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CORNELL AGRICULTURAL ECONOMICS STAFF PAPER

Undergraduate Education in Agricultural Economics at Cornell University

Challenges and Lessons

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UNDERGRADUATE EDUCATION IN AGRICULTURAL ECONOMICS AT CORNELL UNIVERSITY

Challenges and Lessons

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This paper was given at the University of Minnesota on January 25, 1988 as a part of the seminar series in the Department of Agricultural Economics. The views expressed in this paper are those of the author and do not reflect official policy of Cornell's Department of Agricultural Economics. Comments on an earlier version of this paper by Jon Conrad, Olan Forker, Harry Kaiser and Deborah Streeter are graciously acknowledged.

Undergraduate Education in Agricultural Economics at Cornell University

Challenges and Lessons

Over the past sixty years undergraduate education in the Department of Agricultural Economics at Cornell University has evolved from a program with its historical roots in the study of farm businesses to today's considerably broader set of programs with emphases in applied economics and business management. This paper presents an overview of these programs and highlights their unique features. First, a brief description of the present program is provided. Second, a series of issues, or challenges, is identified that currently confront the department. Finally, drawing from Cornell's experiences, several observations are made regarding likely opportunities for the undergraduate program at the University of Minnesota.

The Undergraduate Major in Applied Economics and Business Management

The Department of Agricultural Economics at Cornell administers an undergraduate program with one major, "Applied Economics and Business Management." Within this major, six specializations are offered: Agricultural Economics, Business Management and Marketing, Farm Business Management and Finance, Food Industry Management, Public Affairs Management and Resource Economics. Students in all specializations earn a B.S. degree and thus must take 55 credit hours from the College of Agriculture and Life Sciences to meet the distribution requirements set by the college faculty to provide breadth in the biological, physical, and social sciences, in the humanities, and in written and oral expression. Nonetheless, over half of a student's program is devoted to courses in his/her specialization (major) and electives. All of the specializations require several courses in economics, accounting, and applied economics and then, depending on the selected specialization, students select courses to provide depth in their field (see Appendix I for example of course requirements/options for one specialization).

To better understand the current undergraduate environment of the department consider a number of recent trends. First, the Applied Economics and Business Management Program has the largest number of undergraduate majors not only in the College of Agriculture but the entire University (Appendix II). Moreover, continued growth in this program is documented by several key indicators: applications, enrollment, transfers, student credit hours and others (Appendix III). Second, and importantly, although the department now (January 1988) counts 784 undergraduate majors, approximately 700 (89%) are in one specialization, Business Management and Marketing. This is <u>not</u>

to be confused with an agribusiness program -- the majority of courses offered in this curriculum have little or no agricultural content: accounting, business management, business law, finance, marketing principles, marketing management, business policy, small business management and others. The remaining specializations have the following approximate student distribution: Agricultural Economics (30), Farm Business Management and Finance (20), Food Industry Management (35), Public Affairs Management (8), Resource Economics (7). Third, many of our undergraduate courses are exceptionally large: in the past academic year 16 courses had over 100 students, and 6 of these had over 300 students (Appendix IV). This phenomenon has led to a student/course ratio, 131, well over twice the college average. Although the average advising load is also high relative to most institutions, 21.3 students per advisor, recent efforts have been successful in moderating it somewhat (Appendix III).

Past Present and Future Challenges:

The unique characteristics of the undergraduate program at Cornell and the growth it has enjoyed have together led to a number of issues or challenges. At various times the department has attempted to address most of these challenges but with varying degrees of success. The most critical of these are capsuled below.

- **Are we an Agricultural Economics or a Business Program?** This is not a new debate at Cornell but rather an overarching issue that the faculty has struggled with for years. Further, it defines a set of ancillary issues. Cornell does not have an undergraduate business school, and while other departments do offer selected management courses, our program has become the principal beneficiary of the renewed interest in business education. Within this environment many of our faculty members feel that a shift away from traditional farm management and production economics courses toward applied economics and business displays a sound, market oriented strategy. However, others argue that since all of our faculty (currently) are agricultural economists that we ought to "stick to our knitting" and limit our research and teaching to the discipline where we have a comparative advantage. Furthermore, they point out that student interest in majors tends to be capricious and that the long run demand for business education may not remain strong.

