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Abstracts of Invited and Selected Papers and Organized Symposia

WAEA Annual Meetings, Anchorage, Alaska
June 28–30, 2006

Invited Paper Abstracts

WAEA PRESIDENTIAL ADDRESS

“Research and Publishing: Relevance or Irreverence?” Gary W. Brester (Mont. State Univ.).

The value, relevance, and efficacy of conducting and publishing research has been widely debated throughout the agricultural economics profession. On the one hand, some argue that the research process creates little value and directly competes with teaching/outreach output. On the other hand, others argue that research provides answers to important questions, improves human capital, and complements teaching/outreach activities. I argue that the research and publishing process develops human capital, improves the quality of teaching/outreach, reduces bias, generates new ideas, improves societal welfare, creates innovation, and is essential for public policy debate.

[Note: The full presidential address is published in this journal issue.]

KEYNOTE GUEST ADDRESS

“Perspectives on Farm Policy Reform.” Julian M. Alston (presenter) and Daniel A. Sumner (Univ. of Calif., Davis).

Ten years ago U.S. farm policy had just undergone major reforms, and appeared to be on a long-term track toward much less government involvement in agricultural commodity markets and reduced transfers to agriculture. Ten years later, many wonder how things got off track. The purpose of this paper is to try to make sense of U.S. agricultural policy evolution and its likely prospects. We begin with a review of what has happened to U.S. domestic farm policies and related agricultural trade policies over the past 10 years, and why. We conclude this review with a brief overview of the policies as they stand today. Then we consider potential outcomes in the 2007 Farm Bill, and their implications for U.S. agriculture and, in particular, for agriculture in the Western states. Finally, we contemplate the longer-term possibilities for meaningful, enduring reform of U.S. farm program policies, and some ideas on what might be done to increase the odds.

Selected Paper Abstracts

SESSION: *Consumer and Household Economics*. Moderator: Gary Taylor (S. Dak. State Univ.).

“Why the Poor Get Fat: Obesity and Economic Insecurity.” Trenton G. Smith (Wash. State Univ.), Christiana Stoddard (Mont. State Univ.), and Michael Barnes (Wash. State Univ.).

Something about being poor makes people fat. We use the 1979 National Longitudinal Survey of Youth together with state-level instrumental variables to estimate the effect of economic insecurity on weight gain. Over the 12-year period between 1988 and 2000, a 1% increase in time spent unemployed is found to cause weight gain over this period to increase by about one pound. Findings also reveal some evidence showing that an increase in “social safety net” payments results in smaller weight gains. These results suggest that a “health dividend” may accrue to government policies which increase economic security among vulnerable populations.

“How Food Taxes and Subsidies Affect U.S. Obesity.” Christiane Schroeter (Ark. State Univ.), Jayson Lusk (Okla. State Univ.), and Wallace Tyner (Purdue Univ.).

This study investigates the effects of changes in economic factors on body weights. A utility theoretic model is estimated by combining data on individuals’ body weight, demographic, and physical activity information from the 2003 Behavioral Risk Factor Surveillance System and state-level measures from the Bureau of Labor Statistics pertaining to the prices of food-away-from-home and food-at-home. Combining these data sources allows the direct estimation of the weight impacts of price and income changes. The empirical analysis suggests that changing food prices could increase body weight, a finding which emphasizes the need to employ economic modeling when developing public policy measures.

"Time Use on America's Farms and Ranches." Mary Ahearn, Karen Hamrick, and Anne Effland (USDA/ERS).

The majority of workers on U.S. farms/ranches are operators and their families, and measurement of this production input has been problematic. The paper evaluates data from alternative sources and describes how operators and spouses allocate their time to farm/ranch work, off-farm work, leisure, and other activities, such as home production. Data are compared from USDA's Agriculture and Resource Management Survey and the new BLS American Time Use Survey. The data collection methodology for these two surveys is very different, yielding different insights, but there is considerable consistency where the surveys overlap.

SESSION: Production Economics and Farm/Ranch Management. Moderator: Dillon M. Feuz (Utah State Univ.).

"On Why Grazing Permits Have Economic Value." L. Allen Torell (N. Mex. State Univ.), Neil R. Rimbey (Univ. of Idaho), and John A. Tanaka (Oreg. State Univ.).

Few economists have questioned the logical explanation for the existence of grazing permit value, a cost advantage realized by profit-maximizing ranchers. Yet, it has long been recognized that ranches are overpriced relative to income earning potential. Grazing permits are overpriced as well. Hedonic models in New Mexico and the Great Basin were used to evaluate permit value. Grazing permits add to ranchland value but only for ranches with a high percentage of public land. Deeded and public land acreages make the ranch bigger and it is the acreage, not the cattle grazing it, that adds the most to ranchland value.

"Comparison of Economic and Disease Criteria for Controlling Foot-and-Mouth Disease." John G. Lee (Purdue Univ.), Ann Hillberg Seitzinger (USDA/APHIS/Veterinary Services), and Philip L. Paarlberg (Purdue Univ.).

Current protocols to control an outbreak of FMD in the U.S. rely primarily on epidemiological criteria. A multi-species disease spread simulation model was used to assess three control strategies over two economic and two epidemiological criteria. The epidemiological criteria include the distribution of outbreak length and total number of animals destroyed. The economic criteria include the distribution of direct government cost as well as producer

welfare. The three control strategies evaluated include direct animal contact destruction, direct plus indirect contact, and a one-kilometer destruction ring. Stochastic dominance was applied to rank the three control strategies by criteria. The one-kilometer destruction ring stochastically dominated the other two strategies over all criteria.

"Evaluation of Non-Thermal Methods in the Production of Kentucky Bluegrass Seed." Jared Wolfley (Tex. A&M Univ.), Larry Van Tassel, Donn Thill, and John Holman (Univ. of Idaho).

For the production of Kentucky bluegrass seed, stochastic simulation was used to compare the profitability of traditional mechanical residue removal (REM) methods to chemical, mechanical, and hay suppression production methods. Prices were modeled using harmonic regression techniques and seed yields were modeled using a log-linear function and empirical distributions. Highest net returns per acre were realized from the REM treatment (-\$11.41), followed by the chemical suppression treatment (-\$22.30). The annual returns per acre for the mechanical and hay suppression treatments were -\$28.03 and -\$31.59, respectively. The REM treatment also dominated all suppression treatments when compared by second-degree stochastic dominance.

SESSION: Agricultural Finance. Moderator: Steve Vickner (Utah State Univ.).

"Spatial Equity of Agricultural Property Tax Policy." Billy B. Golden (Bus. Consultant, Stephenville, Tex.), Leah J. Tsoodle, and Allen M. Featherstone (Kans. State Univ.).

Extensive literature exists that focuses on the issue of equity in the property appraisal process. To be considered an equitable tax, all properties should be taxed at the same percentage of their market value, or taxed at the same percentage of some other appropriate benchmark. Inequity, either horizontal or vertical, exists if comparable properties are not subject to the same effective tax rate. This research examines the issue of agricultural property tax inequity in Kansas, using estimated productive value as a benchmark. Ratio analyses and multivariate regression analyses suggest that both horizontal and vertical spatial inequalities exist within Kansas.

"Agricultural Assets in an Optimal Investment Portfolio." Dustin L. Pendell and Allen M. Featherstone (Kans. State Univ.).

Structural breaks have been found to have large effects on optimal investment allocations. This analysis empirically tests for a structural break and then evaluates the impact the break has on the optimal allocation of agricultural and nonagricultural investments using a mean-variance model. Results indicate nonfarm investors could enhance their portfolios by investing in farm assets. However, the results suggest that the allocation of assets prior to the structural break in the 1950s is vastly different than the time period following the break and the entire time period as is generally found in the literature. This demonstrates the importance of the regime studied when making decisions on investment allocation.

"Savings by Farm Households: Who Does It and How Much?" Ashok K. Mishra (USDA/ERS) and Hung-Hao Chang (Cornell Univ.).

Savings play an important role in the financial and economic well-being of households in general, but it is particularly true for farm households who have variable income from farming. Savings can help smooth fluctuating incomes of farmers and smooth consumption in times when income falls below consumption. Further, savings can help fund investment on the farm. This study examines the saving behavior of farm households. The model is estimated using Agricultural Resource Management Survey (ARMS) 2003 farm-level national data and the double-hurdle estimation method. Results indicate that education, family size, work pattern of farm operator and spouse, and location of the farm have a significant impact on savings decisions and amount saved by farm households.

"Evidence of Adverse Selection from the Use of Transitional Yields in Crop Insurance." Cory G. Walters, Hayley H. Chouinard, Douglas L. Young, Philip R. Wand-schneider, and Holly H. Wang (Wash. State Univ.).

This paper tests the hypothesis that indemnities may be increased with the use of transitional yields using administrative data from the USDA's Risk Management Agency. Two different wheat growing regions, north-central Montana and south-central Kansas, are analyzed and compared. Overall results indicate that a positive and significant correlation exists between the number of transitional yields used and indemnity. Strong

evidence of adverse selection is present in both north-central Montana and south-central Kansas. However, it is harder to benefit from adverse selection in south-central Kansas than north-central Montana. Results indicate that producers who use transitional yields have an informational advantage over the insurer.

SESSION: Resource and Environmental Economics. Moderator: Harry Djunaedi (Mont. State Univ.).

"Policy Options for Overabundant Deer: Are Socially Optimal Deer Densities Possible?" Kelly John Ward, Jim Shortle, and Richard Ready (Penn. State Univ.).

Traditional hunting seasons are failing to reduce game species in many areas of the United States to their socially acceptable levels. Using white-tailed deer in Pennsylvania as an example, this paper develops a theoretical bioeconomic model of a game species that has both density-dependent costs and benefits. The paper investigates the specific policy option of paying hunters to harvest antlerless deer as an incentive to increase harvest to socially optimal levels. A bioeconomic model is developed, calibrated with Pennsylvania data, and solved as a dynamic programming problem. The results indicate that significant social welfare improvements are possible, but that the payments to hunters may exceed what is politically feasible under current conditions.

