Abstracts

Symposia

Lifelong Learning. Carl E. Olson, presiding (University of Wyoming), Maurice Baker (University of Nebraska), Robert O. Burton, Jr. (Kansas State University), and Kenneth L. Casavant (Washington State University)

A common thread of the symposium was that instructional goals of the classroom include 1) developing problem-solving skills and competence in a disciplinary and/or subject matter context, 2) realizing how the discipline and/or subject fit into the whole of society, and 3) developing in the students the desire to continue to learn and expand their knowledge base throughout their lifetimes.

It was stressed that the individual course syllabus or outline given the students should identify clearly what are the goals and intent of the course. This allows the students a basis for developing their expectations of a particular course and for evaluation of the course in terms of the instructor meeting the goals and intent of that course.

The methods of instruction used to meet course goals and intent were widely discussed by the presentors and the audience. It was suggested that the students need to work with the theories and tools presented to "solve problems" within the context of the subject matter and/or discipline of the course. An idea suggested was to have the students be more self-taught with guidance from the course instructor. The instructor would present the basics and then the students would work on their own to use the basics to identify problems, develop solutions to the problem and communicate their results to the instructor in an appropriate manner.

Caution was expressed that the instructor avoid using a trade school approach—that is, to avoid as much as possible the "how to do" approach, but rather emphasize the development and use of a body of theory and a set of "tools" and skills that are used to identify the subject matter and/or disciplinary problems and development of solutions to such problems.

Three general areas were suggested as needing to be developed for the educational process to occur and to develop the desire for an individual to become involved with Lifelong Learning. They are: 1) developing an understanding of society through exposure to the liberal arts; 2) understanding and being able to use the scientific method with the discipline or major area of study; and 3) developing good communication skills, including oral, written, listening and reading.

Extension Delivery Under Budget Stress. Neil Meyer, presiding (University of Idaho), Thomas Dobbs (South Dakota State University), and Clement Ward (Oklahoma State University)

Extensions' delivery system must change to reflect the changes and economic pressure which exist in rural areas today. These changes affect who is being served: the large commercial operator, the mid-sized producer as mandated by the 1985 Food and Agriculture Act, and the part-time producer or homeowner.

Several basic conditions were thought necessary to maintain support. They include: (a) maintaining a presence in all counties (i.e., a minimum of one agent in each county), (b) repackaging educational materials to make them available for use at times convenient for the learner (i.e., sound or video cassettes which can be ordered by phone and distributed or have programs broadcast by satellite which clientele could then record for later viewing, including a procedure for phone follow-up), (c) changing the mix of wholesaling (producing information and releasing it to others for their selective re-release) and retailing (direct presentation to users) information, (d) more direct cooperation among extension and research faculty and program clientele (implies clusters of extension and research personnel being located at extension/research centers within two hours of producers), and (e) more training is needed for extension economists. Intradisciplinary training is needed to improve skills in solving economic problems as well as interdisciplinary training to permit working on problems which transcend disciplinary lines. This should also include changing the reward structure towards more credit for cooperative work with other researchers. In summary, the roles of county faculty, state specialists and experiment station researchers need to be redefined to encourage higher degrees of communication and cooperation. This will permit applying the full resources of the university to the present and future problems of rural citizens.

Selected Papers

New and Provocative Issues, Art Stoecker, presiding (Oklahoma State University)

"The Evolution of Fashionable Research in Agricultural Economics." David L. Debertin and Garnett L. Bradford (University of Kentucky)
This paper examines some of the historical trends in the evolution of research using econometrics, simulation, and operations research within agricultural economics. Agricultural economists are placing increased emphasis on economic theory and on increasingly sophisticated quantitative techniques. Implications of these trends for the future of agricultural economics research are discussed.

"Valuing Women's Role in Development: Is It Adequately Measured?" Twila Jacobsen (Oregon State University)
The division of labor along gender lines reflects itself in the acounting of the Gross National Product (GNP). This has resulted in the undervaluation of production and income activity of women. In order to formulate development theories and strategies it is imperative to acknowledge the importance of women's economic activity.

