



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**A HISTORY OF
AGRICULTURAL AND APPLIED ECONOMICS
at the
UNIVERSITY OF MINNESOTA
1979-2000**

W. Burt Sundquist

**DEPARTMENT OF APPLIED ECONOMICS
UNIVERSITY OF MINNESOTA
2001**

INTRODUCTION AND ACKNOWLEDGMENTS

This publication updates the earlier history of Agricultural Economics at the University of Minnesota from 1886-1979 authored by Willard Cochrane. Although I can't reasonably hope to duplicate Willard's excellent work, I have tried to follow a similar format for data presentation in order to provide a consistent continuity of the historical record for the much shorter period 1979-2000. Data for much of the historical record for the Department of Agricultural and Applied Economics from 1979 to 2000 is presented in the appendices for this report. These include: 1) faculty appointments, resignations and retirements; 2) graduate degree recipients; and 3) course offerings.

No two people would write the same historical report and thus I hold no one else responsible for the content and accuracy of this report. I have, however, greatly benefitted from the availability of Willard Cochrane's previous history and the assistance of Laura Bipes, Gary Cooper, Sharon Kill, Louise Letnes and Linda Schwartz in preparing the historical data record. G. Edward Schuh, Michael Boehlje and Vernon Eidman have provided insights into the goals which they envisioned for the department as they undertook the successive assignments of heading the department. Although James Houck's untimely death on May 16, 2000 prevented him from specifically addressing his goals for the department as department head, I have benefitted from several reports which he wrote on goals and accomplishments for the department during his tenure as head.

Over the past several decades, several University of Minnesota Centers in agricultural and applied economics were created to strengthen areas of subject matter

emphasis and to augment the funding for their programs. These started with the establishment of the University of Minnesota Economic Development Center in 1967. Because this and the several Centers created in the 1980s and 1990s played such an important role in the evolution of the department's programs, I have given special attention to documentation of these Centers in Appendix J of this report in which the Economic Development Center is listed as J-1. Several of the Centers' previous or current directors have provided information on the creation, objectives, funding and accomplishments of these Centers. Included are William Easter, William Gartner, Richard Hawkins, Jean Kinsey, Claudia Parliament, and Vernon Ruttan. Special thanks are due Elaine Reber who has processed this report in its several versions, initially from my handwritten draft and to Willard Cochrane and Vernon Eidman who reviewed an earlier draft of this report and provided a number of useful comments.

For the record it should be noted that the department of Agricultural Economics at the University of Minnesota became Agricultural and Applied Economics in July, 1970 and Applied Economics in May, 1995. Some of the reasoning behind the latter name change will be discussed later in this report.

Finally, although most of the content of this report is based on factual findings, I have, on occasion, included some of my personal evaluative comments. I trust that readers will be able to separate the factual history from my personal editorial perspectives.

Burt Sundquist, Professor Emeritus of Applied Economics, University of Minnesota
December 2001

Chapter 1. AGRICULTURAL AND APPLIED ECONOMICS AT MINNESOTA IN 1979

By at least one measure, the number of tenured and tenure track faculty members (45), the size of the Department of Agricultural and Applied Economics peaked in the 1978-1979 academic year. This is, at best, however, a shaky measure of size. As will be recounted in the following chapters, a shift occurred over time between 1979 and 2000 in the number of professional staff employed in non-tenure track positions. Thus, although the number of faculty positions funded with "hard money" (faculty salary money from the University's teaching budget, the Minnesota Agricultural Experiment Station and the Minnesota Extension Service), began to decline in 1979-1980, expansion in non-tenure track employment occurred via grants and contracts including those received by the several Centers located in the department. This shifting in support away from traditional land grant university funding and toward other grant and contract funding for specific work projects, particularly research, occurred in most, if not all, other agricultural economics departments in the U.S. as well. And, it resulted in more of the department's research agenda being influenced by financial sponsors outside of the land grant system. This increased external funding was, however, welcomed by the department as traditional funding sources were being retrenched. Not surprisingly, land grant institutions were losing some of their clout in the allocation of budget support at both the state and federal levels, particularly the latter. This reduction in regular federal funding was particularly important for the agricultural segment of land grant universities. At last, the declining relative importance of the agricultural sector in the total economy had

begun to show up in the allocation of state and federal budgets.

As Cochrane indicates in his history, the Department of Agricultural and Applied Economics was, in 1979, a mature department.

Of the departments total hard money funding for 1979-80 of about \$2.21 million, about \$752 thousand came from the University's teaching budget, \$772 thousand from the University of Minnesota Agricultural Experiment Station and \$685 thousand from the Minnesota Extension Service. In addition, grants and contracts totaling \$315 thousand brought the departmental budget total to \$2,524 thousand of which almost 88 percent was hard money. In 1979, a record number of 107 graduate students were enrolled in the department, up by more than 30 percent from 1976.

Undergraduate enrollment increased to 254 in fall 1979 compared to 167 in 1976. Of the 254 undergraduate students in 1979, almost two-thirds of the total (159), were enrolled in the Agricultural Business Administration major. Major increases in agricultural exports in the late 1970s benefitted agricultural income which resulted in increased employment opportunities for the department's graduates, particularly in agribusiness.

Extension faculty had been integrated into the department budget-wise since the 1960s. A number of the professional activities of extension faculty were also integrated within the departmental structure and several faculty members with major extension appointments were engaged in some research and teaching. In still other cases, Extension faculty continued their professional activities somewhat independent of the departmental structure and substantive integration was still in the future.

Since the mid-1970s the Department of Agricultural and Applied Economics had provided, on a contract basis, the half-time services of a senior faculty member to serve as the Minnesota State Economist in the executive branch of the state government. This provided at least limited opportunity

for the department to move selected research results into the arena of the state's financial planning process. At the national agricultural policy level, however, the department was having a decreased level of influence compared to the 1960s and 1970s.

Chapter 2. REKINDLING THE INTERNATIONAL FOCUS: 1979-84

New Leadership

G. Edward Schuh began his tenure as department head on July 1, 1979. Ed Schuh received his B.S. degree from Purdue University in 1952 and his M.S. degree from Michigan State University in 1954. Following a tour in the military, Schuh undertook graduate work at the University of Chicago and completed his Ph.D. in 1961. He served on the faculty of Purdue University from 1959 to 1979. During his tenure at Purdue, he worked extensively on foreign technical assistance programs for the Ford Foundation and Purdue University in Brazil, and served subsequently as Deputy Assistant Secretary in the U.S. Department of Agriculture. By the time he undertook the position of department head at the University of Minnesota he had built a strong reputation for his work on international trade and on foreign exchange problems and policy.

In personal correspondence with the author, Schuh indicated that his goals for the department were fourfold:

- (1) to sustain the 'high national' ranking of the department at that time;
- (2) to strengthen the international dimensions of the department;
- (3) to strengthen ties with the Department of Economics; and
- (4) to have the department address more vigorously important current issues, nationally and internationally.

G. Edward Schuh was eminently qualified to undertake the goals which he enunciated for the department. He was well trained in economic theory, highly productive and well

experienced in the international dimensions of agricultural economics. He also brought with him extensive personal contacts in USAID, Latin America and the U.S. Department of Agriculture. His expertise in Latin America augmented well the expertise already available in the department in Asia and francophone Africa. Schuh also brought with him some different work habits than those typical of an academic department. He worked early and late and scheduled appointments on weekends as well as during the traditional work week.

Changes in Faculty

Ed Schuh proceeded to implement his plans for expanding the department's international dimensions by first hiring Karen Brooks, who had completed her Ph.D. course work at the University of Chicago and had strong background on the Soviet Union, to work on Russian problems. He next hired Harald Von Witzke to work on European problems. Von Witzke had done his academic work at the University of Goettingen in Germany and, following postdoctoral study at Berkeley, was serving as a junior faculty member at Goettingen. Schuh himself undertook work on a number of problems in developing countries with particular emphasis on trade and exchange rate issues and Terry Roe and Vernon Ruttan continued their substantial efforts in foreign economic development.

Other major hires for the department included: Jeffrey Apland, a Purdue University Ph.D. graduate serving on the faculty of the University of Kentucky. Apland's major professional focus was on production economics and applied

mathematical programming; C. Ford Runge, a University of Wisconsin Ph.D. who was on the Political Science faculty at the University of North Carolina. Runge had training and experience in both political science and natural resource economics and had been a Rhodes Scholar at Oxford; Theodore Graham-Tomasi, a Ph.D. from the University of Michigan whose expertise was in natural resource economics and quantitative analysis; and Robert King, a Michigan State University Ph.D. who was on the faculty of Colorado State University. King, although still a young assistant professor at the time, was hired for the E. Fred Koller Chair in Agricultural Information Systems. In addition to working on agricultural information systems, he assumed a major role in the department's program in production economics. Finally, Hal Everett was hired in 1983 as an Extension Specialist in Grain Marketing to replace Willis Anthony who resigned from the department in 1981. Everett's tenure in the department was very brief, however, as he resigned in 1984 to take a position in the business world.

In addition to Anthony, two other faculty members, Malcolm Purvis and Mary Ryan, resigned during Schuh's tenure and eight faculty members retired. The latter included John Blackmore, Uel Blank, Martin Christiansen, Willard Cochrane, John Hoyt, Harald Jensen, Lee Martin and Frank Smith.

Several of these new appointments, resignations and retirements had major impacts on the department's program as will be discussed in more detail later.

Program Challenges

Early in his tenure as department head, Ed Schuh acknowledged several challenges in

addition to the one of expanding the international focus of the department. These included strengthening the departmental capabilities in consumer and consumption economics and in natural resources, including energy policy. And, he expressed concern about the areas of price analysis, agricultural trade and U.S. agricultural policy. Mary Ryan had elected to take early retirement, James Houck had accepted the editorship of the *American Journal of Agricultural Economics* and Willard Cochrane announced his plans to retire at the end of June, 1981. Houck had conducted a strong research program in agricultural price analysis and Cochrane was a national and international authority on agricultural and food policy. Ryan, who was a full-time researcher, provided substantial support for both Houck and Cochrane in their research programs. It can probably be said with some accuracy that the impact of these three changes spawned a rather permanent reduction in the department's emphasis and expertise in U.S. agricultural policy and price analysis. Moreover, these had been areas of subject matter strength in the department for several decades.

During 1981-82 the Minnesota Agricultural Extension Service experienced a major reduction in funding at both the Federal and State levels. In response, early retirement options were offered to extension faculty. Thus, in 1982 professors Frank Smith, Uel Blank, Martin Christiansen and John Hoyt all chose to retire. This resulted in a major cutback in extension education programming in the areas of recreation and tourism economics, agribusiness and agricultural policy.

The Department at Work

In keeping with Ed Schuh's plans, the department increased its work efforts in the international area. In contrast with the 1970s, however, when the department had a major contingent of faculty in long-term agricultural development assignments overseas, particularly in North Africa, agricultural development work in the early 1980s involved mainly short-term contracts and consulting work in which several faculty members assumed major roles. Several contracts, mainly with USAID, included training of foreign graduate students with increased emphasis on Latin America. The department continued, however, to train substantial numbers of Asian and North African graduate students as well. Among the graduate student population, foreign and women students increased relative to male U.S. students. The latter group of students had declined in numbers in the late 1970s as the strong domestic job market for baccalaureate-level students siphoned off a portion of the potential supply of graduate students.

As indicated earlier, faculty retirements impacted negatively on the department's research and extension programming in some of the departments traditionally strong subject matter areas including agricultural price analysis and policy and agribusiness including agricultural cooperatives. Programming in consumer and consumption economics, on the other hand, was expanded under the leadership of professors Jean Kinsey and Benjamin Senauer. And, Professors William Easter, Ted Graham-Tomasi, John Waelti and Ford Runge strengthened the programming in natural resource and environmental economics. Professor Wilbur Maki continued a

substantial program of regional economic analysis including input-output and shift-share analysis for the Minnesota economy and its several economic sub-sectors. The department's programs in agricultural marketing and production economics remained solid although extension programs in marketing were operated at much reduced levels from earlier periods and research on the changing structure of the agricultural sector and policy analysis pertaining thereto was rather limited. Not only were faculty numbers thin in the agricultural policy, prices and marketing areas, but funding from the Minnesota Agricultural Experiment Station was undergoing retrenchment. Also, fewer graduate students were entering the departmental program with strong U.S. agricultural industry background. Thus, their interests in and their capabilities to do quality research in traditional areas of agricultural economics were somewhat diminished.

Several faculty members working in farm management extension were in the forefront of the profession in developing computerized decision aids for farm and financial management. These included professors Earl Fuller, Paul Hasbargen, Richard Hawkins and Kenneth Thomas. The demand for such decision aids was high both from farmers and from the farm credit agencies and businesses serving farmers. Although the demand for farm financial analysis was fueled by the farm financial crisis starting in the early 1980s, it was made possible by the availability of expertise within the department. Planning for the creation of a Center of expertise in computerized decision making analysis was initiated in 1983 between Professor Hawkins and department head Schuh. Subsequently, the Center for Farm Financial Management

was created in the department in December, 1984, with Professor Hawkins as its initial director. A detailed description of the Center, its creation, goals and achievements are included in Appendix J-2 of this publication. In summary, farm management extension stands almost alone as an example of strengthened extension programming in the department during the 1979-1984 period.

One final faculty change of significant impact occurred toward the end of Schuh's tenure as department head. That was the retirement of Professor Philip Raup. Raup's major areas of work had been on land economics and tenure and on the changing structure of agriculture. Raup had also worked extensively on international topics and was a widely acknowledged expert on agriculture in the Former Soviet Union and on land economics and the structure of agriculture worldwide. Although Raup formally retired in June, 1984 he continued in much of his professional work in the department for a number of years following retirement.

The Undergraduate Program

Enrollment of undergraduate majors in the department continued to increase from the mid-1970s and reached a high of 324 in 1982. Then, largely in response to declining agricultural exports, the financial crisis in agriculture and a curtailment in agribusiness, enrollment declined to 279 in 1984. Proportionally, students continued to shift out of production agriculture majors and into Agricultural Business Administration. By 1984, more than 70 percent of the department's undergraduates were enrolled in the latter major. Most of the remaining departmental majors were in Agricultural Economics with a small number, less than

ten, in a third major, the Economics of Public Resource Management. Meanwhile, undergraduate enrollment in the College of Agriculture declined from 1676 in 1979 to 1195 in 1984, a decline of almost 30 percent. A listing of departmental courses at periodical intervals is included in Appendix E of this report.

The Graduate Program

Graduate student enrollment (students in residence) in the department remained relatively constant at around 100 during the early 1980s. But, the composition of graduate student numbers continued its secular change. In 1977 about 80 percent of the students were U.S. citizens. This proportion declined to 50 percent by 1986. In 1977, less than 14 percent of the graduate students were female. This proportion increased to about one-third in 1984 and 1985. While emphasis on U.S. agricultural policy had declined significantly by 1984, several new graduate courses were initiated with international emphasis. These included dual-level (upper division undergraduate and graduate-level) courses in European Agriculture and European Food and Agricultural Policies and Agricultural Policy in Planned Economies, and a graduate-level course titled, "Economics of EC Food and Agricultural Policies." Serious discussions were also underway to hire a new faculty member who could teach one or more courses in applied econometrics as graduate-level econometrics courses in the Economics department had become quite mathematical and theoretical.

A listing of recipients of graduate degrees in the department and the titles of their theses is included in Appendix D of this report.

The Publication Record

Faculty members continued to publish on a broad range of topics during the 1979-1984 period. In fact, during this period, the department consistently ranked in the top two to sixth U.S. agricultural economics departments for number of articles published in the *American Journal of Agricultural Economics*. Increases occurred in publications relating to farm and financial management computerized decision aids and econometric modeling, to resource economics, including energy and water, to consumer and consumption economics and to agricultural trade. In addition, the areas of farm product and input marketing and firm organization and structure received considerable attention. And, the farm financial crisis precipitated by the major decline in U.S. agricultural exports in the early 1980s resulted in a number of articles and reports dealing with the financial distress of Minnesota and Midwest farmers.

Several books were published by departmental faculty which received major

attention within the agricultural economics profession. These included: Michael Boehlje and Vernon Eidman's, *Farm Management*, Willard Cochrane's, *The Development of American Agriculture: A Historical Analysis*, and Vernon Ruttan's, *Agricultural Research Policy*. In addition, several books which received major attention in the profession were edited by departmental faculty. Topics included a survey of agricultural economics literature, the role of markets in the world food economy, agricultural development and water resources research. Finally, Professor Willis Peterson continued to have broad adoption of his textbooks on the Principles of Micro- and Macro-Economics. In summary, it can be said that during the period 1979-1984, the Department of Agricultural and Applied Economics continued to be in the forefront of the profession in its production of professional literature and its leadership role in the U.S. agricultural economics profession. This was particularly the case in international development and trade.

Chapter 3. AN INCREASE IN STATE AND LOCAL FOCUS, 1984-1990

A Change in Leadership

G. Edward Schuh resigned as department head in September, 1984 to join the World Bank. Professor Burt Sundquist agreed to serve as Acting Department Head while a national search was undertaken for Schuh's replacement. Several candidates were interviewed for the position and the Dean of the College of Agriculture named Michael Boehlje to be the new department head beginning October 1, 1985.

Michael Boehlje grew up on an Iowa farm and received his Ph.D. from Purdue University in 1971. After spending 1970-1973 on the faculty of Oklahoma State University, Boehlje joined the faculty of the Department of Economics at Iowa State University in 1973. He rose to the rank of full professor and subsequently became Assistant Dean of the College of Agriculture at Iowa State.

Boehlje's areas of professional expertise were in agricultural finance, farm management and production economics. At Iowa State his work included teaching, research and extension. During the farm financial crisis of the early 1980s, Boehlje became a regional and national spokesman on the farm financial crisis. He spoke and wrote extensively on the financial problems of farmers and farm credit institutions and on management strategies to alleviate these problems. He continued these efforts on an intensive basis after arriving at the University of Minnesota.

Changes in Faculty

The department received approval to fill several faculty positions before Boehlje arrived as department head. These positions were mainly to replace department faculty who had retired or resigned and did not represent a growth in the size of the departmental faculty. Six new hires were made for faculty positions during the 1984-1985 academic year. New faculty members included the following individuals: Glenn Pederson, a Michigan State University Ph.D. who was currently on the faculty at North Dakota State University was hired to work in agricultural finance and to replace Jerry Thompson who had resigned in August, 1984; Kent Olson, an Iowa State University Ph.D. working as an extension economist at the University of California at Davis was hired to replace Professor Delane Welsch who had moved into college-level administration of international programs. Olson was to work in farm management and to provide leadership for the Department's long-standing farm records projects; Steven Taff, a University of Wisconsin Ph.D. with experience in resource economics, was hired to work in public policy extension; Stanley Stevens, a University of Illinois Ph.D. was hired to work in grain marketing extension. Stevens had been out of academia for several years while working in the private sector; Claudia Parliament, a University of California, Berkeley Ph.D. was hired to work in agribusiness and small business management. Her position was, at least in part, a replacement for retired professor Frank Smith. Parliament, like Pederson, had completed a master's degree at the University of Minnesota and both were well known to departmental faculty. Finally, in

the way of new hires, JoAnn Paulson, who received her Ph.D. at Stanford University was hired as an Assistant Professor on a contract (non tenure-track) basis to work in the area of rural economic development. The financial crisis in rural Minnesota provided much of the incentive for expanding the department's faculty effort in rural economic development and agricultural finance.

A very significant faculty change which preceded Boehlje's arrival as department head was the retirement of John Helmberger.

Helmberger had, for many years, given strong leadership and administration for the department's undergraduate program. Helmberger's retirement left a substantial gap in the expertise committed to managing the department's undergraduate program.

During the period of Michael Boehlje's tenure as department head, several additional faculty members retired or resigned and replacement hires were made. These included: Richard Levins and William Lazarus who were hired to work in Farm Management Extension and to replace professors Paul Hasbargen and Fred Benson.

Levins held a Ph.D. from Mississippi State University and was an Associate Professor and Extension Economist at the University of Maryland when hired to join the Minnesota department. Lazarus held a Ph.D. from the University of Illinois and was on the faculty at Cornell University. And, late in Boehlje's tenure as department head, John Lawrence, an Iowa State University Ph.D. was hired to work in livestock marketing extension to replace retired professor, Kenneth Egertson. Three additional faculty hires were prompted by programmatic changes in the department. These included Professors George Morse,

Scott Loveridge and Yacov Tsur. These appointments will be elaborated in the following section of this report. Finally, three additional faculty members retired in 1987 and 1988. These were extension economists Gordon Rose and Robert Snyder, who worked in resource and community development economics, and Clifford Hildreth, an econometrician whose major appointment was in the Department of Economics.

Changes in Program Focus

In contrast to program emphasis during Schuh's tenure as department head, none of the new faculty hires from 1984 to 1990 were individuals who were expected to undertake major responsibilities in the international area. Rather, the emphasis was on expanding program thrust at the state and community level. This program emphasis was induced, at least in part, by the financial crisis occurring in Minnesota's agriculture and rural communities. It also happened to be the area of strong professional interest of the new department head, Michael Boehlje. Boehlje himself gave strong professional attention to the financial crisis of the 1980s and to strategies to cope with the crisis. JoAnn Paulson conducted research and extension in rural economic development. In addition, Professor George Morse was hired to direct a program of extension and applied research support on retention of and expansion assistance to Minnesota businesses. Morse, a University of Wisconsin Ph.D., had led a successful business retention program at Ohio State University prior to his employment in the department at Minnesota. Largely in support of this effort of economic assistance to businesses, Scott Loveridge, a new Minnesota Ph.D., was hired as an Assistant

Professor on a contract (non-tenured) basis. Professor Glenn Pederson gave major attention to the financial problems of farmers and credit institutions and Professor Claudia Parliament shifted focus from agribusiness management to community economic development. Finally, Professor Glenn Nelson continued to give major attention to the economics of public services.

In the international area a strong program continued with Professors Brooks, Roe, Ruttan and Von Witzke providing major attention to this area and a number of other faculty members providing strong support in research, training and short-term consulting projects. Resource and environmental economics and consumer and consumption economics had, by now, become traditional areas of emphasis in the department and received substantial faculty attention but only limited funding support from external grants and contracts. Environmental economics was beginning to get some faculty attention but only on a very modest basis. Agricultural and resource economists were still struggling to find acceptable measures for the values (benefits and costs) of environmental enhancement or degradation.

For some years, the department had felt the need to augment the more theoretical work in econometrics in the economics department with faculty support in applied econometrics. Encouraged by an external review of the department in 1987 which recommended hiring an econometrician, a search was initiated to hire a strong econometrician to teach econometrics and to provide support for the department's research program. Yacov Tsur was subsequently hired for that position in 1989.

Tsur was a resident of Israel who received his Ph.D. at the University of California at Berkeley in 1983 and was on the faculty of Ben Gurion University of the Negev. In addition to his strong econometrics skills, Tsur had substantial research experience with water resource issues in Israel.

In summary, and with the exception of the hiring of Yacov Tsur, from 1984 to 1990 the department's new and/or expanded research and extension efforts were focused almost entirely on the state and community level topics of finance and rural development. A second exception was the establishment in 1988 of a new international Center in the department, The Center for International Food and Agricultural Policy (CIFAP). This Center, funded in large part from a grant from Cargill, provided an organizational and funding umbrella for continued international work. A more detailed description of the Center and its structure, program and funding is included in Appendix J-3 of this report.

In personal communication with the author, Michael Boehlje cited five areas of important change in the department from 1985 to 1990. These included: (1) the establishment of CIFAP and its enhancement of funding and international programming; (2) the increased outreach and research programming focused on rural communities with expanded activity of specialty field staff focused on such topics as business retention and expansion and rural economic development. This expanded programming effort was supported by significant external funding, particularly from The Northwest Area Foundation; (3) the undergraduate curriculum was revised substantially to provide a stronger conceptual base for more specifically

targeted majors or curriculum options in the Department, and, simultaneously, to support a more interdisciplinary approach to undergraduate teaching in the College of Agriculture. This wholesale revision of the undergraduate curriculum led by a committee chaired by Dale Dahl strengthened the Department's teaching program both in terms of the desired skills employers were seeking in graduates, and in the Departmental contributions to the undergraduate education of all graduates of the College of Agriculture irrespective of departmental major or subject matter emphasis; (4) expanded interdisciplinary research and outreach programs were initiated or strengthened with the School of Management, and the Hubert H. Humphrey School of Public Affairs and with several departments within the Colleges of Agriculture and Veterinary Medicine; (5) outreach and extension programming focused on farm financial and business management was expanded both through additional staffing and enhanced programs and activities of the Center for Farm Financial Management. This Center was able to attract additional external funding and personnel to expand its programming thrust beyond financial management to a broader set of farm management topics and issues.

The Undergraduate Program

Undergraduate majors in the Department of Agricultural and Applied Economics and in the College of Agricultural, Food and Environmental Science (COAFES) continued to decline from 1984 to 1990. In 1990, the department's share of undergraduate majors in the College stood at 21 percent.

A grant to the COAFES from the Kellogg Foundation in 1986 was aimed at modifying the College's curricula to better prepare students for employment in a highly technological, integrated and international society. In addition, an external review of the Department of Agricultural and Applied Economics in 1987 included a recommendation to drop the major in The Economics of Public Resource Management with its typical enrollment of only seven or eight students. Thus, in 1990, the department's 160 undergraduate majors were in two curricula: Agricultural and Food Business Management (100) and Applied Economics (60). The departmental faculty also advised 38 majors in the Agricultural Industries and Marketing curriculum. The latter major was joint with several other departments in the College. It was in 1989 that the department discontinued the teaching of an undergraduate course in agricultural and market policies which had been a long tradition in the department. Also, the department discontinued its graduate-level seminar in food and agricultural policy in the U.S. and replaced it with a course in agricultural policy in developed countries. This course was subsequently dropped from the curriculum thus ending a long tradition of graduate-level teaching in agricultural policy and examination for Ph.D.-level students in a field in agricultural policy and prices. Thus ended an era in which U.S. agricultural policy had been a benchmark of subject matter expertise in the department and for which the department's graduates had been recognized nationally and internationally. The author believes that the cost of reducing this area of subject matter expertise in the department was probably greater than some faculty members realized.

Advising undergraduate majors required a substantial time commitment by the department's faculty. And, there were fewer faculty members to perform this function. As a result a decision was made for the department to hire a person to supervise the processing of student applications and the advising of undergraduate majors. Implementation of this recommendation resulted in a reduction in faculty time required for managing the logistics of the undergraduate program.