"Assessing Impacts of Land Use Change in Montana's Flathead County." Tony Prato, Anthony Clark (Univ. of Mo.), and Ken Erickson (USDA/ERS).

An Ecosystem Landscape Modeling System (ELMS) has been developed to simulate the ecological and economic impacts of future growth and development in Montana's Flathead County. Impacts are simulated for nine alternative futures representing combinations of low, medium, or high growth, and unrestrictive, moderately restrictive, or highly restrictive land use policies. ELMS integrates geospatial technologies (GIS and remote sensing), landscape ecology, input-output analysis, wildlife habitat assessment, and an interactive spatial decision support tool. Simulation results are useful in identifying the effectiveness of alternative land use policies in alleviating adverse ecological impacts of future growth and development in the county.

“Working-Lands Conservation Practices: Evidence from an Integrated National Survey.” Glenn D. Schaible, Dayton Lambert, and C. S. Kim (USDA/ERS).

Based on 2004 CEAP-ARMS Phase II data, higher-sales farms among conservation program nonparticipants adopted conservation land-management practices much more intensively for 2004 wheat than did any other farm-size type for participants or nonparticipants. GEE estimation of a cost-function based, field-level acreage allocation model suggests that conservation program nonparticipants place more emphasis on adopting in-field structural practices, while participants emphasize perimeter-field structural practices. Wheat producers, particularly program nonparticipants, recognize the productivity/profitability benefits of in-field structures as sufficient to promote their adoption without program incentives. However, for perimeter-field structures, because benefits are viewed as being off-site, producers prefer a program incentive to encourage their adoption. Results also suggest that not accounting for exogenous farm and environmental attributes could likely result in an overestimate of acreage response elasticities.

SESSION: Community and Regional Economics. Moderator: Bruce Weber (Oreg. State Univ.).

“Computable General Equilibrium Analysis of Population Growth and Water Policy in the Platte River Basin of Colorado.” Philip Watson, Steve Davies, Dawn Thilmany, and Eric Schuck (Colo. State Univ.).

Water is often cited as a limiting resource to the economy in Colorado and throughout much of the American West. Using a general equilibrium framework that includes 20 industrial sectors, this study investigates water demand for the South Platte River Basin in Colorado. Water is incorporated into the model as a primary factor of production for agricultural operations as well as for a municipal water supply sector and as an intermediate input for all other sectors. It is determined that the projected 10% increase in population over the coming decade will result in a 1% to 4% shift in water from agriculture to other sectors; however, the total real value of agricultural sales is expected to increase between 5% and 7% due to the reallocation of water and subsequent changes in economic activity.

“Measuring Regional Welfare Considering Natural and Cultural Resources.” Tommy Lundgren (Swedish Univ. of Agr. Sciences).

The aim of this paper is to explore some of the theoretical aspects of measuring welfare in regional economies using a simple dynamic growth model. The focus is on natural and cultural resources, which are treated as capital stocks in the analysis. We use the concept of a social accounting matrix (SAM) to illustrate how the addition of income flows and net changes of various natural and cultural resources can be incorporated into a measure of welfare that is more complete compared to the standard net regional product/income. Furthermore, we propose how to set a theoretically “optimal” subsidy to compensate a cultural sector—in our example engaged in the pastoral activity of reindeer herding—for maintaining and upholding a cultural heritage.

“Economic Impacts of Alternative Sized Dairies in South Dakota.” Larry Janssen, Gary Taylor, Erik Gerlach, and Alvaro Garcia (S. Dak. State Univ.).

The South Dakota dairy industry has shifted toward large operations to offset declining numbers of dairy cows and milk production stemming from rapid exodus of smaller (< 100-cow) dairy farms. This study examines the regional and state-level economic impacts of expansion by large and medium sized modern dairies. Whole-farm budgets were constructed from producer panel and secondary data. Based on IMPLAN results, the 1,000-head dairy generally had higher output, employment, and value-added multipliers resulting from increased feed and wholesale purchases. The 150-head dairy, which raised its own feed and replacement heifers, had higher amounts of value added.

“A Regional Analysis of School Dropout in Rural Communities: Implications for Economic and Educational Policy Decision Making.” Forrest E. Stegelin (Univ. of Ga.) and Dolores A. Stegelin (Clemson Univ.).

Comparative regional analysis of school dropout rates in non-metro counties is conducted by examining relationships between school dropout rates and indicators of economic well-being in rural communities and summarizing implications for educational and economic policy, with special attention toward rural economic development. Analyses indicate education is a preferred investment by rural communities, social and economic

well-being is higher in low dropout counties, and out-migration from rural communities is lower when education services are provided. Implications for policy decisions in rural economic and education development, early education programs, dropout prevention, home-school-community education initiatives, and sustaining smaller school districts versus consolidation are cited.

"Joint Prediction and Simulation of Labor Force and Fiscal Conditions of Nevada Counties." Wuyang Hu and Thomas Harris (Univ. of Nev., Reno).

This study provides a complete system to model labor and fiscal conditions of Nevada counties. The labor module and the fiscal module are each specified as a system of equations, and links are created by allowing variables from the labor module to enter the fiscal module. Following the identification of parameters in the two modules, a simulation study is conducted to account for the effects of exogenous employment changes to the labor and fiscal status of each Nevada county as well as dynamic relationships of county budgets. In particular, uncertainties and noise in the estimation process are explicitly considered.

SESSION: *International Trade and Development.* Moderator: Andrew P. Barkley (Kans. State Univ.).

"Crowding Out or Crowding In? Shrimp Imports and the U.S. Shrimp Industry." Ingrid Ardjosoediro (Development Alternatives, Inc.) and Paul N. Wilson (Univ. of Ariz.).

During the period 1990–2000, the U.S. became increasingly dependent on foreign shrimp imports, largely from aquaculture operations, to meet its domestic demand. Seeing their market dominated by foreign suppliers, the U.S. domestic capture shrimp industry successfully lobbied federal authorities for trade sanctions on six foreign suppliers. Our competitive analysis indicates that the U.S. shrimp industry failed to capture rising domestic demand due to relatively higher production costs, stricter environmental constraints, and inadequate attention to marketing. Results from the gravity trade model point to rising per capita income and higher domestic prices as the key economic forces explaining the surge in imports. In summary, foreign farm-produced shrimp have captured a large part of the U.S. market due to low production costs, favorable exchange rates, preferential government policy, and aggressive entrepreneurship.

"Is There an End to U.S.-Canadian Softwood Lumber Disputes?" Stephen Devadoss (Univ. of Idaho).

A two-country theoretical trade model is developed to show that Canadian subsidies increase lumber supplies and exports to the United States, and the U.S. retaliatory tariff raises U.S. prices, safeguards producers, but hurts consumers. These results underscore the shortsightedness of policy decisions in a bilateral trade dispute as empirical results from the multiregional spatial equilibrium trade model highlight that both countries pursue myopic policies without taking into account the reactions of other exporters and importers. For instance, after the imposition of tariffs by the United States, other exporters grab the market share lost by Canada in the U.S. North and U.S. West, while Canada augments its exports to other importing countries. Consequently, the United States is able to only partially protect its producers from the Canadian oversupply since it cannot fully safeguard its producers from other exporters.

"An Assessment of the Economic Effects of the United States-Central America-Dominican Republic Free Trade Agreement on the World Fiber Market." Suwen Pan, J. Mark Welch, Samarendu Mohanty, Mohamadou Fadiga, and Don Ethridge (Tex. Tech Univ.).

This paper studies the effects of the United States-Central America-Dominican Republic Free Trade Agreement (US-CAFTA-DR) on the world fiber market using a partial equilibrium modeling approach. We found the effect of the agreement on the U.S. cotton yarn and Caribbean cotton apparel industries was positive while the U.S. cotton apparel industry suffered significant losses. Cotton apparel producers in the Caribbean region gained approximately \$80 million under US-CAFTA-DR while gains by the U.S. yarn industry averaged about \$120 million over current trade arrangements. The U.S. cotton apparel industry would lose about \$40 million per year under US-CAFTA-DR.

SESSION: *Agricultural Industry Organization.* Moderator: Lynn Williams (Calif. State Univ., Fresno).

"Optimal R&D Subsidies with Endogenous Information Collection by Innovating Firms." James Vercammen (Univ. of Brit. Columbia).

A model is constructed within which an innovating firm underinvests in R&D due to a market externality. The externality causes the firm to

reject a risky project in an inefficiently high number of information states (an extensive margin distortion) and to choose an inefficiently low level of R&D intensity when the project is adopted (an intensive margin distortion). The firm collects information about the uncertain future market value of the proposed innovation. If endogenous information collection is ignored, the R&D subsidy provided to the firm will typically be inefficiently low or high, depending on whether the extensive or intensive margin has the largest distortion.

“Clustering of Independent Dairy Operators for Generation of Bio-Renewable Energy: A Feasibility Analysis.” Sean P. Hurley, James Ahern, and Douglas Williams (Calif. Polytech. State Univ., San Luis Obispo).

Using geo-spatial data and simulation methods, the economic feasibility of anaerobic regional digesters (RD) for the California dairy industry is analyzed. It is shown that while it is feasible to cluster dairies together given their current technology, this feasibility is reliant upon the RD being located on the premises of large dairies and that very little transportation is needed for hauling the manure needed to the RD. Also shown in this paper is that it is feasible to cluster dairies from a greater distance apart from each other if the dairies change from a flush system to a scrape system.

SESSION: *Resource and Environmental Economics*. Moderator: Penelope L. Diebel (Oreg. State Univ.).