Resource Economics, Harry Mapp, presiding (Oklahoma State University)

"Contingent Valuation of Preserving Endangered Species Using Volunteer Time as a Payment Option." Karl C. Samples and James R. Hollyer (University of Hawaii)
This paper explores the feasibility of including time as a payment option when valuing public goods using the contingent valuation method (CVM). Welfare theory and empirical results suggest that some individuals prefer making payments in the form of volunteer time rather than money. CVM estimates are sensitive to the monetary value assigned to time contributions.

"Distribution of Social Costs on the Rock Creek Idaho Rural Clean Water Project." David J. Walker and Dan T. Noble (University of Idaho)
Federal soil and water conservation programs traditionally have relied on cost-share payments to encourage participation. Not much is known about the distribution of water quality costs between government and farmers. This paper examines the high share of after-tax costs borne by the government for an irrigated tract in southern Idaho.

"A Methodological Issue in Appraisal of Regional Water Projects: Indirect Effects." Neil Meyer and G. C. Van Kooten (University of Saskatchewan)
The inclusion of secondary effects in benefit-cost analysis is inappropriate because the assumption of a static demand implies that these secondary effects are interregional transfers. The current analysis points out how distortions in other markets constitute true indirect benefits and it suggests how these benefits or costs can be measured. Finally, several B-C studies are reviewed to evaluate the method of estimating secondary effects and to question whether net welfare has really increased.

"Must the Government Control Livestock Numbers on Public Ranges to Prevent Severe Overgrazing?" Ray Huffaker (University of Tennessee)
This paper argues that the government may not need to specify livestock numbers in grazing permits to prevent public ranges from being severely overgrazed if permittees operate with management flexibility and secure rights to their allotments. The goal is to lend economic support to the BLM's Cooperative Management Agreement Program.

Finance, Paul Wilson, presiding (University of Arizona)

"An Overview of Conditions, Trends and Transition in Agriculture and Banking." John A. Hopkin and David J. Leatham (Texas A&M University)
The American Bankers Association (ABA) undertook an assessment of the role of banks in providing credit and other financial services to the farm sector. This paper summarizes the findings of this study. Study reviews the trends in banking; projects the future economic conditions in agriculture; provides an assessment of the existing agricultural credit delivery system; and addresses the credit and banking policy changes needed to stengthen the ability of banks to serve the changing financial needs of agriculture.

"A Financial Evaluation of Alternative FmHA Debt Restructuring Programs." Scott M. Mendenhall, Andrew Vanvig, and Larry J. Held (University of Wyoming)
Alternative debt restructuring programs—deferral of principal payments, partial set-aside of loan balances, interest rate reductions, extended loan terms, and a no interest payment option—are analyzed over a five year period for a representative Wyoming farm situation. The no interest payment option is found to be most effective.

Western Journal of Agricultural Economics, 12(2): 234–239

"An Analytical Model for the Investigation of Farm Income Distributions." Gary McBryde and Philip R. Wandschneider (Washington State University)
A stochastic dynamic program model is developed to investigate impacts of agricultural policies. Monte-Carlo simulation of a farm unit is described. The impact of the policies is measured on the changes in income distribution of these units. An entropy measure is defined to assess the impact on system stability.

"Characteristics of Farm Reorganization Bankruptcy Filings." Larry Janssen and Brian Schmiesing (South Dakota State University)
Although agricultural financial conditions and reorganization options have been analyzed extensively by agricultural economists, an analysis of actual chapter 11 bankruptcy filings has not previously been completed. The study analyzed 219 filings and documents the financial characteristics of the procedures and creditors.

Quantitative Methods, James Trapp, presiding (Oklahoma State University)

"Discriminating Alternative Meat Demand Systems Using Non-Nested Tests." T. Kesavan and Satheesh V. Aradhyula (Iowa State University)
Four different meat demand sytems were estimated for the U.S. using quarterly time series data for the years 1967–1984. Non-nested tests were used to discriminate these estimated demand systems. Results indicated that the specification in linearized almost ideal system dominates over the alternatives, linear expenditure system, indirect addilog system, and linear demand system.

