staffed by a PhD student.
- Core courses should be a first priority for AEC majors and minors. Notes on specific courses in the course catalog should assist in sequencing consistency. These courses can be released to other majors after AEC majors and minors have had a chance to register.
- Continue to emphasize the diversity of AEC faculty, staff and students.
- Explore innovative recruitment options (e.g. Ag Ambassadors, DECA, 4-H, FFA, FBLA, APES, high school counselors, Extension agents and specialists, alumni, etc.)
- Consider the development and implementation of a first year course that would serve as an undergraduate orientation and introduction to AEC careers.
- Explore teaching pedagogies that include distance learning technology to enhance the current learning environment.
- Develop career tracking tools.

Teaching Recommendations

After a discussion with available faculty, staff and undergraduate and graduate students, the review team offers the following recommendations. These recommendations should be addressed to ensure the Department of Agricultural Economics continues their commitment in offering quality education to both undergraduate and graduate students.

- ***Keep the academic coordinator position and clarify responsibilities, specifically to include: advising freshman and transfer students; developing advising materials with course sequencing information; and developing and implementing clear undergraduate academic requirements, mentorship and expectations.*** Other activities might include: train faculty advisors for advising upperclass students; teach an introduction course about job opportunities; collect student success data; maintain a direct contact with the Gatton Business College, etc.

- ***Hire a director of experiential student learning who is responsible for internships, education abroad, student clubs, quiz bowl and other activities.*** Other duties may

include event planning; social media or web postings; alumni relations and development; job placement; career tracking, etc.

- ***Allocate adequate DOE time (currently 15%) for the Director of Graduate Studies (DGS)*** **to develop and implement clear graduate academic requirements, mentorship and expectations.** Other activities might include: guidance for faculty and thesis/dissertation connections and opportunities; emphasis on following graduate handbook rules and guidelines; assisting in assistantship availabilities; educating faculty and graduate students in opportunities for academic, research and outreach opportunities; assisting in faculty relationships; developing informational workshops or a seminar series; and assisting in job placement. A dedicated graduate academic coordinator would also be an option.

- ***Develop and implement a development funding plan*** **to enhance student success and faculty professional activities.**

Research Suggestions

After a discussion with available faculty and graduate students, the review team offers the following suggestions. These suggestions are intended to strengthen the research and grantsmanship of the department.

- Upper administration should continue to support current research and grantsmanship activities in the department.
- AEC should continue to foster international and other external opportunities for research collaborations.
- Increase startup funds with funding through CAFE or University administration to free up AEC resources.
- Continue to develop multidisciplinary and interdisciplinary grant projects.
- Increase national rankings by incentivizing high quality scholarly publications and increasing grant funding.

Research Recommendations

After a discussion with faculty, staff and undergraduate and graduate students, the review team offers the following recommendations. These recommendations should be addressed to ensure the Department of Agricultural Economics continues their commitment to participating in quality research that improves the knowledge or economic development in agricultural economics issues that affect the commonwealth and beyond.

- ***Develop a formal mentorship program that provides direction for junior faculty*** **to promote collegiality, quality scholarly productivity and retention.**

- ***Increase opportunities for graduate students to obtain research assistantships*** **through organized grant funding. Develop clear expectations and follow-up for research engagement and publication, as related to graduate student performance.**

- ***Develop a strategic hiring plan for future hires*** **that includes program focus and emerging research priorities (e.g. policy).**

Extension Suggestions

After a discussion with available faculty, stakeholders, staff and graduate students, the review team offers the following suggestions. These suggestions are intended to strengthen Extension programming and research offered by AEC.

- Continue to develop and market appropriate decision tools for clientele use. Assess quantifiable measures of program resources for the development of success stories to share within the state and beyond.
- Continue to reevaluate AEC presence in Princeton.
- Create more synergy with graduate students to enhance participation in grant funding, Extension programming and refereed publications.

Extension Recommendations

After a discussion with available faculty, stakeholders and graduate students, the review team offers the following recommendations. These recommendations are intended to strengthen Extension programming and research offered by the Department of Agricultural Economics.

- ***Develop a strategic Extension plan*** **to address the ever changing rural communities and Kentucky agriculture, including programs and personnel (e.g. farm finance, ag law, policy, natural resources, sustainability).**

- ***Hire an Extension Associate*** **to enhance Extension programming and allow for the reduction of teaching demands on specialists.**

Staff Recommendations

After a discussion with available staff, the review team offers the following recommendation to strengthen staff support for the department.