The current department position attempts to reconcile these views: we consider ourselves an applied economics and business program where students may combine basic management and liberal arts courses with, if they desire, agricultural courses to prepare for careers with either a general business or an agribusiness orientation. Appendix V sets forth our position as

a liberal arts and science approach to business education. Our philosophy is that the requisite powers of creative thinking and imagination are found in many places and thus we require that a student be well grounded in a wide distribution of arts and sciences as a basis for the specific subject matters and analytical techniques taught in our department.

■ Large Course Sizes and Staffing: Very large courses place a strain on department resources: facilities, secretarial/ administrative support and, especially, teaching faculty. Some express concern that, as a result, research productivity is negatively affected. One partial response has been to hire lecturers to teach several of the largest courses where the faculty has had less training or interest (eg, accounting, business law, etc.). These lecturers have only teaching responsibilities. This strategy has been very effective. The lecturers typically receive among the highest teaching evaluations from students and, they partially relieve the research faculty from an even larger advising burden. Several other of the largest courses, however, are now taught by faculty who, for a variety of reasons, will not be teaching them in another 4-5 years. The majority of the junior faculty are reluctant to take over these time-intensive courses. Yet the department has no contingency plan in place. Recruiting new PhDs with business degrees has received uneven support.

■ Graduate Student Training. The nature of the undergraduate program influences the range of options for graduate students. Many faculty-graduate student research relationships are first established when the student works as a teaching assistant with the faculty member. However, in general, the teaching faculty has found that our own graduate students are either unable or unwilling to serve as TAs for undergraduate courses in business. Consequently, TAs are recruited heavily from the graduate business and law schools and paid on an hourly basis. This arrangement has proved very satisfactory. But the fact remains that undergraduate teachers must find alternatives in order to gain access to and develop working relationships with our own graduate students.

■ Student Quality and Equity. In effect, the department offers six differentiated products (specializations) to six quite different segments of the student population. Each segment is treated differently in the admissions process and receives quite different treatment by advisers. In general this strategy has worked quite well. However, several issues may be raised. Competition to gain acceptance into the "Business Management and Marketing" specialization has become keen over the past six years. Students applying to this specialization are now among the best applicants to the college. These students most often come from urban and suburban areas. On average, students with farm backgrounds do not present academic records of equal caliber. Thus, our faculty has instructed the Admissions Office

to give special consideration to students with farm and food industry interests and experience. Although not yet a major problem, one implication is that agricultural and food industry students, once the mainstay and pride of the department, risk becoming second class citizens.

OPPORTUNITIES FOR UNIVERSITY OF MINNESOTA

As the Department of Agricultural Economics of Minnesota considers its own directions for the future, it may be prudent to reflect on lessons learned from the Cornell experience. If I may, I suggest two:

- **Expansion of Applied Economics Focus.** As farming and agribusiness have become more completely integrated in the fabric of the overall economy and, reflecting this evolution, the training of agricultural economists has broadened to encompass analytical skills applicable to a wider range of problems, Cornell has found that an applied economic and business management emphasis works. Student interest is strong, student quality is high and faculty training in agricultural economics is appropriate. Our roots in the agricultural and food industries have not been abandoned, our horizons are simply broader. Naturally, the lack of an undergraduate school of business at Cornell makes our reorientation much easier. Nevertheless, it appears that this has the potential to be very fertile ground, especially when considered with my second observation below.

