

David W. Bullock

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Personal Information:

Age: 60

Marital Status: Married, 2 grown children

Educational Background:

Ph.D., Agricultural Economics, Iowa State University, Ames, IA, 1989.

Areas of Specialization: Agricultural Marketing and Price Analysis, Econometrics

Major Professor(s): Dermot Hayes and Marvin Hayenga

Dissertation Title: "Options and Market Information: A Mean-Variance Portfolio Approach"

Honors: Gamma Sigma Delta, Iowa State University Graduate Teaching Excellence Award

M.S., Agricultural Economics, NW Missouri State University, Maryville, MO, 1984.

Thesis: "Management of the Existing Upland Woodlots in Nodaway County, Missouri: An Economic Analysis"

B.S., Agricultural Economics, NW Missouri State University, Maryville, MO, 1982.

Honors: Omicron Delta Epsilon, Delta Tau Alpha

Work Experience:

Research Associate Professor (100% Research), North Dakota State University, Fargo, ND, January 2018 - Present. *Develop a research program in affiliation with the NDSU Center for Trading and Risk. Primary focus in the areas of commodity trading, agricultural risk management, agrifinance, Monte Carlo simulation modeling, and statistical analysis of Big Data.*

Senior Economist, AgriBank, FCB, St. Paul, MN, May 2012-December 2017.

Provide leadership in the analysis and evaluation of risk associated with decisions affecting AgriBank and District Association risk management processes and loan portfolio. Serves as a major consulting resource to the Credit Department on issues related to economics. Primary supervisor of the Bank's credit scorecard portfolio.

Chief Foods Economist, INTL FCStone, Inc., St. Louis Park, MN, 2011-2012.

Conduct market research and analysis in the dairy supply chain sector. Provide retainer (Integrated Risk Management Program) and project consulting support for the Foods Division in the Chicago office.

Director of Research, INTL FCStone, Inc., St. Louis Park, MN, 2010-2012.

Coordinate all research activities across the entire organization. Manage all market research vendor relationships. Support the INTL FCStone consultant network with applied research. Develop additional revenue streams through consulting projects, client retainers, and multi-client studies.

Risk Management Consultant, FCStone, Inc., St. Louis Park, MN, 2007-2010.

Provide project and retainer-based consulting services to clients in the food, fiber, and energy industries. Support the broker network in Integrated Risk Management Program (IRMP) retainer-based consulting and in soliciting transactional business. Make risk management recommendations for clients.

Senior Dairy Analyst and Consultant, Informa Economics, New Brighton, MN, 2005-2007.

Provide market analysis and project / retainer consulting services to firms at all levels of the dairy supply chain.

Risk Management Specialist, Minnesota Department of Agriculture, St. Paul, MN, 1999-2001, 2002-2005.

Provide risk management education and applied research services to Minnesota agricultural producers and agribusinesses. Conduct special project management and research for the Commissioner.

Project Consultant, Global Risk Management Group, Eden Prairie, MN, 2001-2002.

Provide project and retainer-based consulting services to firms in the food and fiber industries.

Adjunct Professor (100% Teaching), Embry-Riddle Aeronautical University, Eagan, MN, 2000-2004. *Courses Taught:* Introductory Micro- and Macroeconomics.

Senior Economist, Minneapolis Grain Exchange, Minneapolis, MN, 1993-1999.

Conduct feasibility research on new potential futures and option contracts considered for trading at the Exchange. Assist legal staff in preparing regulatory approval documents for new contracts. Conduct educational seminars for Exchange constituencies. Conduct special project research for the CEO and Board of Directors.

Assistant Professor and Extension Economist (100% Extension), Montana State University, Bozeman, MT, 1989-1993.

Develop an extension educational program that addresses the marketing and risk management issues facing Montana grain and livestock producers, and agribusinesses. Publish applied research to support extension program. Publish refereed basic and applied research in accepted academic journals.

Instructor (20% Teaching / 80% Advising), Department of Economics, Iowa State University, Ames, IA, 1984-1989. *Courses Taught: Agricultural Marketing and Price Analysis (ECONA 335).*

Position was in the undergraduate agribusiness program. Served as both the primary instructor and teaching assistance for the primary undergraduate agricultural marketing course. Had ongoing academic advisement responsibilities for approximately 40 undergraduate agribusiness majors.

Soil Conservation Aid, USDA Soil Conservation Service, Maryville, MO, 1983-1984.

Part time position assisting the Soil Conservationists and Soil Conservation Technicians in the layout and design of soil conservation structures (mainly parallel terracing systems and diversion terraces). Translated the existing terrace design software from HP programmable calculators to microcomputers using interpreted BASIC (received commendation from State Director for this work).