The Graduate Program

Graduate student numbers continued at around 100 during the late 1980s. With the arrival of Yacov Tsur on the departmental faculty in 1989, the department initiated a graduate-level course in applied econometrics. Frustration continued, however, in attempts to integrate the highly mathematical and theoretical graduate-level courses in the Economics department with the graduate program in Agricultural and Applied Economics. A 1987 external review of the graduate program suggested that the department should design and teach a course that would help students understand how recent developments in economic theory have been or could be applied to agricultural economics. Not surprisingly, no candidates volunteered to design and teach such a demanding course. As indicated in Appendix Table G, the department continued to offer a diverse graduate curriculum in the traditional fields of agricultural economics and in applied econometrics, resource economics, applied welfare economics, agricultural development, consumption economics, and the economics of food and consumer policy. Over a period of several decades, graduate students had been increasingly required to

take more courses in economic theory, econometrics and statistics along with agricultural and applied economics. As a result, few students had the time or inclination to register for courses in other social science disciplines or in other fields of technical agriculture. As a further result, their interface with the literature from these other fields was more and more limited and their ability to conduct interdisciplinary research was correspondingly limited.

The Publication Record

The Department of Agricultural and Applied Economics continued to produce a large volume of diverse research and extension education materials from 1984 to 1990. Over this period, departmental faculty members increased their published output in regional, natural resources, finance and food related journals. By one measure, however, that of articles in the *American Journal of Agricultural Economics* (AJAE), departmental publication output declined from a national rank of number 2 in 1985 to number 13 in 1990. But faculty members were of diverse opinions about the value of journal publications. Some, including this author, thought the AJAE had largely abandoned its role of publishing articles on major policy issues and was publishing mainly articles on methodology with emphasis on quantitative methods.

The American Agricultural Economics Association, in response to an expressed need for a popular publication which addressed current food, farm and resource issues, initiated publication of a quarterly magazine, *Choices*, in 1986. Opinion was divided, however, on whether or not the new publication filled adequately the gap for reporting policy related research. For the

most part, the magazine reported dialogue on policy issues but not much policy research.

During the decades leading up to the 1980s, much of the research conducted by agricultural economists at the University of Minnesota had been published by the Agricultural Experiment Station as research and technical bulletins. As such, the published research of the department was widely disseminated in the state including the availability of research bulletins in County Extension offices. By the mid-1980s, largely because of increased costs, such publications were a rarity and most technical research had only the potential outlets of unpublished departmental staff reports and professional journals.

Several books of note were published during the 1984 to 1990 period. These included

James Houck's *Elements of Trade Policies* and Vernon Ruttan's book, co-authored with Ann Krueger, *Aid and Development*. Ford Runge and Harald Von Witzke edited a book, *Policy Coordination in World Agriculture*. Vernon Ruttan continued to publish extensively on international development and research policy, William Easter edited or co-edited several books on water resource management and Jean Kinsey on consumer interests and policy. Finally, Philip Pardey, a staff member of the International Service for National Agricultural Research (ISNAR), who also held a non-tenured appointment in the Department of Agricultural and Applied Economics, co-authored a book, *A Global Data Base on National Agricultural Research Systems* which was to serve as the initial data base for subsequent international evaluations of country-level agricultural research systems.

Chapter 4. CHANGING FACULTY AND PROGRAMS, 1990-1998

A Sudden Change in Leadership

Michael Boehlje's tenure as department head came to an unexpected, and almost tragic, end in January, 1990, when he was involved in a very serious automobile accident which physically incapacitated him for several months. Professor James Houck agreed to serve as Acting Head of the Department of Agricultural and Applied Economics until he was selected as the regular department head in October, 1990.

James Houck was well known, both internally in the department, and to the national agricultural economics profession. He grew up in urban Pittsburgh and received his B.S. and M.S. degrees in Agricultural Economics from Pennsylvania State University in 1957 and 1959 respectively. He received his Ph.D. from the University of Minnesota in 1963. After a two-year contract assignment at Harvard, Houck joined the departmental faculty at Minnesota in 1965 rising to the rank of full professor in 1970.

During his tenure as a faculty member from 1965 to 1990 Houck had developed an outstanding record as a scholar in the fields of Agricultural Price Analysis and Trade. He published numerous technical and popular reports including journal articles and books. He was regarded as an outstanding teacher and served also as Editor of the *American Journal of Agricultural Economics* from 1981 to 1983.

Because of Houck's untimely death in May, 2000, no record is available of his goals and objectives for the department when he became head. He did, however, provide

several brief written reports on the state of the department during the years of his tenure as head and I have drawn on these reports in writing this chapter. Houck quickly undertook to master the skills of systematically organizing and managing the budgetary resources of the department which he did exceptionally well during a period of continued budget retrenchment. He did not, however, undertake to articulate leadership for the department on national or regional policy issues as had been the case for several predecessor department heads. Midway in his tenure as head, Houck enunciated five personal goals for the department:

- (1) To secure and enhance the department's strong national ranking in research, outreach, and teaching programs at both graduate and undergraduate levels.
- (2) To maintain and enhance the department's reputation within the university as a strong, active, and well-managed center of excellence.
- (3) To represent the department vigorously to the broader community, both in Minnesota and beyond the state's borders.
- (4) To work closely with other department heads and administrators to advance collective activities and programs.
- (5) To maintain and enhance the department's morale and spirit by providing active leadership and a visible presence in departmental activities.

Changes in Faculty

It would be difficult to attribute the faculty hires during James Houck's tenure as department head to a specific programmatic goal or set of goals. Several faculty hires

were replacements for resignations or retirements. Others were the result of administrative decisions made outside of the department, but with the departments concurrence. And, several hires were to fill positions determined by the departmental faculty to be of high priority. Of the 20 faculty members who left the department from 1990 to 1998, 11 resigned, 8 retired and 1 died. A complete listing of new tenured or tenure track faculty appointments is presented in Appendix B and resignations and retirements are presented in Appendix C.

Richard Alderfer, a Michigan State University Ph.D. was hired on the departmental faculty to undertake research and extension at the University of Minnesota, Morris. Brian Buhr, an Iowa State University Ph.D. was hired to do extension and research in livestock marketing. Ward Nefstad who had completed his Ph.D. course work at Oregon State University transferred to the department upon the close-out of the University of Minnesota, Waseca where he had been on the faculty for 18 years. Nefstad undertook a major role in undergraduate teaching and advising. Rodney Smith, a University of Maryland Ph.D. assumed a position in research and teaching. Smith's interests were broad with some emphasis on quantitative and resource economics. Beth Honadle, a University of Syracuse Ph.D. in Public Administration, had served as a program leader in Community and Economic Development in the Minnesota Extension Service prior to her reassignment to an extension, research and teaching position in the department where she held her academic tenure. In 1992, William Gartner, a Michigan State University Ph.D. was hired as Director of

the University of Minnesota Tourism Center (described in Appendix J-4) in the Extension Service and to provide program leadership in the economics of tourism. Frances Homans, a University of California Ph.D. was hired to do research and teaching in resource economics. Thomas Stinson, a University of Minnesota Ph.D. in Economics was a long-time employee of the Economic Research Service USDA stationed in the Department of Agricultural and Applied Economics at the University of Minnesota. Since 1987, he had been serving as a professor (without tenure) in the department working one-half time as the State Economist for Minnesota while pursuing macro economics related research funded largely by the Northwest Area Foundation. Stinson was appointed to a tenure track position in 1994 while retaining his responsibilities as State Economist. Donald Liu, a 1985 University of Minnesota Ph.D. had held post-doctoral positions at Iowa State University and Cornell University before being hired by the department as a marketing economist in 1995. Similarly to Liu, Jay Coggins had received his Ph.D. from Minnesota in 1989 and served in faculty positions at Montana State University and the University of Wisconsin before joining the departmental faculty as a resource and environmental economist in 1995. Gerard McCullough, who received his Ph.D. from MIT was named Director of the University of Minnesota Center for Transportation Studies in 1996 with his tenure home in Agricultural and Applied Economics. Margot Rudstrom, a Purdue University Ph.D. replaced Richard Alderfer in research and extension stationed at the University of Minnesota, Morris in 1998 following previous employment at the University of Manitoba. And, finally, Pamela Smith, a University of Wisconsin

Ph.D. was hired to a position in international trade following employment on the faculty at the University of Delaware. Smith's particular area of research interest dealt with patents and knowledge-spillovers.

Aside from the faculty retirements of senior faculty members and the death of Professor Arley Waldo, who had worked mainly in state and local government, several faculty resignations had significant impacts on departmental programs. These included the resignations of John Waelti who taught extensively in the undergraduate curriculum and conducted research in resource and macro economics, Glenn Nelson in the economics of public services, Theodore Graham-Tomasi in resource economics, Michael Boehlje in agricultural finance, Karen Brooks in Soviet agriculture, Harald Von Witzke in European and U.S. agricultural policy and Yacov Tsur in applied econometrics and resource economics. Faculty retirements had their greatest program impacts in lost experience and expertise in farm management (Professors Earl Fuller and Richard Hawkins) and marketing (Professor Dale Dahl - farm input marketing and agricultural law, Reynold Dahl - grain marketing and cooperatives and Jerome Hammond - dairy marketing). It can probably be said that a great deal of the department's institutional memory and policy expertise in commodity and input-specific marketing policy was lost with the retirement of the three latter listed individuals. Other retirements included Wilbur Maki who worked in regional economics and Burt Sundquist who worked in the history of U.S. agricultural development, technology assessment and agricultural research policy.

Program Changes

The period 1990-1998 saw a continuation of a trend started in the 1960s, namely a diversification of the department of the (then) Department of Agricultural Economics into subject matter areas not part of traditional agricultural economics. In the research area, work was expanded in the areas of consumer and consumption economics, economics of tourism and recreation and environmental economics.

In 1995 the department officially changed its name from "Agricultural and Applied Economics" to "Applied Economics". There had been continuing interest for a number of years in implementing this name change. Students, in particular, felt that dropping "agriculture" from the department name would open broader job opportunities for them. Moreover, a number of faculty members were no longer working in agriculturally related fields and some were not trained as agricultural economists. There remained concern among some faculty members and some farm groups that the name change provided at least the appearance of abdicating departmental responsibility for farmers and for agriculture. And some wondered if, in the long run, the University could continue to have two separate economics departments.

In extension, the department undertook major new responsibilities to train teachers and provide primary school curriculum materials in economics for Minnesota schools. The latter was accomplished by the transfer of the office of the Minnesota Council on Economic Education into the department in 1992 and the naming of Professor Claudia Parliament as its executive director. Department head James

Houck played a major role in bringing the Council headquarters into the department. The establishment and operation of the Minnesota Council on Economic Education is described in Appendix J-5. Finally, by way of major institutional change, in January, 1995, the Alfred P. Sloan Foundation made its first grant of \$1.63 million to the University of Minnesota to create the Retail Food Industry Center to be located in the Department of Agricultural and Applied Economics with Professor Jean Kinsey as its first director. A detailed discussion of this center is provided in Appendix J-6 of this report.

By the mid-1990s the department had experienced five consecutive years of retrenchment in its core University's funding for teaching, research and extension. As a result, the department's annual budget of \$6 million was composed of about \$3.5 million (58.3 percent) of so-called "hard" money and about \$2.5 million (41.7 percent) from the "grants and contracts" sector. This represented a major change in departmental funding from the early 1960s when almost all of the departmental resources were funded by core University budget.

Also, by the 1990s, a substantial proportion of departmental research had become aimed at improving or testing quantitative analytical tools with only secondary consideration being given to analysis of important issues of policy, management or economic change. Some perspective on the content of departmental research can be gained through a review of publications of departmental faculty members and by the titles of graduate student theses. Largely as a result of faculty retirements and resignations combined with retrenchment in traditional funding, a further decline

occurred in the research emphasis on the traditional areas of agricultural marketing and agricultural policy.

An external peer review of the department in 1998 acknowledged that the Applied Economics Department at the University of Minnesota had a long and distinguished reputation as a premier research and teaching center in agricultural and resource economics. Many of the great names in the history of agricultural economics have been associated with the University of Minnesota. Reviewers suggested, however, that younger faculty must be encouraged to recognize the responsibilities placed on them to mature into recognized leaders of the profession.

The review panel gave high marks to departmental extension programs in management, marketing and community and resource economics. The reviewers commented that the department had one of the largest concentrations of faculty in community development in the country. They expressed concern, however, that delivery of programs through county agents and other traditional means was not working well. This issue was not unique to Minnesota. As in other states, most county agents had little background in economics and found it hard to use available resources in the economics of management or marketing in their educational programming.

The Undergraduate Program

Undergraduate majors fluctuated in number through the 1990s but the total of 160 in 1990 had declined to 140 in 1998. These numbers compare to a 30 year peak of 324 majors in 1982. The department continued to offer a broad range of undergraduate

courses through the 1990s and a complete listing of courses in 1989-1991 and 1994-1996 is shown in Appendix G and H of this report.

Both course titles and contents had changed substantially from earlier decades. In 1990, a 3-course sequence in applied micro economics dealt separately with consumers and markets, managerial economics and markets and prices. A 2-course sequence in applied macro economics dealt separately with (a) government and the economy and (b) policy, trade and development. In the management area, earlier course titles of farm management had in the early 1990s become a 2-course sequence in strategic management of farms and agribusiness and operations management of farms and agribusiness. In the marketing area, food marketing economics had been added to the list of traditional commodity marketing courses. And, a significant array of courses were offered in the international area.

Thus, although the number of departmental undergraduate majors had declined by about half since the early 1980s, the department continued to teach a large number of courses both for its own majors and to service other majors in the college and throughout the University.

The Graduate Program

With some minor fluctuations resident graduate enrollment in the department continued at around 100 students during the 1990s. In 1993, an externally conducted review of U.S. graduate programs in 1993-1994, found the department's M.S. degree program to rank first and its Ph.D. program third among peer institutions. These peer institutions included the departments with

major graduate programs in Agricultural and Applied Economics.

Tension continued between the highly mathematical courses in economic theory taught in the economics department and the desire among departmental faculty and graduate students to apply that theory. And a problem continued in matching the research funding support from the Minnesota Agricultural Experiment Station with the topical interests of graduate students. Few Ph.D. students, for example, wanted to undertake theses in the agricultural marketing or farm management projects funded by the Agricultural Experiment Station. Their research interests were in a variety of other, sometimes esoteric, topics.

Finally, an external committee review of the department's graduate program in 1998 found the issue of intellectual intensity in the Ph.D. program to be a concern. Many students did not have the opportunity to participate in rigorous discussions of their own and related research. The recommendation of a department-wide research workshop series was, however, found difficult to implement because of the diverse interests of faculty and graduate students and the time pressures for both groups.

The Publication Record

An examination of the publication record of the Department of Applied Economics indicates a broad range of subject matter in a broad diversity of publications including books, professional journals, theses and other report series. For example, in 1996 alone, departmental faculty, staff and graduate students authored or coauthored 25

Extension Service publications, 16 departmental Staff Papers, 4 Economic Development Center Papers, 20 CIFAP Papers, 4 Retail Food Industry Center Papers, 48 journal articles, 5 books, 13 chapters in books, 37 monographs and published proceedings, 6 articles in trade and popular magazines and 16 graduate student theses. This voluminous output of published works represents both a highly productive department, on the one hand, and a highly fractured set of subject matter involvements, on the other hand. Thus, no longer was it possible, if it ever was, for faculty members in the department to keep well informed on what other individuals were doing professionally. As a result, it had become more difficult for the department to operate as a cohesive academic unit with a high degree of common professional interests. Moreover, any brief summary of the published work of the department must leave much of the total work undiscussed.

Of particular note among departmentally authored publications were several books of significant impact including *Food Trends and the Changing Consumer*, by Professors Senauer, Asp and Kinsey; *Reforming Farm Policy: Toward a National Agenda*, by Professors Cochrane and Runge; *Tourism Development: Principles, Processes and Policies*, by Professor Gartner; *Freer Trade, Protected Environment: Balancing Trade Liberalization and Environmental Interests*, by Professor Runge and others; three books, *Why Food Aid?*, *Agriculture, Environment and Health: Sustainable Development in the*

21st Century, and *United States Development Assistance Policy: The Domestic Politics of Foreign Economic Aid*, all by Professor Ruttan; and three major volumes on agricultural research evaluation and policy coauthored by Philip Pardey, who was employed successively by two International Agricultural Research Centers (ISNAR and IFPRI), but who held a joint appointment in the department. The latter three books provided both the methodology and the data bases for evaluation and prioritization of U.S. and international agricultural research efforts. In addition, Professor Emeritus Cochrane updated his book on the development of American agriculture, adding a section on environmental topics; Professor Emeritus Lee Martin completed his editing of a fourth volume in the survey of post World War II agricultural economics literature dealing with agriculture in economic development and Professor Easter continued his efforts to edit titles on management of world water resources.

Finally, as evidence of the strong overall publication rate of departmental faculty, a national ranking study found that, among peer institutions of agricultural economics in 1991-1992, Minnesota ranked first in total articles published as well as articles in all economics and agricultural economic journals. The department rank slipped to sixth, however, when one considered publication in the more-highly recognized economic and agricultural economic journals.

Chapter 5. APPLIED ECONOMICS AT THE TURN OF THE CENTURY (1998-2000)

By late 1997, James Houck indicated that he wished to step aside as department head no later than July, 1998. The departmental faculty expressed their desire for an internal search for a new head. Subsequently, a senior member of the department, Vernon Eidman was selected as Houck's replacement and assumed the position for an initial 3-year term in July, 1998.

Eidman had received his B.S. and M.S. degrees at the University of Illinois and his Ph.D. (in 1965) at the University of California-Berkeley. He joined the faculty at the University of Minnesota in 1975 having served on the faculty at Oklahoma State University from 1964 to 1975 where he rose to the rank of full professor. Eidman had, prior to being employed by the University of Minnesota, established a national reputation in agricultural production economics and farm management. He had, for example, received the American Agricultural Economics Association Annual Award for the Best Article published in The American Journal of Farm Economics in 1968. His outstanding record in research and teaching continued at the University of Minnesota and, in 1984, together with Michael Boehlje he coauthored the broadly adopted textbook, *Farm Management*.

At the time Eidman was interviewed for the position as department head, he enunciated four major goals for the department:

- (1) to maintain the quality of the two undergraduate majors, Agricultural and Food Business Administration and Applied Economics (which were highly ranked programs), and increase the number of students through active

recruiting and better advising.

- (2) to strengthen the departmentally related extension programs through better coordination of activities and by increasing the visibility of these programs with various groups around the State and region.
- (3) to implement the newly developed Ph.D. level courses and fields to strengthen the Ph.D. program, and evaluate the opportunity to position the department's M.S. program to produce more graduates for the non-academic job market.
- (4) to enhance departmental research capabilities with faculty hires and funding for more graduate students.

Eidman indicated that each of the four objectives were necessary conditions for the department to survive and to maintain its position as a leading department of applied economics. It was his feeling that the undergraduate and extension programs were the department's most visible connections to the people of the State, making the first and second objectives essential to the department's survivability in the University of Minnesota funding environment. He argued that maintaining the status of the Ph.D. program, objective 3, was essential for the department's reputation within the profession, and thus to maintaining its status as a top department. Eidman mentioned that exploring development of a masters program to produce applied economists for business and government was an option available to the faculty that would enhance its visibility and reputation within the State and region, but not something essential to maintaining its status. The fourth objective was essential to maintaining a strong graduate program

and the department's leadership within the profession.

The Departmental Faculty

By 1998, the size of the regular departmental faculty, which had been retrenched by about 25 percent from its 1978-1979 peak, had stabilized at about 33 tenured and tenure track members and about 20 professional and administrative staff. Although the number of tenure or tenure track faculty was down from its peak of about 45 in 1978 and automation had also resulted in a decline in secretarial and clerical staff numbers, the number of supporting professional staff, largely funded by grants and contracts, had increased significantly.

The departmental faculty suffered severe losses with the untimely deaths of Professors Willis Peterson in August 1999 and James Houck in May 2000. Both were senior professors with national and international reputations. Also, Professor Vernon Ruttan, a Regents Professor with an international reputation in agricultural development and research and technology policy, retired in December 1998. Ruttan continued, however, to teach and continue his prolific output of books and journal articles. Other faculty losses included the resignation of Professor Beth Honadle and the retirement of Professor Delane Welsch.

The department also realized several major additions to its faculty in 1999 and 2000. These included: Steve Polasky who was hired as a full professor in the Fesler-Lambert Chair of Ecological/Environmental Economics. Polasky held a Ph.D. in Economics from the University of Michigan and was serving as an Associate Professor in environmental economics at Oregon State

University at the time of his hiring by Minnesota. His publication record in top professional journals was outstanding; Terrence Hurley, an Iowa State University Ph.D., who had several years of post doctoral experience, was hired as an Assistant Professor in Farm Management with major extension responsibilities; Elizabeth Davis, a University of Michigan Ph.D. in Economics, was hired as an Assistant Professor in labor economics. Davis had been a Research Associate at Oregon State University working in labor economics and poverty and welfare reform; Paul Glewwe was hired as an Assistant Professor to replace Yacov Tsur in applied econometrics. Glewwe held a Ph.D. from Stanford University in 1987 and had an impressive professional record at the World Bank; and Laura Kalambokidis, a University of Michigan Ph.D. in Economics was hired as an Assistant Professor to work in community and regional development with major extension responsibilities. Kalambokidis had worked from 1992 to 2000 in the Office of Tax Analysis for the U.S. Treasury. Thus, with the exception of Hurley, the new hires were made to strengthen work in applied economics not part of traditional agricultural economics. All of the five new faculty members had substantial experience beyond their Ph.D. training. Also in August 2000, Gerard McCullough resigned as director of the Center for Transportation Studies and moved into the Department of Applied Economics on a full-time basis.

The Departmental Program

By the 1999-2000 academic year, the Department of Applied Economics was funded with \$3,881 thousand of hard money of which \$860 thousand came from the

University teaching budget, \$1,638 thousand from the Minnesota Agricultural Experiment Station and \$1,383 thousand from the Minnesota Extension Service. An additional \$2.0 million, 34 percent of the department's budget, was provided through grants and contracts. Thus, nominal value of the department's hard money budget increased from \$2,208 thousand in 1979-1980 to \$3,881 thousand in 1999-2000. However, if these budgets are deflated by Professor Philip Pardey's Index of University Faculty Salaries (1993 = 100), the real value declined by 40.6 percent.

By 1999-2000, increased research attention was being given by the department to the food industry and to environmentally related issues. In the author's judgment inadequate research attention was being given to the changing structure of farm input and product markets. Rather clearly, industry concentration in these markets was such that it was causing increased concern by many about limited market access and adverse terms-of-trade for farmers. Another important topic receiving only limited research attention was that of agricultural and food policy. Because of the secular retrenchments in real hard money budget over the past two decades, regular faculty numbers were down substantially. At the same time, the department's teaching load had not diminished significantly although the number of course offerings had been reduced particularly at the 5-000 (dual-level undergraduate and graduate) level. As a result, a higher proportion of available faculty resources were required to service the important teaching function and the time of regular faculty members available for hard-core agricultural economics research and some extension programs was much diminished from earlier levels.

The Undergraduate Program

A major change in the department's teaching program occurred with a University-wide shift from a quarter to a semester basis for the 1999-2000 academic year. This required a complete reorganization of courses and course content. As a result, a large commitment of teaching faculty time was required to plan and implement the change.

By Fall Quarter 2000, departmental undergraduate majors had recovered in number to 214 and the program appeared strong and well managed. Appendix I in this report lists departmental course offerings for the 1999-2000 academic year. Of interesting note are the separation of farm and agribusiness management topics, at least partly, in order to address with more specificity the management issues in food processing, wholesaling, retailing and services. Such issues include, for example, quality and inventory management. Also evident in the listing of course offerings is increased attention to natural resource and environmental policy and to other non-farm businesses including tourism. These and other course changes and modifications illustrate the continued curriculum shift from a department of agricultural economics to a department of applied economics.

The Graduate Program

At the graduate level, student application numbers declined slightly in the late 1990s as did the number of graduate students in residence. This was probably due in part to the competition with other universities and the limited student financial support available to the department. The department continued its high ranking among the several best graduate programs in the U.S. Ph.D.

students majoring in the department were required to satisfactorily pass two field examinations among the four administered by the Applied Economics Department. These included: (1) Consumption and Marketing Economics; (2) Development, Trade and Policy; (3) Natural Resource and Environmental Economics; and (4) Production and Managerial Economics. Students were also required to take a written major or minor examination in microeconomic theory in the Department of Economics, and to satisfactorily complete a series of Ph.D.-level macro economics related courses in economic theory. Over time the Ph.D. level written examination in macro economics had been dropped as a requirement because macro economics theory was no longer easily defined by specific courses taught in the Economics Department and because the related subject matter which was taught had become highly mathematical. As shown in Appendix I of this report, in 1999-2000, graduate credit was available for students from some 25 courses, seminars or research projects of wide diversity taught in the department. Several of the 5-000 (dual-level) courses were, however, taken primarily by upper division undergraduates. This number was down from 41 separate offerings for credit in 1983-85. Virtually all of this decline was in 5-000 level courses.

The Publication Record

The period 1998-2000 is a very brief one over which to evaluate the department's publication performance. The departmental faculty continued, however, to publish a broad diversity of reports in a diverse set of outlets and to supervise graduate student theses covering a broad range of topics. In addition, several noteworthy books were

authored or coauthored by departmental faculty. These included: *Policy Reform in American Agriculture: Analysis and Prognosis*, coauthored by Professors Terry Roe, David Orden and Robert Paarlberg; *Willard Cochrane and the American Family Farm*, by Richard Levins; and *Technology, Growth, and Development: An Induced Innovative Perspective*, by Vernon Ruttan. A number of other books were authored, coauthored or edited by departmental faculty members. Topics included water markets and management, recreation, leisure and tourism, environmental strategies, paying for agricultural productivity, structural change and performance in the U.S. grain industry and global markets for processed foods.

Selected Concluding Remarks

No effort will be made here to summarize the highlights of the history of the Department of Agricultural and Applied Economics at the University of Minnesota from 1979 to 2000. Rather, what follows are only some selected comments from the author.

Despite a decline of more than 40 percent in its real hard money budget from 1979 to 1999, the department continued to function as one of the top departments among its U.S. peers. It was only possible to do this by attracting substantial funds through external grants and contracts. There is no evidence that departmental programs were in any way compromised by special interests from this increased dependence on external funding. The department has been judicious in selecting its sources of external funding. Clearly, however, the flexibility available for departmental research and extension programming has been diminished by the reduction in hard money funding.

Somewhat surprising to the author, it was the department's University teaching budget that suffered the greatest real decline (53 percent) over the two decades 1979 to 1999, while the decline in real hard money funds were 28 percent for research and 32 percent for extension. Nonetheless, the department continued to teach an impressive and comprehensive set of undergraduate and graduate courses. Thus, in the face of a major decline in real funding for teaching, it was inevitable that the department borrowed resources from research and extension to service a strong teaching program. Consequently, it was of critical importance that faculty members were able to attract substantial grant and contract monies to support the department's research and extension programs. Whereas other academic units at the University of Minnesota, when faced with reduced funding for teaching, relied heavily on teaching assistants to handle their teaching loads, the department continued to use regular faculty for their classroom teaching.