- **Food Industry Focus.** Cornell has a long standing reputation and close working relationship with the food industry. Indeed, the Food Industry Management specialization is inextricably interwoven with that of Business Management and Marketing. For example, although the official enrollment indicates that only 4 percent of our students are in the food industry specialization, in fact, a large number of our business management and marketing students are attracted to the department because of our applied food industry focus. So the relatively small number of food industry majors belies the actual interest and ultimate career choice. A student interested in working for General Motors is also likely to be interested in General Foods. For that matter, researchable issues may not be terribly different between the two. Nevertheless, as the food manufacturing and distribution industries become more sophisticated, the need for greater education and training of its future managers has intensified. Perhaps the transition from "upstream" agricultural activities to "downstream" food processing and distribution activities is more logical, or less threatening, than other, more dramatic proposals. Moreover, Cornell's experience suggests that the food industry's cooperation on research and its financial support for teaching and scholarships have substantial benefits. The University of Minnesota's prime metropolitan location would appear to reinforce such an initiative.

APPENDIX I

Applied Economics and
Business Management

(Effective August 1987)

Requirements for Specialization in

BUSINESS MANAGEMENT AND MARKETING

This program fulfills the requirements for the B.S. degree while preparing the student for a career in business. All students are expected to complete at least 36 credits of courses (or equivalents) offered in the Department of Agricultural Economics and 39 credits of College Distribution Requirements.

Students transferring into Business Management and Marketing are advised to take biology, chemistry, physics, introductory economics and mathematics before admission. They may need an additional semester to meet requirements for graduation.

I. Required Courses (or Transfer Equivalents)

A. Students must take the following courses offered by the Department of Agricultural Economics.

Ag. Econ. 150	Economics of Agricultural Geography
Ag. Econ. 220	Introduction to Business Management
Ag. Econ. 221	Financial Accounting
Ag. Econ. 240	Marketing
Ag. Econ. 310	Introductory Statistics
Ag. Econ. 320	Business Law
Ag. Econ. 323	Managerial Accounting
Ag. Econ. 324	Financial Management
Ag. Econ. 424 or 441 or 443	Business Policy, or Personal Enterprise and Small Business Management, or Food Industry Management

B. Students must take the following additional offerings.

Com. Arts 201	Oral Communication
*Econ. 101	Introductory Microeconomics
*Econ. 102	Introductory Macroeconomics

Two courses in Mathematics (eg. Educ. 115, Math 107, 111, 112)
One course in computer programing or computer use
One course in intermediate economic theory

* May be credited to College Distribution Requirements.

C. Minimum of two additional courses from the following list of management courses.

Ag. Econ. 302	Farm Business Management
Ag. Econ. 321	Law of Business Associations
Ag. Econ. 322	Taxation in Business and Personal Decision Making
Ag. Econ. 342	Marketing Management
Ag. Econ. 420	Advanced Business Law
Ag. Econ. 424	Business Policy
Ag. Econ. 426	Cooperative Management
Ag. Econ. 441	Personal Enterprise and Small Business Management
Ag. Econ. 443	Food Industry Management
Ag. Econ. 448	Food Merchandising
Ag. Econ. 449	Applications in Strategic Marketing

D. A minimum of two additional courses from the following list of "analytical" courses.

Ag. Econ. 332	Economics of the Public Sector
Ag. Econ. 412	Introduction to Linear Programming
Ag. Econ. 415	Agricultural Prices
Ag. Econ. 416	Introduction to Econometrics
Ag. Econ. 418	Information Systems and Decision Analysis
Ag. Econ. 431	Farm and Food Policies

II. Courses Generally Recommended

Students specializing in Business Management and Marketing are encouraged to take courses in other areas of specialization in the Department of Agricultural Economics, other disciplines of the College of Agriculture and Life Sciences, and other colleges of the University in order to obtain a broad educational experience.

III. Courses Recommended for a "Minor" in Business Management and Marketing

Ag. Econ. 220	Introduction to Business Management
Ag. Econ. 221	Financial Accounting
Ag. Econ. 240	Marketing
Ag. Econ. 320	Business Law
Ag. Econ. 323	Managerial Accounting
Ag. Econ. 324	Financial Management
*Econ. 101	Introductory Microeconomics

* Also satisfies the College Distribution Requirement.