Research Interests:

- Applications of Monte Carlo simulation and optimization tools to risk management and operations research problems in agribusiness.
- Application of multivariate statistics and data mining to problems in econometrics, forecasting, agribusiness management, and big data analytics.
- Use of games / simulations in training students to make optimal risk management decisions.

Refereed Journal Articles:

Bullock, David W., William W. Wilson, and Joseph Neadeau. 2021. "Gene Editing versus Genetic Modification in the Research and Development of New Crop Varieties: An Economic Comparison." Forthcoming in the *American Journal of Agricultural Economics*. DOI: 10.1111/ajae.12201.

Lakkakula, Prithviraj, David W. Bullock, and William W. Wilson. 2021. "Asymmetric Information and Blockchains in Soybean Commodity Markets." Forthcoming in *Applied Economics Perspectives and Policy*. DOI: 10.1002/aep.13159.

Bullock, David W. 2021. "The Influence of State-Level Production Outcomes Upon U.S. National Corn and Soybean Production: A Novel Application of Correlated Component

Regression.” Forthcoming in the *Journal of Agricultural and Applied Economics*. DOI: 10.1017/aae.2020.36.

Lakkakula, Prithviraj, David W. Bullock, and William W. Wilson. 2020. “Blockchain Technology in International Commodity Trading.” *Journal of Private Enterprise* 35(2): 23-46.

Bullock, David W. and William W. Wilson. 2020. “Factors Influencing Gulf and Pacific Northwest Soybean Export Basis: An Exploratory Statistical Analysis.” *Journal of Agricultural and Resource Economics* 45(2): 317-334. DOI: 10.22004/ag.econ.302457.

Bullock, David W., William W. Wilson, and Bruce L. Dahl. 2007. “Strategic Use of Futures and Options by Commodity Processors.” *International Review of Economics and Finance* 16: 578-591.

Bullock, David W., and Dermot J. Hayes. 1993. “The Private Value of Having Access to Derivative Securities: An Example Using Commodity Options.” *International Review of Economics and Finance* 2: 233-49.

Bullock, David W., and Dermot J. Hayes. 1992. “Speculation and Hedging in Commodity Options: A Modification of Wolf’s Portfolio Model.” *Journal of Economics and Business* 44: 201-21.

Book Chapters:

Wilson, William W., David W. Bullock, and Bruce Dahl. 1998. “Futures, Options, and Cash Markets” in *Structural Change and Performance of the U.S. Grain Marketing System*, Donald W. Larson, Paul W. Gallagher, and Reynold P. Dahl, ed. Urbana, IL: Scherer Communications, pp. 25-49.

Conference Proceedings:

Bullock, David. W., William W. Wilson, and Prithviraj Lakkakula. 2020. “Short-Term Dynamics and Structural Changes in the United States and Brazil Soybean Basis: Seasonality, Volatility, Structural Breaks and Information Flows.” *Proceedings of the NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management*, Berna Karali and Anton Bekkerman, ed.

Bullock, David. W., and William W. Wilson. 2019. “Factors Influencing the Gulf and Pacific Northwest (PNW) Soybean Export Basis: An Exploratory Statistical Analysis.” *Proceedings of the NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management*, Berna Karali and Anton Bekkerman, ed.

Bullock, David. W., and William W. Wilson. 2019. “Managing Risk in Ethanol Processing Using Formula Pricing Contracts.” *Proceedings of the NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management*, Berna Karali and Anton Bekkerman, ed.

Carlson, John, David W. Bullock, James B. Johnson, M. Steve Stauber, and Charles McGuire. 1993. "The Forecasting of Prices and Protein Premiums for PNW Hard Red Winter and Dark Northern Spring Wheat." *Proceedings of the NCR-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management*, Marvin Hayenga, ed.

Other Peer-Reviewed Publications:

Bullock, David W., William W. Wilson, and Prithviraj Lakkakula. 2020. "Dynamic Changes in Rail Shipping Mechanisms for Grain." North Dakota State University Department of Agribusiness and Applied Economics Report No. 794.

Bullock, David W., William W. Wilson, and Joseph Nadeau. 2019. "Genetic Editing (GE) versus Genetic Modification (GM) in the Research and Development of New Crop Varieties: An Economic Comparison." North Dakota State University Department of Agribusiness and Applied Economics Report No. 793.

Bullock, David W. 2019. "The Influence of State-Level Production Outcomes Upon U.S. National Corn and Soybean Production: A Novel Application of Correlated Component Regression." North Dakota State University Department of Agribusiness and Applied Economics Report No. 790.