“An Economic Assessment of Flood Mitigation in the Red River Valley.” Dean Bangsund, Eric A. DeVuyst, and F. Larry Leistritz (N. Dak. State Univ.).

We investigate the economic advisability of using agricultural land to temporarily store flood water to reduce spring flooding in the Red River Valley of North Dakota, Minnesota, and Manitoba. While levies have been constructed, damages are realized with all but the smallest floods. Using flood stage damage functions modified to account for growth, we model the economic benefits associated with flood mitigation. Costs include payments to producers, modification and maintenance costs, and administration. Preliminary analyses cast doubt on the economic viability of the storage concept. Recent structural flood protection measures preempt many benefits associated with the flood water storage concept.

“Impact of Processing Quota on Alaska King Crab Harvesters: Empirical Evidence.” Scott C. Matulich (Wash. State Univ.), Leroy Stodick (Univ. of Idaho), and Genevieve Briand (Eastern Wash. Univ.).

A nonlinear, mixed-integer programming model is developed to quantify behavioral changes from the most controversial fishery rationalization policy in the U.S., possibly the world—the Bering Sea and Aleutian Islands red king crab fishery. The cornerstone of the BSAI crab rationalization policy was the use of individual transferable processing quota (IPQ) along with individual fishing quota (IFQ) and community protections to increase economic returns and stability for harvesters, processors, and communities. Despite rent-seeking rhetoric calling IPQs slavery, the empirical evidence is that harvesters expected (and paid for) a four-fold increase in harvesting-sector value. The model explains why.

“Disproving Causal Relationships Using Observational Data.” Henry L. Bryant, David A. Bessler (Tex. A&M Univ.), and Michael S. Haigh (Commodity Futures Trading Commission).

Economic theory is replete with causal hypotheses that are scarcely tested because economists are generally constrained to work with observational data. This paper describes the use of causal inference methods for testing a hypothesis that one random variable causes another. Contingent on a sufficiently strong correspondence between the hypothesized cause and effect, an appropriately related third variable can be employed for such a test. The procedure is intuitive, and is easy to implement. The basic logic of the procedure naturally suggests strong and weak grounds for rejecting the hypothesized causal relationship. Monte Carlo results suggest that weakly grounded rejections are unreliable for small samples, but reasonably reliable for large samples. Strongly grounded rejections are highly reliable, even for small samples.

SESSION: *Agri-Marketing, Demand and Price Analysis*. Moderator: Larry Makus (Univ. of Idaho).

“Canadian-U.S. Comparison of Fed Cattle Pricing and Marketing.” Clement E. Ward (Okla. State Univ.).

More information exists on marketing and pricing practices of U.S. cattle feeders than Canadian cattle feeders. Based on surveys in each country, pricing and marketing practices,

trends, and perception of issues and alternatives are compared. Many similarities were found, such as moving away from cash market pricing, use of formula pricing for determining base prices in grids, motivations to shift pricing methods, concerns regarding buyer concentration and captive supplies, and alternative policies.

"Organic Produce Market: Market Trends and Price Premium." Biing-Hwan Lin (USDA/ERS), Chung L. Huang, Feng Zhang (Univ. of Ga.), and Steven Yen (Univ. of Tenn.).

The objectives of this study are to: (a) describe the growth of fresh organic produce sales at the retail level during the period 1998–2004, before and after the implementation of the National Organic Standards in October 2002; (b) characterize the consumers who purchased fresh organic produce; and (c) estimate hedonic price models for 10 fresh produce, five fruits and five vegetables. This study is based on data reported by ACNielsen's Homescan panel, a nationally representative panel of U.S. households, which provides food purchase data for at-home consumption. The premium for fresh organic produce is found to vary by produce and season.

"Grass, Grain, or Natural Beef: Will Consumers Put Their Money Where Their Mouth Is?" R. Curt Lacy, Candice N. Clark (Univ. of Ga.), and Wendy J. Umberger (Colo. State Univ.).

Two hundred twenty-five panelists in Athens, Georgia, and Clemson, South Carolina, participated in a survey to assess their preferences for certain beef attributes, as well as six *n*-th-price auctions to determine their willingness to pay for grass-finished versus grain-finished beef. In the survey, the greatest number of panelists indicated a willingness to pay a 25% premium for beef that was tender, contained no hormones, and was traceable. In a sensory evaluation with complete information, grass-finished beef generated a \$0.04 per pound (0.75%) premium. Production information and past purchases of pastured beef had the largest positive marginal effect on willingness to pay.

"Modeling Federally Inspected Steer and Heifer Slaughter Marketings Using Lagged Feedlot Placement Data." Russell Tronstad and Heather Waters (Univ. of Ariz.).

Feedlot placement data were transformed from monthly to weekly series by first estimating seasonal patterns and then imposing percentage

adjustments and seasonal patterns, using the Solver function in Excel™, so that weekly placements summed to total placements for each month in every weight category. Lagged weekly differences of "actual placements" from expected seasonal deviations, corn prices, and the Choice to Select price spread were found to be overshadowed by seasonal patterns and holiday effects in explaining weekly federally inspected slaughter marketings.

"Chinese Urban Consumers' Preferences for Fluid Milk: Empirical Results from a Choice-Based Conjoint Analysis Experiment." Junfei Bai, Thomas I. Wahl, and Philip R. Wandschneider (Wash. State Univ.).

This study analyzes Chinese consumers' preference and purchasing behavior for fluid milk defined by four attributes (production process method, fat content level, taste, and price). The individual data were collected in Qingdao, China, by designing a choice-based conjoint (CBC) experiment. Multinomial logit models are estimated both at aggregate and individual levels. The results indicate that Qingdao consumers' preferences for fluid milk are significantly influenced by milk choice-specifics, respondent characteristics, and their interactions. In magnitude, market price and taste flavor have more effects on consumers' choice behavior of fluid milk than production process method and fat content.

SESSION: Production Economics and Farm/Ranch Management. Moderator: Laura Gow (Oreg. State Univ.).

"Impact of Ethanol Expansion on the Cattle Feeding Industry." Erin Daley, Joe L. Outlaw, and David P. Anderson (Tex. A&M Univ.).

A stochastic partial budget model was used to determine the impact on the cost of gain when ethanol co-products are substituted into beef finishing rations at varying inclusion rates. Ration scenarios were simulated to determine the impacts of changing corn prices, corn processing costs, cattle performance, and feeding and transportation costs on cost of gain. Fifteen percent WDGS and 15% DDGS (dry matter inclusion rate) can be fed at feedlots within 200 miles of ethanol production and greater than 200 miles from ethanol production, respectively, at a lower cost of gain than under the base ratio scenario.

"Short- and Long-Run Responsiveness of U.S. Agriculture to Energy Price Changes." David K. Lambert (N. Dak. State Univ.).

Agricultural producers found few substitution options when energy prices increased in 1973. Producer adjustment to changing energy prices is measured by deriving input demands using data spanning over 1948 to 2002. Demands for energy inputs have become slightly less inelastic since 1972. The sensitivity of fixed input shadow values to energy price changes form the basis for a dynamic model to estimate longer run changes in capital and land as energy prices change. Energy prices do have a statistically significant impact on capital investment, though the impacts of energy prices on land area are insignificant.

"Optimal Control of Desensitizing Inputs: The Case of Paylean." Ning Li (CitiGroup, New York), Ken Foster, Paul Preckel, Allan Schinckel, and Brian Richert (Purdue Univ.).

This paper examines the economics of a specialized input to which a biological system becomes desensitized over time but marginal productivity can be restored with adjustment of the dosage level. The optimal dosage and timing of changes in dose become choice variables in a dynamic control problem. The importance of endogenous timing of input use in the case of Paylean in hog production is demonstrated. Use of a Paylean step-up approach is shown to return substantial value to the farm decision maker, especially in market structures that are highly coordinated and in cases where the health status of pigs is compromised.

"Optimal Response to Drought in a Stochastic and Dynamic Farm System." Dannele E. Peck and Richard M. Adams (Oreg. State Univ.).

Farm management decisions in response to drought can affect management options in subsequent years, particularly when inter-year financial flow and crop interdependencies exist. A multi-year stochastic programming model is developed to examine optimal drought response in a stochastic and dynamic farm system. Results indicate that optimal response to drought does, in some cases, involve adjusting crop mixes not only during the drought, but after it as well. Therefore, the full economic impact of a drought might not materialize until several years after it subsides. Results also suggest that preceding years of drought can exacerbate losses in subsequent years of drought.

SESSION: International Trade and Development. Moderator: Munisamy Gopinath (Oreg. State Univ.).

"Reworking of the U.S. Meat Demand: A Source-Differentiated Analysis." Joao Mutoondo and Shida Henneberry (Okla. State Univ.).

A restricted source-differentiated AIDS model is used to quantify the impact of economic variables, seasonality, and disease outbreaks on the U.S. meat demand for domestically produced and imported meats. Price and expenditure elasticities indicate that the United States and Canada have competitive advantage in the U.S. beef market. Pork from the ROW has the most to gain from an expansion in U.S. meat expenditures, followed by beef from Canada and poultry from the U.S. The outbreaks of BSE in Canada and the U.S. were shown to have small impacts on meat demand, which were not statistically significant in most cases.

"Productivity and Competitiveness of U.S. Processed Fruits and Vegetables Industry." Jun Ruan, Munisamy Gopinath, and Steven Buccola (Oreg. State Univ.).

In this paper we analyze technological convergence in the global processed fruits and vegetables (PFV) industry and derive its implications for the competitiveness of its U.S. counterpart. We extend Krugman's monopolistic competition model to allow for technological differences between two countries. Technological convergence is modeled as a narrowing inter-country gap between marginal costs. Comparative static analysis indicates technological convergence raises the follower's competitiveness but reduces that of the leader. Empirical evidence suggests technological convergence has taken place among 24 sample countries in the PFV industry during 1994–2001. Despite technological convergence, the U.S. PFV industry has increased its competitiveness in global markets largely due to its relatively rapid growth of total factor productivity.