- ***Analyze the current staffing responsibilities before developing a staff hiring plan*** **to accommodate current needs. Future hires are inevitable to keep AEC running smoothly.**

External Partnerships and Stakeholders Suggestions

After a discussion with available stakeholders and external partners, the review team offers the following suggestions in strengthening communications and relationships among AEC external constituents.

- Identify and refine stakeholder relationships to develop opportunities for greater communications and collaborations.
- Develop an active alumni base to integrate expertise into instruction, research, outreach, student experiential learning, mentorship and job placement.
- Continue to enhance AEC visibility to build existing and future constituencies.

II. Conclusions or Summary

The Department of Agricultural Economics is a well-respected department with talented, committed and engaged faculty, staff and students. The department supports the University land grant missions of quality education, research and Extension in a family-friendly environment. Stakeholders and outside constituents interact in a professional and mutually

beneficial manner. Adopting the review team’s recommendations should enhance and strengthen the department’s core mission for the future.

College of Agriculture, Food and Environment
Department of Agricultural Economics
Periodic Program Review
Site Visit Agenda for External Review Committee

Date:	October 9, 2016
Day 1:	Sunday

11:00 – 5:00 pm	Reviewers external to UK travel to Lexington Flight schedules: Dr. Fields arrives at Bluegrass Airport at 10:51 am. Dr. Manfredo arrives at Bluegrass Airport at 4:09 pm. Dr. Bastin meets Dr. Fields and transports him to Hilton Suites Lexington Green, 425 Lexington Green Circle, Lexington, 859-271-4000. Dr. Maynard meets Dr. Manfredo and transports him to Hilton Suites. Aleta Botts is driving to Hilton Suites.
6:15 pm	External reviewers walk from Hilton Suites Lexington Green to Palmers Fresh Grill, 161 Lexington Green Circle, Lexington, 859-273-0103
6:30 – 8:00 pm	External Review Committee (ERC) has dinner (reservation for 10 in the name Collins) and working session. Group is joined by department chair Dr. Leigh Maynard. Following dinner, external reviewers return to Hilton Suites Lexington Green.

Date:	October 10, 2016
Day 2:	Monday

7:30 – 8:30 am	External reviewers dine on own at Hilton Suites Lexington Green and charge breakfast to their rooms.
8:30 – 9:00 am	Aleta Botts transports Drs. Fields and Manfredo to Ag North. Park on circle drive in dean's guest space.
9:00 – 10:00 am	Meet with College of Agriculture, Food and Environment Dean Cox and Assistant Dean for Academic Administration Lisa Collins. Committee receives their charge from Dean Cox and Dr. Collins reviews rules and procedures – S125C Ag North.
10:00 – 10:30 am	Break, walk to Room 400 Barnhart Building. Group is joined by Dr. Leigh Maynard, who leads departmental facilities tour
10:30 – 11:30 am	Extension Faculty and Jerry Pierce, director, Kentucky Farm Business Management Program – 341 Barnhart Building
11:30 am – 12:30 pm	Lunch meeting with Undergraduate Students – 341 Barnhart Building. Dr. Snell is recused.
12:30 – 1:00 pm	Break, walk to Ag North

1:00 – 2:15 pm	Associate Deans – Agricultural Information Center (AIC), N-24B-1, Ag North Dr. Rick Bennett, Research Dr. Larry Grabau, Instruction Dr. Jimmy Henning, Extension Dr. Steve Workman, Administration
2:15 – 2:30 pm	Break, walk to Barnhart Building
2:30 – 3:30 pm	Research and Teaching Faculty – 341 Barnhart Building. Snacks will be provided.
3:30 – 4:30 pm	Stakeholders, Constituents – 341 Barnhart Building. Snacks will be provided.
4:30 – 4:45 pm	Break
4:45 – 9:00 pm	Working dinner – 341 Barnhart Building. Dinner scheduled to arrive at 6 pm.
9:00 pm	Aleta Botts transports Dr. Manfredo and Dr. Fields to the Hilton