The Department of Agricultural and Applied Economics continued to provide strong leadership for the agricultural economics profession in the U.S. over the two decades of this history with Professors Schuh, Houck, Eidman and Kinsey serving terms as Presidents of the American Agricultural Economics Association and Professors Parliament and King also serving as Executive Board members of the Association. In addition, several departmental faculty members provided key leadership on the Executive Board of the American Agricultural Economics Foundation and on important regional and national committees and task forces.

Over time, the department has built up a very good set of support services for teaching, research and extension. As of 2000, the department had an excellent reference library with access to extensive data series and published literature. In addition, the department's reference librarians were both skilled and service oriented. In an age where the department's research program relies heavily on secondary data, a good reference library is a crucial resource. Similarly, the department has developed a good set of computer services. An external review of the department's graduate program in 1998 assessed there to be an inadequacy of computer facilities for graduate students and research assistants. Such facilities were deemed critical for maintaining student productivity and the quality of training. It is the author's opinion that computer facilities have been improved substantially since 1998 and that very good services are available for providing software and computer consulting. The author would, however, caution that access to good secondary data and to good computer services are not, in themselves, adequate for producing good quality research. In addition, appropriate research techniques need to be effectively applied to important problems.

Finally, if the Department of Applied Economics is to continue to be a leader in the U.S. profession, it must take seriously the responsibility of prioritizing the important policy issues falling under its research and outreach purview which face the state, region, country and world. Some such issues will be both difficult and controversial. But it is better to make progress in solving important issues than to successfully solve unimportant ones. The author has no comparative advantage in

identifying the important topics which the department should undertake to address in the future. But they certainly include issues relating to environmental quality, resource sustainability, human resource development, the cost and benefit incidences of public sector income transfers and subsidies, and access to input and product markets as well as the more traditional issues of productivity and efficiency. Several of these issues can be addressed in a strong departmental program of agricultural, food and environmental policy and some are being

addressed. Obviously, the department cannot undertake leadership on all important economic issues. But it can take leadership on some and encourage the broader profession to do likewise. It is the judgment of the author that in recent decades the applied economics profession has given its major attention to assessing issues of quantitative research methods and economic efficiency to the point where other of the important issues listed above, particularly policy issues, have suffered serious neglect.

Appendix A. UNIVERSITY OF MINNESOTA FACULTY IN AGRICULTURAL AND APPLIED ECONOMICS (1979-2000)

1979-1980

<u>Name</u>	<u>Title/Position</u>
1. G. Edward Schuh	Professor and Head
2. K. William Easter	Professor
3. Harald R. Jensen	Professor
4. Lee R. Martin	Professor
5. Philip M. Raup	Professor
6. Vernon R. Eidman	Professor and Extension Economist Production Economics and Farm Management
7. Delane E. Welsch	Professor and Extension Economist Farm Management
8. Reynold P. Dahl	Professor and Extension Economist Marketing
9. Willard W. Cochrane	Professor
10. Jerome W. Hammond	Professor
11. Gordon D. Rose	Professor and Program Director Community and Resource Development**
12. Vernon W. Ruttan	Professor
13. Oscar Uel Blank	Professor and Extension Resource Economist**
14. Paul R. Hasbargen	Professor and Extension Economist Farm Management**
15. John D. Helmberger	Professor and Extension Economist Public Finance
16. Francis J. Smith, Jr.	Professor and Extension Economist Marketing**
17. Wilbur R. Maki	Professor
18. Kenneth Egertson	Professor and Extension Economist Marketing**
19. John S. Hoyt, Jr.	Professor and Assistant to Director Extension for Special Projects, Assistant to the Dean, College of Agriculture**
20. Arley D. Waldo	Professor and Extension Economist Public Policy**
21. James P. Houck	Professor
22. Dale C. Dahl	Professor and Extension Economist Legal Affairs and Adjunct Professor Law
23. Earl I. Fuller	Professor and Extension Economist Farm Management**
24. Willis L. Peterson	Professor
25. Martin K. Christensen	Professor and Extension Economist Agricultural Policy**
26. Kenneth H. Thomas	Professor and Extension Economist Farm Management**
27. John Blackmore	Professor
28. John J. Waelti	Professor and Extension Economist
29. Malcolm J. Purvis	Professor
30. Terry L. Roe	Professor

<u>Name</u>	<u>Title/Position</u>
31. Richard D. Hawkins	Professor and Extension Economist Farm Management**
32. Willis E. Anthony	Professor and Extension Economist Marketing**
33. Wesley B. Sundquist	Professor
34. Jerry Fruin	Associate Professor**
35. Robert W. Snyder	Associate Professor and Extension Land Economist**
36. Benjamin H. Senauer	Associate Professor
37. Carole J. B. Yoho	Associate Professor and Extension Economist Specialist Public Policy**
38. Glenn L. Nelson	Associate Professor
39. Mary Ellen Ryan	Associate Professor
40. Fred J. Benson	Associate Professor and Extension Economist Farm Management**
41. Jean D. Kinsey	Assistant Professor
42. Jerry L. Thompson	Assistant Professor
43. Clifford Hildreth	Professor (joint appointment with Economics and Statistics)

** Indicates that 50 percent or more of the staff member's salary comes from Extension.

1984-1985

<u>Name</u>	<u>Title/Position</u>
1. G. Edward Schuh	Professor and Head
2. Fred J. Benson	Professor **
3. Dale C. Dahl	Professor
4. Reynold P. Dahl	Professor
5. K. William Easter	Professor
6. Kenneth Egertson	Professor **
7. Vernon R. Eidman	Professor
8. Earl I. Fuller	Professor **
9. Jerome W. Hammond	Professor
10. Paul R. Hasbargen	Professor **
11. Richard C. Hawkins	Professor **
12. John D. Helmberger	Professor
13. James P. Houck, Jr.	Professor
14. Wilbur R. Maki	Professor
15. Glenn L. Nelson	Professor
16. Willis L. Peterson	Professor
17. Terry L. Roe	Professor
18. Gordon D. Rose	Professor **
19. Vernon W. Ruttan	Professor
20. W. Burt Sundquist	Professor
21. Kenneth H. Thomas	Professor **
22. John J. Waelti	Professor
23. Arley D. Waldo	Professor **
24. Delane E. Welsch	Professor
25. Jeremiah E. Fruin	Associate Professor
26. Buddy G. Crewdson	Associate Professor **
27. Robert P. King	Associate Professor
28. Jean D. Kinsey	Associate Professor
29. Benjamin H. Senauer	Associate Professor
30. Robert W. Snyder	Associate Professor **
31. Carole J.B. Yoho	Associate Professor **
32. Jeffrey D. Aplan	Assistant Professor
33. Karen M. Brooks	Assistant Professor
34. Theodore Graham-Tomasi	Assistant Professor
35. Carlisle Ford Runge	Assistant Professor
36. Jerry L. Thompson	Assistant Professor
37. Harald von Witzke	Assistant Professor
38. Hal W. Everett	Associate Professor **
39. Clifford Hildreth	Professor (joint appointment with Economics and Statistics)

** Indicates that 50 percent or more of the staff member's salary comes from Extension.

1989-1990

<u>Name</u>	<u>Title/Position</u>
1. Michael Boehlje	Professor and Head
2. Dale C. Dahl	Professor
3. Reynold P. Dahl	Professor
4. K. William Easter	Professor
5. Vernon R. Eidman	Professor
6. Earl I. Fuller	Professor **
7. Jerome W. Hammond	Professor
8. Richard C. Hawkins	Professor **
9. James P. Houck, Jr.	Professor
10. Robert P. King	Professor
11. Jean D. Kinsey	Professor
12. Wilbur R. Maki	Professor
13. Glenn L. Nelson	Professor
14. Willis L. Peterson	Professor
15. Terry L. Roe	Professor
16. Vernon W. Ruttan	Professor
17. Benjamin H. Senauer	Professor
18. W. Burt Sundquist	Professor
19. Kenneth H. Thomas	Professor **
20. John J. Waelti	Professor
21. Arley D. Waldo	Professor **
22. Jeffrey D. Aplan	Associate Professor
23. Buddy G. Crewdson	Associate Professor **
24. Jeremiah E. Fruin	Associate Professor
25. Richard A. Levins	Associate Professor **
26. Glenn D. Pederson	Associate Professor
27. Carlisle Ford Runge	Associate Professor
28. Harald von Witzke	Associate Professor
29. Carole J.B. Yoho	Associate Professor **
30. Karen M. Brooks	Assistant Professor
31. Theodore Graham-Tomasi	Assistant Professor
32. William F. Lazarus	Assistant Professor **
33. Kent D. Olson	Assistant Professor
34. Claudia Parliament	Assistant Professor **
35. Stanley C. Stevens	Assistant Professor **
36. Steven J. Taff	Assistant Professor **
37. Yacov Tsur	Assistant Professor

** Indicates that 50 percent or more of the staff member's salary comes from Extension.

1994-1995

<u>Name</u>	<u>Title/Position</u>
1. James P. Houck, Jr.	Professor and Head
2. Dale C. Dahl	Professor
3. K. William Easter	Professor
4. Vernon R. Eidman	Professor
5. Earl I. Fuller	Professor **
6. Jerome W. Hammond	Professor
7. Richard C. Hawkins	Professor **
8. Beth W. Honadle	Professor **
9. Robert P. King	Professor
10. Jean D. Kinsey	Professor
11. Richard A. Levins	Professor **
12. Wilbur R. Maki	Professor
13. George W. Morse	Professor **
14. Glenn D. Pederson	Professor
15. Willis L. Peterson	Professor
16. Terry L. Roe	Professor
17. Carlisle Ford Runge	Professor
18. Vernon W. Ruttan	Professor
19. Benjamin H. Senauer	Professor
20. Harald von Witzke	Professor
21. Delane E. Welsch	Professor
22. Jeffrey D. Aplan	Associate Professor
23. Buddy G. Crewdson	Associate Professor **
24. Jeremiah E. Fruin	Associate Professor
25. William F. Lazarus	Associate Professor **
26. Ward E. Nefstead	Associate Professor **
27. Kent D. Olson	Associate Professor
28. Claudia Parliament	Associate Professor **
29. Stanley C. Stevens	Associate Professor **
30. Steven J. Taff	Associate Professor **
31. Yacov Tsur	Associate Professor
32. Carole J.B. Yoho	Associate Professor **
33. Richard Alderfer	Assistant Professor
34. Brian L. Buhr	Assistant Professor **
35. Frances R. Homans	Assistant Professor
36. Rodney B. Smith	Assistant Professor
37. Thomas F. Stinson	Assistant Professor

** Indicates that 50 percent or more of the staff member's salary comes from Extension.

2000-2001

<u>Name</u>	<u>Title/Position</u>
1. Vernon R. Eidman	Professor and Head
2. Jeffrey D. Aplan	Professor
3. K. William Easter	Professor
4. Robert P. King	Professor
5. Jean D. Kinsey	Professor
6. Richard A. Levins	Professor**
7. George W. Morse	Professor**
8. Kent D. Olson	Professor
9. Claudia Parliament	Professor
10. Glenn D. Pederson	Professor
11. Stephen Polasky	Professor
12. Terry L. Roe	Professor
13. Carlisle Ford Runge	Professor
14. Benjamin H. Senauer	Professor
15. Brian Buhr	Associate Professor**
16. Jay Coggins	Associate Professor
17. Buddy G. Crewdson	Associate Professor**
18. Jeremiah E. Fruin	Associate Professor
19. William F. Lazarus	Associate Professor**
20. Donald Liu	Associate Professor
21. Gerard McCullough	Associate Professor
22. Ward E. Nefstead	Associate Professor**
23. Pamela J. Smith	Associate Professor
24. Rodney B. Smith	Associate Professor
25. Stanley C. Stevens	Associate Professor**
26. Steven J. Taff	Associate Professor**
27. Carole J.B. Yoho	Associate Professor**
28. Elizabeth Davis	Assistant Professor
29. Paul Glewwe	Assistant Professor
30. Frances R. Homans	Assistant Professor
31. Terrence Hurley	Assistant Professor**
32. Laura Kalambokidis	Assistant Professor**
33. Thomas F. Stinson	Assistant Professor

** Indicates that 50 percent or more of the staff member's salary comes from extension.

Appendix B. NEW FACULTY APPOINTMENTS IN AGRICULTURAL AND APPLIED ECONOMICS (1979-2000)*

<u>Name</u>	<u>Appointment Date</u>	<u>Rank</u>
1. Jeffrey Apland	December, 1980	Assistant Professor
2. Robert King	January, 1983	Associate Professor
3. Theodore Graham-Tomasi	June, 1983	Assistant Professor
4. Karen Brooks	July, 1983	Assistant Professor
5. Ford Runge	July, 1983	Assistant Professor
6. Buddy Crewdson	July, 1983**	Assistant Professor
7. Harald von Witzke	August, 1983	Assistant Professor
8. Hal Everett	November, 1983**	Assistant Professor
9. Jo Ann Paulson	July, 1985 (contract)	Assistant Professor
10. Glenn Pederson	August, 1985	Assistant Professor
11. Michael Boehlje	September, 1985	Professor and Head
12. Steven Taff	November, 1985**	Assistant Professor
13. Claudia Parliament	November, 1985**	Assistant Professor
14. Stanley Stevens	November, 1985**	Assistant Professor
15. Kent Olson	November, 1985	Assistant Professor
16. Richard Levins	April, 1988**	Assistant Professor
17. William Lazarus	June, 1988**	Assistant Professor
18. Yacov Tsur	July, 1989	Assistant Professor
19. George Morse	October, 1989**	Professor
20. Scott Loveridge	October, 1989**	(temporary Assistant Professor)
21. John Lawrence	January, 1990**	Assistant Professor
22. Richard Alderfer	December, 1990 (stationed at Morris, MN)	Assistant Professor
23. Michael V. Martin	September, 1992	Professor
24. Brian Buhr	September, 1992**	Assistant Professor
25. Ward Nefstead	September, 1992	Associate Professor
26. Rodney Smith	December, 1992	Assistant Professor
27. Beth Honadle	January, 1993**	Professor
28. William Gartner	January, 1993**	Professor
29. Frances Homans	October, 1993	Assistant Professor
30. Thomas Stinson	September, 1994	Assistant Professor
31. Donald Liu	July, 1995	Assistant Professor
32. Jay Coggins	September, 1995	Assistant Professor
33. Gerard McCullough	September, 1996	Associate Professor
34. Margot Rudstrom	May, 1998** (stationed at Morris, MN)	Assistant Professor
35. Pamela Smith	July, 1998	Assistant Professor
36. Terrance Hurley	June, 1999**	Assistant Professor
37. Steve Polasky	September, 1999	Professor
38. Elizabeth Davis	September, 1999	Assistant Professor
39. Paul Glewwe	October, 1999	Assistant Professor
40. Laura Kalambokidis	September, 2000**	Assistant Professor

* With the exception of Professor Honadle, whose salary was initially budgeted in Extension, McCullough, whose salary as Director of the Center for Transportation Studies was budgeted in the Graduate School, and Polasky, whose salary was paid from an endowment in the Graduate School, the above listing of faculty includes individuals who were tenured or who had tenure track appointments and whose salary base was included in the department's University budget. In addition, Michael V. Martin held tenure as a professor in the department from September, 1992 to October, 1998 during which time he served in several administrative posts including those of Dean of the College of Agricultural, Food and Environmental Science, Director of the University of Minnesota Agricultural Experiment Station and University Vice President for Agricultural Policy.

** Appointment funded 50 percent or more from Extension.

Appendix C. FACULTY RESIGNATIONS AND RETIREMENTS IN AGRICULTURAL AND
APPLIED ECONOMICS (1979-2000)

<u>Name</u>	<u>Date</u>	<u>Retirement/Resignation</u>
1. John Blackmore	October, 1979	Retired
2. Harald Jensen	December, 1979	Retired
3. Mary Ryan	June, 1980	Resigned
4. Willis Anthony	June, 1981	Resigned
5. Willard Cochrane	September, 1981	Retired
6. Malcom Purvis	October, 1981	Resigned
7. Frank Smith	March, 1982	Retired
8. Lee Martin	June, 1982	Retired
9. Uel Blank	June, 1982	Retired
10. John Hoyt	June, 1982	Retired
11. Martin Christiansen	September, 1982	Retired
12. Philip Raup	June, 1984	Retired
13. Jerry Thompson	August, 1984	Resigned
14. Hal Everett	October, 1984	Resigned
15. G. Edward Schuh	September, 1984	Resigned
16. John Helmberger	February, 1985	Retired
17. Paul Hasbargen	October, 1986	Retired
18. Fred Benson	December, 1986	Resigned
19. Gordon Rose	November, 1987	Retired
20. Robert Snyder	June, 1988	Retired
21. Clifford Hildreth	June, 1988	Retired
22. Kenneth Egertson	June, 1989	Retired
23. John Waelti	September, 1990	Resigned
24. Glenn Nelson	December, 1990	Resigned
25. John Lawrence	June, 1991	Resigned
26. Jo Ann Paulson	August, 1991	Resigned
27. Theodore Graham-Tomasi	September, 1991	Resigned
28. Arley Waldo	October, 1991	Deceased
29. Kenneth Thomas	June, 1992	Retired
30. Michael Boehlje	October, 1992	Resigned
31. W. Burt Sundquist	December, 1992	Retired
32. Karen Brooks	August, 1993	Resigned
33. Reynold Dahl	June, 1994	Retired
34. Harald von Witzke	July, 1994	Resigned
35. Scott Loveridge	September, 1994	Resigned
36. Richard Alderfer	June, 1995	Resigned
37. Earl Fuller	June, 1995	Retired
38. Wilbur Maki	June, 1995	Retired
39. Yacov Tsur	September, 1995	Resigned
40. Richard Hawkins	July, 1997	Retired
41. Dale Dahl	June, 1998	Retired
42. Jerome Hammond	June, 1998	Retired

<u>Name</u>	<u>Date</u>	<u>Retirement/Resignation</u>
43. Michael V. Martin	October, 1998	Resigned
44. Vernon Ruttan	December, 1998	Retired
45. Beth Honadle	August, 1999	Resigned
46. Willis Peterson	August, 1999	Deceased
47. James Houck	May, 2000	Deceased
48. Delane Welsch	August, 2000	Retired

Appendix D. RECIPIENTS OF GRADUATE DEGREES WITH MAJORS IN AGRICULTURAL AND APPLIED ECONOMICS AND IN APPLIED ECONOMICS, UNIVERSITY OF MINNESOTA, 1980-2000*

Date	Name	Degree	Thesis Title
1980	Adelberg, Charles R.	M.S.	No Thesis
	Campos, Jose Edgardo	M.S.	No Thesis
	Dodge, Claudia A.	M.S.	The American Agricultural Movement, Economic Prairie Fire or Smoldering Ember
	Feitshans, Theodore A.	M.S.	A Linear Programming Model of Dairy Cattle Feeding Alternatives
	Gbikpi, Pascal J.	M.S.	No Thesis
	Groble, Anthony	M.S.	No Thesis
	Gustafson, Cole R.	M.S.	Optimum Production Adjustments of a Southern Minnesota Cash Grain Farm to Changing Energy Supplies
	Harindhanavudhi, Amaridhi	M.S.	No Thesis
	Henneberry, David M.	M.S.	No Thesis
	Lyche, Harald C.	M.S.	No Thesis
	Nelson, Stephan P.	M.S.	No Thesis
	Opp, David B.	M.S.	No Thesis
	Paulson, Jo Ann	M.S.	No Thesis
	Schwartz, Robert J.	M.S.	No Thesis
	Sexton, Richard J.	M.S.	No Thesis
	Browning, Thomas L.	Ph.D	Measuring Cattle Breeding Herd Growth and Disappearance Flows and Incorporating Them into USDA Farm Income and Productivity Measures
	Groenewegen, John R.	Ph.D	Corn and Soybean Acreage and Yield Response with Emphasis on Multiple Product Production, Uncertainty, and Commodity Programs
	Knowles, Glenn J.	Ph.D	Estimating Utility of Gain Functions for Southwest Minnesota Farmers
	Litterman, Mary A.	Ph.D	Energy Substitution in U.S. Manufacturing and Agriculture
	Mandagi, Johannes W.	Ph.D	A Simulation Model for Indonesia with Economic Projections and Regional Distribution of Growth from 1972 to 1985
1981	Andersson, Hans A.	M.S.	No Thesis
	Attigbe, Kodjovi S.	M.S.	No Thesis
	Chutikamoltham, Siriwan	M.S.	Income Elasticities for Selected Food Items: An Application of Segmented Regression
	Craven, Robert H.	M.S.	No Thesis

	Dalton, Margaret M.	M.S.	No Thesis
	Darko-Mensah. K.	M.S.	No Thesis
	Eckmann, Scott W.	M.S.	Economic Incentives for the Efficient Operation and Maintenance of Municipal Wastewater Treatment Plants
	Efstathiou, Christos	M.S.	No Thesis
	Ellingson, Dennis D.	M.S.	No Thesis
	Friend, Catherine R.	M.S.	No Thesis
	Greenhalgh, Kurt H.	M.S.	No Thesis
	Johnson, Mark S.	M.S.	No Thesis
	Kaiser, Harry M.	M.S.	No Thesis
	Larson, Sandra L.	M.S.	No Thesis
	Lotterman, Edward D.	M.S.	No Thesis
	Pike, Mark A.	M.S.	No Thesis
	Santopietro, George D.	M.S.	The Population Turnaround in Hubbard County: Lakes and a Whole Lot More
	Soedjana, Tjeppy D.	M.S.	No Thesis
	Thompson, Thomas G.	M.S.	No Thesis
	Ussett, Edward C.	M.S.	No Thesis
	Walstad, William B.	M.S.	No Thesis
	West, Loraine A.	M.S.	An Evaluation of Seasonality in Some U.S. Agriculture Price Indexes
	Wilbert, Gerhard K.	M.S.	No Thesis
	Wong, Lung-Fai	M.S.	No Thesis
	Conklin, Neilson C.	Ph.D	An Economic Analysis of the Pricing Efficiency and Market Organization of the U.S. Grain Export System
	Gerrard, Christopher D.	Ph.D	Economic Development, Government-Controlled Markets, and External Trade in Food Grains: The Case of Four Countries in East Africa
	Kinnucan, Henry W.	Ph.D	The Role of Income Variability in the Analysis of Household Savings Behavior
	Leitch, Jay A.	Ph.D	Valuation of Prairie Wetlands
	Lindner, Robert	Ph.D	Adoption as a Decision-Theoretic Process
	Lokaphadhana, Tipaporn	Ph.D	Impact of Trade Policy on Six Agricultural Exports of Thailand
	Pudasaini, Som Prasad	Ph.D	The Contribution of Education to Agricultural Productivity, Efficiency, and Development in Nepal

	Thraen, Cameron S.	Ph.D	An Econometric Assessment of the U.S. Dairy Price Support Policy With Special Emphasis on Risk, Uncertainty and Rational Producer Expectations
	Tubpun, Somnuk	Ph.D	Risk Allocative Error, and Value of Perfect Information Among Thai Rice Farmers in Channasutr Land Consolidation Area
	Tubpun, Yuavares	Ph.D	Economics of Tank Irrigation Projects in Northeastern Thailand
1982	Garcia, Maria C.	M.S.	No Thesis
	Gunawan, Memed	M.S.	No Thesis
	Knopff, Gregory C.	M.S.	Bureaucrats and Mineral Leasing: A Theoretical and Empirical Analysis
	Leonard, Karin F.	M.S.	A Profile and Economic Analysis of Small Farms in Minnesota, North Dakota and Iowa; Comparisons Between Farm Size and Among Participation in the U.S. Commodity Program
	Love, Harold A.	M.S.	Economic, Social, and Political Determinants of Regional Federal Expenditures
	Marsh, William E.	M.S.	No Thesis
	Morgan, Nancy R.	M.S.	No Thesis
	Nielson, David J.	M.S.	No Thesis
	Nordquist, Dale W.	M.S.	No Thesis
	Nunes, Petronio P.	M.S.	No Thesis
	Solar, Alvaro J.	M.S.	No Thesis
	Tambunan, Mangara	M.S.	No Thesis
	Ward, Ivonne A.	M.S.	No Thesis
	Winchell, Elizabeth H.	M.S.	A Study of the Economies of Milk Concentration to Reduce Milk Marketing Costs
	Antonovitz, Frances A.	Ph.D	The Value of Information and Allocative Error Under Risk in Fat Cattle Production: The Role of Cash and Futures Markets
	Hanson, Gregory D.	Ph.D	Agricultural Income Tax Expenditures and Their Effects on Farm Growth
	Hatch, Luther Upton	Ph.D	The Effect of Environmental Protection Agency Regulation of Research and Development in the Pesticide Industry
	Lee, Shun-Cheng	Ph.D	Effects of Agricultural Policy on Efficiency, Growth, and Equity in the Taiwanese Rice Economy: A Cross-Sectional Time-Series Analysis
	McDowell, Frank H.	Ph.D	Domestic Dairy Marketing Policy: An International Trade Approach
	Michaels, Gregory H.	Ph.D	The Determinants of Kharif Fallowing on the Vertisols in Semi- Arid Tropical India
	Miner, Alan G.	Ph.D	The Contribution of Weather and Technology to U.S. Soybean Yields

	Sumodiningrat, Gunawan	Ph.D	Varietal Choice and Input Demand in Rice Production in Indonesia
	Vanegas-Fonseca, Manual A.	Ph.D	Supply and Demand for Nicaragua Milk and Dairy Products: 1958- 1977 Period, an Econometric Analysis
	Wilson, Paul N.	Ph.D	Structural Determinants of the Swine Production Industry: A Stochastic Dominance Analysis
	Zentner, Robert P.	Ph.D	An Economic Evaluation of Public Wheat Research Expenditures in Canada
1983	Agneroh, Amari R.	M.S.	No Thesis
	Andreou, Christos A.	M.S.	The Implications of the EC-Cyprus Association Agreement for the Agricultural Sector of Cyprus
	Barchenger, Edward L.	M.S.	No Thesis
	Bengston, David N.	M.S.	No Thesis
	Ford, Stephen A.	M.S.	Optimal Crop Mixes and Resource Allocations for Various Sized Specialty Crop Farms in East-Central Minnesota
	Geigel, Joanne M.	M.S.	No Thesis
	Gemma, Masahiko	M.S.	No Thesis
	Gois, Maryline	M.S.	Production and Price Risk Management in Agriculture: An Application to a Southwestern Minnesota Farm
	Hendrickson, Shelley A.	M.S.	No Thesis
	Kan, Lai-Chun	M.S.	No Thesis
	Matsunaga, Marcos H.	M.S.	Currency Devaluation: Its Effect on the Corn Sector in Brazil
	Moeller, Gabrielle G.	M.S.	No Thesis
	Romerozazueta, Luxberto	M.S.	No Thesis
	Schulte, Robert B.	M.S.	No Thesis
	Stanbrough, Olga S.	M.S.	No Thesis
	Stenberg, Peter L.	M.S.	No Thesis
	Wilson, Douglas	M.S.	No Thesis
	Amamou, Habib	Ph.D	Imperfect Knowledge, Risk and Efficiency, Wheat Production in Northern Tunisia
	Deuson, Robert R.	Ph.D	The Lower Moulouya Irrigation Project: An Assessment of Its Socio-Economic Impact on the Northeast of Morocco
	Gallagher, Paul W.	Ph.D	Crop Yield Capacity and Probability: Estimation and Forecasting with Non-Symmetric Disturbances
	Hodges, Christopher B.	Ph.D	Low Income Countries and the World Wheat Trade
	Maxwell, Judith A.	Ph.D	The Economic Impact of Irrigation Development in West Central Minnesota: A Case Study of Swift County