"Factors Affecting Canadian Export of Feeder Pigs to the U.S." Ronald L. Plain and J. Bruce Bullock (Univ. of Mo.-Columbia).

Feeder pig shipments from Canada to the United States have become quite large. Data relevant to U.S. and Canadian hog industries were analyzed and a survey conducted of U.S. hog farms which purchase Canadian Pigs. The size of the Canadian pig crop, currency exchange rates, and feed prices are the most significant

variables in explaining pig trade. At the margin, a third of the Canadian pig crop will be shipped to the United States as feeder pigs.

"Foreign Market Entry Strategies and Firm Performance in the U.S./EU Agricultural Trade Context." Cristina Calegario (Universidade Federal de Lavras) and Jack E. Houston (Univ. of Ga.).

Technical trade barriers imposed by the European Union restrict the exports of GMO products. Production at home incurs added costs of segregation into GMO and GMO-free, labeling, and shipping separately from conventionally produced crops. We integrate international business management and industrial organization concepts to evaluate factors that influence U.S. food processing firms' EU mode of entry choice and examine the effect of mode of entry on the firms' performance using a hierarchical multiple regression analysis. Firm-specific variables figure influentially, including size, stage of processing, and intensity of research and development. Interaction terms substantively change the interpretation of many firm-specific factors.

SESSION: Teaching and Extension Issues. Moderator: James Casey (Univ. of La., Monroe).

"Characteristics and Perceptions of Students in Agriculture-Related Majors." Elhadji Sidi, Larry Van Tassell, and John Foltz (Univ. of Idaho).

We examined the demographics and perceptions of students majoring in five agricultural production majors at the University of Idaho to improve recruiting practices of the college. Variables significant in explaining the choice of major included gender, rural and agricultural background, involvement in youth organizations, favorite high school subjects, and parents' occupation. Choice of major also was influenced by the friendliness and quality of each department's faculty. We suggest agricultural economics departments diversify their recruitment efforts by including students in urban schools taking business, math, and economics classes while increasingly focusing their efforts toward female students.

"The Determinants of College Student Performance: The Role of Assessment Method." Andrew Barkley (Kans. State Univ.).

The objective of this research is to explore the potential influence of assessment method on

student performance. The research uses two semesters of data from a Principles of Agricultural Economics and Agribusiness course to identify and quantify determinants of student performance. The focus is how instructor choices of assessment type and method (assignments, quizzes, exams, etc.) can modify learning outcomes in undergraduate economics courses and curricula. The study provides some evidence that assessment methods influence student performance. The selection, administration, and frequency of assessment tools such as assignments, quizzes, and examinations influence how well students learn economic principles.

"Enhanced Learning Through Cooperative Classroom Governance." John L. Park and Kerry K. Litzenberg (Tex. A&M Univ.).

This paper investigates the potential for an alternative form of classroom governance that allows for cooperative student participation. The setting is a course in cooperative marketing and management at Texas A&M University. Students in the course were provided opportunities to cooperatively control the administration of their course and share in benefits according to their participation. Specific methods included the democratic election of a board of directors, pooling of exam questions, and additional returns to exam scores based on participation. Student evaluations and survey suggest an enthusiastic acceptance of this method and its potential use in other topics.

"If You Raise It Will They Come? Enrollment Responses to Tuition Increases." Jeffrey M. Peterson and Hikaru Hanawa Peterson (Kans. State Univ.).

This paper evaluates the impacts of recent higher education tuition increases on enrollment at the institution level. A system of equations representing the interacting enrollment decisions of students and institutions was estimated from a cross-sectional data set on over 765 four-year institutions in the United States. For an average institution, the estimated overall elasticity of enrollment with respect to tuition was -0.54. If applications and admission rates were held constant, however, the estimated elasticity of enrollment became -0.94. These results suggest that the main effect of a tuition increase is to increase the likelihood that admitted students will attend a competing school.

"The Distribution of Benefits from Online Homework." Roger Dahlgran (Univ. of Ariz.).

This study examines the learning impact of online homework wherein the student answers

problems, submits answers, and receives immediate scoring. In this application, each student has a unique problem set and students can revise and resubmit answers without limit or penalty. Findings are: first, students utilized online homework though attainment of perfection was less than anticipated; second, homework participation raised scores for related examination items; and third, the learning benefits did not vary by gender, race, or employment status. However, online homework conferred greater benefits to high-grade-point-average students than to low-grade-point-average students.

SESSION: Agri-Marketing, Demand and Price Analysis. Moderator: E. Bruce Godfrey (Utah State Univ.).

"Price Discovery in North and West Central Nebraska Livestock Auction Markets." Roger K. Wilson, Matt C. Stockton (Univ. of Nebr.-Lincoln), David A. Bessler (Tex. A&M Univ.), and Dillon M. Feuz (Utah State Univ.).

Data from livestock auction markets in and near the Nebraska Sandhills were analyzed using time-series methods and Directed Acyclical Graphs (DAGs) to determine in which weight/gender classes prices were discovered and the paths of price information flow between classes. Heavier weight heifers and lighter weight steers were important in price discovery and/or price information transfer. It was hypothesized that these findings were the result of the option to feed or breed heavier weight heifers and the option to background or calf feed lighter weight steers.

"Direct Marketing of Fresh Produce: Understanding Consumer Purchasing Behavior." Dawn D. Thilmany, Jennifer Keeling Bond, and Craig Bond (Colo. State Univ.).

Direct marketing is integral to the prosperity of most small fruit and vegetable farms; however, little is understood about how those who buy directly from producers differ from the average consumer. We investigate whether direct consumers have different preferences for motivating factors associated with the choice of product purchase locations or with the attributes of fresh produce itself. Using national survey data, we find that direct consumers value freshness of produce and social interactions relatively more when making purchase location choices and that freshness, production practices (organic, pesticide free), and locally

grown attributes are relatively more important when selecting produce.

"Consumers' Assessments of Food Safety and Environmental Safety Relative to Plant Molecular Farming." Michele Veeman, Yu Li, and Wiktor Adamowicz (Univ. of Alberta).

Risk rankings for a variety of food and environmental issues, including the applications of modern agricultural biotechnology known as Plant Molecular Farming (PMF), are obtained from a 2005 survey of a representative sample of some 1,500 Canadian adults. Survey analysis indicates that applications of genetic modification/engineering (GM/GE) involving production of medical products are viewed as being relatively lower risks for food and the environment than GM/GE applications that are directed at increasing crop production. Similarly, PMF applications to produce industrial products or more nutritious food are also viewed as relatively lower risk than GM/GE applications to increase crop production. These assessments are consistent with the hypothesis that innovations and situations which seem to provide little personal or socially accepted benefit are seen as more risky, and thus less socially acceptable, than innovations and activities that do involve socially accepted benefits. Ordered probit models are employed to analyze risk rankings given to these PFM applications; these suggest risk perceptions are consistently associated with gender, income, and location of residence. Trust also seems to be associated with the risk ratings, at least in some applications.

"Estimating the Market Demand for Value-Added Beef: Testing for BSE Announcement Effects Using a Generalized AIDS Model Approach." Steven S. Vickner, DeVon Bailey (Utah State Univ.), and Al Dustin (Bridgerland Applied Tech. College).

The principal empirical objective of this paper is to estimate the impact of BSE media coverage on the market demand for fresh retail meats using regional-level, weekly point-of-purchase scanner data, and an Almost Ideal Demand System. Autocorrelation is purged from the model using the method prescribed by Berndt and Savin. The media effects are assessed on the entire demand system using a likelihood-ratio test. We failed to reject the null hypothesis of no media effects.

SESSION: Production Economics and Farm/Ranch Management. Moderator: Douglas L. Young (Wash. State Univ.).

“Economically Sustainable Cattle Production Practices During Multiple Years of Drought.” John Ritten, W. Marshall Frasier (Colo. State Univ.), Chris Bastian (Univ. of Wyo.), Wendy Umberger (Colo. State Univ.), Siân Mooney, Michael Smith, and Steven Paisley (Univ. of Wyo.).

When facing an extended drought, producers face reduced range and cattle productivity resulting in lower ranching incomes. The mathematical programming using a GAMS model, which is based on previous modeling work done in Fremont County, Wyoming, was used to identify optimal cattle management decisions. This model is based on a 600-head cow-calf operation and is parameterized primarily via region-specific enterprise budgets. Optimal strategies showed no need for full liquidation. However, even with partial liquidation, supplemental summer feeding proved to be a viable option to offset effects of drought to net income.

“The Expected Value of Genetic Information in Livestock Feeding.” David K. Lambert and Eric A. DeVuyst (N. Dak. State Univ.).

Scientific inquiry is increasing our knowledge of plant and animal genomics. The ability to specify heterogeneous production processes, to sort agricultural inputs by genotype, or to guide breeding programs to satisfy specific markets based on genetic expression may potentially increase producer and consumer benefits. This research develops a decision analysis framework to assess the expected value of genetic information. Expected utilities are evaluated both in the presence of, and without, genetic trait information. An application to cattle feeding indicates potential gains to developing markets for specific animal genetic characteristics based on the amino acid sequence of the leptin gene.

“Risk and Profit of Organic Grain Farmers.” Hikaru Hanawa Peterson and Terry L. Kastens (Kans. State Univ.).

Organic farming in the United States has grown rapidly since the 1990s, but little is known about its impact on organic farmers' household income. The paper analyzes responses of a 2005 nationwide survey of organic grain producers. Organic grain farmers had diverse farming and educational backgrounds and operated 5.7 farming enterprises on average. Major risk concerns included yield losses and potential changes in the definition of organics. Results from an ordered probit model suggested longer experience in

organic farming increased the probability of obtaining higher income, while agreeing with the statement “organic is our lifestyle” increased the probability of lower income.