Bullock, David W., and William W. Wilson. 2019. "Factors Influencing the Gulf and Pacific Northwest (PNW) Soybean Export Basis: An Exploratory Statistical Analysis." North Dakota State University Department of Agribusiness and Applied Economics Report No. 788.

Bullock, David W., William W. Wilson, and Bruce L. Dahl. 2003. "Strategic Use of Futures and Options by Commodity Processors." North Dakota State University Department of Agribusiness and Applied Economics Report No. 521.

Bullock, David W. 1993. "A Preliminary Investigation of the Short-Run Impacts of the Clinton Administration's Proposed BTU Tax on Montana Farmers and Ranchers." Montana State University Extension Special Report No. ESR 93-3.

Johnson, James B., David W. Bullock, and M. Steve Stauber. 1993. "Commodity and 0/92 Programs: Provisions Available for the 1993 Crop Year." Montana State University Extension Special Report No. ESR 93-1.

Bullock, David W., and Walt Hudyma. 1992. "The Economic Feasibility of Limited Soybean Production in the Yellowstone Valley of Montana." Montana State University Department of Agricultural Economics and Economics Staff Paper No. 92-4.

Sheard, Michael, James B. Johnson, John Saltiel, and David W. Bullock. 1992. "Future Uses of Montana Croplands Enrolled in CRP: A Preliminary Economic Analysis." Montana State University Extension Special Report No. 92-2.

Johnson, James B., Kent Williams, Terry Angvick, Walt Adams, M. Steve Stauber, and David W. Bullock. 1992. "Commodity and 0/92 Provisions Available for the 1992 Crop Year." Montana State University Extension Special Report No. 92-1.

Johnson, James B., Alan Baquet, and David W. Bullock. 1991. "Commodity Provisions of the 1990 Farm Bill: Initial Analyses of Impacts on Montana Grain Farms." Montana State University Department of Agricultural Economics and Economics Staff Paper No. 91-1.

Johnson, James B., Alan Baquet, M. Steve Stauber, and David W. Bullock. 1991. "Commodity and 0/92 Provisions Available for the 1991 Crop Year." Montana State University Extension Bulletin No. EB95.

Bullock, David W., and Dermot J. Hayes. 1990. "A Mean-Variance Portfolio Model Containing Options, Futures, and Physicals: Information, Optimal Positions, and Market Interaction." Montana State University Department of Agricultural Economics and Economics Staff Paper No. 90-5.

Bullock, David W. 1990. "Seasonal Forecasting of Montana Wheat, Barley, and Calf Prices." Montana State University Extension Bulletin No. EB78.

Bullock, David W. 1990. "An Introduction to Risk and Its Management." Montana State University Extension Bulletin No. EB79.

Bullock, David W. 1990. "Basis Tables for Montana Calves." Montana State University Extension Bulletin No. EB80.

Bullock, David W. 1990. "Basis Tables for PNW Spring and Winter Wheat." Montana State University Extension Bulletin No. EB81.

Johnson, James B., M. Steve Stauber, David W. Bullock, and Duane Griffith. 1990. "Wheat, Barley, and 0/92 Program Provisions Available for 1990." Montana State University Extension Service.

Hayes, Dermot J., David W. Bullock, and Giancarlo Moschini. 1988. "Noisy Rational Expectations and the Informational Role of Option Markets." Iowa State University Agriculture and Home Economics Experiment Station Journal Paper No. J-13332.

Miscellaneous Publications:

Bullock, David W. 2016. "Which States Make the U.S. Corn and Soybean Crops: A Comparison of the Pre- and Post-GMO Eras", working paper published on personal blog at www.percentilezone.wordpress.com.

Bullock, David W. 2016. “The ‘At-Risk’ Approach to Market Risk Measurement and Management: A Primer for the Commodity-Based Business”, working paper published on personal blog at www.percentilezone.wordpress.com.

Bullock, David W. 2016. “Big Data, Analytics, and Corn: They Have More in Common Than You Think”, commentary published on personal blog at www.percentilezone.wordpress.com.

Bullock, David W. 2016. “Data Mining: Keeping It in Perspective”, commentary published on personal blog at www.percentilezone.wordpress.com.

Bullock, David W. *MonteCrop 1.0*, an Excel spreadsheet for applying Monte Carlo risk analysis to pre-harvest crop marketing and insurance decisions featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2005.

Bullock, David W. *MilkSim 1.0*, an Excel spreadsheet for applying Monte Carlo risk analysis to producer milk hedging decisions featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2004.