"A Multivariate Flexible Accelerator Model for U.S. Agriculture." John Baffes and Utpal Vasavada (University of Georgia)
A multivariate flexible accelerator model in the context of a cost functional specification was employed to examine the input factor demand behavior of U.S. agriculture. Low adjustment rates for labor and rather high adjustment rates of capital were derived. Demand elasticities were consistent with the La-Chatelier principle. The model exhibited stability and the value function was found to be concave.

"Forecasting Beef Price Magnitude and Direction: Simultaneous-Recursive and Fully Simultaneous Approaches." Livia R. Cloman, James E. Epperson, and Tsu-Tan Fu (University of Georgia)
Accurate price forecasts are an essential tool for agricultural decisionmakers. These forecasts can be enhanced by reflecting both dimensions of price, magnitude and direction, in a forecasting model. Two simultaneous methods are examined and compared as to their forecasting ability.

"Quasi-Rational Expectations: Experimental Evidence." Robert G. Nelson and David A. Bessler (Texas A&M University)
The theory that expectations of economic agents can be represented by time series models was tested in a laboratory setting. Ten subjects gave 50 probabilistic forecasts of a Monte Carlo series. An aggregate of the means of their forecasts passed all tests for quasi-rationality.

Production Economics, Don Ethridge, presiding (Texas Tech University)

"Load Management Controls: Economic Friend or Foe of the Irrigator?" Donald C. Taylor (South Dakota State University)
Irrigator incomes are highly sensitive to yield losses from load management irrigation system power interruptions. Should irrigators, therefore, avoid load management control programs? Under the conditions examined in this case study, the answer is probably "yes" if irrigators are unable to opt out of the load control program during the irrigation season. If discretion to opt out is permitted, however, the answer is clearly the opposite "no."

"Forecasting Market Value for Used Farm Tractors." Gregory M. Perry, J. David Glyer, and Wesley N. Musser (Oregon State University)
Farm equipment represents an important component of asset values for many farms. Resale values for tractors were regressed against several independent variables to quantify how values change over time. Values were shown to exhibit a geometric pattern, particularly as tractors aged. Rates were significantly different between some manufacturing companies.

"Some Issues of Security and Stability Associated with Farmland Leasing." Michael Lundeen (University of Nebraska-Lincoln), Larry Janssen (South Dakota State University), Bruce Johnson (University of Nebraska-Lincoln), and Scott Peterson (South Dakota State University)
Several issues of security and stability in farmland leasing markets were examined in farmland leasing studies conducted in South Dakota and Nebraska during 1986. These issues are important because leasing is increasingly an integral component of production agriculture and represents one means of decreasing financial risk.

"A Dynamic Model for Determining Optimal Range Improvement Programs." Daniel J. Bernardo (Oklahoma State University)
A Markov chain dynamic programming model is presented for determining optimal range improvement treatment strategies and accompanying stocking rates. The model is applied to an eroded prairie

range site in southern Oklahoma. Results indicate that the economic efficiency of range investments is influenced by treatment cost as well as accompanying production practices.

"Effects of the Wool Act on the U.S. Sheep Industry." Glen D. Whipple and Dale J. Menkhaus (University of Wyoming)
A dynamic model of the U.S. sheep industry is constructed. The model incorporates restrictions on fixed capital and the demographic characteristics of the breeding flock. The model is simulated over the time period from 1954 through 1983 to estimate the impact of the wool incentive payment program on the U.S. sheep industry.

Effects of Policy on Trade and Production, Kary Mathis, presiding (Texas Tech University)

"European Community Enlargement and U.S. Corn Exports to Spain and Portugal." Tassos Haniotis and Glenn C. W. Ames (University of Georgia)
Analysis based on an Armington-type model differentiating products by origin indicates that U.S. corn exports to Spain and Portugal will face a dramatic decrease as a result of European Community enlargement. The 1987 agreement on the U.S.-EC feedgrain dispute over the enlargement does not reverse the decline in exports, but may reduce the magnitude of U.S. losses.

"The Substitution of Market Signals for Government Intervention in Agriculture: The New Zealand Case." Thomas E. Dickinson (California State University)
New Zealand's agricultural policy has shifted from extreme government intervention to a "more market" approach. This paper reviews the dismantling of protectionist programs and the resulting impacts on producers' incomes, changes in the system of marketing, and the effects on the rural economy.