SESSION: Agribusiness. Moderator: Aaron Johnson (Oreg. State Univ.).

“Economic Viability of an Ultra-Filtration System for Recycling Chiller Water in a Poultry Processing Facility.” Jack E. Houston, Forrest E. Stegeline, and Horacio Saravia Diaz (Univ. of Ga.).

The biophysical effectiveness of polymeric ultra-filtration membrane technologies for recycling chiller water and the economic feasibility of the investment were evaluated, including the determination of averted or avoided costs. Incorporating an ultra-filtration screen in the poultry processing facility indicates positive economic impacts: profitability increases due to averted costs by reducing pollutant discharges, and the technology reduces primary water and electrical energy usage. Financial returns exceeded management's “go or no-go” decision threshold; however, the analysis addressed only the chiller water usage, not the total water used, and did not include the cost of retrofitting the facility.

“Persistence and Determinants of Return on Equity in U.S. Local Farm Supply and Grain Marketing Cooperatives.” David Barton, Michael Boland (Kans. State Univ.), Scott Boyd (Nobel Foundation, Okla.), and Kevin Dhuyvetter (Kans. State Univ.).

Farm cooperatives are an important component of the retail agribusiness industry in the United States. The objective is to determine persistence of return on equity in local farm supply and grain marketing cooperatives. Financial variables are then identified that are determinants of return on equity in these cooperatives. The fact that performance can be sustained is important information for managers and the producer directors who hire them. There was no significant sign on asset size, suggesting return on equity is invariant to size in these cooperatives over the time period studied.

“Feasibility of a Producer-Owned Winter Canola Processing Venture.” Phil Kenkel, Rodney B. Holcomb, Michael Dicks, and Nurhan Dunford (Okla. State Univ.).

The feasibility of a winter canola processing facility with further processing into biodiesel or food-grade refined oil was investigated. The rate

and location of canola adoption was projected using field-level records on over 130,000 wheat farms. The results indicated acceptable rates of return for two alternative mechanical oil extraction systems. Further integration into biodiesel or food-grade oil increased returns slightly while doubling the total project costs. Returns were sensitive to canola seed price and canola oil price. The study concluded that a \$0.105/pound canola price would provide adequate crushing returns and sufficient incentives for canola adoption.

"Economics of Introducing Functional Foods to Market: The Case of CLA-Enhanced Cheese." Kara Ross and Vincent Amanor-Boadu (Kans. State Univ.).

Technological and medical advancements are allowing people to live longer with chronic diseases. This is contributing to higher health care costs and prompting the demand for preventative medical initiatives. This study identifies the competitiveness of functional foods as a solution to rising health care problems. Using a system dynamic framework, we investigate a firm's economic performance under various market conditions for a functional food product. The results show that the firm is most profitable when it is able to establish and exploit a market dominated by health-conscious consumers.

SESSION: Resource and Environmental Economics. Moderator: John Tanaka (Oreg. State Univ.).

"Recreational Fishing Demand by Specie Sought at the Snake River Reservoirs." John R. McKean (Colo. State Univ.), Donn Johnson (Quinnipiac Univ.), and Garth Taylor (Univ. of Idaho).

The travel cost method was applied to estimate demand for recreational fishing at the Snake River reservoirs in eastern Washington. Willingness to pay (WTP) was estimated for eight fish species. The WTP for a fishing trip varied from \$7 to \$22, depending on the primary specie sought and treatment of incidental catch. Anglers preferred the anadromous steelhead trout over most resident species. However, the estimated value of a trip for steelhead anglers at the reservoirs was less than the adjoining free-flowing Snake River where the steelhead catch rate was higher.

"Economic and Non-economic Impacts of Restoration: A Case Study Analysis of the Great Basin Region." Vijayanand Satyal,

John Tanaka, Denise Lach (Oreg. State Univ.), David Pyke (U.S. Geological Survey), and Paul Doescher (Oreg. State Univ.).

Cheatgrass (*Bromus tectorum*) affects biodiversity of rangelands and causes economic and non-economic losses. We focused on the economic and social impacts of controlling cheatgrass using different restoration strategies in the Great Basin. We used a linear programming multi-period optimization ranch model and a parallel social attitudinal study. The economic study found the total costs of restoration lowest under baseline conditions and increasing with use of grazing, fire, herbicide, and a combined strategy, each followed by seeding native grasses. Attitudinal data indicated that the meaning of restoration and the social acceptability of the restoration strategies differed within and among stakeholder groups.

"Carbon Sinks in the Forestry." Sune Håkansson (Blekinge Institute of Technology).

Trees bind carbon. If the timber stock increases, the amount of carbon in the trees increases, and the amount of carbon dioxide in the atmosphere decreases. Give subsidies to the forests' owners if they do not cut, and the cuttings will decrease and the timber price will rise considerably. Sawmills and paper mills will slow down. In some areas the cuttings will stop completely. It is necessary to have the same rules all over the globe. Published articles compare different steady states. This study deals with the transitory period—which probably will last for many decades.

SESSION: Food and Agricultural Policy. Moderator: Tony Prato (Univ. of Mo.).

"U.S. Ethanol Production and Use Under Alternative Policy Scenarios." Henry L. Bryant and Joe Outlaw (Tex. A&M Univ.).

Government policy in the U.S. strongly encourages ethanol production. Two prominent policy instruments are currently employed: (a) a federal excise tax credit on each gallon produced, and (b) a "renewable fuel standard" (RFS)—a mandate that certain quantities of renewable fuels must be used. Recent market conditionals also encourage ethanol production. This study investigates the extent to which existing government and market-based incentives for ethanol production are redundant, and the levels of ethanol production that would be realized under alternative government program configurations.

"The 2007 Farm Bill: Farm-Level Financial Implications." Jacob AcMoody, Joseph V. Balagtas, Allan Gray, and Michael Boehlje (Purdue Univ.).

This paper develops a farm simulation model to investigate the potential effects of reduced government payments on Corn Belt crop farms. Stochastic simulations quantify the impact on income, wealth, and debt service for farms of different size and financial characteristics. As expected, those farms who receive the biggest government payments see the biggest reductions in net farm income, and payment reductions also increase variability in wealth, especially for farms with the highest land ownership. Given rising mean crop prices, only farms with high debt and high land ownership see significant decrease in ability to service debt.

SESSION: *International Trade and Development.* Moderator: Stephen Devadoss (Univ. of Idaho).

"Mitigating Trade Disruptions Due to Disease Outbreaks in Integrated U.S. and Canadian Swine and Pork Markets." Philip L. Paarlberg, John G. Lee (Purdue Univ.), Jennifer Grannis, Kamina Johnson, and Ann Hillberg Seitzinger (USDA/APHIS/Veterinary Services).

The economic impacts of bovine spongiform encephalopathy (BSE) on the integrated North American cattle and beef markets raise questions about the potential impact of a foreign swine disease entering North American swine populations. This work estimates the economic impact of regionalized trade responses by the United States in the face of a hypothetical Canadian swine disease outbreak using a quarterly partial equilibrium model of the U.S. feed and livestock sectors. Regionalization of an embargo of Canadian exports to the United States to only one province reduces net losses by over 60% when compared to a nationwide embargo of Canadian live swine and pork exports using a 2004 base.

"Lessons from Canada/U.S. Egg Trade." Richard R. Barichello and Shinan N. Kassam (Univ. of Brit. Columbia).

There have been many disputes and frictions between Canada and the United States over trade in dairy products but not so in eggs, despite the use of Canada's supply management system in both commodities. Given the same regulatory framework in both cases, why has there been an absence of trade disputes in eggs and egg

products? In identifying issues related to domestic policy as well as trade policy in eggs and egg products, we ask whether Canada is pursuing an optimal domestic strategy in the regulations of production and trade of these commodities.

SESSION: *Consumer and Household Economics.* Moderator: James Sartwelle (Tex. A&M Univ.).

"Nutritional and Dietary Impacts from Beverage Choices." Oral Capps, Jr. (Tex. A&M Univ.), Annette Clauson (USDA/ERS), and K.A.S.D.B. Dharmasena (Tex. A&M Univ.).

With the publication of the 2000 and 2005 USDA Dietary Guidelines for Americans, the role of beverages in the American diet suddenly increased in attention. The 2000 Guidelines gave prominence to the role of soft drinks and other sweetened beverages in the U.S. obesity epidemic. The 2005 Guidelines reiterated the need to limit calories from soft drinks, and emphasized even more strongly than previously the need to increase consumption of nonfat and low-fat milk. Utilizing data from the 1998–2003 ACNielsen Homescan panel, probit models and demand models were used to analyze household purchase patterns of nonalcoholic beverages. The nonalcoholic beverages considered were: (a) carbonated beverages, (b) milk, (c) bottled water, (d) fruit juices and drinks, (e) coffee, (f) tea, and (g) sport drinks. Using various statistical techniques, differences were ascertained in the consumption of the different beverages, nutrient intakes of vitamin C, calcium, calories, and caffeine, along with the probabilities of purchases according to demographic profiles.

"Effects of Economic and Noneconomic Factors on Frequency of Fruit and Vegetable Consumption." Luanne Lohr, Ruthann Swanson, and Marcy L. McElveen (Univ. of Ga.).

This study models the count of 17 fresh fruits and vegetables consumed at least once a week by 201 university students as a function of demographic variables and eight motivation factors. Factors were extracted from 36 statements of motivation for consumption, using varimax rotation and a scree test for retention. Consumption was positively associated with perceptions of natural/healthful food attributes and enhanced weight control and stress management, and negatively associated with desires for convenience and familiar foods. This suggests education programs

should highlight the convenience of fresh fruits and vegetables and encourage experimentation with unfamiliar produce.

"Measuring the Impact of Biosafety Regulations on Urban Consumer Acceptance of Genetically Modified Food in China." Cai-ping Zhang, Junfei Bai (Wash. State Univ.), Carl E. Pray (Rutgers Univ.), and Jikun Huang (Chinese Academy of Sciences).