Bullock, David W. *MDA Risk Management Monthly*, a monthly Internet newsletter published on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2000-2001, 2002-2005.

Bullock, David W. *Class III Milk Futures Price Percentile Report*, a monthly report featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2003-2005.

Bullock, David W. *Class III Milk Options Implied Volatility Report*, a monthly report featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2003-2005.

Bullock, David W. *Grain Futures Implied Volatility Report*, a monthly report featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2003-2005.

Bullock, David W. *Option Portfolio Analyzer*, an Excel spreadsheet for analyzing option portfolio sensitivities featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2003.

Bullock, David W. *Black’s Option Pricing Model Calculator*, an Excel spreadsheet for calculating option premiums and greeks featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2003.

Bullock, David W. *CropRisk 1.0*, an Excel spreadsheet for analyzing crop insurance and marketing options featured on the Minnesota Department of Agriculture website at www.mda.state.mn.us/riskmgmt, 2001.

Bullock, David W. *Futures Basic Series*, Minneapolis Grain Exchange, 1995.

Bullock, David W., *Shrimp Futures 101 Course Workbook*, Minneapolis Grain Exchange, 1995.

Bullock, David W., "Market Analysis", a bi-weekly feature column in *AgWeek* farm magazine, 1993-1995.

Bullock, David W., "Advanced Risk Management", a monthly feature column in the *Montana Farmer-Stockman* magazine, 1990-1991.

Other Notable Research / Consulting Experience:

Independent Consulting

- Developed a margin-at-risk model for cross hedging the durum wheat exposure of an international pasta manufacturer.
- Revised a durum wheat price forecasting model for institutional use.
- Conducted a statistical / data mining analysis of soybean production data for one of the largest farming operations in Russia.
- Expert analysis of potential price manipulation in the CBOT wheat futures contract for the Commodity Futures Trading Commission (CFTC).
- Damages expert on court case involving pre-release of unapproved GMO varieties into export channels for U.S. corn.

INTL FCStone, Inc.

- Developed a cross-hedge model that was used to assist a Midwestern based coffee store chain in managing its Class I milk price exposure.
- Developed cross-hedge model used to assist major East Coast fluid milk bottler in developing a price risk management strategy for its Class I skim milk price exposure.
- Provided technical assistance in the development of cross-hedge models to manage the price risk of fertilizer components.
- Developed a spatial basis model and Monte Carlo financial projections for a proposed Wisconsin soybean crush facility.
- Was lead investigator on project to review the natural gas risk policy of a large U.S. manufacturer of building materials.
- Developed value-at-risk and budget-at-risk models covering 16 different commodity categories for a Fortune 500 food company based in the Twin Cities.
- Developed a value-at-risk model covering 13 different commodity categories for a large Minnesota based manufacturer and distributor of prepackaged food products.
- Developed a budget-at-risk model covering three energy commodity categories for a large Minnesota based dairy and food cooperative. Assisted the cooperative (using the model) in setting their annual energy budget.

Informa Economics

- Was primary manager of Informa's internal dairy forecasting model. This model provided monthly forecasts of prices and dairy balance table aggregates (production, imports, exports, domestic usage, and ending stocks) for eight dairy product categories (i.e., American cheese, mozzarella cheese, butter, NFDM / SMP, dry whey, WPC, lactose, and buttermilk powder). These forecasts were projected 2 years out. Introduced improvements in seasonal forecasting (using analog clustering), out of sample forecast analysis (using Theil U statistics), and general forecast modeling. Supervised and assisted in the maintenance of the databases used to support the models.
- Was the primary editor and author for one weekly (*Dairy Weekly*) and three monthly (*Dairy Productcast*, *Dairy Monitor*, and *Butter Report*) Informa dairy publications.
- Was lead investigator and manager on a large project to assist a leading Midwest ice cream manufacturer in determining strategic options to manage its excess skim capacity after the company exited its fluid milk operations.
- Participated in a project (in conjunction with Robert Morris and Associates of Canada) to evaluate the pricing impacts of reopening the U.S. to the import of Canadian dairy heifers. Developed vector autoregression and Box-Jenkins transfer function models to project pricing impacts.
- Assisted Midwest Dairy Association (MDA) each year in developing annual projections of milk production for each participating state in order to develop check-off funding projections.