"Futures Options to Protect Deficiency Payments and Idled Acres under the 1985 Farm Bill: A Case from U.S. Cotton Production." Foy Mills, Jr. (Texas Tech University)
Producers participating in the 1987 cotton program are exposed to price risk on their expected deficiency payment and idled acres. The purchase of call options is shown to be an effective method of reducing producer exposure to price risk in a rising cash market.

"The Demand for Pesticide Legislation: 1947-1980." Philip I. Szmedra (USDA, ERS)
This paper notes the significant federal legislation governing the use and manufacture of pesticides in this century, and develops a logit model to establish probable linkages between the probability of legislative enactment and underlying economic forces. Levels of pesticide production and occupational injury rates in the chemical industry were found to be positively related to the demand for legislation.

"Biotechnology and Dairy Herd Buyout Program: Implications for the U.S. Dairy Industry." Satheesh V. Aradhyula and David R. Krog (Iowa State University)
An econometrically estimated model is used to project the impacts of introduction and adoption of biotechnological advances in milk production on the dairy industry and government program costs. Projections indicate that in spite of removing about one million cows through dairy herd buyout programs, milk production increases dramatically as a result of biotechnological advances and the support price drops significantly.

Marketing and Price Response, John Yanagida, presiding (University of Nebraska)

"Production Response to Anticipated and Unanticipated Prices for U.S. Agricultural Production." Vickie J. Alexander, G. Scott Smith, and Fred C. White (University of Georgia)
An output supply and factor demand system for U.S. agricultural production is developed incorporating prices consisting of anticipated and unanticipated components. Results indicate that production response is not equivalent for the two components for most of the netputs. Production response to changes in anticipated prices is greater than response to unanticipated price changes.

"The Economics of Storing a Non-Storable Commodity." G. C. Van Kooten, Andrew Schmitz, and W. H. Furtan (University of Saskatchewan)
The case of commodity storage via a buffer stock under the price uncertainty case is extended to the case of perishable goods. We demonstrate that, in general, a buffer stock scheme is preferred to a buffer fund. Further, we show that a buffer fund scheme cannot be actuarially sound, except in very restrictive circumstances. An empirical example for beef is included.

"A Further Examination of the Combination of Forecasts With an Application to Forecasting Cattle Prices." K. L. Haden (University of Tennessee) and J. R. Franzmann (Oklahoma State University)
The premise of combining forecasts has been investigated in previous studies. The study further examines composite forecasts and previous studies and analyzes various methods of combining annual cattle price forecasts. Furthermore, this study attempts to examine some of the implications of employing various methods of combining forecasts. This study shows improved forecasts can result from

combining forecasts. Conclusions are compared with those from past studies and comparison of results indicate that data characteristics influence the type of composite methods which is most appropriate.

"Probit Analysis of Market Participants' Attitudes Toward Selected Market Alternatives for U.S. Farmers' Stock Peanuts." P. K. Kwakyi, J. E. Epperson, D. H. Carley, and S. M. Fletcher (University of Georgia)
This paper analyzed factors affecting marketing participants' attitudes toward selected market alternatives for U.S. farmers' stock peanuts using a "mirror-image" survey design and multivariate probit analysis. Agreement or disagreement among farmers and middlemen was ascertained via matching patterns of "mirror-image" variable relationships.

"Developing a Marketing Strategy for Branded, Low Fat, Fresh Beef." Dale J. Menkhaus, Glen D. Whipple, and Steven J. Torok (University of Wyoming)
The objective of this paper is to report the results of a logistic regression analysis designed to identify factors which are important in influencing purchase and reorder decisions of a branded, low fat, fresh beef product. Health related factors and visual differences significantly influence the probabilities of reordering and purchasing, respectively.

Financial Issues Affecting Borrowers and Lenders, John A. Hopkin, presiding (Texas A&M University)

"Structural Differences and Change Among Nonmetropolitan Texas Banks: Implications for Rural Funds Availability." Douglas G. Duncan (Texas A&M University)
Economic stress has placed rural banks at risk causing concern over rural credit availability. This paper identifies statistically significantly different characteristics of different bank types and structural changes between time periods. Information identified should assist policymakers in identifying and targeting policy alternatives affecting rural credit availability through rural banks.

