

# CURRICULUM VITAE

**NAME** W. Marshall Frasier

**ADDRESS** Agricultural and Resource Economics  
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## **EDUCATION**

1995 Ph.D., Agricultural Economics, Washington State University, Pullman, WA  
Dissertation: On-Farm Management and Nitrate Leaching in the Columbia Basin of Washington: An Economic Analysis

1990 M.S., Agricultural Economics, University of Nebraska, Lincoln, NE  
Thesis: Optimal Management Strategies for Beef Cattle Herds in the Sandhills Area of Nebraska

1983 B.S., Agricultural Economics, University of Nebraska, Lincoln, NE  
Production Option

## **ACADEMIC POSITIONS**

(2008-present) Professor, Agricultural and Resource Economics, Colorado State University

(2000-2008) Associate Professor, Agricultural and Resource Economics, Colorado State University

(1993-2000) Assistant Professor, Agricultural and Resource Economics, Colorado State University

## **OTHER POSITIONS**

(1990-1993) Graduate Research/Teaching Assistant, Washington State University, Pullman, WA

(1989-1990) Graduate Research Assistant, University of Nebraska, Lincoln, NE

(1984-1989) Technical Coordinator Integrated Resource Management, University of Nebraska, Lincoln, NE

(1983-1984) Employee and livestock owner in family farming and ranching operation in Dundy County, NE

## **CURRENT JOB DESCRIPTION**

65 % Teaching 0 % Research/Creative Activity 10 % Service/Outreach 25 % Admin

**HONORS AND AWARDS**

2015 Western Regional awardee for 2015 National Awards Program for Excellence in College and University Teaching in the Food and Agricultural Sciences (USDA national teaching award) (presented at APLU Annual Meetings in Indianapolis, IN)

2015 Distinguished Teaching Award: Undergraduate Teaching: Ten or More Years Experience, American Agricultural Economics Association (presented at Annual Meetings in San Francisco, CA)

2014 Outstanding Undergraduate Teaching Award: More than 10 Years Experience, Western Agricultural Economics Association (presented at Annual Meetings in Colorado Springs, CO)

2012 Outstanding Service Award, College of Agricultural Sciences, Colorado State University, Fort Collins, CO

2007 Faculty Award of Merit, Gamma Sigma Delta, Colorado State University, Fort Collins, CO

2004 Distinguished Teaching Award: Less than 10 Years Experience, American Agricultural Economics Association (presented at Annual Meetings in Denver, CO)

2003 Outstanding Undergraduate Teaching Award: Less than 10 Years Experience, Western Agricultural Economics Association (presented at Annual Meetings in Denver, CO)

2003 Jack E. Cermak Advising Award, Colorado State University, Fort Collins, CO

2000 Charles N. Shepardson/NACTA Meritorious Teaching Award, College of Agricultural Sciences, Colorado State University, Fort Collins, CO

**PUBLISHED WORKS****Refereed Journal Articles:**

Balgopal, M.M., Klein, J.A., Morgan, J.A., Brown, C.S., Frasier, W.M., & Sample McMeeking, L.B. (2014). Linking biophysical, socio-economic, and political effects of climate change on agro-ecosystems. *Journal of Geoscience Education*, 62(3), 343-352.

Frasier, W.M., And T. Steffens. "Stocking Rate Decisions are Not Related to What You Paid for Your Land or Pickup." *Rangelands*, 35(5):14-21.

Alhassan, M., J. Loomis, M. Frasier, S. Davies, A. Andales.(2013). "Estimating Farmers' Willingness to Pay for Improved Irrigation: An Economic Study of the Bontanga Irrigation Scheme in Northern Ghana." *Journal of Agricultural Science*, 5(4):31:42.

French, J. T., J. K. Ahola, J. C. Whittier, W. M. Frasier, R. M. Enns, and R. K. Peel. (2013) "Differences in lifetime productivity of beef heifers that conceived to first-service artificial insemination (AI) or a clean-up bull via natural service (NS) as a yearling and among females that were offspring of an AI or NS mating." *Professional Animal Scientist*. 29:57-63.

Ritten, J. R., W. M. Frasier, C. T. Bastian, and S. T. Gray. (2010). "Optimal Rangeland Stocking Decisions Under Stochastic and Climate-Impacted Weather." *American Journal of Agricultural Economics.* 92:1242-1255.