APPENDIX II

UNDERGRADUATE MAJOR FIELDS OF STUDY

Agriculture and Life Sciences

Major	Number of Students Fall 1984	Fall 1985	Fall 1986	Fall 1987
Agricultural & Bio Engineering	177*	175*	136*	122*
Agronomy: Crops, Soils & Meteorology	39	39	57	66
Animal Sciences	566	517	529	531
Applied Economics & Business Management	713	760	711	699
Biological Sciences	634	630	626	617
Communication	183	225	254	280
Education	39	45	58	56
Entomology	15	14	14	17
Food Science	69	56	53	56
Landscape Architecture	72	66	69	73
Microbiology	74	74	90	107
Natural Resources	150	167	165	166
Plant Sciences	182	181	150	143
Rural Sociology	14	13	15	14
Statistics & Biometry	37	58	62	46
Special Ag Programs	151	124	115	118
TOTAL	**3,115**	**3,144**	**3,104**	**3,111**

*Does not include approximately 25 students who are double registered in the College of Engineering.

APPENDIX III

Agricultural Economics
Applied Economics and Business Management
Selected Statistics

	Fall 1984	Fall 1985	Fall 1986	Fall 1987
Undergraduate enrollment	713	760	711	699
Total CALS	3,115	3,144	3,104	3,111

Freshmen	Fall 1986	Fall 1987
Applications	761	914
Approved	155	151
Enrolled	103	99

Transfers	Fall 1986	Fall 1987
Applications	162	169
Enrolled	42	35

Advising Load	Fall 1987	[Updated 12/11/87]
Number of advisees	726	787
Number of advisers	37	37
Average advising load	20.7	21.3

Average Undergraduate Advising Load

1983	23.6
1984	24.1
1985	23.9
1986	24.6
1987	20.7

Bachelor's Degrees Granted

	Applied Economics and Business Management			CALS	
	Men	Women	Total	Total	Percent
1983-84	137	85	222	898	24.7
1984-85	129	89	218	863	25.3
1985-86	140	112	252	902	27.9
1986-87	135	112	247	855*	28.8

* 50/50 male/female

Student Credit Hours (000)

	Ag. Econ.	CALS	Percent
1977-78	13.1	96.3	14
1978-79	14.8	96.9	15
1979-80	16.8	98.9	17
1980-81	16.1	97.6	16
1981-82	15.8	97.5	16
1982-83	15.2	98.0	16
1983-84	16.8	98.7	17
1984-85	18.0	97.6	18
1985-86	18.2	94.6	19
1986-87	17.4	92.6	19

Fall 1986-Spring 1987

	Undergraduate Courses		Graduate Courses	
	Ag. Econ.	CALS	Ag. Econ.	CALS
Number of courses	42	525	21	358
Number of students	5,484	28,276	202	4,018
Students/course	131	54	10	11

Instructional FTE's (Faculty and Staff)

	Ag. Econ.	CALS	Percent
1982-83	14.5	144.8	10.0
1983-84	15.6	151.4	10.3
1984-85	14.5	139.0	10.4
1985-86	14.9	140.8	10.6
1986-87	15.5	136.0	11.4

"Efficiency Factors" (1986-87)

	Ag. Econ.	CALS
Instructional FTE's	15.5	136.0
Total instructional dollars (000)	1,606	11,613
Student credit hours	17,451	62,370
Department cost/credit hour	$92	$186
Credit hours/FTE	1,126	459

Source: Profile of Students, Courses, Departments, CALS Office of Instruction, December 1, 1987.

Prepared by: Olan D. Forker/Shirley Arcangeli, 12/11/87.