Minnesota Department of Agriculture

- Put together a proposal for the research and development of a Dairy Revenue Insurance (DRI) product that was submitted to the USDA Risk Management Agency. Unfortunately, the proposal was not funded.
- Put together a research proposal (in collaboration with Cole Gustafson and William Nganje, North Dakota State University Agriculture and Applied Economics Department) to develop a whole farm revenue insurance product using a rating method based upon the Arbitrage Pricing Theory (APT) model used in finance. Proposal was submitted to the USDA-RMA for funding. Unfortunately, the proposal was not funded.
- Conducted an actuarial review of the AGR-Lite insurance product at the request of the Commissioner of Agriculture. Found significant problems with the product and recommended against the State providing funds for its development in Minnesota. Commissioner accepted the recommendation.
- Developed an internal revenue forecasting model for the Grain Inspection Division. Provided regular forecasts from the model to accounting staff for budgeting purposes.
- Created outline for a study of the current and potential identity preserved (IP) infrastructure in Minnesota, and contracted with Global Resource Associates (GRA) to conduct the study. Worked with GRA and department staff to present the study findings and policy recommendations to key members of the

Minnesota Legislature. The end result of this effort was the creation of the Minnesota Shippers Association during the 2001 Legislative Session.

- Oversaw the completion of a study that examined the potential implications of increasing usage of production and long-term marketing contracts by processors in Minnesota. The consultants for this study were Marvin Hayenga, Neil Harl, and John Lawrence of Iowa State University. Presented key findings and policy recommendations to Minnesota legislative committees. The end result of this effort was the creation and passage of legislation during the 2000 Minnesota Legislative Session that regulated production and long-term marketing contracts; in particular the legislation required that: (1) contracts meet readability criteria, (2) contracts contain a simplified risk disclosure statement, and (3) producers have 3 days to review the contract before it became binding.

Global Risk Management Group

- Created market year and seasonal price forecasting models for oats, soymeal, corn, and wheat for various corporate clientele including one Fortune 500 food processor. Assisted in the presentation of price forecasting results and strategy recommendations. 2001-2002.
- Developed Monte-Carlo product margin risk management models for corporate clientele. 2002.

Minneapolis Grain Exchange

- Was responsible for feasibility research, development, and regulatory (CFTC) approval for the following new futures and option contracts introduced by the Exchange:
 - Cottonseed, 1999.
 - Twin Cities On-Peak and Off-Peak Electricity, 1998.
 - Durum Wheat, 1997.
 - Feed Barley, 1996.
 - Black Tiger Shrimp, 1994.
- Also, responsible for research and analysis of proposed changes to existing Exchange contracts.

National Presentations:

Bullock, David W. (presenter), William W. Wilson and Prithviraj Lakkakula. "Short-Term Dynamics and Structural Changes in the United States and Brazil Soybean Basis: Seasonality, Volatility, Structural Breaks and Information Flows." NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management, St. Louis, MO, April 2020 (Conference cancelled due to COVID-19).

Bullock, David W. (presenter), and William W. Wilson. "Managing Risk in Ethanol Processing Using Formula Pricing Contracts." WERA-72 Regional Committee on Agribusiness Scholarship Annual Meeting, Fargo, ND, June 2019.

Wilson, William W. (presenter), David W. Bullock, and Prithviraj Lakkakula. “Dynamic Changes in Rail Shipping Mechanisms for Grain.” USDA Transportation Research Forum, Washington, D.C., May 2019.

Bullock, David W. (presenter), and William W. Wilson. “Factors Influencing the Gulf and Pacific Northwest (PNW) Soybean Export Basis: An Exploratory Statistical Analysis.” NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management, Minneapolis, MN, April 2019.

Bullock, David W. (presenter), and William W. Wilson. “Managing Risk in Ethanol Processing Using Formula Pricing Contracts.” NCCC-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management, Minneapolis, MN, April 2019.

Bullock, David W. “Dairy Fiscal Wellness in a Global Economy.” Keynote Speech at 2012 Pfizer Dairy Wellness Summit, Dallas, TX, March 2012.

Bullock, David W. “Combining Crop Insurance and Marketing Tools.” Crop Insurance Research Bureau Annual Convention, Palm Springs, CA, January 2002.

Carlson, John, David W. Bullock (presenter), James B. Johnson, M. Steve Stauber, and Charles McGuire. “The Forecasting of Prices and Protein Premiums for PNW Hard Red Winter and Dark Northern Spring Wheat.” NCR-134 Conference on Applied Commodity Price Analysis, Forecasting, and Market Risk Management, Chicago, IL, April 1993.

Bullock, David W. “Structural Changes in Econometric Forecasting Models for U.S. Wheat.” Northwestern Ag Outlook Conference, Postville, ID, August 1990.