	Nag, Prantosh	Ph.D	A Study of Apparent Irrationality in the Production Behavior of Rice Farmers in West Bengal, India: A Case Study
	Rasahan, Chairil A.	Ph.D	Government Intervention in Food Grain Markets: An Econometric Study of the Indonesian Rice Economy
	Todd, Richard M.	Ph.D	A Dynamic Equilibrium Model of Seasonal and Cyclical Fluctuations in the Corn-Soybean-Hog Sector
1984	Abdelgadir, Idris M.	M.S.	No Thesis
	Birky, David G.	M.S.	No Thesis
	Birmingham, Catherine M.	M.S.	No Thesis
	Fuglie, Keith O.	M.S.	No Thesis
	Hammer, David P.	M.S.	No Thesis
	Hammida, Mustapha	M.S.	No Thesis
	Johnson, Roy A.	M.S.	No Thesis
	Kilkenny, Maureen R.	M.S.	An Economic Assessment of Biological Nitrogen Fixation in a Farming System of Southeast Minnesota
	Kim, Tae-Ho	M.S.	No Thesis
	Kunze, Joel P.	M.S.	An Examination of the Effects of Asset Fixity on the Normative Production Response of the Dairy Farm
	Mghizou, Mohamed	M.S.	No Thesis
	Mirotschie, Mesfin	M.S.	Comparative Economic Analysis of Conventional and Reduced Tillage Systems for Corn and Soybean Production in Southeast Minnesota
	Moe, Lonn A.	M.S.	No Thesis
	O'Connell, Catherine M.	M.S.	No Thesis
	Russell, Chad R.	M.S.	An Economic Study of Cropland Supply in Selected Minnesota Counties
	Smith, Matthew G.	M.S.	No Thesis
	Spinks, Thomas L.	M.S.	No Thesis
	Strohmaier, Jay S.	M.S.	An Economic Analysis of the Changing Price Relationships Between Wheat Futures Markets
	Tabone, Gail D.	M.S.	No Thesis
	Weigel, Eric J.	M.S.	No Thesis
	Westgate, Robert A.	M.S.	Returns to Investment in Forestry Research: The Case of Containerized Forest Tree Seedlings
	Bosch, Darrell J.	Ph.D	The Value of Soil Water and Weather Information in Increasing Irrigation Efficiency

	Fischer, Martin L.	Ph.D	Financing Agricultural Cooperatives: Economic Issues and Alternatives
	Fryar, Edward O.	Ph.D	Edible Vegetable Oil Prices in the United States and World Markets
	Gineo, Wayne M.	Ph.D	Agricultural Income Insurance: A Policy Alternative
	Gulliver, Karen L.	Ph.D	The Brazilian Soybean Economy: An Econometric Model with Emphasis on Government Policy
	Hill, Robert A.	Ph.D	An Economic Analysis of Rice Production in the Dominican Republic
	Linse, Frederick V.	Ph.D	Implications of Price Risk for Price Support Loan Demand
	Nagy, Joseph G.	Ph.D	The Pakistan Agricultural Development Model: An Economic Evaluation of Agricultural Research and Extension Expenditures
	Ramos, Jeronimo	Ph.D	An Economic Evaluation of Government Intervention in the Mexican Agriculture Sector: The Corn and Wheat Sectors
	Ranola, Roberto	Ph.D	Cropping Systems and Determinants: Factors Influencing Cropping Patterns, Fertilizer-Use and Resource-Use Efficiency
	Riethmuller, Paul C.	Ph.D	Government Intervention in Commodity Markets: The Case of the Japanese Rice and Wheat Markets
	Salmon, David C.	Ph.D	An Evaluation of Investment in Agricultural Research in Indonesia, 1965-1977
	Sexton, Richard J.	Ph.D	The Formation of Cooperatives: An Analysis of Entry Incentives, Entry Deterrence, Optimal Financing Arrangements, and Stability Requirements
	Vogel, Wolfgang O.	Ph.D	An Economic Analysis of the Potential Sunflower Acreage in the Upper Midwest
1985	Coggins, Jay S.	M.S.	No Thesis
	Del Ninno, Carlo	M.S.	No Thesis
	Dickerson, S. Yolanda	M.S.	An Economic Analysis of the Effects of Crow's Nest Rate Rationalization on Canadian Export Grain Transportation
	Echeverria, Ruben G.	M.S.	No Thesis
	Emerson, Carolyn J.	M.S.	No Thesis
	Gates, Scott G.	M.S.	No Thesis
	Gill, Eric E.	M.S.	No Thesis
	Johnson, Kenneth M.	M.S.	The Minnesota Budgetary Process: A Simulation Model
	Kalambokidis, Nicholas A.	M.S.	No Thesis
	Keefe, Brian J.	M.S.	No Thesis
	Larson, Ronald B.	M.S.	Discount Coupons and Consumers
	Lindall, Scott A.	M.S.	Regional Economic Development and State Economic Policy
	Meyer, Mark D.	M.S.	No Thesis

	Reimers, Joel W.	M.S.	The Impact of Imports on the Changing Nature of the U.S. Farm Machinery Industry
	Sindelar, Scott S.	M.S.	No Thesis
	Young, Nathan C.	M.S.	No Thesis
	Adelberg, Charles R.	Ph.D	The Market Place for R&D Outcomes: Its Function and Significance in the Innovation Process
	Brownschidle, Terry N.	Ph.D	An Evaluation of the Economic Incentives of Water Use Charges for Producers Under Uncertainty
	Calegar, Geraldo M.	Ph.D	Brazilian Wheat Policy and Its Income Distribution and Trade Effects: A Case Study
	Fox, Glenn C.	Ph.D	Optimal Public Investment in U.S. Agricultural Research: A Study in the Management of Technical Change
	Geyer, Leighton Leon	Ph.D	Farmer Bargaining: Legal, Economic, Conceptual, Theoretical, and Empirical Considerations
	Kaiser, Harry M.	Ph.D	An Analysis of Farm Commodity Programs as Risk Management Strategies for Minnesota Corn and Soybean Producers
	Liu, Donald J.	Ph.D	The Willingness to Pay of an Individual Fed Cattle Producer for a Better Forecasting Technique: An Evaluation in a Dynamic Economic Setting with Cash and Futures Marketing Alternatives
	Santana, Carlos A.	Ph.D	The Impact of Economic Policies on the Soybean Sector of Brazil: An Effective Protection Analysis
	Sussman, Jean C.	Ph.D	A Comparison of Part-Time and Full-Time Agricultural Operations in Dodge County Minnesota
	Wong, Lung-Fai	Ph.D	A Comparative Analysis of Agricultural Productivity Growth Among Socialist Countries
1986	Bauer, Gregory A.	M.S.	Agricultural Interest Rate Risk
	Dion, George D.	M.S.	Collective Action as Conventional Behavior
	Halbach, Daniel W.	M.S.	No Thesis
	Landwehr, James B.	M.S.	No Thesis
	Lemka, Kristine I.	M.S.	No Thesis
	Martinez Paulin, Maria	M.S.	No Thesis
	Rocha Lima, Maria H.	M.S.	The Marginal Productivities of Inputs for Crop Production in Brazil
	Sher, Michael Garson	M.S.	No Thesis
	Sigalla, Fiona	M.S.	No Thesis
	Viker, Russel R.	M.S.	The Valuation of Farm Labor
	Walsh, Marie E.	M.S.	No Thesis

	Wen, Frank H.	M.S.	No Thesis
	Fackler, Paul L.	Ph.D	The Informational Content of Option Premiums
	Huang, Chung-Huang	Ph.D	The Recreation Benefits of Water Quality Improvement in Selected Lakes in Minnesota
	Myers, Robert J.	Ph.D	Economic Inefficiency under Uncertainty and the Effects of Ideal Risk Markets in U.S. Agriculture
	Ohannesian, Judy T.	Ph.D	A Risk Programming Model of Grain Pricing Strategies for a Southwestern Minnesota Farm
	Pardey, Philip G.	Ph.D	Public Sector Production of Agricultural Knowledge
	Park, Jung Keun	Ph.D	Technological Change in the Korean Rice Economy: Sources, Direction, and Impact
	Sherif, Sherin A.	Ph.D	Optimization of Groundwater Allocation for the Anoka Sand Plain Aquifer in East Central Minnesota
	Tambunan, Mangara	Ph.D	Targeting Public Investment: An Application to Recreational Planning in Minnesota
	Wen, Frank H.	Ph.D	Determinants of the Optimal Soil Loss Tolerance (T-Value) from a Societal View Point--The Study of Minnesota Lower-Upper Mississippi River Basin
1987	Balcazar, Mauricio J.	M.S.	No Thesis
	Clark, Evelyn A.	M.S.	No Thesis
	Frerichs, Stephen M.	M.S.	No Thesis
	Garcia, Miguel C.	M.S.	No Thesis
	Grosse, Michael R.	M.S.	No Thesis
	Hagen, James M.	M.S.	Economic Development Assistance under Eisenhower and Kennedy: Events and Ideas Leading to the Development of the 1960s
	Hall, Joyce A.	M.S.	No Thesis
	Kennedy, Joseph V.	M.S.	No Thesis
	Ramirez, Jorge	M.S.	No Thesis
	Regmi, Anita	M.S.	No Thesis
	Stommes, Daniel G.	M.S.	An Economic Evaluation of Alternative Tillage Systems for a Minnesota Dairy Farm
	Vanderwall, Kathleen M.	M.S.	No Thesis
	Zuleta, Juan C.	M.S.	No Thesis
	Ayres, Carlos H.	Ph.D	The Contribution of Agricultural Research to Soybean Productivity in Brazil

	Del Ninno, Carlo	Ph.D	The Impact of the Value of Time and Household Characteristics on the Determination of the Actual Income of Rural Households in the Philippines
	Ford, Stephan A.	Ph.D	Forecasting Regional Production Relationships: Interregional Competition in the U.S. Turkey Market
	Hickenbotham, Terry L.	Ph.D	Vegetable Oil as a Diesel Fuel Alternative: An Investigation of Selected Impacts On the U.S. Agricultural Sector
	Kilkenny, Maureen R.	Ph.D	Productivity, Prices and the Real Exchange Rate
	Yen, Tze-Yi	Ph.D	Stagewise Estimation of Complete Demand Systems with Limited Dependent Variables: An Analysis of Dominican Household Consumption
	Young, Nathan C.	Ph.D	Prior Information in Demand System Estimation
1988	Abraham, Pio F.	M.S.	No Thesis
	Bae, Jong Ha	M.S.	No Thesis
	Becker, Daniel V.	M.S.	West German Agricultural Policy under the Common Agricultural Policy of the European Community
	Buschena, David E.	M.S.	No Thesis
	Huh, In	M.S.	No Thesis
	Kundert, John Peter	M.S.	No Thesis
	Maginnis, Hugh J.	M.S.	An Analysis of Links Between Foreign Agricultural Assistance, Productivity, and International Trade
	Miyake, Akira	M.S.	No Thesis
	Nyberg, Jennifer J.	M.S.	No Thesis
	Papadas, Christos	M.S.	The Farm-to-Retail Price Spreads and Linkages for Dairy Products
	Peterson, Steven L.	M.S.	No Thesis
	Poirier, Lise Ann	M.S.	An Economic Analysis of Hedging Wheat Flour Purchases and Sales
	Qiu, Yiguang	M.S.	No Thesis
	Ryan, Barry M.	M.S.	The Demand for Wastewater Treatment Facilities in Rural Minnesota Communities
	Scott, Linda A.	M.S.	No Thesis
	Su, Ye	M.S.	No Thesis
	Swanson, Jeffrey A.	M.S.	No Thesis
	Taitt, Jodi L.	M.S.	Reorganization Performance of Local Agricultural Cooperatives: A Minnesota Study
	Traxler, Gregory J.	M.S.	The Contribution of World Bank Assistance to Agricultural and Rural Development in Pakistan

	Tvedt, Douglas D.	M.S.	No Thesis
	Vink, Lorna L.	M.S.	No Thesis
	Wilcox, Cindy J.	M.S.	No Thesis
	Zhang, Yalai	M.S.	No Thesis
	Zirler, Abraham	M.S.	No Thesis
	Adamowicz, Wiktor L.	Ph.D	Extramarket Benefit Evaluation and Revealed Preference
	Bailey, Kenneth W.	Ph.D	The Impact of the Food Security Act of 1985 on U.S. Wheat Exports: An Econometric Analysis
	Driouchi, Ahmed	Ph.D	The Agricultural Pricing Processes: Risk, Dynamics, and Interventions in the Moroccan Soft Wheat Economy
	Echeverria, Ruben G.	Ph.D	Public and Private Sector Investments in Agricultural Research: The Case of Maize
	Gunawan, Memed	Ph.D	Adoption and Bias of New Agricultural Innovation in Jawa Barat, Indonesia
	Honicke, Karin	Ph.D	Technology Transfer in the Private Sector: The Case of Insecticides
	Jeffrey, Scott R.	Ph.D	Future Performance and Structure of Upper Midwestern Dairy Farms: A Stochastic Simulation Analysis
	Knudson, Mary K.	Ph.D	The Invention and Diffusion of Two Competing Technologies: Semi- Dwarf and Hybrid Wheat
	Rodgers, John L.	Ph.D	Structural Change in Agriculture
	Schnepf, Randall D.	Ph.D	Southern Minnesota Rural Household Economic Linkages: An Agricultural Household Model Application
	Weldon, Richard N.	Ph.D	Farm Risk and Diversification: A Capital Markets Approach
	Yeldan, A. Erinc	Ph.D	Turkish Economy in Transition: A General Equilibrium Analysis of the Export-Led Versus Domestic Demand-Led Strategies of Development
1989	Anderson, Bradley C.	M.S.	A Search for Bias in Corn and Soybean Futures Prices
	Armanto, Boedi	M.S.	No Thesis
	Bawa-Allah, Wasiu K.	M.S.	No Thesis
	Bobenrieth, Eugenio S.	M.S.	No Thesis
	Burk, Brenda K.	M.S.	Regional Consumer Price Comparisons, with Specific Application to Minnesota
	Cecilio, Maria Benedita	M.S.	No Thesis
	Cox, Craig A.	M.S.	No Thesis
	Dalton, Patricia Q.	M.S.	Fiscal Effects of Changing Revenue Sources in a Resource Based Region

	Donovan, Cynthia	M.S.	No Thesis
	Dornbush, Calvin W.	M.S.	Some Points on Potential Economies of Size Curves for Southeastern Minnesota Dairy Farms
	Duffy, Michael J.	M.S.	No Thesis
	Falconi, Cesar A.	M.S.	No Thesis
	Helmberger, John M.	M.S.	Determining Optimal Rotation Length for Short-Rotation Intensive Culture of Hybrid Poplar with Increasing Real Prices: Pulpwood vs. Fuelwood Production
	Helmberger, Peter J.	M.S.	No Thesis
	Hewitt, Robert S.	M.S.	No Thesis
	LeVoir, James W.	M.S.	No Thesis
	Ma, Yu	M.S.	No Thesis
	Plagge, Jacalyn J.	M.S.	No Thesis
	Qayyum, Abdul	M.S.	No Thesis
	Seiter, Sister Marie H.	M.S.	A Comparative Study of the Costs of Administration in Public and Private Elementary Schools
	Suarez, Otto P.	M.S.	No Thesis
	Tavernier, Edmund M.	M.S.	No Thesis
	Abebe, Kassahun	Ph.D	Factors Affecting the Demand for Farm Inputs in U.S. Agriculture
	Briggs, David W.	Ph.D	The Optimal Control of Northern Corn Rootworm in Minnesota in the Presence of Dynamic Externalities
	Coggins, Jay S.	Ph.D	On the Existence and Optimality of Equilibria in Lobbying Economies
	Fan, Shenggen	Ph.D	Regional Productivity Growth in China's Agriculture
	Fuglie, Keith O.	Ph.D	The Adoption of New Agricultural Technology in a Rainfed Rice Farming System in Northeast Thailand
	Gemma, Masahiko	Ph.D	Reforming Polish Agriculture: Productivity Growth and Market Behavior of Socialized and Private Farms
	Greene, Duty D.	Ph.D	The Impact of Economic Policies on the Agricultural Sector and Food Consumption in the Dominican Republic: A Multimarket Analysis
	Koirala, Govind P.	Ph.D	Crop Technology Choice: An Intra-Firm Conceptual and Empirical Model
	Kozloff, Keith L.	Ph.D	Benefits and Costs to Society from Retiring Erodible Cropland: A Case Study of the Conservation Reserve Program
	De Carvalho, Bernardo P.	Ph.D	Demand Restraints and Technical Change
	Ramaswami, Bharat	Ph.D	Incompleteness in Insurance: An Analysis of Crop Insurance Schemes
	Thompson, Shelly J.	Ph.D	Dynamic Games in Agricultural Policy

1990	Batabyal, Amitrajeet A.	M.S.	No Thesis
	Brewer, David R.	M.S.	No Thesis
	Cao, Zhuo	M.S.	No Thesis
	Day, Kelly A.	M.S.	Federal Funding of Natural Resource Research and Development, 1978-88
	Duarte, Lafayette P.	M.S.	No Thesis
	Herrera, Augusto A.	M.S.	No Thesis
	Jetter, Frank P.	M.S.	No Thesis
	Lee, Stuart Todd	M.S.	No Thesis
	Lyman, Bruce E.	M.S.	No Thesis
	McGuire, Mark F.	M.S.	No Thesis
	Monke, James D.	M.S.	No Thesis
	Montero, Marcelo E.	M.S.	No Thesis
	Novak, Kathleen N.	M.S.	No Thesis
	Otte, Catherine S.	M.S.	No Thesis
	Pottebaum, David A.	M.S.	The Benefits of Groundwater Pollution Avoidance: A Case Study in Southeastern Minnesota
	Rego, Winston T.	M.S.	Is the Use of Mathematical Models in Agricultural Economics Scientific?
	Rodgers, Charles A.	M.S.	No Thesis
	Schwab, Andrew L.	M.S.	No Thesis
	Wang, Yong	M.S.	No Thesis
	Wulff, Scott M.	M.S.	No Thesis
	Xu, Zhi	M.S.	No Thesis
	Zanussi, David E.	M.S.	No Thesis
	Andersson, Hans A.	Ph.D	Owner Operated Land, Fixed Rent Leases and Share-Leasing Arrangements: Some Implications for Asset and Debt Restructuring on Minnesota Farms
	Bae, Jong H.	Ph.D	Estimating Dynamic Input Demand: Primal and Dual
	Becker, Nir E.	Ph.D	Dynamic Supply from a Common Property Resource: Water Diversions from the Great Lakes
	Crooks, Anthony C.	Ph.D	Modeling the Dairy Cooperatives Sector for Policy Analysis
	Fulton, Joan R.	Ph.D	Centralization Versus Decentralization of Decision Making Authority in Grain Marketing Cooperatives
	Hermanto	Ph.D	Demand for Inputs and Supply of Rice under Risk and Selectivity Bias: A Study of Indonesian Farmers

	Johnson, David D.	Ph.D	Dynamic Aspects of Grain Merchandising Decisions
	Johnson, Martin A.	Ph.D	Agricultural Policies as Nash Equilibria
	Kim, Hun	Ph.D	Information in the Term Structure of Commodity-Specific Interest Rates in the Chicago Wheat Futures Market
	Macagno, Luis F.	Ph.D	The Nature and Distribution of Gains from Quality Improving Research in a Multimarket Framework: The Case of Barley
	Pokharel, Champak P.	Ph.D	Portfolio Adjustment and Asset Fixity under Uncertainty at Agricultural Banks
	Ramirez, Jorge	Ph.D	The Role of Irrigation Development in the Indian Foodgrain Sector
	Regmi, Anita	Ph.D	The Value of Information in Integrated Pest Management of Corn Rootworm and European Corn Borer in Minnesota
	Shuker, Iain G.	Ph.D	The Economics of Information Production and Use: An Application to Agribusiness Cooperatives
	Stenberg, Peter L.	Ph.D	A University's Relationship to High-Tech Industry and the Regional Economy: The Case of Minnesota and the U.S.
	Yoo, Mansik	Ph.D	An Application of a Linear-Quadratic Regulator Optimal Control Problem for a Beef Cattle Operator and Its Implications
1991	Bjornstad, Even	M.S.	No Thesis
	Elbehri, Abdelfatah	M.S.	No Thesis
	Erdman, Laurie A.	M.S.	EC - U.S. Soybean and Soybean Product Trade Policy Issues and Disputes
	Giordano, Mark F.	M.S.	No Thesis
	Grande, Jorunn	M.S.	No Thesis
	Huseby, Dana S.	M.S.	No Thesis
	Hussain, Anwar	M.S.	No Thesis
	Jordahl, Brian D.	M.S.	No Thesis
	Ratnayake, Palamandadige C.	M.S.	No Thesis
	Richardson, David Wynn	M.S.	Implementing a Neural Network Model as an Economic Predictor
	Robles-Guavita, Dora Marcela	M.S.	No Thesis
	Rooney, Jody L.	M.S.	No Thesis
	Rossmann, Charles E.	M.S.	A Household Model for Technical Change in Agricultural Development
	Scherping, Daniel J.	M.S.	No Thesis
	Swanson, Michael J.	M.S.	No Thesis

	Agcaoili-Sombilla, Mercedita C.	Ph.D	The World Rice Market: A Model of Imperfect Substitutes
	Athanasenas, Athanasios	Ph.D	Cost-Effectiveness of Network Design: The Case of Rural Road Investment and Maintenance Management Strategies
	Chen, Kai-Lih	Ph.D	Political Economy and the Regulation of Externalities: Instrument Choice in Lobbying Economies
	Falconi, Cesar A.	Ph.D	Estimation of an Almost Ideal Demand System for U.S. Food with Household and Aggregate Data
	Garcia, Miguel C.	Ph.D	Bioeconomics of Interdependent Fishery and Forestry Resources
	Legg, Thomas D.	Ph.D	Farm Level Effects of Environmental Policies Aimed at Nitrogen Management
	Ndisale, Brave R.	Ph.D	The Impact of Structural Adjustment Policies on Rural Households in Malawi
	Rao, Ananth S.	Ph.D	Dynamic Asset Liability Management at Agricultural Banks
	Socatiyanurak, Montree	Ph.D	An Economic Analysis of Resource Productivity in a Newly Industrialized Country: Thailand
	Swinton, Scott M.	Ph.D	A Bioeconomic Model for Weed Management in Corn and Soybean
	Wiese, Arthur M.	Ph.D	An Analysis of Land Use Change at the Rural-Urban Fringe: A Theoretical and Empirical Treatment
1992	Bahiigwa, Godfrey B.	M.S.	No Thesis
	Cortez, Rafael A.	M.S.	No Thesis
	Creason, Jared R.	M.S.	No Thesis
	Elias, Debra J.	M.S.	No Place for the New-Comer: Access to Land as a Barrier to Entry in Farming
	Green, Geoffrey M.	M.S.	No Thesis
	Harold, Courtney A.	M.S.	No Thesis
	Hausner, Ulrich	M.S.	No Thesis
	Heintz, James S.	M.S.	An Investigation into the Values Inherent in Social Discounting
	Johnson, Nancy L.	M.S.	Is Large-Scale Agriculture Viable in Developing Countries? Economic and Ecological Evidence from Five Case Studies
	Kiiza, Barnabas A.	M.S.	No Thesis
	Klair, Kevin S.	M.S.	No Thesis
	Lewis, Wendy S.	M.S.	No Thesis
	Lyons, Robert F.	M.S.	An Hedonic Model of Federally Subsidized Housing and Neighboring Property Values

	Risser, Randall S.	M.S.	Will Global Talk Lead to Global Action? Theoretical and Empirical Evidence Regarding Carbon Dioxide Abatement
	Seyid, Kelly K.	M.S.	The United States and United Nations Development Assistance: US Participation in Specialized Agencies and Voluntary Programs Involved in Assistance to Developing Countries
	Sserunkuuma, Dick	M.S.	No Thesis
	Tayyab, Shoaib	M.S.	No Thesis
	Cap, Eugenio J.	Ph.D	The Political Economy of Wheat Target Pricing in the United States: A Dynamic Programming Approach
	Ekanem, Enefiok P.	Ph.D	Farmer Preference for Seed Corn: Estimating a Hedonic Price Model for Special Quality Attributes of Hybrid Seed Corn
	Feather, Peter M.	Ph.D	Valuing Water Quality Using Discrete Choice Models
	Neumeyer, Catherine F.	Ph.D	Research Policy Performance: Research Policy, Biotechnology and the Hybrid Seed Corn Sector in the U.S.
	Onianwa, Okwudili O.	Ph.D	Taxing Nitrogen Fertilizer: Potential Effects on Corn Production
	Tavernier, Edmund M.	Ph.D	The Canadian Hog Stabilization Program: Effect on U.S. Retail Pork Prices
1993	Amado, Elicio O.	M.S.	No Thesis
	Bauman, Ronda K.	M.S.	No Thesis
	Chism, John W.	M.S.	Local Spending Patterns of Farm Businesses in Southwest Minnesota
	Clark, Linda S.	M.S.	No Thesis
	Karnowski, Daniel M.	M.S.	No Thesis
	Li, Qun	M.S.	No Thesis
	Matlhare, Joseph	M.S.	No Thesis
	RM, R. Chellappan	M.S.	No Thesis
	Sagadiyev, Erlan K.	M.S.	Weak State During Economic Transition: Case of Belarus
	Selting, Anne C.	M.S.	An Analysis of Shift-Share Models
	Sridhar, Vengesana R.	M.S.	No Thesis
	Takeuchi, Tetsuji	M.S.	No Thesis
	Zhao, Jun	M.S.	No Thesis
	Akhtar, Muhammad	Ph.D	An Economic Analysis of the U.S. Retail Fertilizer Industry: Impacts and Policy Implications at the Regional Level
	Cua, Olivia O.	Ph.D	An Analysis of the Macroeconomic Effects of Foreign Aid: The Case of Egypt