APPENDIX IV

NUMBER OF STUDENTS ENROLLED IN SPRING TERM COURSES APPLIED ECONOMICS AND BUSINESS MANAGEMENT

Course number	Number/Feb. 1987			Total enrollment					
	Grads	Out of College*	CALS	1987**	1986	1985	1984	1983	1982
221	2	336	316	655	498	507	408	366	363
240	5	100	334	443	492	468	466	391	367
302	4	2	84	92	94	94	104	134	115
321	0	10	95	100	148	-	-	-	-
322	0	3	64	62	109	136	86	114	100
324	1	30	253	275	266	240	224	249	208
346	0	1	24	25	49	-	37	28	25
402	2	0	42	44	44	57	66	36	60
406	0	1	49	48	42	54	42	32	35
407	0	0	15	15	16	16	16	16	15
411	0	0	19	20	20	33	-	-	-
412	7	1	21	33	45	59	60	69	59
415	3	0	30	34	72	99	94	48	67
416	8	1	5	15	16	27	25	13	15
418	4	5	58	66	-	-	-	-	-
420	0	24	115	142	196	151	127	-	127
424	0	0	172	170	159	158	157	140	150
441	3	16	100	116	54	-	-	-	-
443	6	7	40	55	64	41	67	68	62
455	0	0	14	15	-	-	-	-	-
464	6	0	7	11	7	20	18	19	22
Total	51	537	1857	2436	2391	2160	1997	1723	1790

* Includes Extramural and Unclassified students.

** The Number/Feb. 1987 is as of February 1987 while the 1987 Total enrollment is a count as of April 1987 and therefore they do not equal each other.

NUMBER OF STUDENTS ENROLLED IN FALL TERM COURSES APPLIED ECONOMICS AND BUSINESS MANAGEMENT

Course number	Number/Fall 1986			Total enrollment				
	Grads	Out of College*	CALS	1986	1985	1984	1983	1982
150	3	59	377	439	592	590	662	589
220	0	378	410	788	767	739	601	546
310	2	38	204	244	318	243	252	263
320	2	147	282	431	419	306	221	306
323	0	32	239	271	263	258	191	223
332	0	8	128	136	117	72	65	-
342	2	2	172	176	188	170	151	-
347	5	2	14	21	18	29	28	-
350	4	1	7	12	19	-	17	37
351	6	1	67	74	111	113	110	133
405	0	0	47	47	47	71	78	47
408	3	0	33	36	37	43	34	19
409	0	0	11	11	7	4	9	7
410	-	-	-	-	29	22	16	21
422	0	4	99	103	51	-	-	-
426	3	1	30	34	-	43	37	42
430	-	-	-	-	28	35	18	17
448	7	10	125	142	123	100	131	124
449	3	0	33	36	46	39	38	29
Total	40	683	2278	3001	3180	2877	2659	2403

* Includes Extramural and Unclassified students.

APPENDIX V

The Undergraduate Business Management Program in the Department of Agricultural Economics at Cornell University

Objectives

The primary objective is to provide a basic undergraduate business management program that allows the student to obtain a broad based education that contains both the basic science and arts of a liberal education and the management skills and concepts necessary to successfully enter the job market. By combining basic management courses with others taught within the Department of Agricultural Economics and the rest of the University, students will be able to develop strong programs oriented toward either the general business or the agribusiness sector.

It is not the objective of the Department to offer the full range of courses that are offered at most undergraduate business schools or that might be required for accreditation as an undergraduate business program. It is expected that course offerings, both in and outside of the basic set of courses, will continue to reflect the strong agribusiness expertise and interest of the faculty.

Responsibilities

The Department of Agricultural Economics accepts the responsibility to offer, on a continuing basis, each of the basic Business Management courses. This set of courses is to be limited to the basic building blocks of a management education. The set is not, in and of itself, sufficient for a major. Rather, the Department will offer additional courses that when combined with the basic set of courses, and other courses available within the University, will meet the requirements of the business management and marketing specialization. Courses not in the basic set will find their justification in other instruction objectives of the Department. It is expected that nonbasic courses will change with the skills and interests of the faculty.

The Department will insure staffing of the basic set of courses at the level necessary to provide quality instruction. The source of professorial appointments will continue to be based on the total needs of the Department and the availability of quality personnel.

Basic Business Management Courses

(Generic Title)

Business Law I
Financial Accounting I
Managerial Accounting I
Finance I
Business Management I
Marketing I