Bullock, David W. (presenter), and Dermot J. Hayes. “A Mean-Variance Portfolio Model Containing Options, Futures, and Physicals: Information, Optimal Positions, and Market Interaction.” American Agricultural Economics Association Annual Meeting, Baton Rouge, LA, August 1989.

Other Presentations:

Numerous formal and informal presentations have been made since 1989 – too many to list all of them here.

Courses Taught:

Iowa State University

- **ECONA 335, Agricultural Marketing and Price Analysis**
 - 10 semesters: lab only (1 credit hour), two lab sessions per semester, approximately 25-30 students per lab.

- 3 semesters: lecture and lab (4 credits), summer session instructor, approximately 15 students per class. Had complete control over selection of text and course content.

Embry-Riddle Aeronautical University

- **EC210, Microeconomic Theory**
 - 3 semesters: lecture (3 credits), approximately 10 students per class. Had complete control over selection of text and class content.
- **EC211, Macroeconomic Theory**
 - 2 semesters: lecture (3 credits), approximately 10 students per class. Had complete control over selection of text and class content.

North Dakota State University

- **AGEC 711, Risk Analysis I**
 - 3 semesters: Fall 2018, Fall 2019, and Fall 2020. Graduate level class covering applied risk analysis with agricultural applications. Full control over selection of text and class content.
 - Student Evaluations (Instructor Rating, 1= poor, 5 = excellent):
 - Fall 2018: 4.56 / 5.00
 - Fall 2019: 4.57 / 5.00
 - Fall 2020: 4.75 / 5.00

Short Courses and Other Educational Presentations:

INTL FCStone, Inc.

- Chair of Commodity Risk Management and Advanced Options Hedging Schools that were held in Moscow, Russia and Kyiv, Ukraine, September 2010. Schools were held in collaboration with the Russian Grain Union, the Russian Institute for Agricultural Market Studies (IKAR), UkrAgroConsult, and the European Bank for Reconstruction and Development (EBRD).

Minnesota Department of Agriculture

- Developed the Minnesota Certified Farm Risk Management Consultant (MCFRMC) training and certification program. This program is modeled after the Financial Planning Association's Certified Financial Planner (CFP) professional certification program. Contracted with the Minnesota State Colleges and Universities (MnSCU) Farm Management Program to provide funding for 6 program instructors (called Regional Risk Management Specialists). Provided a one-week in-service training session for these regional specialists at MDA headquarters. Worked with the specialists in preparing the content and materials for the 6 course modules. Assisted the regional specialists in the marketing and teaching of the course. Prepared and graded the final qualifying exams. A total of 80 risk management professionals from Minnesota, Iowa, and North Dakota became certified under the program. An additional 40 individuals attended the course (some for the 20 hours of insurance continuing education credits that were made

available from the State of Minnesota). Unfortunately, the program was curtailed after a year due to cuts in funding and completely discontinued after four years.

- Collaborated with the Minnesota Milk Producers Association (MMPA) to develop “Price Makers” – a marketing and risk management short course that was offered to Minnesota dairy producers. Put together a team of industry experts to assist in the development of the course content. Worked with the MMPA coordinator to put together a pool of guest instructors. Assisted in the presentation of the course at locations around Minnesota. Course was funded by MMPA and MDA dairy development funds. Course was presented at six locations around Minnesota in first year and additional four locations in second year. Over 100 producers attended the course during its two-year run.
- Was the main department liaison with USDA-RMA during the Dairy Options Pilot Program (DOPP). Assisted with the various workshops that were presented around Minnesota.
- Made numerous short (1 day or less) educational presentations on behalf of the Minnesota Department of Agriculture. Selected titles include:
 - “Statistical Concepts and Risk Management”
 - “Agricultural Risk Management in the 21st Century”
 - “The U.S. Grain and Livestock Marketing System”
 - “An Introduction to Crop and Revenue Insurance”

Northern Crops Institute, North Dakota State University, Fargo, ND

- Have been a regular instructor at NCI’s “Grain Procurement Management for Importers” and “Advanced Grain Procurement Strategies” short courses since 1996. Over that time, have presented to over 400 individuals representing grain importing and government entities from over 70 different nations.
- Presentations include:
 - “Introduction to Futures Markets and Hedging”
 - “Introduction to Option Markets”
 - “Advanced Option Hedging Strategies for Importers”
 - “Introduction to Over-the-Counter (OTC) Derivative Markets”
 - “Implementing Value-at-Risk (VaR) in a Food Based Business”
- Developed a trading simulation game for the Grain Procurement Management for Importers course in 1997. In this game, participants are divided into teams and must use futures, basis, and fixed price forward contracts to manage the purchase of DNS spring wheat for export out the PNW region. The game lasts six rounds and uses price / basis data and market headlines from an actual marketing year.
- Developed a hands-on computer lab training session covering Monte Carlo simulation modeling for the Advanced Grain Procurement Strategies course in 2003.
- Developed an options trading simulation game for the Advanced Grain Procurement Strategies course in 2004. Participants are divided up into teams and are assigned a cash position that they must manage using exchange futures and options over eight rounds. After each round, the game application

provides each team with a complete set of option diagnostics (P/L profile, delta, gamma, vega, theta) on their current portfolio.