"Commercial Bank Financing of American Agriculture." Paul N. Wilson and David L. Barkley (University of Arizona)
Declining agricultural-lending market shares for commercial banks for the period 1969–1982 is investigated using cross-sectional and time-series data for 48 states. Factor analysis and multiple regression techniques reveal that non-agricultural economic activity and bank structure explain a significant percentage of changing market shares.

"A Portfolio Analysis of Kansas Agriculture Equity Returns." Mario F. Crisostomo and Allen M. Featherstone (Kansas State University)
A portfolio analysis was performed to determine the optimal investment in alternative types of Kansas farms. If the rates of returns to equity do not shift in relative position among farm types, one might expect more medium sized swine farms and fewer medium sized beef farms in the future.

"Farmers' Optimal Mix of Fixed and Adjustable Rate Loans with Implications for Lenders." David J. Leatham (Texas A&M University) and Timothy G. Baker (Purdue University)
A discrete stochastic programming approach was used to evaluate Midwest crop-hog farmers' optimal mix of fixed-rate and adjustable-rate loans. Results showed that it would be optimal for risk averse producers to pay an interest rate premium as high as 2.25 percentage points to obtain fixed-rate debt. When fixed-rate debt was excluded from farmers' debt choice, total farm risk increased by 34.8%.

Agriculture and the Community, Thomas Dobbs, presiding (South Dakota State University)

"Agriculture in the Year 2000 and Beyond." Burton C. English (University of Tennessee) and Thyrele Robertson (Soil Conservation Service)
The Resource Conservation Act appraisal is the latest national analysis appraising agricultural resource availability. This paper presents the major analytical tool used in the analysis and provides a brief set of results. The analysis concluded that this nation's agricultural sector will be faced with a surplus resource situation during the foreseeable future.

"What is a Small Farm: Farm Size Classifications and Economies of Size." Douglas L. Young (Washington State University), Lewis C. May (University of Wisconsin), and Grera M. Shetewi (University of Tripoli)
Economic theory and policy relevance suggest using scale of plant as a measure of firm size; however, the Agricultural Census and USDA typically use value of sales. Pacific Northwest grain farms, but not dairies, showed much greater economies of size when a sales instead of a scale measure was used.

"Off-Farm Income and Employment in Nebraska: Impacts and Implications." Kenneth W. Forsythe, Jr., and Bruce B. Johnson (University of Nebraska)
This study examines the role of off-farm income in Nebraska agriculture in terms of magnitude, stabilizing influence on total farm family income, and the need for off-farm employment in the state. An estimate is made of farm family labor utilization in Nebraska. It is found that a considerable pool of human resource capital exists for off-farm employment.

"Examination of Public School Resources for Rural Communities: A Study of Size Economies in Eastern Nebraska Public School Districts." Kenneth W. Forsythe, Jr., John F. Yanagida, and Bruce B. Johnson (University of Nebraska)
This study estimates the average total cost function for fifty-three selected public school districts in eastern Nebraska over the time period 1981–1984. A quality of education index is developed and used to account for quality differences between school districts over time. Using a covariance model to pool time series and cross-sectional data, significant economies of size were found.

Risk in Agricultural Decisions, Roger Selley, presiding (University of Nebraska)

"An Alternative Algorithm for Convex Set Stochastic Dominance." Francis McCamley (University of Missouri)
Cochran and his associates discussed an algorithm for applying a combination of convex set stochastic dominance (CSD) and stochastic dominance with respect to a function (SDWRF) criteria. This paper presents an alternative algorithm which exploits a simple intuitive definition of the CSD criterion and a property of SDWRF utility functions.