Date:	October 11, 2016
Day 3:	Tuesday

7:45 – 8:45 am	External reviewers dine on own at Hilton Suites Lexington Green and charge breakfast to their rooms. Dr. Bastin meets them at the hotel to oversee checkout and pick up luggage.
8:45 – 9:15 am	Aleta Botts/Dr. Bastin transport external reviewers to Ag North, walk to Barnhart Building. Dr. Bastin and Ms. Botts park on the circle drive in a dean's guest space.
9:15 – 10:00 am	Graduate Students – 341 Barnhart Building. Dr. Snell is recused. Snacks will be provided.
10:00 – 10:45 am	Staff – 341 Barnhart Building. Dr. Snell is recused. Snacks will be provided.
10:45 – 11:30 am	Community & Economic Development Initiative of Kentucky (CEDIK) and Small Business Development Center (SBDC) staff – 341 Barnhart Building.
11:30 – 12:45 pm	Working lunch – 341 Barnhart Building.
12:45 – 1:00 pm	Break, walk to Ag North
1:00 – 1:45 pm	Dean of the College of Agriculture, Food and Environment to present preliminary findings – S-125C Ag North
2:00 pm	Sandra Bastin transports external reviewers to Bluegrass Field Airport
	Flight schedules: Dr. Fields departs Bluegrass Airport at 4:52 pm. Dr. Manfredo departs Bluegrass Airport at 6:28 pm

Periodic Review Implementation Plan

Unit Name:
Agricultural Economics

Date: 11-11-16

Recommendation/ Suggestion	Source I/E/H*	Accept/ Reject**	Unit Response/Rationale (include goal or objective alignment)	Actions (including needed resources & Approximate Costs)	Time Line
Keep the academic coordinator position and clarify responsibilities, specifically to include: advising freshman and transfer students; developing advising materials with course sequencing information; and developing and implementing clear undergraduate academic requirements, mentorship and expectations.	E	A	We are committed to the importance of the academic coordinator role. Including leadership of the academic advising process in this role is important, as the faculty advisors require mentorship and technical assistance. If the academic coordinator role were divested from its current experiential education duties (see next recommendation), the extra time would allow a shift of the advising function away from faculty toward the academic coordinator. This would improve advising quality control, but narrow the role of faculty, and reduce faculty interaction with undergraduate students, continuing a trend of shifting previous faculty roles into staff roles.	We are in the midst of rehiring our recently vacated academic coordinator role. The position devotes 30% of effort to academic advising, but we are also looking for experience and talent in employer relations and experiential education. If the recommendation immediately below becomes feasible, we will revise the position description of the academic coordinator accordingly.	immediate

Periodic Review Implementation Plan

Recommendation/ Suggestion	Source I/E/H*	Accept/ Reject**	Unit Response/Rationale (include goal or objective alignment)	Actions (including needed resources & Approximate Costs)	Time Line
Hire a director of experiential student learning who is responsible for internships, education abroad, student clubs, quiz bowl and other activities.	E	A	It would enhance our experiential education outcomes if the current academic coordinator role could be split into two positions. Employer relations would grow stronger, leading to more professional opportunities for our students. Including responsibility for student clubs and teams would replace roles currently held by faculty, again potentially reducing the utility of faculty. We currently lack a funding source, the budget environment discourages personnel growth, and this recommendation will likely be considered in FY18 or future years.	Periodically evaluate the financial feasibility of splitting the academic advisor role from the experiential education role. Approximate costs are $50,000 salary plus benefits. Consider including philanthropy duties in this position (see fourth recommendation).	FY18, and subsequent years.
Allocate adequate DOE time (currently 15%) for the Director of Graduate Studies (DGS) to develop and implement clear graduate academic requirements, mentorship and expectations.	E	A	As noted, 15% effort is currently allocated to the DGS role, translating into about 6-8 hours per week. The same effort is allocated to the Director of Undergraduate Studies (DUS), and appears to be the default allocation based on University guidelines, which are open to customization at the unit level.	An evaluation of time use is warranted, including comparisons across departments in the College. The effort allotted to the DUS and DGS roles may be revised if 15% is inappropriate.	prior to FY18, open to modification at any time
Develop and implement a development funding plan to enhance student success and faculty professional activities.	E	A	With the arrival of a new Senior Director of Philanthropy, Pamela Gray, and the restructuring of philanthropic efforts in the College, we have new opportunities to build resources during an otherwise declining funding path.	Meet with Pamela Gray to identify how the chair and others can become involved in recruiting gifts. For several years, we have expressed a desire to use philanthropy in reducing student costs of education abroad. If we are successful in this priority, others can be added.	Spring, 2017 and ongoing