	Deiningner, Klaus W.	Ph.D	Technical Change, Human Capital, and Spillovers in US Agriculture, 1949-1985: An Empirical Analysis
	Gillespie, Jeffrey M.	Ph.D	The Effect of Risk and Autonomy on Hog Farmers' Contracting Decisions
	Govindan, Kumaresan	Ph.D	Technological Change and Trade Patterns: An Econometric Analysis of the Indonesian Economy
	Kassouf, Ana L.	Ph.D	Estimation of Health Demand and Health Production Functions for Children in Brazil
	Kim, Jeongin	Ph.D	Environmental Accounting in a Social Accounting Matrix Framework: The Case of Mexico
	Li, Farong	Ph.D	Political Competition, Institutional Arrangements and Long-Run Growth
	Lyon, Charles C.	Ph.D	Learning, Irreversible Investment, and the Intra-Firm Diffusion of a New Agricultural Technology
	Naday, Carmel	Ph.D	Incentives and Equity Capital in Cooperatives
	Thomas, Saji	Ph.D	Income Distribution in the United States: The Full Income Approach
	Van der Sluis, Everhardus	Ph.D	Cropland Diversion Programs and Rural Out-Migration
	Walsh, Marie E.	Ph.D	Production of Biotechnology Knowledge at the State Agricultural Experiment Stations
1994	Gabe, Todd M.	M.S.	The Economic Effects of Tribal Gaming on Rural Minnesota Counties
	Maldonado Polit, Cesar	M.S.	No Thesis
	Mold, Doris E.	M.S.	Conflict Resolution in Agriculture: Farmer-Lender Mediation in Minnesota; Long Run Planning for Pork Production: A Case Study Example
	Van Blarcom, Bonni J.	M.S.	World Bank Structural Adjustment Assistance and Agriculture
	Wang, Wen Chun	M.S.	No Thesis
	Cortez, Rafael A.	Ph.D	Taste Changes in the Demand for Food by Demographic Groups in the United States: A Nonparametric Empirical Analysis
	Freeman, Horatio A.	Ph.D	The Effects of Policies on the Environment: A Household Level Analysis in the West African Northern Guinea Savana Zone
	Gim, Uhn-Soon	Ph.D	Optimal Control of Nitrate Pollution in Groundwater: The Use of Taxation
	Kennedy, Philip Lynn	Ph.D	Agricultural Policy Decisions in the Uruguay Round: A Game- Theoretic Examination
	Ndayisenga, Fidele	Ph.D	The Impact of Farm and Food Firms' Lobbying Expenditures on Transfers to Agriculture
	Papadas, Christos	Ph.D	Economic Impacts of Structural Changes in Agriculture: An Input- Output Analysis
	Wang, Zhi	Ph.D	The Impact of Economic Integration Among Taiwan, Hong Kong and ChinaBA Computable General Equilibrium Analysis

	Yadav, Satya N.	Ph.D	Nitrate Contamination of Ground Water in Southeastern Minnesota: A Dynamic Model of Nitrogen Use
1995	Allanach, Christopher B.	M.S.	The Market For and Impacts of Business Retention and Expansion Visitation Programs
	Carlson, Gail V.	M.S.	No Thesis
	Friesen, Arthur W.	M.S.	Farm to Market Grain Movement in Minnesota
	Glowka, Mieczyslaw W.	M.S.	No Thesis
	Hamilton, Lynn L.	M.S.	No Thesis
	Khakimzhanov, Sabit T.	M.S.	Analysis of Barge Movements of Agricultural Commodities in US, 1980-92
	Love, Patricia	M.S.	No Thesis
	Rotsios, Konstantinos	M.S.	Ethanol Production in Minnesota and Its Impact on Transportation
	Wang, Yin	M.S.	No Thesis
	Zeuli, Kimberly A.	M.S.	Women Farmers: A New Trend in Agriculture
	Aziz, Fahima	Ph.D	Nutrition, Health and Labor Productivity Analysis of Male and Female Workers: A Test of the Efficiency Wage Hypothesis
	Collins, Michael I.	Ph.D	The Economics of Productivity Maintenance Research: A Case Study of Wheat Leaf Rust Resistance Breeding in Pakistan
	Creason, Jared R.	Ph.D	Using Nonmarket Values in Dynamic Bioeconomic Models: Walleye Stocking in Minnesota
	Dessy, Sylvain E.	Ph.D	Making the Transition from Low-to-High-Productivity Activities in Developing Countries
	Diao, Xinshen	Ph.D	Environment, Welfare and Gains from Trade - A North-South Model in General Equilibrium
	Galdon-Sanchez, Jose E.	Ph.D	Establishments' Heterogeneity and Employment: The Case of Spain
	Harraqi, Fouad	Ph.D	Market Implications of the Federal Dairy Price Programs on the Allocation of Milk Components and Government Costs
	Hearne, Robert R.	Ph.D	The Market Allocation of Natural Resources: Transactions of Water Use Rights in Chile
	Kim, Hanho	Ph.D	Foreign Imports and Firms' Dynamic Adjustment: The Case of the U.S. Beef Industry
	Munisamy, Gopinath	Ph.D	General Equilibrium Analysis of Growth and Competitiveness of U.S. Agriculture, 1949-91
	Oriade, Caleb A.	Ph.D	A Bioeconomic Analysis of Site-Specific Management and Delayed Planting Strategies for Weed Control
	Temel, Tugrul	Ph.D	Endogenous Technological Change via Industry Lobbying in a Two- Sector Overlapping Generations Model

1996	Arlt, Timothy J.	M.S.	Comparative Whole Farm Analyses of Conservation Reserve Program Exit Decisions in Southeastern Minnesota
	Chambers, William B.	M.S.	No Thesis
	Chen, Ming	M.S.	No Thesis
	Hartell, Jason G.	M.S.	The Contribution of Genetic Resource Diversity: The Case of Wheat Productivity in the Punjab of Pakistan
	Hauth, Eric P.	M.S.	A Test of the Effectiveness of the Twin Cities' Metropolitan Agricultural Preserves Program
	Husain, Syed A.	M.S.	No Thesis
	Jaax, Ross K.	M.S.	An Evaluation of the Economic Incentives for Watershed Associations to Implement Soil and Water Conservation Activities in Cape Verde
	Johnson, Deanna M.	M.S.	The BTS/DOT Customs Data: An Analysis with Applications to North American Meat and Meat Products Trade
	Marshall, Elizabeth P.	M.S.	Incorporating Environmental Uncertainty into Management Decisions: Kirtland's Warbler Habitat Management as a Case Study
	Martinez-Cruz, Victor M.	M.S.	No Thesis
	Rubbright, Keo L.	M.S.	Management Alternatives for Corn-Soybean and Alfalfa Hay Production in Southern Minnesota: An Environmental and Financial Comparison
	Vincze, Zsolt	M.S.	No Thesis
	Yigzaw, Michael	M.S.	Effects of Industry Mix on Poverty in Minnesota
	Cho, Yong Sung	Ph.D	Willingness to Pay for Drinking Water Quality Improvements: A Contingent Valuation Study for Southwestern Minnesota
	Chung, Chanjin	Ph.D	Economic Impacts of Modified Soybeans: Who Will Win and Who Will Lose?
	Doss, Cheryl R.	Ph.D	Intrahousehold Resource Allocation in an Uncertain Environment: Evidence from Ghana
	Elbasha, Elamin H.	Ph.D	Three Essays on Endogenous Growth and the Environment
	Hamilton, Lynn L.	Ph.D	Economic Impacts of the Conservation Reserve Program on Rural Minnesota Communities: A Sub-County Analysis
	Park, Changwon	Ph.D	Estimation of Household Brand-Size Choice Models for Spaghetti Products with Scanner Data
	RM, R. Chellappan	Ph.D	Intertemporal Allocation of Groundwater Resources with Stochastic Surface Supplies: The Case of Southern India
	Tao., Hunglin	Ph.D	Alternatives Measurements of Human Capital: Selected Applications and Implications
	Trueblood, Michael A.	Ph.D	An Intercounty Comparison of Agricultural Efficiency and Productivity
1997	Brekke, Barbara J.	M.S.	No Thesis

	Chung, Wonho	M.S.	No Thesis
	Digiacomio, Gigi B.	M.S.	An Econometric Analysis of Japanese Import Demand for Differentiated US Chilled and Frozen Pork Products
	Ehlert, Kenneth S.	M.S.	Economies of Size and Scope of Local Agricultural Cooperatives in the Upper Midwest
	Johansson, Robert C.	M.S.	No Thesis
	Konare, Amadou	M.S.	No Thesis
	Lohano, Heman D.	M.S.	No Thesis
	Sano, Yumiko	M.S.	A Multi-Choice Model of Formal and Informal Sector Employment by Women in Lima, Peru
	Stroebe, Jay M.	M.S.	No Thesis
	Alexander, Michael S.	Ph.D	The Effect of Changes in Technology of Derived Demand: The Takeback Effect in Energy Conservation Programs
	Doukali, Rachid M.	Ph.D	Economic Analysis of Second Stage of Structural Adjustment in Morocco: Gains from First and Second Best Policy Instruments
	Duclos, Maria T.	Ph.D	The Effect of Demographic and Environmental Factors on Adult Health in Brazil
	Hauer, Grant K.	Ph.D	International Pollution Externalities: Public Bads with Multiple Jurisdictions
	Hu, Xueming	Ph.D	Efficiency Optimization of Income Redistribution to Farmers in Large Exporting Countries
	Husain, Syed A.	Ph.D	Spacial and Dynamic Analysis of Timber and Biomass Supply in Minnesota
	Johnson, Nancy L.	Ph.D	Rural Financial Markets and Agricultural Development: An Analysis of Land Tenure and Credit Reform in Mexico
	Karlson, Nicholas E.	Ph.D	An Economic Analysis of Corn and Soybean Forward Contract Prices, Risk Premiums, and Basis Behavior
	Lupi Jr., Frank	Ph.D	Exact and Approximate Welfare Measures in the Repeated Random Utility Model with an Application to Valuing Great Lakes Fish
	McCann, Laura M.	Ph.D	Evaluating Transaction Costs of Alternative Policies to Reduce Agricultural Phosphorus Pollution in the Minnesota River
	Phumpiu, Paul F.	Ph.D	Institutional and Technological Innovations and the Changing Form of Business Relationships: Evidence from the Food Industry
	Sjaastad, John E.	Ph.D	A Theoretical and Empirical Investigation of Farm Level Specialization
	Vande Kamp, Philip R.	Ph.D	Assessing Economic Incentives for Contracting in the Pork Industry: A Mathematical Simulation Approach
1998	Annou, Mamane	M.S.	No Thesis
	Ashman, Sara M.	M.S.	No Thesis

	Brenden, Jason A.	M.S.	An Econometric Analysis of Economic Development Policy in Minnesota Using Shift-Share
	Brown, Jamelle L.	M.S.	No Thesis
	Hanson, Darin K.	M.S.	No Thesis
	Kamili, Mohammed	M.S.	Economic Impact of Expanded International Markets for Moroccan Horticultural Products
	Krantz, Rachel M.	M.S.	Wetland Regulations and Residential Property Values: Can Empirical Analyses Support Claims of Widespread Regulatory Takings?
	Ruliffson, Jane A.	M.S.	The Welfare Effects of Angler Regulation: A Case Study of Two Lakes in West-Central Minnesota
	Wacharakiat, Angsupalee	M.S.	No Thesis
	Zhao, Yihua	M.S.	No Thesis
	Elshennawy, Abeer M.	Ph.D	The Transitional Costs to Trade Liberalization: An Intertemporal General Equilibrium Model for Egypt
	Gonzalez, Alfredo	Ph.D	Effects of Mexican Agricultural and Trade Policies on Maize Output, Income Distribution and Social Welfare
	Mathews, Leah R.	Ph.D	Combining Revealed and State Preference Methods for Environmental Valuation: The Benefits of Improving Water Quality in the Minnesota River
	McNamara, Paul E.	Ph.D	Rural Residents' Demand for Hospital Services: An Empirical Analysis of Patient Outmigration and Geographic Accessibility
	Sserunkuuma, Dick	Ph.D	Privatization of Property Rights and Rangeland Resource-Use: An Empirical Assessment of Private Farms in Nyabushozi County, Western Uganda
	Swanson, Michael J.	Ph.D	Estimation of Regional Purchase Coefficients for Regional Input-Output Models Using Norwegian Value Added Tax Data
	Thomsen, Michael R.	Ph.D	An Analysis of the Efficiency of Local Supply and Grain Marketing Cooperatives in the Upper Midwest
	Vonnegut, Andrew M.	Ph.D	Three Essays on Structural Change in Transition from Central Planning
	Zeuli, Kimberly A.	Ph.D	Value-Added Processing: An Assessment of the Risks and Returns to Farmers and Communities
1999	Agmapisarn, Charoenchai	M.S.	A Panel Data International Tourism Demand Function for Thailand as the Final Destination
	Doherty, Brigid A.	M.S.	No Thesis
	Kielkopf, James J.	M.S.	Price Asymmetry and Pork Marketing: Have Recent Changes in Industry Structure Led to Asymmetric Pricing?
	Wisniewski, Suzanne L.	M.S.	Returns to Scale in Family Farms: A Case Study of the Senegal Peanut Basin
	Annou, Mamane	Ph.D	An Economic Analysis of Field Windbreak Renovation in the Great Plains States

	Carlson, Andrea C.	Ph.D	Determinants of Children's Health in the United States
	Chambers, William B.	Ph.D	Changes in the Structure of the US Food System: Evidence from the Dry Bean Industry
	Gonzalez-Estrada, Adrian	Ph.D	A Dynamic General Equilibrium Model of Mexico: Macroeconomic Dynamics under NAFTA
	Ha, Inhyuck	Ph.D	The Minnesota Regional Integrated Modeling System: A Case Study of Economic and Fiscal Impacts of the Tax Abatements
	Havir, Nancy A.	Ph.D	An Analysis of Firm Performance in the U.S. Craft Brewing Industry
	Khakimzhanov, Sabit T.	Ph.D	Sustainability of Trade Reforms
	Kiiza, Barnabas A.	Ph.D	Household Savings Mobilization in Uganda: An Integrated Portfolio-Savings Approach
	Luo, Xiaopeng	Ph.D	Market Integration and Grain Policy Reform B A Case Study of the Rice Market in South China
	Mangisoni, Julius H.	Ph.D	Land Degradation, Profitability and Diffusion of Erosion Control Technologies in Malawi
	Morgan, Cynthia L.	Ph.D	Tradable Permits for Controlling Nitrate Pollution of Domestic Groundwater Supplies
	Mussell, R. Allan	Ph.D	The New Economics of Dairy Enterprise Organization in the Upper Midwest
	Pritchett, James G.	Ph.D	Estimating Backward Vertical Integration in a Primary Input Market: The Case of the U.S. Hog Industry
	Stensland, Jeffrey T.	Ph.D	Vertical Integration of Rural Health Care Delivery Systems
	Toichoabuaha, Gabriel	Ph.D	The Adoption of Genetically Altered Seeds: An Ex Ante Empirical Analysis of B.t. Corn Adoption in Minnesota
	Valdivia, Jose M.	Ph.D	Asymmetric Information and Credit Markets in Peruvian Rural Economies
2000	Babetskaya, Lyubov G.	M.S.	No Thesis
	Gjertsen, Terje A.	M.S.	Foreign Exchange Rate Risk and Risk Management
	Katsaras, Nikolaos	M.S.	What Data Mining Provides the Retail Food Industry-Building Profiles of U.S. Grocery Shoppers
	Khitarishvili, Tamar	M.S.	No Thesis
	Mancino, Lisa	M.S.	Twin City Natural Food Co-ops: How Consumer Preferences Influence Structural Options.
	Quinones, Ana R	M.S.	Arsenic Contamination of Groundwater in Bangladesh-Assessment of Health and Labor Productivity Effects on Rural Agricultural Populations
	Esteban Platas Rosado, Diego	M.S.	Economic and Fiscal Impacts of Different Sizes of Swine Operations on Minnesota Counties
	Wang, Xujia	M.S.	No Thesis

	Hausner, Ulrich	Ph.D	Structural Adjustment, Agricultural Performance and Income Distribution in Zambia: A Computable General Equilibrium Analysis
	Irz, Xavier	Ph.D	The Contribution of Agriculture to Economic Growth: A Dynamic General Equilibrium Inquiry
	Johansson, Robert C.	Ph.D	Point-Nonpoint Emissions Trading for Minnesota River Phosphorus
	Jonk, Yvonne C.	Ph.D	Insuring the Uninsured: An Analysis of the Degree of Risk Aversion and the Demand for Health Insurance in the State of Minnesota
	Lin, Pei-Chien	Ph.D	The Contribution of Technological Progress to Aggregate and Sectoral Production: A Case Study of the Taiwanese Economy
	Marshall, Elizabeth P.	Ph.D	A Spatial Analysis of the Economic and Ecological Efficacy of Land Retirement
	Platasrosado, Diego E.	Ph.D	Economic and Fiscal Impacts of Different Sizes of Swine Operations on Minnesota Counties
	Sur, Mona	PhD	Adult Health Nutrition, Labor Productivity and Rural Household Incomes, Empirical Evidence from Bangladesh

* M.S. students who did not write a thesis were required to write a Plan B paper.

Appendix E. COURSE OFFERINGS IN AGRICULTURAL AND APPLIED ECONOMICS, 1979-1981

- | | |
|---|---|
| <p>1020. Principles of Macroeconomics. (5 cr, \$Econ 1001) Determinants of national income and employment levels; prices and money; the banking system; monetary and fiscal policy; economic growth and development; role of government in the economy.</p> <p>1030. Principles of Microeconomics. (4 cr, \$Econ 1002; prereq 1020) Economics of the firm and household; factor and product price determination; theory of production, consumption, and distribution; supply and demand analysis; equilibrium analysis.</p> <p>1030H. Principles of Microeconomics. (4 cr, \$Econ 1002; prereq 1020 and B avg or #) Economics of the firm and household; factor and product price determination; theory of production, consumption, and distribution; supply and demand analysis; equilibrium analysis.</p> <p>1250. Principles of Accounting. (5 cr) Fundamentals of business accounting; basic finance concepts; use of accounting data for income tax and managerial decision making.</p> <p>1400. Agricultural Markets and Prices. (4 cr; prereq 1030) Economics of agricultural marketing; factors determining prices and price trends of agricultural commodities, demand for and supply of agricultural products, and food and fiber market organization.</p> <p>3040. Economic Development of American Agriculture. (4 cr; prereq 1030) Economic, political, social, and technical forces that have shaped the development of American agriculture; the role of agricultural development in national economic development in the United States; implications for presently developing countries.</p> <p>3070. Agriculture and Economic Growth in Developing Countries. (4 cr; prereq 1020, 1030) Agricultural development problems; the contribution of economics to analyzing these problems; the use of economics in agricultural development policy and planning.</p> <p>3101. Microeconomic Theory. (4 cr; \$Econ 3101; prereq 1030 or Econ 1002. Math 1111 or equiv or #) Behavior of households, firms, and industries under competitive and monopolistic conditions; factors influencing production, price, and advertising decisions.</p> | <p>3102. Macroeconomic Theory. (4 cr; \$Econ 3102; prereq 1020, 1030 or Econ 1001 and 1002 or #) Determinants of national income, employment, and price level; aggregate consumption, investment, and government demand; the money market; the labor market.</p> <p>3290. Agribusiness Management. (4 cr; prereq 1020, 1030 and Mgmt 3001 for agricultural business majors...3101 or # for others) Application of economic, other social science, and technical concepts to the decision-making process of firms supplying inputs to agriculture and/or processing and distributing agricultural products.</p> <p>3410. Economic Organization of the Hospitality Industry. (4 cr; prereq 1020, 1030, Mktg 3000 or #) Principles of economics applied to markets and firms serving people away from home, including food, lodging, travel, recreation, health care, and related activities.</p> <p>3420. Grain Marketing Economics. (3 cr; prereq 1400) Economic relationships in the marketing of grain and grain products; analysis of supply and demand; grain grades, storage, and transportation; market structure, channels, pricing and competition; government programs and policies.</p> <p>3430. Dairy Marketing Economics. (3 cr; prereq 1400) Economic relationships in the marketing of milk and milk products; analysis of supply and demand; market structure, channels, pricing and competition; federal milk market price regulations; dairy programs and policies.</p> <p>3440. Livestock Marketing Economics. (3 cr; prereq 1400) Economic relationships in the marketing of livestock and livestock products; analysis of supply and demand; livestock grades, inspection and transportation; market structure, channels, pricing and competition; government regulations and policies.</p> <p>3500. Farm and Agribusiness Finance. (5 cr; prereq 1030, 1250 or Acct 1050 or equiv) Analysis of financing and investment policies for farm and agribusiness firms with reference to effects on liquidity, solvency, and profitability. Introduction to financial intermediaries in agriculture.</p> <p>3610. Community Resource Development. (4 cr; prereq 1020-1030 or Econ 1001-1002 or #)</p> |
|---|---|

- Basic concepts of resource use including physical and economic classifications; physical and economic feasibility; benefits and costs; external effects; cost sharing; selected resource use problems. Economic areas and units for planning and development; generating alternative program elements and developing consequences; problems in choosing elements for an optimum resource development program.
3640. **Public Finance: Concepts and Practices.** (4 cr; prereq 1020, 1030 or Econ 1001, 1002) Survey of government revenue systems, expenditures, taxation, and debt in the United States. Federal, state, and local fiscal institutions; intergovernmental fiscal relations; budget analysis; and policy issues.
3710. **Agricultural and Market Policies.** (4 cr; prereq 1400 or 3101, 3102 or Econ 3101, 3102 or #) Analysis of public problems and issues concerning U.S. agriculture and the welfare of rural residents; economic problems of the food and fiber industry and of rural residents and communities; critical appraisal of past and present public programs; economic and social implications of alternative policies and programs; political decision making in policy formulation.
3820. **Farm Management Economics.** (4 cr; prereq 1030) Introduction to the use of farm accounts in planning; application of economic principles and budgeting procedures to the development of enterprise budgets and whole farm plans; development of projected cash flows; and evaluation of investment alternatives.
3830. **Organizing the Farm Business for Entry, Growth, and Transfer.** (4 cr; prereq 3820, 3850 recommended) Focuses on business and personal considerations and analytical procedures for evaluation opportunities and arrangements for gaining entry into farming; in analyzing business expansion alternatives; and in deciding how best to transfer the farm business between generations. Acquisition of land and machinery and management of labor.
3831. **Organizing the Farm Business for Entry, Growth, and Transfer Lab.** (1-3 cr; prereq ¶3830) Development of a detailed production, marketing, and financial plan for either the student's home or another actual farm business.
3850. **Farm Business and Enterprise Analysis.** (4 cr, \$5800; prereq 3820) Concepts to use in selecting a record system; data requirements and procedures of analysis to provide tax information, total business evaluation, and enterprise evaluation.
3900. **Special Topics in the Economics of Public Services.** (1-3 cr; prereq 1020 or #) Upper division seminar on public service issues; discussion of principles of analysis followed by case studies on topics of current interest such as economics of income maintenance, education, transportation, health services, housing, municipal services.
3990. **Problems or Independent Study.** (Cr ar; prereq #) Independent study, supervised reading, or research on agricultural economic problems not covered in regularly offered courses.
5000. **Professional Experience Program.** (1-6 cr; prereq #; not for grad cr) Professional experience in agribusiness firms or government agencies obtained through supervised practical experience; evaluate reports and consultations with faculty advisers and employers.
5020. **Applied Linear Programming.** (4 cr for undergrad, 3 cr for grad; prereq 1030 and Math 1111 or 1131) Application of linear programming to farm and agribusiness firms. Emphasizes economic concepts using minimal mathematics. Develops skills in computer use for decision making. Profit maximization, cost minimization, and transportation analysis.
5400. **Intermediate Market and Price Analysis.** (4 cr for undergrad, 3 cr for grad; prereq 1400 or 3101 or Econ 3101 or Econ 5151) Development of analytical models and their application in various market situations. Unique market institutions that have developed in response to marketing problems and policies.
5440. **Cooperatives and Agribusiness Organization.** (4 cr for undergrad, 3 cr for grad; prereq 1400) Analysis of economic problems and issues facing Agricultural cooperatives, including changing Market organization, financing, taxation, antitrust regulations, and others.
5480. **Futures, Markets, and Prices.** (4 cr for undergrad, 3 cr for grad; prereq 1400 or #) Economics of cash and futures trading on organized markets; futures trading theory; hedging and speculation.
5500. **Advanced Agricultural Finance.** (4 cr for undergrad, 3 cr for grad; prereq 3500) Analysis of financial institutions and financial markets.

- Managerial policy issues confronting managers of Financial intermediaries with reference to those operating in an agricultural setting. Current problem issues confronting financial intermediaries.
5560. **Economics of Consumer Policies.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101 or #) Impact of legislative, regulatory, and judicial policies on consumers examined for their tendency to promote efficiency, equity, consumer sovereignty and freedom of choice. Policies for dealing with information, prices, consumer protection, consumer redress, public goods, and regulatory institutions evaluated.
5580. **Economic Organization of the Household.** (4 cr for undergrad, 3 cr for grad; prereq 1030 or Econ 1002; not open to agricultural economics grads) Economic concepts applied to the analysis of household production, market and nonmarket work, family formation and size, and household consumption activity.
5591. **Consumption Economics.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101) Analytical and empirical treatment of consumer behavior. Modern adaptations of theory to explain household consumption activities.
5600. **Land Economics.** (4 cr for undergrad, 3 cr for grad; prereq 3101, 3102 or Econ 3101, 3102 or #) Land as a factor of production; land use, classification, and value; sale and rental markets for land; domestic and foreign land policies.
5610. **Institutional Factors in Land Use.** (4 cr for undergrad, 3 cr for grad; prereq 1020, 1030) Public laws and administrative rules, public and private contractual arrangements, monetary and tax policies, public spending, and legal procedures that affect land use and development.
5620. **Regional Economic Analysis.** (4 cr for undergrad, 3 cr for grad; prereq 1030 or Econ 1002) Analysis of regional industry and community structure; role of resource, transportation, and institutional constraints; trade, migration and investment in regional growth and change. Use of regional economic information in business investment and location planning.
5630. **Regional Development Systems.** (4 cr for undergrad, 3 cr for grad; prereq 1030 or Econ 1002) Population, income, and employment disparities in regional growth and development in selected countries. Regional development strategies and institutions for public intervention in regional development process. Regional systems analyses and forecasts for economic policy and development planning.
5640. **Financing State and Local Governments.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101) Problems and issues in financing state and local public services in the United States. State and local revenue systems, debt, and expenditures. Intergovernmental fiscal relations. Budget analysis.
5650. **Economics of Natural Resource Policy.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101 or Econ 5151 or #) The application of economic analysis, including project evaluation, to current natural resource issues. Emphasis on conservation and resource scarcity, environmental quality, population growth, and resource use issues and their implications for public policy.
5660. **Economics of Public Services.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101 or Econ 5151 or #) Introduction to the issues of finance and supply and demand for public services; pricing, producing, and financing public goods; bureaucratic decision making; implementation of policies.
5720. **Economics of World Agriculture.** (4 cr for undergrad, 3 cr for grad; prereq 1020, 1030 or #) Distribution, quality, and utilization of agricultural resources; agricultural organization and structure; location of agricultural activity; national and international agricultural policies.
5750. **Agricultural Trade and Commercial Policies.** (4 cr for undergrad, 3 cr for grad; prereq 3101, 3102 or Econ 3101, 3102) Patterns of trade in agricultural products; trade policies and practices of export and import nations; commodity agreements; agricultural trade policies of common market areas; negotiations and potential trade developments.
5790. **World Food Supply Problems.** (4 cr, \$PIPa 5220, \$Soc 5675, \$LACS 5280, \$FScN 5643; prereq ag, pre-veterinary medicine, home economics, or social science majors or #...agricultural economics grads with #) A multidisciplinary approach will examine the social, economic, and technical problems of feeding the world's growing population. Principles sought from the social and economic sciences, plant sciences, and animal sciences for their application to food problems.