North Dakota State University Department of Agricultural Economics and North Dakota Grain Shippers Association

- Was a regular instructor on basic and advanced option strategies at the Country Elevator Managers' School from 1996 through 1999 when the program was discontinued.

Minneapolis Grain Exchange

- Was part of a team of instructors that presented two one-week short courses on the structure of the U.S. cash grain industry in May 1994. Program was presented to Russian grain industry participants in Moscow, Russia under the auspices of the USAID Emerging Democracies program. Other members of the team were William W. Wilson and D. Demcey Johnson (North Dakota State University); Robert Hauser and Lowell Hill (University of Illinois); and Morris Larson (CEO of the St. Louis Merchants Exchange). Program was presented in collaboration with the Institute of World Economy and International Relations (IMEMO) of the Russian Academy of Sciences, Moscow. Participants included over 40 individuals representing Russian grain merchandising joint stock companies, government agencies, and academics. Gave presentations covering the structure / rules of the Minneapolis Grain Exchange cash markets, and the history and structure of the Northern Plains region commission house business. After the conclusion of the Moscow portion of the course, 20 of the Moscow participants were selected for funding from USDA to come to the U.S. for an additional two-week program. Hosted participants for a week in the Twin Cities and was responsible for putting together the educational and cultural program for the group. This included recruiting guest instructors from MGEX member firms to provide sessions on various topics of interest. Also, set up tours of various Twin Cities landmarks such as the Mall of America, Fort Snelling, and local terminal grain facilities.
- Did customized Exchange tours and educational presentations for visitors from over 20 different countries including the Minister of Agriculture from Kazakhstan.
- Did on-site staff training on risk management using MGEX shrimp complex futures and options for the following top seafood companies:
 - King and Prince
 - Rich-SeaPak
 - ExPack Seafood
 - Darden Restaurants
- Did a wide variety of training programs involving hedging with MGEX futures for various state and national commodity organizations, electric utilities, and agribusiness firms.

Montana State University

- Developed, in collaboration with Alan Baquet and Duane Griffith of the Montana State University Department of Agricultural Economics, a three-day producer short course covering use of microcomputers to evaluate risk management decisions on the farm. This course was offered six times from 1991 through 1993 with approximately 20 producers attending each session. Developed customized computer applications for the course using Microsoft Visual Basic. This course was funded by a grant from the Montana Wheat and Barley Committee.
- Did numerous one-day hedging and risk management seminars across Montana.

Grants and Contracts:

Wilson, William W. and David W. Bullock. FY2020-21. *Technology Valuation Services*, Agreement ACN 006 598 198, Agriculture Victoria Services, funded for \$68,500.

Wilson, William W., David W. Bullock, and Prithviraj Lakkakula. FY2020-21. *Logistical Competition for Corn Shipments from the United States and Ukraine to Targeted International Markets*, USDA-AMS Cooperative Agreement #20-TMTSD-ND-004, funded for \$79,915.

Bullock, David W. and William W. Wilson. FY2020-21. *Strategies to Improve / Assure Performance of Soybean Purchases*, North Dakota Soybean Council, funded for \$50,673.

Wilson, William W. and David W. Bullock. FY2020-21. *Marketing Consulting, and Research Projects*, North Dakota Soybean Council, funded for \$40,000.

Wilson, William W., David W. Bullock, and Prithviraj Lakkakula. FY2019-20. *Dynamic Changes in Rail Shipping Mechanisms for Grain and Competition*, USDA-AMS Cooperative Agreement #16-TMTSD-ND-004, funded for \$117,700.

Wilson, William W. and David W. Bullock. FY2019-20. *Marketing Consulting, and Research Projects*, North Dakota Soybean Council, funded for \$40,000.

Wilson, William W. and David W. Bullock. FY2019-20. *Technology Valuation Services*, Agreement ACN 006 598 198, Agriculture Victoria Services, funded for \$68,500.

Wilson, William W. and David W. Bullock. FY2018-19. *Marketing Consulting, and Research Projects*, North Dakota Soybean Council, funded for \$40,000.