Periodic Review Implementation Plan

Recommendation/ Suggestion	Source I/E/H*	Accept/ Reject**	Unit Response/Rationale (include goal or objective alignment)	Actions (including needed resources & Approximate Costs)	Time Line
Develop a formal mentorship program that provides direction for junior faculty to promote collegiality, quality scholarly productivity and retention.	E	A	Since the mid-1990s, the department has required all untenured faculty to designate a mentoring committee, and recommends twice-yearly meetings. Combined with the two- and four-year reviews, and annual performance reviews, there should be no surprises about strengths and shortcomings as the tenure decision approaches.	Review mentorship program with faculty to ensure full awareness, gather feedback on changes that may be needed.	prior to FY18, open to modification at any time
Increase opportunities for graduate students to obtain research assistantships through organized grant funding. Develop clear expectations and follow-up for research engagement and publication, as related to graduate student performance.	E	A	With declining state and federal funding, grants will need to play an increasing role in sustaining the graduate program. Faculty have been making good progress recently, and should be recognized in performance evaluations for grantsmanship, which is listed in every position description and offer letter as an expectation of employment. Grants not only allow recruitment and retention of strong graduate students, they guide research that helps students get published and succeed in the job market.	Hold discussions with faculty, beginning with the graduate program and research committee, on clear ways to incentivize and reward grantsmanship in the context of other research expectations.	Spring, 2017, continuing into new chair's appointment in FY18 and beyond
Develop a strategic hiring plan for future hires that includes program focus and emerging research priorities (e.g. policy).	E	A	It is hard to argue against the usefulness of such planning. We developed hiring plans in the past, and they were often rendered obsolete by changing circumstances or short-term needs. Two barriers to planning are that faculty consensus about priorities is rare, and it is hard to discuss de-prioritizing the area of an existing faculty member. However, the process of discussing personnel planning is useful in its own right.	Include this discussion in a faculty meeting on a regular (e.g., annual) basis that allows updating of a documented plan that is distributed to faculty.	ongoing

Periodic Review Implementation Plan

Recommendation/ Suggestion	Source I/E/H*	Accept/ Reject**	Unit Response/Rationale (include goal or objective alignment)	Actions (including needed resources & Approximate Costs)	Time Line
Develop a strategic Extension plan to address the ever changing rural communities and Kentucky agriculture, including programs and personnel (e.g. farm finance, ag law, policy, natural resources, sustainability).	E	A	This process currently occurs organically in discussions among extension faculty, who receive frequent feedback from stakeholders. A structured process can be helpful with little additional effort, and may make the full scope of extension programming in AEC more easily visible. Potentially momentous changes are coming as a result of budget cuts and a university-mandated review of Extension. Any plan would need to account for those changes.	Develop the plan in monthly extension group meetings. Align the plan with the college and university priorities for extension. Pursue "center" status for CEDIK. Evaluate sources of program needs and external funding opportunities, and be open to diverging from the status quo.	after the dust settles from the ongoing review and potential reorganization of Extension
Hire an Extension Associate to enhance Extension programming and allow for the reduction of teaching demands on specialists.	E	A	We would welcome the chance to hire another extension associate, but we do not have a funding source. Current extension associates are mostly soft-funded, with duties determined by sponsors. It is not clear that an extension associate would reduce teaching demands on extension faculty, unless the associate were teaching. Some extension faculty teach more than their appointment requires, and this should occur only on a voluntary basis. However, further reducing the teaching role of extension faculty threatens departmental cohesion, adaptability to shifting needs, teaching quality, and equity among title series. Further discussions among faculty are necessary to determine if greater specialization of faculty roles is in the department's long-run interests.	Annual costs of adding an extension associate are approximately $50,000 salary plus benefits. Hold discussions with faculty about the benefits and dangers of reducing the historical engagement of extension faculty with students at UK. If a faculty consensus does not exist, action on this recommendation might be best deferred until the new chair is in place.	FY18 or subsequent years

Periodic Review Implementation Plan

Recommendation/ Suggestion	Source I/E/H*	Accept/ Reject**	Unit Response/Rationale (include goal or objective alignment)	Actions (including needed resources & Approximate Costs)	Time Line
Analyze the current staffing responsibilities before developing a staff hiring plan to accommodate current needs. Future hires are inevitable to keep AEC running smoothly.	E	A	Staff needs have been shifting away from clerical tasks and toward fiscal management, program coordination, and communications tasks. Philanthropy may be part of an evolving future need. After multiple rounds of budget cuts, staff are now more efficient in many ways, but there are times when workloads are unsustainable.	Discuss evolving personnel needs in staff meetings and with supervisors. Use the university's work-life surveys as part of workload evaluations. Remain committed to solving challenges together.	immediate and ongoing

***Source of Recommendation (I = Internal/Self-study recommendation; E = External Review Committee recommendation; H = Unit Head recommendation)**

****Accept/Reject Recommendation (A=Accept; R=Reject) as negotiated between self-study stakeholders and Unit Head.**

Self-Study Chair Signature:	**Date:** 3/24/17
Unit Head Signature:	**Date:** 3/24/17
Unit Head Supervisor Signature: Nancy M. Cox	**Date:** 3/24/17