5860. **Economics of Agricultural Production.** (4 cr for undergrad, 3 cr for grad; primarily for grads; prereq 21 cr in economics or agricultural economics) Production economics applied to agriculture; profitable combination of production factors; comparative advantage and location of production.

5890. **Independent Study: Advanced Topics in Farm Management.** (1-6 cr; prereq #) Special topics or individual work suited to the needs of particular groups of students.

Appendix F. COURSE OFFERINGS IN AGRICULTURAL AND APPLIED ECONOMICS, 1983-1985

- | | |
|--|--|
| <p>1000. Orientation to Agricultural and Applied Economics. (1 cr; S-N only) Introduction to the curricula, areas of specialization, course work, employment opportunities, faculty, and functions of the Department of Agricultural and Applied Economics.</p> | <p>3102. Macroeconomic Theory. (4 cr, \$Econ 3102; prereq 1020, 1030 or Econ 1001 and 1002) Determinants of national income, employment, and price level; aggregate consumption, investment, and government demand; the money market; the labor market.</p> |
| <p>1020. Principles of Macroeconomics. (5 cr, \$Econ 1001) Determinants of national income and employment levels; prices and money; the banking system; monetary and fiscal policy; economic growth and development; role of government in the economy.</p> | <p>3290. Agribusiness Management. (4 cr; prereq 1020, 1030 and Mgmt 3001 for agricultural business majors...3101 or # for others) Application of economic, other social science, and technical concepts to the decision-making process of firms supplying inputs to agriculture and/or processing and distributing agricultural products.</p> |
| <p>1030. Principles of Microeconomics. (4 cr, \$Econ 1002; prereq 1020) Economics of the firm and household; factor and product price determination; theory of production, consumption, and distribution; supply and demand analysis; equilibrium analysis.</p> | <p>3410. Economic Organization of the Hospitality Industry. (4 cr; prereq 1020, 1030, Mktg 3000 or #) Principles of economics applied to markets and firms serving people away from home, including food, lodging, travel, recreation, health care, and related activities.</p> |
| <p>1250. Principles of Accounting. (5 cr) Fundamentals of business accounting; basic finance concepts; use of accounting data for income tax and managerial decision making.</p> | <p>3420. Grain Marketing Economics. (3 cr; prereq 1400) Economic relationships in the marketing of grain and grain products; analysis of supply and demand; grain grades, storage, and transportation; market structure, channels, pricing and competition; government programs and policies.</p> |
| <p>1400. Agricultural Markets and Prices. (4 cr; prereq 1030) Economics of agricultural marketing; factors determining prices and price trends of agricultural commodities, demand for and supply of agricultural products, and food and fiber market organization.</p> | <p>3430. Dairy Marketing Economics. (3 cr; prereq 1400) Economic relationships in the marketing of milk and milk products; analysis of supply and demand; market structure, channels, pricing and competition; federal milk market price regulations; dairy programs and policies.</p> |
| <p>3040. Economic Development of American Agriculture. (4 cr; prereq 1030) Economic, political, social, and technical forces that have shaped the development of American agriculture; the role of agricultural development in national economic development in the United States; implications for presently developing countries.</p> | <p>3440. Livestock Marketing Economics. (3 cr; prereq 1400) Economic relationships in the marketing of livestock and livestock products; analysis of supply and demand; livestock grades, inspection, and transportation; market structure, channels, pricing and competition; government regulations and policies.</p> |
| <p>3070. Agriculture and Economic Growth in Developing Countries. (4 cr; prereq 1020, 1030) Agricultural development problems; the contribution of economics to analyzing these problems; the use of economics in agricultural development policy and planning.</p> | <p>3500. Farm and Agribusiness Finance. (5 cr; prereq 1030, 1250 or Acct 1024 and 1025 or equiv) Analysis of financing and investment policies for farm and agribusiness firms with reference to effects on liquidity, solvency, and profitability. Introduction to financial intermediaries in agriculture.</p> |
| <p>3101. Microeconomic Theory. (4 cr, \$Econ 3101; prereq 1030 or Econ 1002, Math 1111 or equiv) Behavior of households, firms, and industries under competitive and monopolistic conditions; factors influencing production, price, and advertising decisions.</p> | <p>3610. Community Resource Development. (4 cr; prereq 1020-1030 or Econ 1001-1002 or #) Basic concepts of resource use including physical and</p> |

- economic classifications; physical and economic feasibility; benefits and costs; external effects; cost sharing; selected resource use problems. Economic areas and units for planning and development; generation of alternative program elements and development of consequences; problems in choosing elements for an optimum resource development program.
3640. **Public Finance: Concepts and Practices.** (4 cr; prereq 1020, 1030 or Econ 1001, 1002) Survey of government revenue systems, expenditures, taxation, and debt in the United States. Federal, state, and local fiscal institutions; intergovernmental fiscal relations; budget analysis; and policy issues.
3710. **Agricultural and Market Policies.** (4 cr; prereq 1400 or 3101, 3102 or Econ 3101, 3102 or #) Analysis of public problems and issues concerning U.S. agriculture and the welfare of rural residents; economic problems of the food and fiber industry and of rural residents and communities; critical appraisal of past and present public programs; economic and social implications of alternative policies and programs; political decision making in policy formulation.
3820. **Farm Management Economics.** (4 cr; prereq 1030) Introduction to the use of farm accounts in planning; application of economic principles and budgeting procedures to the development of enterprise budgets and whole farm plans; development of projected cash flows; and evaluation of investment alternatives.
3830. **Organizing the Farm Business for Entry, Growth, and Transfer.** (4 cr; prereq 3820...3850 recommended) Business and personal considerations and analytical procedures for evaluation opportunities and arrangements for gaining entry into farming; analyzing business expansion alternatives; and deciding how best to transfer the farm business between generations. Acquisition of land and machinery and management of labor.
3850. **Farm Business and Enterprise Analysis.** (4 cr; prereq 1030, 3820, or #) Principles of selecting, organizing, maintaining, and using a farm accounting system. Financial statements and farm financial management. Tax preparation and planning; analysis and forward planning of crop and livestock enterprises and the overall farm business.
3980. **Current Issues in Agricultural Economics.** (Cr ar; prereq #) Discussion and analysis of important and timely problems in agricultural economics. Topics vary from quarter to quarter and are listed in the *Class Schedule*. For full details, inquire at the department office prior to registration.
5020. **Applied Linear Programming.** (4 cr for undergrad, 3 cr for grad; prereq 1030 and Math 1111 or 1131) Application of linear programming to farm and agribusiness firms. Emphasizes economic concepts using minimal mathematics. Develops skills in computer use for decision making. Profit maximization, cost minimization, and transportation analysis.
5104. **Agricultural Systems Analysis and Modeling.** (4 cr, \$PIPa 5104, \$AnSc 5104, \$Soil 5104; prereq Math 1142 or #) Introduction to bioeconomic modeling as preparation for interdisciplinary agricultural systems analysis. Basic concepts; deterministic and stochastic models; delays, feedback, and clockwork; data acquisition; model verification and validation; role of models for agroecosystem management.
5180. **Agri-Marketing Communications.** (4 cr, \$AgJo 5180; prereq basic AgJo course or Δ or #, 1020 and 1030, basic communications and speech courses; not open to agricultural economics grads) Research and development of a complete marketing plan for an agricultural product from development through the final marketing communications stages.
5272. **Bayesian Decision Making.** (4 cr, \$Econ 5272; prereq 5271) Sequential economic decisions; dynamic programming; multivariate utility.
5400. **Intermediate Market and Price Analysis.** (4 cr for undergrad, 3 cr for grad; prereq 1400 or 3101 or Econ 3101 or Econ 5151) Development of analytical models and their application in various market situations. Unique market institutions that have developed in response to marketing problems and policies.
5440. **Cooperatives and Agribusiness Organization.** (4 cr for undergrad, 3 cr for grad; prereq 1400) Analysis of economic problems and issues facing agricultural cooperatives, including changing market organization, financing, taxation, and antitrust regulations.
5480. **Futures, Markets, and Prices.** (4 cr for undergrad, 3 cr for grad; prereq 1400 or #) Economics of cash and futures trading on organized markets; futures trading theory; hedging and speculation.

5500. **Advanced Agricultural Finance.** (4 cr for undergrad, 3 cr for grad; prereq 3500) Analysis of financial institutions and financial markets. Managerial policy issues confronting managers of financial intermediaries with reference to those operating in an agricultural setting. Current problem issues confronting financial intermediaries.
5580. **Economic Organization of the Household.** (4 cr for undergrad, 3 cr for grad; prereq 1030 or Econ 1002; not open to agricultural economics grads) Economic concepts applied to the analysis of household production, market and nonmarket work, family formation and size, and household consumption activity.
5600. **Land Economics.** (4 cr for undergrad, 3 cr for grad; prereq 3101, 3102 or Econ 3101, 3102 or #) Land as a factor of production; land use, classification, and value; sale and rental markets for land; domestic and foreign land policies.
5610. **Land Use Institutions of Local Government.** (4 cr for undergrad, 3 cr for grad; prereq 1020, 1030) Introduction to law as an institution of government as applied to land use. Emphasis on regulatory powers, especially zoning, including types of permits, methods of exercising discretion, constitutional and statutory constraints, administrative procedures, growth control techniques, planned developments, exclusionary zoning, separation of powers, and judicial review. Other regulatory powers include subdivision controls, building, housing and sanitary codes, and official maps.
5620. **Regional Economic Analysis.** (4 cr for undergrad, 3 cr for grad; prereq 1030 or Econ 1002) Analysis of regional industry and community structure; role of resource, transportation, and institutional constraints; trade, migration, and investment in regional growth and change. Use of regional economic information in business investment and location planning.
5630. **Regional Development Systems.** (4 cr for undergrad, 3 cr for grad; prereq 1030 or Econ 1002) Population, income, and employment disparities in regional growth and development in selected countries. Regional development strategies and institutions for public intervention in regional development process. Regional systems analyses and forecasts for economic policy and development planning.
5640. **Financing State and Local Governments.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101) Problems and issues in financing state and local public services in the United States. State and local revenue systems, debt, and expenditures. Intergovernmental fiscal relations. Budget analysis.
5650. **Economics of Natural Resource Policy.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101 or Econ 5151 or #) Application of economic analysis, including project evaluation, to current natural resource issues. Emphasis on conservation and resource scarcity, environmental quality, population growth, and resource use issues and their implications for public policy.
5660. **Economics of Public Services.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or Econ 3101 or Econ 5151 or #) Introduction to the issues of finance and supply and demand for public services; pricing, producing, and financing public goods; bureaucratic decision making; implementation of policies.
5670. **Economics of Agricultural Transportation.** (4 cr for undergrad, 3 cr for grad; prereq 3101-3102 or Econ 3101-3102 and Tran 3054 or #) Application of economic analysis to current issues in agricultural and rural transportation policy. Relationship between transportation infrastructure and economic development and regional and national trade.
5720. **Economics of World Agriculture.** (4 cr for undergrad, 3 cr for grad; prereq 1020, 1030 or #) Distribution, quality, and utilization of agricultural resources; agricultural organization and structure; location of agricultural activity; national and international agricultural policies.
5730. **European Agriculture and European Food and Agricultural Policies.** (3-4 cr).
5740. **Agricultural Policy in Planned Economies.** (3 4 cr; prereq 3101 or Econ 3101 or #).
5750. **Agricultural Trade and Commercial Policies.** (4 cr for undergrad, 3 cr for grad; prereq 3101, 3102 or Econ 3101, 3102) Patterns of trade in agricultural products; trade policies and practices of export and import nations; commodity agreements; agricultural trade policies of common market areas; negotiations and potential trade developments.
5790. **World Food Supply Problems.** (4 cr, \$Agro 5200, \$PIPa 5220, \$Soc 5675, \$LACS 5280, \$FScN 5643; prereq ag, pre-veterinary medicine, home economics, or social science majors or

- #...agricultural economics grads with #) A multidisciplinary approach to the social, economic, and technical problems of feeding the world's growing population. Principles sought from the social and economic sciences, plant sciences, and animal sciences for their application to food problems.
5840. **Management of the Farm Business.** (4 cr for undergrad, 3 cr for grad; prereq 3820...3830, 3850 recommended) Decision-making procedures under conditions of uncertainty; development of an information system to monitor and control the ongoing operation; control of crop and livestock enterprises; labor management; and cash flow management.
5860. **Economics of Agricultural Production.** (4 cr or undergrad, 3 cr for grad; primarily for grads; prereq 21 cr in economics or agricultural economics) Production economics applied to agriculture; profitable combination of production factors; comparative advantage and location of production.
5890. **Independent Study: Advanced Topics in Farm Management.** (1-6 cr; prereq #) Special topics or individual work suited to the needs of particular groups of students.
5990. **Special Topics and Independent Study in Agricultural and Applied Economics.** (Cr ar; prereq #) Special classes, independent study, and supervised reading and research on subjects and problems not covered in regularly offered courses.
- For Graduate Students only:
8200. **Advanced Topics in Agriculture and Applied Economics.**
8220. **Applied Mathematical Programming.**
8245. **Agricultural Marketing Economics.**
8264. **Resource Economics.**
8266. **Applied Regional Economics.**
8270. **Applied Welfare Economics and Public Policy.** (3 cr; prereq calculus and intermediate economic theory).
8278. **Agricultural and Economic Development.**
8287. **Production Functions: Theory and Estimations.**
8288. **Dynamic Production Economics.**
8356. **Seminar: Consumption Economics.**
8364. **Seminar: Resource Economics and Policy.**
8373. **Seminar: Food and Agricultural Policy in the United States.**
8378. **Seminar: Agricultural Development.**
8382. **Seminar: Farm Management and Production Economics.**
8591. **Consumption Economics.**

Appendix G. COURSE OFFERINGS IN AGRICULTURAL AND APPLIED ECONOMICS, 1989-1991

- | | |
|--|--|
| <p>1000. Orientation to Agricultural and Applied Economics. (1 cr; S-N only) Introduction to the curricula, areas of specialization, coursework, employment opportunities, faculty, and functions of the Department of Agricultural and Applied Economics.</p> | <p>factor and commodity markets; elements and effects of agricultural and trade policy in the course of economic development; macroeconomic and international aspects of agricultural development, policy, and trade.</p> |
| <p>1101. Principles of Microeconomics. (4 cr, \$Econ 1101 or AgEc 1030) Economics of the firm and household; factor and product price determination; theory of production, consumption, and distribution; supply and demand analysis, equilibrium analysis.</p> | <p>3006. Applied Macroeconomics: Government and the Economy. (4 cr; prereq 1101, 1102 or Econ 1101, 1102, \$3102 or Econ 3102) Relationship between the public sector and the market economy. Public goods, externalities, and other allocation issues. Government and the stabilization of the national economy. Overview of the new classical and Keynesian models. Principles of taxation. The individual income tax, sales, business, and property taxes. Intergovernmental fiscal relations.</p> |
| <p>1102. Principles of Macroeconomics. (5 cr, \$Econ 1102 or AgEc 1020) Determinants of national income and employment levels; prices and money; the banking system; monetary and fiscal policy; economic growth and development; role of government in the economy.</p> | <p>3040. Economic Development of American Agriculture. (4 cr; prereq 1101 or Econ 1101) Review of the economic, political, social, and technical forces that have shaped the development of American agriculture; the role of agricultural development in national economic development in the United States; implications for presently developing countries.</p> |
| <p>1250. Principles of Accounting. (5 cr) Fundamentals of business accounting; basic finance concepts; use of accounting data for income tax and managerial decision-making.</p> | <p>3070. Agriculture and Economic Growth in Developing Countries. (4 cr; prereq 1101, 1102 or Econ 1101, 1102) Agricultural development problems; the contribution of economics to analyzing these problems; the use of economics in agricultural development policy and planning.</p> |
| <p>3001. Applied Microeconomics: Consumers and Markets. (4 cr; prereq 1001 or Econ 1101, Math 1142 or 1211, Stat 1101 or MSci 1010, 1020, \$3101 or Econ 3101) The portion of microeconomic theory that relates to the consumer, the household, and demand for both public and private goods. Integration of empirical applications with theory, including the estimation of demand functions from actual data.</p> | <p>3290. Agribusiness Management. (4 cr; prereq 3002 and Mgmt 3001 for agricultural business majors, 3101 or # for others) Application of economic, other social science, and technical concepts to the decision-making process of firms supplying inputs to agriculture and/or processing and distributing agricultural products. <i>This course will be replaced by 3240 in 1990-91.</i></p> |
| <p>3002. Applied Microeconomics: Managerial Economics. (4 cr; prereq 3001, Acct 1024 or AgEc 1250 or #) Microeconomic theory that relates to the firm and its application to managerial problems. Integration of empirical applications with theory, including programming and the estimation of cost and production functions.</p> | <p>3300. Agricultural Management Information Systems. (4 cr, \$MIS 3300; prereq 1030) Introduction to information systems technology, conceptual foundations of MIS, and MIS design implementation and management for farm and non-farm firms in agriculture. <i>This course will be replaced by 3240 in 1990-91.</i></p> |
| <p>3003. Applied Microeconomics: Markets and Prices. (4 cr; prereq 3002 or #) Theory of price and output determination in alternative market settings. Time, form, and spatial aspects of price formation. Institutions and government policies that affect prices and outputs in agriculture.</p> | <p>3410. Economic Organization of the Hospitality Industry. (4 cr; prereq Mktg 3000 or #) Principles of economics applied to markets and firms serving people away from home, including</p> |
| <p>3005. Applied Macroeconomics: Policy, Trade, and Development. (4 cr; prereq 1101, 1102 or Econ 1101, 1102) History of agricultural and economic development; determinants of development on</p> | |

- food, lodging, travel, recreation, health care, and related activities.
3420. **Grain Marketing Economics.** (3 cr; prereq 1101 or Econ 1101) Economic relationships in the marketing of grain and grain products; analysis of supply and demand; grain grades, storage, and transportation; market structure, channels, pricing, and competition; government programs and policies.
3430. **Dairy Marketing Economics.** (3 cr; prereq 1101 or Econ 1101) Economic relationships in the marketing of milk and milk products; analysis of supply and demand; market structure, channels, pricing, and competition; federal milk market price regulations; dairy programs and policies.
3440. **Livestock and Meat Marketing Economics.** (3 cr; prereq 1101 or Econ 1101) Economic relationships in the marketing of livestock and livestock products; analysis of supply and demand; livestock grades, inspection, and transportation; market structure, channels, pricing, and competition; government regulations and policies.
3450. **Agricultural Input Marketing Economics.** (3 cr; 1101 or Econ 1101) Demand for farm inputs; structure of farm sector, factors affecting input purchases, derived demand from production functions, time series demand analysis, farmland as a production input; farmland markets; the farm labor input; farm labor usage and markets; farm-generated inputs and alternative enterprise combinations. Purchased farm inputs; farm machinery and buildings, animal production input markets, crop production input markets.
3500. **Farm and Agribusiness Finance.** (5 cr; prereq 1250 or Acct 1024, 1025, and 3002 or #) Analysis of financing and investment policies for farm and agribusiness firms with reference to effects on liquidity, solvency, and profitability. Introduction to financial intermediaries in agriculture.
3610. **Resource Development and Environmental Economics.** (3 cr; prereq 1101, 1102 or Econ 1101, 1102 or #) Basic concepts of resource use including physical and economic classifications; physical and economic feasibility; benefits and costs; external effects; cost sharing; selected resource use problems. Economic areas and units for planning and development; generation of alternative program elements and development of consequences; problems in choosing elements for an optimum resource development program.
3810. **Principles of Farm Management.** (4 cr; §3820; prereq AgEc 1101 or Econ 1101; not open to majors in AgEc dept) Introduction to the use of farm accounts in planning; application of economic principles and budgeting procedures to the development of enterprise budgets and whole farm plans; development of projected cash flows; and evaluation of investment alternatives.
3820. **Farm Management Economics.** (4 cr; prereq 1250, 3101) Introduction to the use of farm accounts in planning; application of economic principles and budgeting procedures to the development of enterprise budgets and whole farm plans; development of projected cash flows; and evaluation of investment alternatives. *This course will be replaced by 3240 in 1990-91.*
3850. **Farm Business and Enterprise Analysis.** (4 cr; prereq 3810 or 3820) Principles of selecting, organizing, maintaining, and using a farm accounting system. Financial statements and farm financial management. Tax preparation and planning; analysis and forward planning of crop and livestock enterprises and the overall farm business. *This course will be replaced by 3860 in 1990-91.*
3920. **Agricultural Law.** (4 cr; prereq 1101 or Econ 1101) The legal system; contracts; torts; labor; property; meaning, acquisition, rights; water drainage; environmental concerns; animals; credit, finance; UCC; sales; transportation; tenancy; partnerships, corporations, cooperatives; estate and tax planning.
3990. **Independent Study in Agricultural and Applied Economics.** (Cr ar; prereq #) Independent study and supervised reading and research on subjects and problems not covered in regularly offered courses.
5020. **Applied Linear Programming.** (4 cr for undergrad, 3 cr for grad; prereq 1101 or Econ 1101, Math 1111 or 1131) Application of linear programming to farm and agribusiness firms. Emphasizes economic concepts using minimal mathematics. Develops skills in computer use for decision-making. Profit maximization, cost minimization, and transportation analysis.
5400. **Intermediate Market and Price Analysis.** (4 cr for undergrad, 3 cr for grad; prereq 3101 or 3001-2, 3 or Econ 3101 or #) Development of analytical models and their application in various

- market situations. Unique market institutions that have developed in response to marketing problems and policies.
5440. **Cooperatives and Agribusiness Organization.** (4 cr for undergrad, 3 cr for grad; prereq 1101, 1102 or Econ 1101, 1102) Analysis of economic problems and issues facing agricultural cooperatives, including changing market organization, financing, taxation, and antitrust regulations.
5480. **Futures, Markets, and Prices.** (4 cr for undergrad, 3 cr for grad; prereq 1101, 1102 or Econ 1101, 1102) Economics of cash and futures trading on organized markets; futures trading theory; hedging and speculation.
5500. **Advanced Agricultural Finance.** (4 cr for undergrad, 3 cr for grad; prereq 3500) Analysis of financial institutions and financial markets. Managerial policy issues confronting managers of financial intermediaries with reference to those operating in an agricultural setting. Current problem confronting financial intermediaries.
5550. **Food Marketing Economics.** (4 cr for undergrad, 3 cr for grad, \$FScN 5474; prereq 3101 or 3001 or Econ 3101 or #) Analytical and empirical treatment of consumer food behavior. Data and methods used to study economic and nutritional aspects of food consumption. Students pursue individual projects.
5600. **Land Economics.** (4 cr for undergrad, 3 cr for grad; prereq 3101, 3102 or Econ 3101, 3102 or #) Land use as a factor of production; land use, classification, and value; sale and rental markets for land; domestic and foreign land policies.
5620. **Regional Economic Analysis.** (4 cr for undergrad, 3 cr for grad; prereq 1101 or Econ 1101) Analysis of regional industry and community structure; role of resource, transportation, and institutional constraints; trade, migration, and investment in regional growth and change. Use of regional economic formation in business investment and location planning.
5630. **Regional Development Systems.** (4 cr for undergrad, 3 cr for grad; prereq 1101 or Econ 1101) Population, income, and employment disparities in regional growth and development in selected countries. Regional development strategies and institutions for public intervention in regional development process. Regional systems and analyses forecasts for economic policy and development planning.
5650. **Economics of Natural Resource Policy.** (4 cr for undergrad, 3 cr for grad; prereq 3001, 3002 or 3101 or Econ 3101 or Econ 5151 or #) Application of economic analysis, including project evaluation, to current natural resource issues. Emphasis on conservation and resource scarcity, environmental quality, population growth, and resource use issues and their implication for public policy.
5720. **Economics of World Agriculture.** (4 cr for undergrad, 3 cr for grad; prereq 3001, 3002, 3003 or 3101, 3102 or 3005, 3006 or Econ 3101, 3102 or #) Distribution, quality, and use of agricultural resources; agricultural organization and structure; location of agricultural activity; national and international agricultural policies.
5750. **Agricultural Trade and Commercial Policies.** (4 cr for undergrad, 3 cr for grad; prereq 3003, 3005 or 3101, 3102 or Econ 3101, 3102) Patterns of trade in agricultural products; trade policies and practices of export and import nations; commodity agreements; agricultural trade policies of common market areas; negotiations and potential trade developments.
5790. **World Food Supply Problems.** (3 cr, \$Agro 5200, \$Soc 5675, \$LACS 5280, \$FScN 5643; prereq ag, pre-vet med, home econ, or soc sci majors, or #, or agricultural economics grads with #) A multidisciplinary approach to the social, economic, and technical problems of feeding the world's growing population. Principles sought from the social, economic, plant, and animal sciences for their application to food problems.
5840. **Management of the Farm Business.** (4 cr for undergrad, 3 cr for grad; prereq 3820; 3830, 3850 recommended) Decision-making procedures under conditions of uncertainty; development of an information system to monitor and control the ongoing operation; control of crop and livestock enterprises; labor management; cash flow management. *This course will be replaced by 3860 in 1990-91.*
- 5860f. **Economics of Agricultural Production.** (4 cr for undergrad, 3 cr for grad; primarily for grads; prereq 21 cr in economics or agricultural economics) Production economics applied to agriculture; profitable combination of production factors; comparative advantage and location production.
5890. **Independent Study: Advanced Topics in Farm and Agribusiness Management.** (1-6 cr; prereq

	#) Special topics or individual work suited to the needs of particular groups of students.	8288.	Dynamic Production Economics.
5990.	Special Topics and Independent Study in Agricultural and Applied Economics. (Cr ar; prereq #) Special classes, independent study, and supervised reading and research on subjects and problems not covered in regularly offered courses.	8345.	Seminar: Agricultural Marketing.
		8360.	Seminar: Land Economics and Tenure.
		8364.	Seminar: Resource Economics and Policy.
		8370.	Agricultural Policy in Developed Countries.
		8378.	Seminar: Agricultural Development.
		8382.	Seminar: Farm Management and Production Economics.
		8590.	Economics of Food and Consumer Policy.
		8591.	Consumption Economics.
		8777.	Thesis Credits: Masters. (Open to graduate students admitted for Fall, 1983 or later) (A-F only)
		8888.	Thesis Credits: Doctoral. (Open to graduate students admitted for Fall, 1983 or later; max 18 cr per qtr) (A-F only)
For Graduate Students Only			
8200.	Advanced Topics in Agriculture.		
8210.	Applied Econometrics.		
8231.	Agricultural Prices.		
8245.	Agricultural Marketing Economics.		
8264.	Resource Economics.		
8270.	Applied Welfare Economics and Public Policy.		
8278.	Agricultural and Economic Development.		
8287.	Production Functions: Theory and Estimations.		