"Subjective Probabilities and Mastitis Control Practices." Wayne H. Howard (University of Guelph), Thomas O. Knight (Texas A&M University), C. Richard Shumway (Texas A&M University), Robert W. Blake (Cornell University), and Michael A. Tomaszewski (Texas A&M University)
The dissemination of information by extension agents on dairy management practices used to control mastitis and the perception of that information by producers is investigated. Subjective probabilities are elicited from "experts," extension agents, and producers concerning the impact and cost of various management practices. Subjective marginal value products and marginal input costs are computed and compared for the respondent groups. Stochastic dominance is used to rank the relative importance of the practices as perceived by the respondents.

"Financial Performance of Risk-Income Models." Glenn A. Helmers (University of Nebraska), Joseph Atwood (Auburn University), Myles J. Watts (Montana State University), and Larry J. Held (University of Wyoming)
From a cropping returns data set used to estimate 19 different risk-programming solutions, the financial growth and survivorship of each model was simulated 25 times using four randomly selected states of the data set. The models included LP, MOTAD, and Target-MOTAD models with and without financial constraints. The results demonstrate the superiority of optimizing models over risk models.

"Accounting for Environmental Uncertainty in Range Improvement Analysis." L. W. VanTassell (University of Tennessee), J. R. Conner (Texas A&M University), and J. W. Richardson (Texas A&M University)
The ability of mesquite control methods to increase the success and survivability of ranchers in the Rolling Plains of Texas was examined via stochastic simulation. Risks stemming from environmental uncertainties were incorporated into the analysis. Results showed it was economically pertinent to control mesquite infestations.

"Effect of Machinery Cost Economies on Diversified Risk-Efficient Crop Plans." Larry J. Held (University of Wyoming), Glenn A. Helmers (University of Nebraska), Joseph A. Atwood (Auburn University), and Myles J. Watts (Montana State University)
Impacts of machinery costs on risk-income efficiency and associated activity mixes are examined in a mixed integer programming framework. Selected solutions optimized with machinery costs tended to be less diversified, showed higher returns over machinery costs, but lower returns over variable costs—than solutions optimized without machinery costs.

Trade and Policy Issues, Paul Gallagher, presiding (Kansas State University)

"Portraying Traders as Revenue Maximizers." Carlos Arnade and Robbin Shoemaker (USDA, Economic Research Service)
This paper introduces the trader decision rule and shows how it could be put to use. By assuming individual trading companies are price takers in the markets where they sell their goods and by assuming traders maximize revenues across these markets we derive properties of an export supply equation. This may aid in specifying and estimating export supply functions.

"Examining the Leontief Paradox in the U.S. Food and Fiber Trade." Chinkook Lee, Darryl Wills, and Gerald Schluter (USDA, Economic Research Service)
Factor intensity of U.S. agricultural trade is examined in the context of Leontief's classic paradox using Leontief's method as well as methods developed more recently by Leamer and others. Findings indicate that factor endowments are important determinants of U.S. agricultural's comparative advantage in trade as suggested by the Hecksher-Ohlin theory.

"External Debt and the Demand for Imports." Terri

L. Raney (Washington State University), Daniel S. Tilley (Oklahoma State University), and David M. Henneberry (Oklahoma State University)
A macroequilibrium model including external trade and borrowing is used to develop demand functions for total, agricultural, and wheat imports for 24 LDCs. Income, exchange rates, and three external debt variables are included. SUR estimates corrected for autocorrelation suggests that debt effects vary across countries, commodity classifications, and debt measurement.

"Export Demand for High-Value Products—A Case Study." Vicki A. McCracken (Washington State University), Kenneth L. Casavant (Washington State University), and David C. Miller (USDA, FAS)
Growth in world trade is in the market for high value products. This study exemplifies research needed on specific commodities in potential markets. Consumer taste and preference information was used to analyze Japanese demand for American cherries. Preliminary results indicate the importance of timing in exporting high value unprocessed products.

"Quality Demand and Policy Implications for Florida Fresh Tomatoes." Theresa Sun and Kathryn L. Lipton (USDA, Economic Research Service)
This study uses single- and system-equation approaches to examine quality demand for Florida fresh tomatoes. The single-equation relationships evaluate consumers' ranking of tomatoes by grade/size combinations, while the system demand estimates substitutability among grades. Estimated demand shifts and elasticities are used to evaluate quality standard and minimum quality policies.