This study analyzes the impacts of biosafety regulations on Chinese consumers' acceptance of genetically modified (GM) foods. Four GM foods, pest-resistant GM soybean oil, pest-resistant GM rice, nutrition-enhanced GM rice, and pork-fed by GM maize are considered. Binary logit models with and without instrumental variables imposed are applied to obtain parameter estimates. The results indicate that Chinese consumers' acceptances of GM foods are significantly linked to the selection of food item and consumers' demographics. In addition, the implementations of biosafety regulations, including food safety-related and environment safety-related regulations, significantly enhance consumers' confidences to accept these foods.

"Bargains or Ripoffs: Reference Price Effects in Conjoint Stated Demand." Wuyang Hu (Univ. of Nevada, Reno).

This study provides a framework that allows the incorporation of predictions from reference point effects into a stated survey of consumer demand for food with credence attributes. Based on this analysis, parametric tests can be applied to the utility function to examine the existence of reference price effects. Results are consistent with theory in that consumers exhibit strong and nonlinear reference price effects, with cheaper prices receiving less weight than higher prices. The utility function is also shown to be concave over lowered prices and convex over increased prices with diminishing sensitivity in both domains.

"Property Taxes and Residential Rents." Leah J. Tsoodle and Tracy M. Turner (Kans. State Univ.).

Property taxes are a fundamental source of revenue for local governments, comprising 73% of local government tax revenue in the United States. In this paper, we empirically investigate the impact of residential property taxes on residential rents. Using a two-stage hedonic approach with comprehensive unit-level, neighborhood-level, and city-level controls from the American

Housing Survey, we find that a one standard deviation increase in the property tax rate raises residential rents by between \$380 and \$450 annually.

SESSION: Resource and Environmental Economics. Moderator: Ken Erickson (USDA/ERS).

"Prescribed Management for Conservation Reservation Reserve Program Lands in the North American Shortgrass Prairie." Megan M. McLachlan and Michael R. Dicks (Okla. State Univ.).

Roughly 25 million U.S. cropland acres have been converted to grass under the Conservation Reserve Program (CRP). While the process of selecting acreage for inclusion in the CRP uses an Environmental Benefits Index to guide enrollment decisions, no effort has been made to manage CRP fields for specific wildlife species. This paper provides a protocol for determining a management scheme for specific fields using birds as indicator species.

"The Role of Forest Resources as Amenities in the Southwest." Michael S. Hand, Jennifer Thacher (Univ. of N. Mex.), Daniel W. McCollum (USFS, Rocky Mountain Research Station), and Robert Berrens (Univ. of N. Mex.).

Forests provide non-marketed goods and services for which people are willing to pay through choices made in housing and labor markets. The extent to which this occurs within a geographic region is investigated empirically using data from Arizona and New Mexico. Wage and housing price regressions estimated with a unique set of forest amenity measures yield positive implicit prices for national forests and grasslands area. Recreation sites do not consistently exhibit a positive implicit price. The results suggest that policies affecting the supply of forest land on a regional scale can have welfare effects within a region.

"Agricultural Cost of Maintaining Playa Lake Hydroperiod to Preserve Playa Lake Ecosystems in the Texas High Plains." Phillip Peabody and David B. Willis (Tex. Tech. Univ.).

The cost-effectiveness of using filter strips and/or furrow dikes as on-farm control measures to reduce sediment runoff from agricultural cropland into playa wetlands to increase/preserve playa wetland hydroperiod is examined. The

Agricultural Policy and Environmental Extender (APEX) simulation program was modified to simulate playa response to existing baseline agricultural practices and potential conservation practices over a 50-year planning horizon. Under baseline agricultural practices, regardless of crop scenario and soil type, nearly all hydroperiod is lost by the end of each stochastic 50-year simulation. Current cost-share rates and EQIP payments are insufficient to encourage voluntary producer adoption of conservation practices.

"The Value of Snowmobile Recreation in Valley County, Idaho." Ryan Larsen, Garth Taylor (Univ. of Idaho), Philip Wand-schneider (Wash. State Univ.), and John McKean (Colo. State Univ.).

Snowmobiling is engaged in a struggle with the environment and other winter recreation. Valley County, Idaho, is ranked as one of the nation's premier snowmobiling destinations and the 50,000 annual visitors are vital to the local economy. Demand for snowmobiling was estimated using a two-step decision travel cost model. Demand was calculated for single-site visitors and multi-site visitors, with the willingness to pay estimated at \$83 and \$141 per person per trip, respectively. Own-price elasticity was -0.73, and elasticity of preferences, closely related goods, and income were estimated with a view to assessing the tradeoffs between land uses and promoting snowmobile recreation.

SESSION: Agri-Marketing, Demand and Price Analysis. Moderator: Steven Blank (Univ. of Calif., Davis).

"Influence of Increased Ethanol Production on the Livestock Feed Market." Brian K. Herbst, Joe L. Outlaw, David P. Anderson, and Henry Bryant (Tex. A&M Univ.).

Ethanol production in the United States has increased four-fold over the last decade. With the increase in ethanol production, production of the primary dried distiller's grain with solubles (DDGS) has also increased. DDGS is unique in that it replaced protein (primarily soybean and other types of meals) and energy sources (primarily corn) in livestock rations. The use of DDGS in livestock rations has lessened the price impact of more corn moving into ethanol production. Estimates from the demand system indicate a significant relationship between DDGS, corn, and soybean meal prices.

"Mexican Meat Demand Analysis: Did NAFTA Cause Consumer Behavior Change?" Jaime Malaga, Suwen Pan, and Teresa Duch-Carvalho (Tex. Tech. Univ.).

Since NAFTA implementation in 1994, per capita meat consumption in Mexico has increased 73%. Censored LA/AIDS and QUAIDS models are used to estimate Mexico's meat demand parameters using official household survey data between 1992 and 2004, and results are compared for both models across time. The purpose was to test whether consumer behavior in Mexico has changed with the implementation of NAFTA. The results suggest that beef and pork are luxury goods while chicken is a normal good in Mexico throughout the analyzed period. Further, no significant changes were found to have occurred in the behavior of Mexican meat consumers after NAFTA.

"Cattle Feeding Net Revenue Variability: Forecasting and Window Contract Value." Glynn T. Tonsor (Mich. State Univ.) and Ted C. Schroeder (Kans. State Univ.).

This research evaluates a multivariate approach to forecasting the net revenue of feeding cattle as well as the design and feasibility of profitability window contracts as feedlot risk management tools. The proposed forecasting method is found superior to and provides substantial information not provided by traditional approaches. Further findings suggest that significant differences and challenges in window contract design exist relative to similar tools existing in other livestock industries. Results of this work advocate further research and development, as these window contracts appear to offer beneficial attributes to processors and feedlot managers in an appealing and economically sound manner.

"A Panel Data Econometric Analysis of Voluntary Trans Fatty Acid Labeling in the Domestic Cracker Industry." Rutherford Johnson (Univ. of Ky.), Steven S. Vickner (Utah State Univ.), Angelos Pagoulatos, and David Debertin (Univ. of Ky.).

The principal empirical objective of this paper is to estimate the impact of voluntary trans fatty acid labels and related media coverage on the market demand for crackers using a panel of weekly point-of-purchase scanner data and a first-differenced, linear-approximate Almost Ideal Demand System. Both classic pooled and one-way fixed effects models are estimated. The label and media effects are assessed on the entire demand

system using an F -test. In most cases we rejected the null hypothesis of no label and no media effects.

"The Fate of Federal Milk Marketing Orders: Is Order 135 an Indication of the Future?" E. Bruce Godfrey (Utah State Univ.), Matt C. Stockton (Univ. of Nebr.-Lincoln), and Wilson Gray (Univ. of Idaho).

The federal milk marketing order (FMMO) system has existed for nearly 70 years. Some have questioned the need for the system in today's environment while others suggest that chaos would result if orders were eliminated. On April 1, 2004, order 135 was terminated. Experience since this order was eliminated suggests that: (a) national prices for products are used to set milk prices paid to producers with and without the order, (b) shifts in utilization is a major contributor to the volatility of prices paid to producers, and (c) a decreasing percentage of milk used for fluid consumption diminishes the need for and role of an FMMO.

SESSION: Production Economics and Farm/Ranch Management. Moderator: Holly Wang (Wash. State Univ.).

"Early Irrigation Termination of Cotton as a Drought Mitigation Tool." Russell Tronstad, Jeffrey C. Silvertooth, and Abraham Galadima (Univ. of Ariz.).

The marginal value of water for additional irrigations applied toward the end of the cotton season was quantified by considering both yield and quality attributes. Later irrigation termination dates resulted in the higher lint yields, but quality was reduced from high micronaire. Depending on the variety and fruit load, upwards of 20% to 45% of the water applied to a conventional long-season cotton crop could be transferred to other uses during the July to August months at a cost of less than \$100 an acre-foot or \$0.31 per thousand gallons.

"The Impact of the Kansas Wheat Breeding Program on Wheat Yields, 1911–2005." Lawton Lanier Nalley and Andrew Barkley (Kans. State Univ.).

The objective of this research is to quantify the impact of the Kansas State Agricultural Experiment Station wheat breeding program on wheat yields in Kansas for 1977–2005. Regression results indicate that the impact of the wheat breeding program, holding all other technological change constant, was equal to 0.27 bushels per

acre per year. By quantifying the precise amount of additional yield per acre that can be attributed to the KAES wheat breeding research program, and using data on acres planted and market prices, it is possible to estimate the economic benefits associated with the KAES wheat breeding research in Kansas.

"Off-Farm Income and the Adoption of Agricultural Innovations: Four Case Studies." Jorge Fernandez-Cornejo, Ashok Mishra, Alexandra Gregory, and Malaya Southern (USDA/ERS).