Appendix H. COURSE OFFERINGS IN AGRICULTURAL AND APPLIED ECONOMICS, 1994-1996

- | | |
|---|--|
| <p>1000. Orientation to Agricultural and Applied Economics. (1 cr; S-N only) Curricula, areas of specialization, course work, employment opportunities, faculty, and functions of the Department of Agricultural and Applied Economics.</p> | <p>3007. Applied Macroeconomics: Policy, Trade, and Development. (4 cr; prereq 1101, 1102 or Econ 1101, 1102) History of agricultural and economic development; determinants of development on factor and commodity markets; elements and effects of agricultural and trade policy in the course of economic development; macroeconomic and international aspects of agricultural development, policy, and trade.</p> |
| <p>1101. Principles of Microeconomics. (4 cr; SEcon 1101) Economics of the firm and household; factor and product price determination; theory of production, consumption, and distribution; supply and demand analysis, equilibrium analysis.</p> | <p>3040. Economic Development of American Agriculture. (4 cr; prereq 1101 or Econ 1101) Review of the economic, political, social, and technical forces that have shaped the development of American agriculture; role of agricultural development in national economic development in the United States; implications for presently developing countries.</p> |
| <p>1102. Principles of Macroeconomics. (4 cr, SEcon 1102) Determinants of national income and employment levels; prices and money; the banking system; monetary and fiscal policy; economic growth and development; role of government in the economy.</p> | <p>3070. Agriculture and Economic Growth in Developing Countries. (4 cr; prereq 1101, 1102 or Econ 1101, 1102) Agricultural development problems; contribution of economics to analyzing these problems; use of economics in agricultural development policy and planning.</p> |
| <p>1250. Principles of Accounting. (4 cr) Fundamentals of business accounting; basic finance concepts; use of accounting data for income tax and managerial decision making.</p> | <p>3240. Strategic Management of Farms and Agribusiness. (4 cr; prereq 3002, 3500 or #) Identifying and analyzing strategic issues and problems of farms and agribusiness, establishing business goals and developing realistic plans of action; strategy formulation, implementation and control issues; analysis of case studies.</p> |
| <p>3001. Applied Microeconomics: Consumers and Markets. (4 cr, SEcon 3101; prereq 1101 or Econ 1101, Math 1142 or 1251, Stat 1001 or IDSc 1010, OMS 1020 or #) Microeconomic theory relating to the consumer, the household, and demand for both public and private goods. Empirical applications integrated with theory, including the estimation of demand functions from actual data.</p> | <p>3260. Operations Management of Farms and Agribusiness. (4 cr; prereq 3002, 3500 or #) Annual planning, implementation, and control in farms and agribusiness firms; design of information systems to support management operations; forecasting; risk management.</p> |
| <p>3002. Applied Microeconomics: Managerial Economics. (4 cr; prereq 3001, Acct 1050 or AgEc 1250 or #) Microeconomic theory relating to the firm and its application to managerial problems. Empirical applications integrated with theory, including programming and the estimation of cost and production functions.</p> | <p>3400. Markets, Marketing and Prices. (4 cr; prereq AgEc 1101 or equiv, Math 1142 recommended) Market structure, demand and supply structure, regulations, and institutions that influence the behavior of firms in agricultural marketing systems will be examined. Performance in food assembly, manufacturing, and distribution industries will be investigated with respect to conduct and strategies of firms.</p> |
| <p>3006. Applied Macroeconomics: Government and the Economy. (4 cr, SEcon 3102; prereq 1101, 1102 or Econ 1101, 1102) Relationship between the public sector and the market economy. Public goods, externalities, and other allocation issues. Government and the stabilization of the national economy. Overview of the new classical and Keynesian models. Principles of taxation. The individual income tax, sales, business, and property taxes. Intergovernmental fiscal relations.</p> | <p>3420. Grain Marketing Economics. (4 cr; prereq 1101 or Econ 1101) Economic relationships in the marketing of grain and grain products; analysis of supply and demand; grain grades, storage, and transportation; market structure,</p> |

- channels, pricing, and competition; government programs and policies.
3430. **Dairy Marketing Economics.** (4 cr; prereq 1101 or Econ 1101) Economic relationships in the marketing of milk and milk products; analysis of supply and demand; market structure, channels, pricing, and competition; federal milk market price regulations; dairy programs and policies.
3440. **Livestock and Meat Marketing Economics.** (3 cr; prereq 1101 or Econ 1101) Economic relationships in the marketing of livestock and livestock products; analysis of supply and demand; livestock grades, inspection, and transportation; market structure, channels, pricing, and competition; government regulations and policies.
3450. **Agricultural Input Marketing Economics.** (4 cr; prereq 1101 or Econ 1101) Demand for farm inputs; structure of farm sector, factors affecting input purchases, derived demand from production functions, time series demand analysis, farmland as a production input; farmland markets; farm labor input; farm labor usage and markets; farm-generated inputs and alternative enterprise combinations. Purchased farm inputs; farm machinery and buildings, animal production input markets, crop production input markets.
3500. **Agribusiness Finance.** (4 cr; prereq 1250 or Acct 1050, AgEc 3002 or #) Analysis of financing and investment strategies for agribusiness firms and their effects on liquidity, solvency and profitability; financial intermediaries in agriculture.
3610. **Resource Development and Environmental Economics.** (4 cr; prereq 1101, 1102 or Econ 1101, 1102 or #) Basic concepts of resource use including physical and economic classifications; physical and economic feasibility; benefits and costs; external effects; cost sharing; selected resource use problems. Economic areas and units for planning and development; generation of alternative program elements and development of consequences; problems in choosing elements for an optimum resource development program.
3810. **Principles of Farm Management.** (4 cr; prereq 1101 or Econ 1101; not open to ag bus and applied econ majors) Using farm accounts in planning; applying economic principles and budgeting procedures to developing enterprise budgets and whole farm plans; developing projected cash flows; and evaluating investment alternatives.
3920. **Agricultural Law.** (4 cr; prereq 1101 or Econ 1101) The legal system; contracts; torts; labor; property; meaning, acquisition, rights; water drainage; environmental concerns; animals; credit, finance; UCC; sales; transportation; tenancy; partnerships, corporations, cooperatives; estate and tax planning.
3990. **Independent Study in Agricultural and Applied Economics.** (Cr ar; prereq #) Independent study and supervised reading and research on subjects and problems not covered in regularly offered courses.
5020. **Applied Linear Programming.** (4 cr; prereq 1101 or Econ 1101, Math 1031 or 1131) Application of linear programming to farm and agribusiness firms. Emphasizes economic concepts using minimal mathematics. Develops skills in computer use for decision making. Profit maximization, cost minimization, and transportation analysis.
5400. **Intermediate Market and Price Analysis.** (4 cr; prereq 3002 or Econ 3101 or #) Development of analytical models and their application in various market situations. Unique market institutions that have developed in response to marketing problems and policies.
5440. **Cooperatives and Agribusiness Organization.** (4 cr; prereq 1101, 1102 or Econ 1101, 1102 or #) Analysis of economic problems and issues facing agricultural cooperatives, including changing market organization, financing, taxation, and antitrust regulations.
5480. **Futures Markets and Prices.** (4 cr; prereq 1101, 1102 or Econ 1101, 1102 or #) Economics of futures trading; the basis and theoretical price relationships in storable and nonstorable commodities; hedging and commercial use of futures markets with illustrations; arbitrage; options on agricultural futures; financial futures; speculation; futures market performance and regulation.
5500. **Financial Markets and Agricultural Credit Institutions.** (4 cr; prereq 3500 or BFin 3000 or grad or #) Analysis of financial institutions and financial markets; managerial policy issues confronting managers of financial intermediaries with particular reference to those operating in an agricultural setting; current problems confronting financial intermediaries.

5550. **Food Marketing Economics.** (4 cr, \$FScN 5474; prereq 3001 or Econ 3101 or #) Economics of food marketing in the United States. Food consumption trends; consumer food behavior, food expenditure and consumption data; consumer survey methodology; the food distribution retailing system; food policy issues related to food marketing. Students pursue individual and group projects.
5580. **Human Capital and Household Economics.** (3 cr; prereq 3001 or Econ 3101 or #) Investment in household formation, child education, health, labor force participation and non-market work will be analyzed in the context of household economics and national productivity; effects of economic variables on investment decisions and returns.
5620. **Regional Economic Analysis.** (3 cr; prereq 1101 or Econ 1101) Analysis of regional industry and community structure; role of resource, transportation, and institutional constraints; trade, migration, and investment in regional growth and change. Use of regional economic formation in business investment and location planning.
5640. **Financing State and Local Governments.** (4 cr; prereq 3001 or Econ 3101 or #) Problems and issues in financing state and local public services in the United States. State and local revenue systems, debt and expenditures. Intergovernmental fiscal relations. Budget analysis.
5710. **U.S. Agriculture: Farm, Food, and Environmental Policy.** (3 cr; prereq 3002, 3006, 3007) Development of U.S. agriculture and U.S. agricultural and trade policy; agricultural input and commodity markets; U.S. environmental policies effects on agriculture; design and economic effects of U.S. agricultural policy; determinants of U.S. agricultural and trade policies.
5720. **Economics of World Agriculture.** (3 cr; prereq 3001, 3006 or Econ 3101, 3102 or #) Theories of agricultural development, comparative agricultural organization and structure, technical and institutional change on agricultural development, national development policies, bilateral and multilateral assistance, international policy conflicts.
5750. **Agricultural Trade and Commercial Policies.** (3 cr; prereq 3001, 3006 or Econ 3101, 3102 or #) Patterns of trade in agricultural products; trade policies and practices of export and import nations; commodity agreements; agricultural trade policies of common market areas; negotiations and potential trade developments.
5790. **World Food Problems.** (3 cr, \$Agro 5200, \$FScN 5643, \$CAPS 5280; prereq ag or pre-vet med or home econ or soc sci major or # or agricultural econ grad with #) Multidisciplinary approach to the social, economic, and technical problems of feeding the world's growing population. Principles sought from the social, economic, plant, and animal sciences for their application to food problems.
- 5860f. **Economics of Agricultural Production.** (3 cr; prereq 3002 or #) Production economics applied to agriculture; profitable combination of production factors; comparative advantage and location production.
5890. **Independent Study: Advanced Topics in Farm and Agribusiness Management.** (1-6 cr; prereq #) Special topics or individual work suited to the needs of particular groups of students.
5990. **Special Topics and Independent Study in Agricultural and Applied Economics.** (Cr ar; prereq #) Special classes, independent study, and supervised reading and research on subjects and problems not covered in regularly offered courses.
- For Graduate Students Only
8100. **Graduate Seminar.**
8110. **Master's Paper: Plan B Project.**
8200. **Advanced Topics in Agriculture and Applied Economics.**
8220. **Applied Mathematical Programming.**
8231. **Agricultural Prices.**
8264. **Resource Economics.**
8270. **Applied Welfare Economics and Public Policy.**
8278. **Agricultural and Economic Development.**
8287. **Production and Supply.**
8288. **Dynamic Production Economics.**
8364. **Seminar: Resource Economics and Policy.**
8378. **Seminar: Agricultural Development.**

8590. **Economics of Food and Consumer Policy.**

8591. **Consumption Economics.**

8666. **Doctoral Pre-Thesis Credits.** (Max 18 cr per qtr; prereq PhD student who has not passed prelims)

8777. **Thesis Credits: Master's.**

8888. **Thesis Credits: Doctoral.**

Appendix I. COURSE OFFERINGS IN APPLIED ECONOMICS, 1999-2000

- | | |
|--|--|
| <p>1001. Orientation to Applied Economics. (1 cr; S-N only) Introduction to applied economics and agricultural and food business management majors and the Department of Applied Economics, faculty, policy and procedures; career opportunities; resources in the department and college.</p> | <p>3006. Applied Macroeconomics: Government and the Economy. (3 cr; QP-ApEc/Econ 1101, 1102; SP-ApEc/Econ 1101, 1102) The public sector and market economics; public goods, externalities, and other allocation issues; government and the stabilization of the national economy; overview of the new classical and Keynesian models; principles of taxation; individual income tax, sales, business, and property taxes.</p> |
| <p>1101. Principles of Microeconomics. (3 cr) Theory of the household and firm; demand and supply; price determination; government in the market; market structures; agriculture and food; externalities and the environment; labor markets and unions; capital and interest; project evaluation; human capital.</p> | <p>3007. Applied Macroeconomics: Policy, Trade, and Development. (3 cr; QP-3006 or #; SP-3006 or #) Foreign trade, development, and growth. General equilibrium models show the affects of trading blocks on U.S. agriculture and the broader economy, the importance of growth on incomes, foreign trade, and policies that impact world trade and economic growth.</p> |
| <p>1102. Principles of Macroeconomics. (3 cr) Unemployment and inflation; measures of national income; macro models; fiscal policy and problems; taxes and the national debt; money and banking; monetary policy and problems; poverty and income distribution; international trade and exchange rates; economic growth and development.</p> | <p>3041. Economic Development of U.S. Agriculture. (3 cr; QP-1101, 1102, Econ 1101, 1102 or #; SP-1101, 1102 or Econ 1101, 1102 or #) Economic, political, social, and technical forces that have shaped the development of U.S. agriculture; the role of agricultural development in national economic development in the United States with implications for developing countries.</p> |
| <p>1251. Principles of Accounting. (3 cr) Fundamentals of business accounting; basic finance concepts; use of accounting data for income tax and managerial decision making.</p> | <p>3071. Agriculture and Economic Growth in Developing Countries. (3 cr; QP-1101, 1102, Econ 1101, 1102 or #; SP-1101, 1102, Econ 1101, 1102 or #) Characteristics and performance of peasant agriculture; potential role of agriculture in economic development, and design of economic policies to achieve agriculture and economic development; role of women in agricultural development.</p> |
| <p>3000. Seminar in International Agriculture. (1 cr [max 3 cr]; QP-#, SP-#) Presentation and discussion of students' research papers, literature reviews of selected topics, or discussions by students and faculty of their experiences in international agriculture.</p> | <p>3401. Markets, Marketing, and Prices. (2 cr; QP-1101 or Econ 1101; SP-1101 or Econ 1101) Market structure; demand and supply structure; regulations and institutions that influence the behavior of firms in agricultural marketing systems; performance in food assembly, manufacturing, and distribution industries.</p> |
| <p>3001. Applied Microeconomics: Consumers and Markets. (3 cr; QP-ApEc/Econ 1101, Math 1142 or Math 1251, BA 1550 or Stat 1001; SP-ApEc/Econ 1101, Math 1142 or Math 1251, BA 1550 or Stat 1001) Intermediate price theory, consumer demand, and marketing. Theory and application of demand analysis. First part of a sequence with 3002.</p> | <p>3411. Grain Marketing Economics. (2 cr; QP-3400 or #; SP-¶3401) Economic relationships in the marketing of grain and grain products; grain grades, storage and transportation; market structure, channels, pricing, and competition; government programs and policies.</p> |
| <p>3002. Applied Microeconomics: Managerial Economics. (3 cr; QP-3001, 1250 or Acct 1050 or #; SP-3001, 1251 or Acct 2050 or #) Microeconomic theory and its application to managerial problems. Integrates theory and applications on special topics; production functions, cost analysis, linear programming, market structure, pricing policy, risk analysis, and capital budgeting.</p> | <p>3421. Livestock and Meat Marketing Economics. (2 cr; QP-3400 or #; SP-¶3401) Economic</p> |

- relationships in the marketing of livestock, dairy, and meat products; product grades; inspection and transportation; market structure, channels, pricing, and competition; government regulations and policies.
3451. **Food and Agricultural Sales.** (3 cr; 1101 or #) Professional selling of agricultural and food products. Build and refine sales abilities, identify and qualify prospects, deliver effective sales presentations, and close the sale; elementary principles of market research. Students develop and deliver a sales presentation.
3501. **Agribusiness Finance.** (3 cr; QP-1250, Acct 1050 or equiv; SP-1251, Acct 2050 or equiv) Analysis of financing and investment strategies for agribusiness firms and their effects on liquidity, solvency, and profitability; analysis of financial institutions, markets, and instruments; management problems and issues facing financial intermediaries serving agriculture.
3811. **Principles of Farm Management.** (3 cr; QP-1101 or Econ 1101; SP-1101 or Econ 1101) Strategic and operations aspects of farm management; financial analysis, budgeting, strategic management; marketing plan and control; enterprise and whole farm planning and control; investment analysis, quality, risk, and personnel management.
3821. **Retail Center Management.** (3 cr; QP-1101 or Econ 1101, 1250 or Acct 1050; SP-1101 or Econ 1101, 1250 or Acct 1050) Management of garden centers, grocery stores, and other retail units selling perishable agricultural products.
3921. **Agricultural Law.** (A-F only; SP-1101 or Econ 1101; QP-1101 or Econ 1101) Economic regulation of agriculture. Industrial organization and market structure in agribusiness, public lands and water law, agricultural cooperatives, farm labor, farm finance, crop insurance and disaster assistance, agricultural biotechnology, food and drug law, price and income regulations, and international agricultural marketing.
3991. **Independent Study in Applied Economics.** (1-4 cr; QP-#, SP-#) Independent study and supervised reading and research on subjects and problems not covered in regularly offered courses.
4096. **Professional Experience Program: Internship.** (1-3 cr [max 6 cr]; QP-COAFES jr or sr, #, complete internship contract available in COAFES Career Services before registering; UC only; SP-COAFES jr or sr, #, complete internship contract available in COAFES Career Services before registering; UC only; S-N only) Professional experience in agribusiness firms or government agencies gained through supervised practical experience; evaluative reports and consultations with faculty advisers and employers.
4103. **World Food Problems.** (3 cr; QP-§Agro 5200, §CAPS 5280, §FScN 5643; jr or sr or grad student; SP-§Agro 4103, §CAPS 4103, §FScN 4103; jr or sr or grad student) A multidisciplinary look at problems and possible solutions affecting food production, storage, and utilization in developing countries. Presentations and discussions introduce conflicting views on population, technology, and ethical and cultural values of people in various parts of the world.
4311. **Tourism Development: Principles, Processes, Policies.** (3 cr; QP-1101, 1102 or Econ 1101, 1102; SP-1101, 1102 or Econ 1101, 1102) Evolution of tourism industry; economic, environmental, and sociocultural impacts of tourism development; influence of government policies and organizations; models and tools needed for successful development; consequences of development activities and ways to involve stakeholders in decisions.
4451. **Food Marketing Economics.** (3 cr; QP-§FScN 5474; 3001, Econ 3101 or #; SP-§FScN 4451; 3001, Econ 3101 or #) Economics of food marketing in the United States. Food consumption trends; consumer food behavior; marketing strategies; consumer survey methodology; food distribution and retailing system; food policy issues related to food marketing. Individual and group projects.
4481. **Futures and Options Markets.** (3 cr; QP-3001 or equiv, Stat 1001 or equiv; SP-3001 or equiv, Stat 1001 or equiv) Economics of futures and options trading in theory and application; basis and price relationship in storable and nonstorable commodities; hedging and commercial use of futures and options contracts; speculation; pricing efficiency; market performances and regulation.
4611. **Resource Development and Environmental Economics.** (3 cr; QP-1101, 1102 or Econ 1101, 1102 or #; SP-1101, 1102 or Econ 1101, 1102 or #) Basic concepts of resource use; financial and economic feasibility; external effects and market failures; resource use and environmental problems. Measuring impacts of resource

- development; economics of alternative resource programs and environmental strategies.
4821. **Agribusiness Management.** (5 cr; SP-3002, 4501, Mgmt 3001) Strategic and operations management for production, processing, wholesaling, retailing, and service. Establishing mission and goals; strategy formulation, implementation, and control; quality management, process selection, operations planning, inventory management, human resource issues; business plans; case study analysis.
5031. **Methods of Economic Data Analysis.** (3 cr; QP-Math 1271, Stat 5021, knowledge of matrix algebra; SP-Math 1271, Stat 5021, knowledge of matrix algebra) Statistical and econometrics techniques for applied economists. Theory and application of multivariate regression model using data sets from published economic studies. Emphasis on use of statistical technique to understand market behavior.
5151. **Applied Microeconomics: Firm and Household.** (2 cr; QP-Econ 5151 or #; SP-¶Econ 5151 or #) Quantitative techniques for analysis of economic problems of firms and households. Links between quantitative tools and economic analysis developed to understand economic theory and develop research skills. Quantitative tools include regression analysis, mathematical programming, and present value analysis.
5152. **Applied Macroeconomics: Income and Employment.** (2 cr; SP-¶Econ 5152 or #) Static general equilibrium open economy models and simple business cycle models examine economic growth, business cycles, and fiscal and monetary policy. Input-output analysis and large scale econometric models. Sources and properties of economy and sector-wide data, and empirical applications.
5401. **Intermediate Market and Price Analysis.** (3 cr; QP-3001 or equiv, Math 1142 or equiv; SP-3001 or equiv, Math 1142 or equiv; A-F only) Development of analytical models and their application in various market situations. Study of unique market institutions in agriculture that have been developed in response to marketing and pricing problems.
5651. **Economics of Natural Resource and Environmental Policy.** (3 cr; QP-3001, 5610 or Econ 3101; SP-3001, 4611 or Econ 3101) Economic analyses including project evaluation of current natural resource and environmental issues. Emphasis on intertemporal use of natural resources, natural resource scarcity or adequacy, environmental quality and mechanisms for pollution control, and their implications for public policy.
5711. **U.S. Agricultural and Environmental Policy.** (3 cr; QP-3001 or Econ 3101; SP-3001 or Econ 3101) U.S. agricultural policy in an open world economy; role of private markets and government in regulating supply and demand; income vs. price support, supply controls, environmental constraints, and export protectionism; functioning of markets; roles of public interest groups and future of American agricultural policy.
5731. **Growth, Technology, and Development.** (SP-[3101, 3102] or equiv or instr consent; QP-[3101, 3102] or equiv or instr consent)
5751. **Agricultural Trade and Trade Policy: Issues and Analysis.** (3 cr; QP-3001 or Econ 3101; SP-3001 or Econ 3101) Trade policies of import and export nations, gains from trade, trade negotiations and agreements, free trade and common market areas, exchange rate impacts, primary commodities and market instability, current trade issues.
5891. **Independent Study: Advanced Topics in Farm and Agribusiness Management.** (1-4 cr; QP-#; SP-#) Special topics or individual work suited to the needs of particular groups of students.
5991. **Special Topics and Independent Study in Applied Economics.** (1-4 cr [max 12 cr]; QP-#; SP-#) Special classes, independent study, and supervised reading and research on subjects and problems not covered in regularly offered courses.
8202. **Mathematical Optimization in Applied Economics.** (SP-[5151, Econ 5151] or equiv or instr consent)
8401. **Consumption Economics.** (SP-[5151, Econ 5151] or equiv, ApEc 8230 or instr consent)
8402. **Marketing Economics.** (SP-[5151, Econ 5151] or equiv, ApEc 8220, ApEc 8230 or instr consent)
8444. **FTE: Doctoral.** (SP-Doctoral student, adviser and DGS consent, dept consent)

- | | |
|---|--|
| <p>8601. Natural Resource Economics. (SP-[5151, Econ 5151] or equiv, ApEc 8220 or instr consent)</p> <p>8602. Economics of the Environment. (SP-Econ 8004 or Econ 8104 or instr consent)</p> <p>8666. Doctoral Pre-Thesis Credits. (SP-Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)</p> <p>8701. International Economic Development, Growth, and Trade. (SP-Econ 8002 or Econ 8102 or instr consent)</p> <p>8702. Economic and Trade Policy: Sectoral and Institutional Issues. (SP-8230, Econ 8002 or Econ 8102 or instr consent)</p> | <p>8777. Thesis Credits: Master's. (SP-Max 18 cr per semester or summer; 10 cr total required [Plan A only])</p> <p>8801. Production Functions and Supply Analysis. (SP-[5151, Econ 5151] or equiv, ApEc 5030 or equiv or instr consent)</p> <p>8802. Managerial Economics. (SP-[5151, Econ 5151] or equiv, ApEc 8220 or instr consent)</p> <p>8888. Thesis Credits: Doctoral. (SP-Max 18 cr per semester or summer; 24 cr required)</p> <p>8901. Graduate Seminar: M.S. Program. (S-N only; SP-ag and applied econ MS student)</p> <p>8902. Graduate Seminar: Ph.D. Program. (S-N only; SP-ag and applied econ PhD student)</p> |
|---|--|

Appendix J-1. THE ECONOMIC DEVELOPMENT CENTER

Establishment:

The University of Minnesota Economic Development Center was established in 1967 as a joint activity of the Department of Economics and the (then) Department of Agricultural Economics. It was one of several centers and programs organized under the Office of International Programs of which Professor Willard Cochrane was the Dean. Much of the interest and energy for establishing the Center came from Professor Vernon Ruttan who was then Head of the Department of Agricultural Economics.

The Economic Development Center was organized to facilitate the research interests of graduate students and staff in the two departments who are interested in development economics and policy. The program of the Center is closely linked to several other units of the University of Minnesota which have a strong development orientation, such as the Center for Comparative Studies in Social and Technical Change and the Office of International Agricultural Programs. Professors Lee Martin and Peter Gregory were the initial co-directors of the Center. Subsequent co-directors were Vernon Ruttan and Ann Krueger and, finally, Terry Roe and Tim Kehoe.

Mission Statement:

To develop knowledge and its applications with respect to economic behavior in order to facilitate efficient economic growth. Initial research of the Center focused on three areas of central significance to the developing economies: (a) labor markets in

developing economies; (b) commodity markets and trade policy; and (c) technical change and agricultural development.

Funding Sources:

Between 1967 and 1970 the program of the Center was supported primarily by a small budget made available to the Center from a Ford Foundation institutional development grant to the University of Minnesota. These funds were supplemented by modest support to the Center or to members of the Center from the Rockefeller Foundation, and the Asia Society (SEADAG).