Bullock, David W., Alan Baquet, and Duane Griffith. FY1992-93. *Marketing and Risk Management Education for Montana Grain Producers II*, Montana Wheat and Barley Committee, funded for \$7,500.

Bullock, David W., Alan Baquet, and Duane Griffith. FY1991-92. *Marketing and Risk Management Education for Montana Grain Producers I*, Montana Wheat and Barley Committee, funded for \$12,500.

Hudyma, Walt, Gil Stallknecht, and David W. Bullock. FY1990-91. *Soybeans in Montana*. Montana Growth Through Agriculture, funded for \$7,310.

Service:

Department

- Member, Scholarship Committee, 2020-2022.
- M.S. Thesis Advisor, Ryan Thompson, North Dakota State University Department of Agribusiness and Applied Economics, 2020.
- M.S. Thesis Committee, Cole Hanson, North Dakota State University Department of Agribusiness and Applied Economics, 2020.
- M.S. Thesis Committee, Ann Denk, North Dakota State University Department of Agribusiness and Applied Economics, 2019.
- M.S. Thesis Committee, Jesse Klebe, North Dakota State University Department of Agribusiness and Applied Economics, 2019.
- M.S. Thesis Committee, Joseph Nadeau, North Dakota State University Department of Agribusiness and Applied Economics, 2018.
- M.S. Thesis Committee, Seth Bisbee, North Dakota State University Department of Agribusiness and Applied Economics, 2018.
- M.S. Thesis Advisor, John Carlson, Montana State University Department of Agricultural Economics and Economics, 1991.
- M.S. Thesis Co-Advisor, Michael Sheard, Montana State University Department of Agricultural Economics and Economics, 1990.

College and University

- Specialist Representative, Montana Extension Advisory Committee, 1992-93.
- Faculty Advisor, Montana State University Ag Commodities Club, 1991.
- Review Team Member, Flathead County Extension Review, Montana State University, 1989.

Professional

- Session moderator, NCCC-134 Conference on Applied Commodity Analysis, Forecasting, and Market Risk Management, April 2020 (conference cancelled due to COVID-19).
- Session moderator, NCCC-134 Conference on Applied Commodity Analysis, Forecasting, and Market Risk Management, April 2019.
- External tenure reviewer, D. Demcey Johnson, North Dakota State University Department of Agricultural Economics, 1995.
- External tenure reviewer, George Flaskerud, North Dakota State University Department of Agricultural Economics, 1994.
- Selected paper reviewer, Western Agricultural Economics Association Annual Meetings, 1993.

- Selected paper reviewer, Western Agricultural Economics Association Annual Meetings, 1992.
- Discussant, NCR-134 Conference on Applied Price Analysis, Forecasting, and Price Risk Management, 1992.
- Reviewed manuscripts for:
 - American Journal of Agricultural Economics (1)
 - Journal of Agricultural and Resource Economics (2)
 - Review of Agricultural Economics (1)
 - Journal of Economics and Business (1)
 - Journal of Futures Markets (2)
 - Applied Economics Perspectives and Policy (1)

Special Skills:

- Monte Carlo simulation modeling and design using Palisade Software's *@Risk* and Vose Software's *ModelRisk* add-ins for Microsoft Excel (expert proficiency).
- Decision Tree modeling using Palisade Software's *PrecisionTree* add-in for Microsoft Excel (expert proficiency).
- Econometric / time series modeling and forecasting using *RATS*, *Gretl*, and *Stata* software packages (expert proficiency).
- Multivariate statistical analysis and data mining using *XLStats* for Microsoft Excel (expert proficiency).
- Graphical data analysis using the *Tableau* software package (expert proficiency).
- Microsoft Office (expert proficiency with all applications).
- Microsoft Project (expert proficiency).
- Computer software programming using Microsoft *Visual Basic for Applications* (expert proficiency). Also, have exposure to the C++, C, Pascal, Prolog, and COBOL computer languages either through coursework or through self-study.
- Over 30 years of experience giving presentations to a wide range of audiences.

Awards:

- ISU Graduate Teaching Excellence Award
- Ph.D. dissertation nominated for AAEE Outstanding Dissertation Award by ISU Ag Econ faculty.
- Primary contributor on *AgriBank Insights* publication series which won a National Agricultural Marketing Association (NAMA) national award in 2016 for best company publication beating out submissions from other companies such as Cargill, CHS, John Deere, DuPont, Bayer, BASF, and Mosaic.

Memberships:

American Agricultural Economics Association
Western Agricultural Economics Association

Professional Certifications:

FINRA Series 3 (currently inactive)

References:

References forwarded upon request.