We develop an econometric model to examine the interaction of off-farm income-earning activities and adoption of four agricultural innovations of varying managerial intensity, including herbicide-tolerant crops, precision agriculture, conservation tillage, and Bt corn. We also estimate econometrically the impact of adopting these innovations on farm household income (from on-farm and off-farm sources) after controlling for such interaction. We estimate the model using USDA survey data of corn and soybean farms for 2000–2001. We find that the adoption of managerial-saving technologies is significantly related to higher off-farm household income. On the other hand, managerially intensive technologies are associated with lower off-farm income.

SESSION: Community and Regional Economics. Moderator: David Holland (Wash. State Univ.).

"Location Determinant of Biotechnology Firms at the State Level: Initial Findings." Thomas R. Harris, Slavica Vusovic, and J. Scott Shonkwiler (Univ. of Nev., Reno).

The biotechnology industry has doubled in size over the past 16 years. However, location of biotechnology firms has not been evenly dispersed. In 2001, approximately 42% of the nation's biotechnology firms resided in California, while neighboring Nevada had barely 1%. This paper estimated statewide locational determinants for biotechnology firms. Simultaneity of explanatory variables was found which has not been addressed in past studies. Also, for states with low numbers of biotechnology firms, the probability of a biotechnology firm locating in the state is low. However, amenity values of a location can be used to enhance the probability of location.

"Evaluating the Economic Impact of Farmers' Markets in an Opportunity Cost Framework: A West Virginia Example." David W.

Hughes (Clemson Univ.), Cheryl Brown, Stacy Miller, and Tom McConnell (W. Va. Univ.).

Farmers' markets presumably benefit local (regional) economies through enhanced retention of local dollars. Unlike other studies, the net impact of farmers' markets on the West Virginia economy is examined. Producer survey results are used in estimating annual direct sales (\$1.725 million). Using an IMPLAN-based input-output model, gross impacts are 112 jobs and \$2.434 million in output, including \$1.532 million in gross state product (GSP). When the effects of direct revenue losses are included (primarily for grocery stores), the impact is reduced to 71 jobs, \$1.048 million in output, and \$0.760 million in GSP.

SESSION: *Resource and Environmental Economics*. Moderator: Paul N. Wilson (Univ. of Ariz.).

"Nonconsumptive Use Valuation of a Scenic Highway: El Calafate to Glaciers National Park, Patagonia, Argentina." Lindsey Ellingson, Andrew Seidl (Colo. State Univ.), and Lawrence Pratt (Central Amer. Institute for Bus. Admin.).

The route between El Calafate and Glaciers National Park in the Patagonia region of Argentina is an undeveloped scenic roadway in which economic activity may fluctuate as a result of the level of physical development along the roadway. The viewscape along this roadway is a public good; therefore, the nonmarket value of the viewscape by tourists must be estimated by other means in order to facilitate rational economic development planning. This study describes the tourists' demographics, trip characteristics, expenditure patterns, and nonconsumptive use values associated with potential development that could hinder the viewscape along the scenic highway in Argentina.

"The Choice of Irrigation Technologies and Groundwater Conservation: Impacts of Cost-Share Programs in the Kansas High Plains." Ya Ding (Univ. of Nebr.-Lincoln) and Jeffrey M. Peterson (Kans. State Univ.).

Cost-share assistance for conversion to more efficient irrigation technologies is a common policy in the High Plains, although its effectiveness at conserving water has been debated. This study modeled and simulated a representative irrigator's optimal technology choice and irrigation water use over time in response to declining

groundwater supplies. The objective was to examine the determinants of technology choice and the impacts of the cost-share program on irrigator income and groundwater consumption. Results indicate that cost-share programs are effective at accelerating the adoption of the more efficient technology, while their effectiveness at conserving groundwater depends on local hydrologic conditions.

"Alaska Snow Crab and King Crab Prices and Revenues." Joshua A. Greenberg and Mark Herrmann (Univ. of Alaska, Fairbanks).

An international snow crab and king crab market model was developed to identify the most important supply and demand factors influencing prices and revenues to the Alaska crab industry. The model was estimated using 3SLS for annual data from 1980 to 2004. Sensitivity analysis was conducted to examine the relationship between landings, both foreign and domestic, and wholesale and dockside (exvessel) prices and revenues. The sensitivity analysis highlighted that the combined snow crab and king crab landings from Canada and Russia are driving the markets and the Alaska crab industry has been relegated to being a market follower.

SESSION: *Agri-Marketing, Demand and Price Analysis*. Moderator: Karen Klonsky (Univ. of Calif., Davis).

"Investigation of the Cost-Price Squeeze for Individual Agricultural Commodities." Jody L. Campiche, Henry L. Bryant, James W. Richardson, and Joe L. Outlaw (Tex. A&M Univ.).

The relationship between prices paid and prices received by farmers for individual agricultural commodities was examined using cointegration analysis. A Johansen cointegration test between prices paid and prices received for barley, corn, wheat, and sorghum indicated that the series were cointegrated. Therefore, we do not reject a long-run correspondence between prices paid and prices received for these commodities. The results of this study validate the authors' previous findings at the aggregate farm price level.

"Measuring Returns to Generic Dairy Advertising in a Multi-Market Setting." Joseph V. Balagtas and Sounghun Kim (Purdue Univ.).

This paper investigates how horizontal supply and demand relationships across markets for

different dairy products affect the economic effects of generic promotion. The extant literature on dairy advertising focuses only on the vertical market relationships, without considering cross-market effects. Analytics and simulation of a multi-market equilibrium displacement model of U.S. dairy markets show that returns to generic promotion and optimal advertising expenditure depend on these horizontal relationships across dairy product markets. In particular, it is shown that by ignoring the cross-market effects, the previous literature overstates both the effectiveness of fluid milk advertising and, relatedly, the optimal advertising expenditure.

“Low Carbohydrate Information, Consumer Health Preferences, and U.S. Market Demand for Fruits.” Laxmi Paudel (Citi Finan. Group), Jack E. Houston (Univ. of Ga.), and Murali Adhikari (Global Future Institute).

Medical studies suggest that overweight, obesity, and obesity-related medical conditions can be successfully controlled by reducing the carbohydrate intake in diets. We estimate the effect of these low-carbohydrate information studies on the U.S. consumption of select fruits by constructing a carbohydrate information index and employing LA/AIDS and Rotterdam model estimation imposing the theoretical restrictions. Study results show information impacts were consistent across all demand model specifications and suggest positive, significant impacts of low-carbohydrate information on the demand for grapes and lemons but significant, negative effects on the demand for apples, bananas, and pears.

SESSION: Production Economics and Farm/Ranch Management. Moderator: Sean Hurley (Calif. Polytech. State Univ., San Luis Obispo).

“Optimal Cull Cow Marketing.” Dillon M. Feuz (Utah State Univ.).

Many cull cows are marketed in the fall at the seasonal low for prices and when the cows are in poor body condition. Weekly returns were estimated for selling cows from September through February. Optimal selling time is dependent upon whether calves can be weaned early from only the cull cows versus from all cows, and upon the relative price of corn (cost of gain) and the price of cull cows. If early weaning is possible, then marketing in September is optimal. Under recent relative corn price and cow price scenarios, feeding the cows into March before marketing is optimal.

“Economic Comparison of Alternative Bluegrass Residue Management Practices in Oregon’s Grande Ronde Valley.” Laura R. Gow and Penelope L. Diebel (Oreg. State Univ.).

Grass seed is a significant contributor to the economy of the Pacific Northwest. Sustained production requires residue to be completely removed from the field. An increase in air quality issues associated with field burning has created a need for the evaluation of alternative residue removal techniques. Three years of on-farm data for four alternative Kentucky Bluegrass Residue Management Practices in the Grande Ronde Valley of northeast Oregon (bale, bale/flail, bale/propane early, bale/propane late) were evaluated. Yields, costs, and return differences were evaluated under various production and price scenarios to determine the net present value of these management strategies.

“Production Risk and Crop Insurance Effectiveness: Organic versus Conventional Apples.” Xiaomei Chen, H. Holly Wang (Wash. State Univ.), and Larry D. Makus (Univ. of Idaho).

Washington State is the leading state in both conventional and organic apple production. The current apple crop insurance program only offers a yield-based program. In this paper we examine the income risks associated with conventional and organic production, and evaluate the roles of GYC and a hypothesized IP for conventional and organic apples by variety.

SESSION: Agribusiness. Moderator: Ted C. Schroeder (Kans. State Univ.).

“Colorado Wine Consumers: Tapping Interest in Local Wines.” Joshua Wilson and Dawn Thilmany (Colo. State Univ.).

This research applies a commonly used market segmentation process, cluster analysis, in which smaller subgroups of consumers can be used to develop a buyer profile. Such profiles are effective tools in developing smart marketing plans and programs for consumer products. Results suggest six consumer segments or clusters exist for the Colorado wine market differentiated by a wide set of categorical variables and responses. Such differences between the perceptions, tastes, and purchase behavior of Colorado wine consumers can be used to conduct more targeted product positioning, marketing, and promotional activities.

"Impacts of Occupancy Changes in Commercial Cattle Feeding." James D. Sartwelle, III, James W. Richardson, and Joe L. Outlaw (Tex. A&M Univ.).

How full to keep one's feedyard is the overriding question facing commercial feedyard managers on a daily basis. Historically, aggregate occupancy has ranged from 69% to 89% in the Texas panhandle. Firm-level stochastic analysis of a representative Texas beef cattle feedyard reveals significant variation in annual profitability as occupancy varies. Stochastic efficiency with respect to a function (SERF) analysis indicates that, even accounting for significant historical variation in cattle performance and cattle/feed prices, all but the most risk-averse managers would prefer higher occupancy levels.

SESSION: Resource and Environmental Economics. Moderator: David Lambert (N. Dak. State Univ.).