In July, 1970 the Center received a major grant from the U.S. Agency for International Development for research on the policy problems of agricultural development. This grant enabled the University of Minnesota to add two new positions in this field of development economics - one in the Department of Agricultural and Applied Economics and one in the Department of Economics. It also enabled the Center to engage in a much more ambitious research program including Ph.D. research projects. Over time funding support for the Economic Development Center has diminished to a very minor level. And, funding for most "international" research and training projects in the department has been subsumed under the Center for International Food and Agricultural Policy (CIFAP) and from other departmental contracts and grants.

Center Program:

The research program of the Center reflects the conviction that application of knowledge with respect to economic behavior can

represent an efficient source of economic growth. Major research efforts were established in three areas of central significance to the developing economies: (a) Labor markets in developing economies; (b) Commodity markets and trade policy; (c) Technical change and agricultural development. Over time, the interest and program of the Economic Development Center has not, however, been limited to these three areas.

In addition to sponsoring research, the Center sponsored a weekly workshop in economic development, a series of Center research bulletins, staff papers and reprints. This made it much easier for departmental faculty and graduate students to publish the results of their research activities. Although the Center had about run its course by the 1990s, it played a vital role in expanding the interests and involvements of faculty and graduate students from the Department of Agricultural and Applied Economics in the international arena during the late 1960s, 1970s and 1980s.

Appendix J-2. THE CENTER FOR FARM FINANCIAL MANAGEMENT

Establishment and Mission:

The Center for Farm Financial Management (CFFM) was officially established within the Department of Agricultural and Applied Economics in December of 1984 following a unanimous vote of support by the department's faculty, approval by the Dean of the College and written permission from the University's Central Administration. The idea to create the Center was the product of discussions begun in early 1983 between Edward Schuh, the department head, and Professor Richard Hawkins. The goal was to establish an institution that would attract resources from diverse sources to carry on and expand farm financial management educational programs for farmers, extension educators, bankers, the, then, Farmers Home Administration (FmHA), and other agricultural professionals in Minnesota and other states during a time of both financial crisis in agriculture and shrinking regular funding to do such work. The accepted proposal and operating procedures were designed to include work with and through the interested Extension Services and Departments of Agricultural Economics in other states as well as in Minnesota. The Center's mission was to teach farm management and financial management principles and concepts to agricultural producers and the professionals who serve them using educational computer software in a way that would allow practical applications.

The Department's Extension Farm Management faculty, rated among the top five in the country, was uniquely qualified to undertake this endeavor because of its highly regarded educational efforts and its

development and use of the computerized farm planning and analysis tools now called FINPACK. Development of these computerized tools started in 1972 as an innovative way to help farm families and agricultural lenders better understand and use the principles and concepts of farm planning and analysis. In 1976, FmHA, now the Farm Service Agency (FSA) and state and county staff who had received FINPACK farm planning and analysis training from the department's farm management faculty wanted to test its use as a loan decision and supervising tool with their clientele. A national pilot project was proposed to test this approach by FmHA to improve its ability to provide supervised credit to its eligible farmers. FmHA funded the project from 1977 through 1986 with over \$600,000. Dale Nordquist was hired in 1977 to lead this project. Minnesota bankers, observing this successful effort, were agreeable to funding a project among twenty banks to test FINPACK use in their setting. Robert Craven was hired in 1981 to lead this project. From 1981 through 1983, the initial twenty banks together with the American Bankers Association and the Minnesota Bankers Association provided an additional \$180,000 to further develop and test FINPACK.

In 1983 the Federal Extension Service made \$80,000 of special project monies available to convert FINPACK from a mainframe to a microcomputer application, and to share it across state lines with Iowa, Kansas, Missouri, Nebraska and Wisconsin. It was in this setting that the Center for Farm Financial Management came into being, and immediately received \$125,000 from the Federal Extension Service to help initialize

the Center and facilitate further sharing of Minnesota's expertise with an increasing number of states. Professor Hawkins, who had been guiding the three above mentioned projects, became the director of the Center and remained so until his retirement in 1997. Nordquist and Craven became the first staff members of the Center, and in 1997 Craven became director and Nordquist associate director.

Funding:

Since its inception in 1984, the CFFM has been primarily self funded. From 1987 to the year 2000, the Center has generated over \$4.3 million in income funds and over \$2.7 million in grant funds. Sources of income funds include license and annual support fees paid by private and non-extension public users of FINPACK and other educational software produced by the Center. Hard dollars were first made available in 1999 from the College of Agricultural, Food and Environmental Sciences and Agricultural Education; but currently comprise only 7.8% of the annual budget. Over time, annual CFFM operating costs have increased from the initial \$145,000 to about \$800,000.

Progress:

By 1988 the extension farm management staffs of thirty-five states were participating with the Center and had been trained in the use of FINPACK and the Center's teaching methodology. Together with Center staff they helped train the county extension staffs of their states and conducted educational programs for their farmers using FINPACK and its methodology. FINPACK continued to be expanded to include the various crop, livestock, and loan needs of all fifty states,

and the business analysis part of the program was expanded to include analysis of each enterprise. To handle the increasing demand for its expertise, the Center staff grew to four and a half M.S. level extension economists, an operations assistant, and one secretary.

In 1989 an English international version of FINPACK was created for use by the extension service in Ireland, with 56 of their staff trained in its use. This version accommodated the metric system, other currencies, and the varying enterprise structures found in Europe. The Minnesota State Legislature made funds available to the Center to train the state's adult vocational education teachers in the use of FINPACK and make it available to them. Part of this appropriation made upgraded microcomputer equipment available to Minnesota county extension offices. As of the year 2000, 1,500 agricultural professionals had been trained and were using FINPACK with 30,000 farmers annually in the U.S.

During the 1990s the Center staff grew to a total of eleven, Polish and Spanish language versions of FINPACK were created and put into use in Poland and Costa Rica, FINPACK itself was greatly improved and converted from DOS to Windows, an addition was created to summarize and store the analysis data in an accessible data base for participating groups and for research purposes, and a version was created for direct use by farmers. The Center was asked to take on many other projects to develop software to effectively teach an array of agricultural subjects including manure management, farm environmental management, dairy enterprise management, and marketing management.

As of the year 2000, the Center's efforts support 5,428 users of its software, 3,000 of whom are agricultural professionals using FINPACK directly with over 40,000 farmers annually. The Center also maintains contact and gives support to agricultural professionals in sixteen countries who have Center software. FINPACK is upgraded annually to incorporate the latest computer technology and new subject matter areas such as marketing management and risk management. As of the year 2000, the Center staff is comprised of Robert Craven, Dale Nordquist, Kevin Klair, Rann Loppnow, Wynn Richardson, Chris Mikesell, Dave Nordquist, Andrew Whyte, Jane Sandstrom, Maeve O'Mara and Lyuba Babetskaya. Over the years the Center has provided assistance to several graduate students in the form of assistantships,

projects, and subject matter and technical assistance. Several Department "firsts" are attributable to the Center - generating income to carry out extension education through sales of software and service, use of full-time M.S. level faculty, employing full-time microcomputer programmers, and having a nationwide program with and through an identified Land Grant agricultural economist (state leader for the Center) in each state. The Center and its staff have received several awards including the USDA's Superior Service Award, the AAEA Distinguished Extension Program Award, the Minnesota Adult Education Outstanding Program Award, the Minnesota Extension Service Distinguished Faculty Award, and the Minnesota Extension Service Distinguished Civil Service Staff Award.

Appendix J-3. CENTER FOR INTERNATIONAL FOOD AND AGRICULTURAL POLICY

Establishment:

As part of the Minnesota Campaign in the 1980s, endowment donations from the Cargill Foundation, Archer Daniels Midland Company, and John Cowles Sr. helped create a unique opportunity for the Department of Agricultural and Applied Economics. Instead of establishing an endowed faculty position, the department envisioned an initiative that would involve and benefit faculty and students from a variety of disciplines. To do this the Center for International Food and Agricultural Policy (CIFAP) was established in 1988 with Professor C. Ford Runge as its first director. Subsequent directors have been Professors Harald Von Witzke, Benjamin Senauer and K. William Easter.

Mission Statement:

The principal mission of the Center is to provide leadership in research to improve our knowledge of the international aspects of food, agriculture, nutrition, natural resources, and the environment. The Center uses its research and education activities to increase international understanding of food, agriculture, nutrition, natural resources and the environment and to positively impact the policies of both developed and developing countries. The Center provides a means for faculty in the department to coordinate their resources and focus their work on a number of important international policy issues. It also gives the faculty and students a greater opportunity to conduct research and collect data in other countries.

Funding Sources:

Funding for the Center's activities comes entirely from an endowment fund totaling about \$2.9 million in the year 2000. This endowment generated annual income for the Center of more than \$150 thousand.

Organization and Operation:

The Center director is a regular member of the department's faculty. A seven-person steering committee is also composed of faculty from the department. However, Center members have been drawn from a number of other departments in the University including Political Science, Law, Economics and the Hubert H. Humphrey Institute of Public Affairs. In addition, Center associates have included former Congressman Tim Penny, Danilo Agostini of the University of Padova, Italy, and Harald von Witzke of the Humboldt University, Berlin, Germany, to name just a few. The Center has a Board of Advisors made up of distinguished persons mostly from Minnesota.

The Center uses its modest budget in support of the following:

- (1) Sponsoring workshops and seminars;
- (2) Funding international travel for faculty and students;
- (3) Supporting departmental faculty and graduate student research in other countries;
- (4) Publishing working papers;
- (5) Providing scholarships for outstanding graduate students;

- (6) Sponsoring visits by faculty from universities with which the Center has cooperative agreements;
- (7) Collaborating with other institutions to obtain funding to support international research or training; and
- (8) Funding an annual award for graduate student writing.

During the 1990s the Center's major programs have included:

- Official Exchange Agreements with:
 - University of Padova and a Consortium of Italian Universities (Bologna, Florence, Milan and Perugia)
Main activity: Biannual conference and joint research.
 - Humboldt University, Berlin
Main activity: A graduate student exchange under the M.S. International Agriculture Program at Humboldt University.
 - Olsztyn University, Poland
Main activity: Major partner in three US-AID training projects which have been completed. Current activities involve help in teaching four courses annually paid for by Olsztyn University.
 - Swedish University of Agriculture, Uppsala
Main activity: Exchange of faculty on sabbatical and joint research
 - International Food Policy Research Institute (IFPRI), Washington, D.C.
Main activity: Joint research, partners on US-AID training project

in Bangladesh completed in 2000 and research opportunities for University of Minnesota graduate students at IFPRI.

- Zhejiang University, Hanzhou, China
Main activities: Exchange of faculty and students, teaching and joint research.
- Tamil Nadu Agricultural University, Coimbatore, India
Main activities: Exchange of faculty and joint research (agreement under discussion).
- Senior Policy Fellow: Former U.S. Congressman Tim Penny
Main activities: Public policy conferences and other outreach activities.
- Seven Joint Conferences on Food, Agriculture, and the Environment held under an exchange agreement with Padova and four other Italian Universities, 1989-2000.
- Co-sponsorship of seven public policy conferences and workshops. Three recent ones have included:
 - March 2 and 16, 1999 conference on "The Agricultural Crisis: Causes, Consequences and Cures," co-sponsored by Minnesota Agri-Growth Council at the Hubert H. Humphrey Institute of Public Affairs.
 - March 25, 1998 conference on "Investing in Minnesota Agriculture: Transportation Infrastructure," co-sponsored by Minnesota Agri-Growth Council in St. Paul.

- October 8, 1998, "Environmental Policy: The Next Generation," with the Hubert H. Humphrey Institute of Public Affairs.
- Helped initiate and/or manage training education programs in Bangladesh, Morocco and Poland, 1994-2000.
- Provided international research travel grants for 20 graduate students to do research in a wide range of countries (\$20,000 available each year).
- Provided an additional stipend of \$2,000/year during the graduate program for one new student each year, plus an annual travel grant of \$2,000.
- Sponsored visits of University faculty from Italy, Poland, Germany, China and Sweden.

Appendix J-4. THE TOURISM CENTER

Establishment:

Established in 1986 with the announcement of the Carlson Endowed Chair, the Tourism Center became affiliated with the Department of Agricultural and Applied Economics in 1992. Professor William Gartner was hired as the Center's Director in January, 1993 and provided tenure in the Department. Professor Gartner served as the Center's Director through the year 2000.

Mission Statement:

The Center's mission is to lead in providing education, research, and outreach services that enhance the understanding of Minnesota's \$9 billion (in year 2000) travel and tourism industry and its relationship to people, communities, industry and the environment. The Center also offers a number of programs intended to enhance individual and institutional performance, provide technical expertise in the development of new touristic products, and assist the public sector to improve customer service.

Funding Sources:

The Center receives the majority of its salary and some of its operating funds from the University of Minnesota Extension Service. Additionally it has an active research program in transportation, consumer behavior and the economic impacts of managed fisheries. As of 2000, research contracts exceed \$400,000. Fees are charged for services and the amount received is devoted to maintaining and upgrading offered programs. A major source of support for the Center is the

Carlson Tourism, Travel and Hospitality Chair. The Chair, which was established from contributions by Curtis Carlson, other members of the Minnesota tourism industry and the University of Minnesota, was capitalized at over \$1.5 million in the year 2000. Annual proceeds from earnings are used to support Center activities.

Center Staffing:

In year 2000, Center professional staff consisted of three statewide Extension Educators; Cynthia Messer, Kent Gustafson and Dan Erkkila. Veronica Long, Extension Educator, was housed at the Experiment Station in Grand Rapids and serviced the Northwest section of the state.

Assessment of the Center's Program:

The strength of the Center's work is most evident in the status of its programmatic offerings. "At Your Service" and "Community Tourism Development," two of the Center's programs, are ranked as two of the top ten Extension programs by the Community Vitality Program area within the Minnesota Extension Service. Significant publications by Center faculty include a thoroughly revised version of the award winning Rural Tourism Development manual which appears as Community Tourism Development with a Spring 2001 release date, and the textbook *Tourism Development: Principles, Practices and Processes* (Wiley 1996) written by William Gartner. Gartner has also collaborated on another book, *Trends in Outdoor Recreation, Leisure and Tourism*, edited by W.C. Gartner and D.W. Lime, CABI, 2000.

Appendix J-5. MINNESOTA COUNCIL ON ECONOMIC EDUCATION

Establishment:

The Minnesota Council on Economic Education, hereafter referred to as “the Minnesota Council” or “the Council”, was founded in 1961 as a 501(c)(3) non-profit organization. The Minnesota Council was originally hosted by the Department of Curriculum and Instruction, College of Education and Human Development at the University of Minnesota. Over the years the Minnesota Council developed a network of Centers for Economic Education located at other higher education institutions within the state. This creative collaboration among higher education institutions provided convenient access to professional development for teachers throughout the state. Although the number of centers and locations has varied slightly over the years, in addition to the University of Minnesota-Twin Cities, four other institutions have continuously supported a center through the in-kind contribution of a faculty member's time to direct a center. They are the University of St. Thomas, University of Minnesota-Duluth, St. Cloud State University, and Minnesota State University Mankato. The in-kind contribution of faculty from institutions of higher education continues to be the major source of support for the efforts of the Minnesota Council and its network of Centers.

After more than 30 years of hosting the Minnesota Council, the Department of Curriculum and Instruction determined it was no longer able to carry the significant debt the Minnesota Council had built up over the years. A new home had to be found.

Under department head James P. Houck's leadership, the Minnesota Council moved to the Department of Applied Economics in 1992. Houck believed the Council's mission was a congruent fit for the outreach and extension efforts of the department. After Houck gained support for hosting the Minnesota Council among departmental faculty, Professor Claudia Parliament became the first Executive Director within the Department of Applied Economics in 1992.

Mission Statement:

The mission of the Minnesota Council is to increase economic literacy of Minnesotans by providing professional development in economics to primary- and secondary-level teachers. The objectives are to outline an appropriate scope and sequence of economic concepts, enhance the economic understanding of classroom teachers through professional development, and provide teachers with high-quality curriculum materials and evaluation instruments. The underlying assumption is that the most effective way to increase economic literacy in Minnesota is to improve the economic understanding of classroom teachers so they can reach students year after year.

Operation and Achievements:

Since the Council moved to the Department of Applied Economics, it has produced several major achievements. The Council took the lead in getting the understanding of economics included in the requirements for high school graduation under the state educational reform efforts with the adoption of the Profile of Learning. Although

implementation and refinements continue with state education standards, the MN Department of Children, Families & Learning and many school districts have significantly progressed in accepting the importance of economic literacy in the secondary curriculum due to the MN Council efforts. More than fifty-three percent of the school districts plan to require the economics content standard for students graduating in 2004 and beyond. In contrast, in 1992 only a meager handful of school districts required economics for high school graduation.

The Minnesota Council has also overcome its debt to the University and established a significant fund balance. In 2000, the Council had total support and revenue of \$800,000, including in-kind contributions of \$508,000. Its unrestricted net assets were \$235,000.

In 1999 the Council expanded its network with the opening of a Center for Economic Education at Minnesota State University Moorhead. This Center serves the northwest region of the state as well as portions of North Dakota. Current plans are to open a Center to provide better coverage to southeastern Minnesota. For a number of years in the mid to late 1990s there was a center at Southwest State University in Marshall, but due to cuts in funding this center was discontinued in 2000.

Currently the Council publishes a newsletter for elementary and secondary educators; maintains a Web site describing the Council's programs and professional development opportunities; and offers programs to students such as *Economics Challenge*, a "quiz bowl" competition for high school students; *Cargill Commodity*

Challenge Contest, which promotes understanding of the ties between current events and price changes in commodity markets; and *Econhostel*, a one-week residential learning experience for high-ability students. Other Council supported programs include the 3M *Economic Education Awards*, which recognize and reward classroom teachers who demonstrate commitment and innovation to economic education; *Economic Education Winter Institute* at St. Cloud State University, which brings together community leaders and teachers to learn more about current economic issues; and *Summer Teacher Internships*, hosted by University of St. Thomas, which provide in-house business internships.

Over its 40 years of existence, the Minnesota Council has, in addition to government grants, had a number of committed and continuous supporters. These organizations include the Federal Reserve Bank of Minneapolis, 3M Foundation, US Bank-Piper Jaffray, Otter Tail Power Company, SUPERVALU, and the Bayport Foundation.

Other current major supporters include Cargill, Inc. and General Mills. The Council has always experienced committed support among many firms and individuals. The faculty of the Department of Applied Economics have been active supporters with up to thirty percent of the faculty providing annual personal contributions to the Council.

In 2000 the Minnesota Council established a memorial fund in the name of James P. Houck to be used to encourage classroom teachers to further their understanding of economics. When the endowment reaches \$25,000 it will be managed by the University of Minnesota Foundation.

Appendix J-6. THE RETAIL FOOD INDUSTRY CENTER

Establishment:

By 1994, the Alfred P. Sloan Foundation had already established eight industry study centers at six major universities. Starting with the International Automotive Center at MIT about six years earlier, they set out to change the way academics approach the study of economic competitiveness and productivity in individual industries. They granted substantial sums of money to establish centers so faculty and graduate students could visit and interview key people in the firms they were studying in order to become familiar with how the firms in the industry operated before they applied their academic discipline and models to studying the firms and the industry's performance. Each center was funded to study a separate industry.

A center for food processing, retailing and services was seen as a natural fit for the Applied Economics Department whose expertise in agricultural economics and industries and consumer food behavior were well established. And, the mandate to approach research from the problems and issues of the industry was consistent with the long established approach of agricultural and applied economists. This Center would give them, along with others at the University of Minnesota, the chance to establish expertise in the middle of the food supply chain, that is, the food manufacturers, wholesalers, distributors, retailers, and food service establishments. It would help the faculty and students to grow and establish their knowledge in the growing part of the food chain simultaneously as it was happening in the real world and help to make them leaders in the profession in the economics and

operations of food and agricultural industries. By the first of January, 1995, the Sloan Foundation made its first grant of \$1.63 million to the University of Minnesota, establishing The Retail Food Industry Center (TRFIC) - the first Sloan Center in the center of the nation and the second at a land grant institution. (By 2001 there are 16 Sloan industry study centers.)

Mission Statement:

The mission statement of the Center is: *The Retail Food Industry Center will be the leading source of knowledge on how food reaches consumers effectively and efficiently. Through research and educational programs, it will help develop leaders for tomorrow's retail food industry.* In preparing the third proposal for Sloan Foundation funding in January, 2001, it was declared that the Center was indeed meeting its mission.

In the first year a logo and official brochure were designed by a professional marketing firm. The semantics and meaning of the retail food industry generated considerable discussion among the steering committee members and later, at the Board of Advisors. It turned out that "Retail Food" is known, in the industry, as the grocery industry. Foodservice is separate and refers to both commercial and non commercial food establishments that serve ready-to-eat food. And the food manufacturers do not consider themselves to be part of the retail food industry. Thus, a tagline to the logo explains that the Center considers its purview to be the whole supply chain between the farm gate and consumers. The tagline reads: *Advanced Knowledge About*

Processing, Distribution, Sales and Food Service. In 2001, the word Retail was dropped from the name and it became The Food Industry Center.

Organization:

Professor Jean Kinsey became the Director of The Retail Food Industry Center in 1995. She held that position until 2001 when she was joined by Professor Benjamin Senauer as Co-Director. Spending about seventy percent of her time administering the center, writing, speaking, supervising graduate work, and soliciting research projects from other faculty paid off in a second grant from the Sloan Foundation in 1998 of \$1.5 million and another of \$1.2 million approved for commencement in 2001. Subgrants have been made by the Center to individual faculty and graduate students with compatible projects.

An outside Board of Advisors was formed in 1996 to provide industry contacts and advise. Michael Wright, CEO and President of Supervalu agreed to be the initial chair of the board inviting several of his business acquaintances to join him on the board. As a result, the Board consists of many CEO's of major food companies, leaders of Trade Associations, and some well-known academics.

Center Operation:

The research and education program of TRFIC had, by the end of the year 2000, generated 29 working papers which were published on an active TRFIC Website (<http://trfic.umn.edu>). Sixteen faculty from across the UM had been funded to conduct some type of research about the food industry, five in Applied Economics, two in

Food Science and Nutrition and nine in the Carlson School of Management (CSOM). Thirty-two graduate students had been involved in projects. Five M.S. students and 15 Ph.D. students had graduated; eight went to work in private industry, eight were teaching and conducting research in universities around the world and three were working at USDA.

The core research project and product of TRFIC is the Supermarket Panel. It took three years to launch this data collection project and achieve the first full annual report and analysis of the data collected from a random, representative, sample of grocery stores around the country. The design is to collect data from the same stores each year in order to track their performance and link it to technology adoption, management practices, food handling, labor practices, and quality of customer service. Professor Robert King became the faculty Project Director for this in 2000 and moved it to a successful program.

Having conducted several research projects related to the retail food channel of the food industry, the Center is moving into research on the foodservice sector, while still continuing to conduct surveys of consumer preferences and behavior, and funding research of professors and students who have projects that fit the needs of the Center. One of the spinoffs of the intensity of work on the retail food chain through the Center has been increased undergraduate student interest in internships and mentorships in food firms, and more graduate students coming to the Department of Applied Economics in order to work on the food industry. The Center is training faculty in the CSOM in expertise in the food industry. Their disciplinary skills have been

invaluable to the work of the Center and in return they are becoming knowledgeable about the food industry. It is truly a multi-disciplinary center.

On the educational side, the Center has offered a food marketing course for outsiders under the title of *Going for Gold*. It was led and partially taught by Dr. Ronald Larson who worked with the Center as a research associate for two years. Many of

the department's regular curriculum courses have adopted more food industry examples and case studies. Faculty members work with trade associations on educational programs for people in the industry including an annual Leadership Course with the Food Marketing Institute. In addition, a large collection of academic and trade literature about the food industry is housed in the department's Waite Library.

Appendix J-7. THE CENTER FOR POLITICAL ECONOMY

Establishment:

The Center for Political Economy was established in May, 1995. The Center's founding members include faculty from two colleges and three departments, the Department of Political Science, the Department of Economics and the Department of Applied Economics, with Professor Terry Roe as Center Director. Two years of start-up funding of about \$50,000 per year were provided from the University's Interdisciplinary Research and Post Baccalaureate Education Program which is administered by the Office of the Vice President for Research and Dean of the Graduate School.

The impetus for the Center came from two directions. First, an implication of an ever more inter linked world economy is the challenge it presents to the development of governance structures and the provision of sound economic and environmental policies.

This challenge requires a multi-disciplinary effort. Second, the evolution of thought in some areas of query in political science and economics suggests the re-emergence of a more common path. In the nineteenth century, political economy was a thriving discipline. Ricardo's *Principles of Political Economy and Taxation* and Mill's *Representative Government* were written in the same disciplinary tradition. By the beginning of the twentieth century, economics and political science emerged as separate disciplines that soon followed different intellectual paths. The contributions of a number of scholars in recent years suggests some re-emergence of a more common path. In this vein, the Center seeks to promote scholarship in

political economy by linking more formally the ongoing teaching and research programs of faculty and graduate students in the areas of economics and political science.

Center Goals:

The Center seeks to promote scholarship in political economy by linking more formally the ongoing teaching and research programs of faculty and graduate students in the area of economics, economic policy and governance. In addition to influencing the content of graduate level courses, specific goals entail:

- (1) a seminar program designed to foster stronger linkages and provide increased synergism among faculty and graduate students;
- (2) the development of a proposal to establish a Minor in Political Economy in the Graduate School;
- (3) promotion of the Center and its activities to peer institutions;
- (4) the development of linkages with faculty in related programs, such as those in Public Affairs and Public Health; and
- (5) the drafting of a proposal(s) seeking external funding to sustain the Center, strengthen its research program and relate it to political economy problems over time.

The Center's activities are to pursue, though at a lower level of intensity, the above goals with emphasis on inter-faculty and graduate student interaction in studying and researching issues in the area of political economy. The intensity of the activities are being held in check pending the additions to

the faculty in Political Science and Economics.

During the first several years, the Center was very active with relatively new hires to the faculty of Political Science and Economics taking major initiatives in course development and in obtaining outside funding. Recently, activity has declined somewhat, however, due in part to the departure from the University of key faculty members.

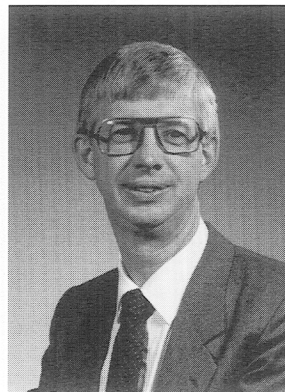
Accomplishments:

A major seminar series of invited speakers has been a mainstay of the Center. Several graduate students in economics who worked with Center faculty have completed their degrees. The Center publishes key papers from the seminar series in its working paper series.

Appendix K. DEPARTMENT HEADS IN AGRICULTURAL AND APPLIED ECONOMICS,
1979-2000



G. Edward Schuh
1979 - 1984



Michael Boehlje
1985 - 1990



James P. Houck
1990 - 1998



Vernon R. Eidman
1998 -