"An Economic Evaluation of Net Environmental Benefit Analysis for Choosing Among Environmental Projects." Richard W. Dunford (Environmental Econ. Services, Raleigh, NC).

Benefit-cost analysis (BCA) is a well-known and accepted economic tool for choosing among alternative environmental and non-environmental projects. In recent years a new tool, known as net environmental benefit analysis (NEBA), has been used to choose among environmental project alternatives, such as alternatives for remediating a hazardous-substance release. Generally, NEBA uses habitat equivalency analysis (HEA) to quantify net environmental benefits. This paper evaluates the use of HEA in an NEBA context from a welfare-theoretic perspective. An application of NEBA to a hypothetical environmental project is also included as a case study.

"Transboundary Water Resource Management and Conflict Resolution: A Coasian Strategic Negotiations Approach." Justin S. Baker and David B. Willis (Tex. Tech. Univ.).

The United States and Mexico recently resolved a decade-old water dispute that requires Mexico to repay the accumulated water debt within one year. A Coasian analysis was used to estimate the social welfare gains attainable to each country under an alternative debt repayment scheme that allowed repayment over a longer repayment horizon and/or in a combination of dollars and water, instead of solely in water. Under average flow conditions and a five-year repayment con-

tract, Mexico's compensation cost was 45% less and the U.S. compensation value was 223% greater relative to the situation where compensation is paid exclusively in water within one year.

"The Determinants of Economic Growth in the Swedish Mountain Region: The Role of the Forest and Tourism Sector, and Protected Land." Tommy Lundgren (Swedish Univ. of Agr. Sciences).

This paper investigates the determinants of economic growth and growth patterns in the Swedish mountain area municipalities. Focus is on the effects of net migration, the forest sector, tourism, and protected land. We use a standard panel data setting with data containing 15 municipalities spanning the years 1985 through 2001. System equation GMM estimation results show that: (a) absolute convergence may be applicable ("poorer" regions grow faster than "rich" regions), but there is no evidence for conditional convergence among the mountain municipalities (additional assumption: different steady-states across economies); (b) forest industry employment has a positive impact on local economic growth and vice versa; (c) tourism does not have a significant effect, either positive or negative, on local growth and vice versa; (d) the development of national GDP is important for local economic growth (+), net migration (-), the forest sector (-), and tourism (+); and (e) amount of protected land in relation to total land area does not seem to be important for the local mountain economy, except for tourism, where it has a statistically weak negative impact.

Organized Symposia

SESSION: Organic Agriculture in the West: Opportunities for Research and Outreach. Organizer and Chair: Dawn Thilmany (Colo. State Univ. and USDA/CSREES).

Presenters: Dawn Thilmany (Colo. State Univ. and USDA/CSREES), Catherine A. Durham (Food Innovation Center, Oreg. State Univ.), Karen Klonsky (Univ. of Calif., Davis), with contributions from Mark Lipson (Organic Farming Research Foundation, Santa Cruz, CA).

Organic agriculture became one of the fastest growing segments of U.S. agriculture during the 1990s. According to USDA statistics, organic acreage in the United States has doubled, and consumption of organically produced products has increased 20% per year for the past decade.

Today, 80% of organic products purchased on the market are fresh fruits and vegetables. The potential consumer demand for other organic products, such as meat and processed foods, is wide open. Organic products represent one of the fastest growing categories in the food business.

Beyond the interest created by increased demand, production, and perceived financial returns to organic agriculture, there are interesting resource and marketing policy issues given organic agriculture is one of the first niche sectors of agriculture moving into mainstream marketing channels. The symposium presented a diverse set of research and outreach/extension and education activities and opportunities emerging among Western Land Grant Universities, USDA agencies, and their partners—including certifying agencies, Organic Research Farming Foundation, Organic Trade Association, and other nonprofits interested in supporting the growth of organic production in the United States.

SESSION: *Rural Households' Health and Access to Health Care.* Organizer and Chair: Ashok K. Mishra (USDA/ERS).

Title of Paper Presentation: "Savings by Farm Households: Who Does It and How Much?" Presenters: Paul McNamara (Univ. of Ill.), Mathew Fannin (La. State Univ.), Joel Cuffey (Univ. of Ill.), Ashok Mishra, and Jay Variyam (USDA/ERS).

Health and wealth are two of the most important components of well-being (Case and Deaton, 2005). Convenient access to health care is of concern to individuals in farm and rural households as most households are located away from any major medical facilities and doctors' offices. Also, many are self-employed and do not have employer-sponsored health care benefits (which effectively reduce employee payments for health care). Many farm households have to bear a larger share of the out-of-pocket expense associated with obtaining health care services. This session is intended to attract economists from other disciplines and serve as a forum to discuss issues relating to applied labor economics and open a forum for discussion on the health-related issues affecting rural households. A dialogue needs to be initiated among researchers, academics, social workers, and policy makers in order to discuss the issues and initiate various solutions. This session seeks to provide the necessary initial steps that will lead to more comprehensive work in this area.

Paul McNamara provided an overview of the rural health and health care access situation as it currently stands in the rural U.S. using descriptive statistics and previously published research. In addition, this paper surveys the literature in agricultural economics and health economics concerning rural people and their access to health care. A particular emphasis is placed upon economic research concerning farm families and their health, access to health care, and well-being.

Mathew Fannin in his study examined the hospital-physician relationship and the transactional attributes, institutional environment, and market characteristics are identified as key variables influencing the organizational relationship between hospital and physician. As asset-specific investments are made by either the hospital or physician, vertically integrated relationships are more likely to occur. The degree of remoteness of rural areas is also considered to affect the impact of these asset-specific investments.

Joel Cuffey presented a paper that examined economic growth in U.S. rural counties across time (county-level panel data) econometrically to measure the distinct contribution of rural health infrastructure on economic growth. Panel data allow for the control of unobserved factors that are time-invariant (such as some macro-level geographical market factors, climate, etc.) on economic growth.

Ashok Mishra and Jay Variyam presented a study that investigated the demand for health insurance by farm households. Many farm households have to bear a larger share of the out-of-pocket expense associated with obtaining health care services. They found that health insurance premiums for farm families were approximately \$1,500 more than for nonfarm families. Wealth, family size, off-farm work status of a family member, and regional location of the farm significantly impacted premium rates for farm families. Farm families were half as likely to pay less out-of-pocket expenses than nonfarm families. Education, income, wealth, work status, and location played an important role in the likelihood of paying out-of-pocket expenses for farm families.

SESSION: *Potential Impacts of Recent Energy Policies and Price Increases on Agriculture, Land and Water Resources, and the Environment.* Organizers and Chairs: Stan Daberkow (USDA/ERS) and Wesley Musser (Univ. of Md.).

Presenters: Hosein Shapouri (USDA, Office of Energy), Felix Spinelli (USDA/National Resources Conservation Service), Ray Huffaker (Wash. State Univ.), and Harry Vroomen (The Fertilizer Institute).

Energy markets have recently exhibited sharply increased real prices and greater volatility compared to the early 1990s. In addition, the 2002 Farm Bill and the 2005 Energy Act included programs on agricultural energy production and consumption. This symposium reviewed the current energy use and price situation, summarized programs affecting energy production and consumption, explored environmental implications of recent energy policies and prices, and discussed a future research agenda.

First, **Hosein Shapouri** discussed policies affecting agricultural energy production. Next, **Felix Spinelli** highlighted National Resources Conservation Service (NRCS) programs promoting energy conservation. Then **Ray Huffaker** examined implications of increasing energy prices for agricultural water use. Finally, **Harry Vroomen** outlined effects of rising energy prices on the fertilizer industry.

SESSION: *The Future of Animal Agriculture in North America—Animal Health, Food Safety, Consumer Demand, and Community Aspects.* Organizer and Chair: Dawn Thilmany (Colo. State Univ. and USDA/CSREES).

Presenters: Dawn Thilmany (Interim Program Leader, Organic Agriculture), Steve Halbrook (The Farm Foundation), and H. L. Goodwin (Poultry Science Center of Excellence, Univ. of Ark.).

This session summarized a 2005 Farm Foundation multi-disciplinary project which examines the challenges and opportunities faced by animal agriculture in North America. Both the process of organizing the expertise and opinions of over 160 industry, government, and academic leaders from all three NAFTA countries and the white papers

developed from the project were discussed. This section focused on three topics of greatest interest to agricultural economists, especially in Western states, including: (a) Animal Health and Food Safety, (b) Markets and Trade Policy, and (c) Consumer Demand. The final report of this project was issued in April 2006, and is available online at farmfoundation.org.

SESSION: *The Future of CRP.* Organizer and Moderator: Michael R. Dicks (Okla. State Univ.).

Presenters: Michael R. Dicks (Okla. State Univ.), "The Importance of the CRP as a Component of Agricultural Policy"; Megan McMahan (Okla. State Univ.), "The Importance of CRP to Wildlife Habitat"; and Skip Hyberg (USDA/Farm Service Agency), "The Role of Science in Guiding the CRP."

The only remaining land retirement program, the CRP, will celebrate the end of its 20th year of existence prior to the start of the new farm bill debate. Agribusinesses and local communities want to reduce or eliminate the program due to the perceived adverse impacts, while farm groups and conservation and environmental groups want to extend the program with specific changes. Some members of Congress view the program as income transfer from coastal America to the Midwest, and want a reallocation of acreage.

In the first presentation, Michael Dicks discussed the importance of the CRP in the context of (a) land use for crop supplies, (b) as part of the overall food and agricultural policy, (c) WTO commitments, and (d) new energy policies. Second, Megan McMahan discussed the importance of the program to the environmental/conservation communities, with particular focus on the need for program changes to assist specific wildlife. In the final presentation, Skip Hyberg provided insight into the limitations to program changes due to limits on knowledge required to implement needed changes in the program.