Ritten, J. P., W. M. Frasier, C. T. Bastian, S. I. Paisley, M. A. Smith, and S. Mooney. (2010). "A Multi-Period Analysis of Two Common Livestock Management Strategies Given Fluctuating Precipitation and Variable Prices." *Journal of Agricultural and Applied Economics.* 42: 177-191.

Ritten, J. P., C. T. Bastian, and W. M. Frasier. (2010). "Economically Optimal Stocking Rates: A Bioeconomic Grazing Model." *Rangeland Ecology and Management.* 63: 407-414.

Bastian, C. T., P. Ponnamaneni, S. Mooney, J. P. Ritten, W. M. Frasier, S. I. Paisley, M. A. Smith, W. J. Umberger. (2009). "Analysis of Management Strategies Used By Livestock Producers During Multiple Years of Drought Under Differing Price Cycles." *Journal of the American Society of Farm Managers and Rural Appraisers.* 72: 153-163.

Pritchett, J., J. Thorvaldson, and M. Frasier. (2008). "Water as a Crop: Limited Irrigation and Water Leasing in Colorado", *Review of Agricultural Economics.* 30(3):425-434.

Khosla, R., D. Inman, D. G. Westfall, R. M. Reich, M. Frasier, M. Mzuku, B. Koch, and A. Hornung. (2008). "A synthesis of multi-disciplinary research in precision agriculture: site-specific management zones in the semi-arid western Great Plains of the USA." *Precision Agriculture.* 9:85-100.

Houk, E.E., W. M. Frasier, and R. G. Taylor. (2007). "Evaluating Water Transfers from Agriculture for Reducing Critical Habitat Water Shortages in the Platte Basin." *Journal of Water Resources Planning and Management.* 133:4:320-328.

Bastian, C. T., S. Mooney, A. M. Nagler, J. P. Hewlett, S. I. Paisley, M. A. Smith, W. M. Frasier, and W. J. Umberger. (2006). "Cattle Ranchers Diverse in Their Drought Management Strategies," *Western Economics Forum.* 5:2:1-8.

Houk, E.E., W. M. Frasier, and E. C. Schuck. (2006). "The Agricultural Impacts of Irrigation Induced Waterlogging and Soil Salinity in the Arkansas Basin." *Agricultural Water Management.* 85:1:175-183.

Schuck, E.C., W. M. Frasier, R. S. Webb, L. J. Ellingson and W. J. Umberger. (2005). "Adoption of More Technically Efficient Irrigation Systems as a Drought Response." *International Journal of Water Resource Development.* 21:651-662.

Houk, E.E., W. M. Frasier, and E. C. Schuck. (2005). "Evaluating the Adoption of Higher Efficiency Irrigation Systems in the Presence of Salinization and Waterlogging." *Global Business and Economics Review.* 7:4:343-352.

Koch, B., R. Khosla, W. M. Frasier, D. G. Westfall, and D. Inman. (2004). "Economic Feasibility of Variable-Rate Nitrogen Application Utilizing Site-Specific Management Zones." *Agronomy Journal.* 96:1572-1580.

Frasier, W. M. (December 2004). "Rangelands and the Academy: Opportunities for Economists in the West." *Western Economics Forum.* 3:26-30.

Schuck, E.C. and W. M. Frasier. (2004). "Coping with Natural and Institutional Drought," *Current Agricultural, Food and Resource Issues.* 5:119-130.

Ascough II, J.C., D.L. Hoag, G.S. McMaster, and W.M. Frasier. (2002). "Computer Use and Satisfaction by Great Plains Producers: Ordered Logit Model Analysis." *Agronomy Journal*. 94:1263-1269.

Hoag, D.L., J.C. Ascough, and W.M. Frasier. (2000). "Will Farmers Use Computers for Resource and Environmental Management?" *Journal of Soil and Water Conservation*. 55:4:456-461.

Huffaker, R.G., W.M. Frasier, and J.R. Hamilton. (June 2000). "The "Intrastate-Trade-Restriction" Defense in Commerce-Clause Challenges of State-Imposed Restrictions on Water Exports to Neighboring States." *International Journal of Water Resource Development*. 16:2:275-279.

Frasier, W.M., A.M. Michelsen, R.G. Taylor, J.F. Booker, and R.G. Huffaker. (December 1999). "Evaluating Economic and Institutional Alternatives for Meeting Interstate ESA Instream Flow Requirements in the Platte River Basin." *American Journal of Agricultural Economics*. 81: 1257-1261.

Ascough, J.C., D.L. Hoag, W.M. Frasier, and G.S. McMaster. (September 1999). "Computer Use in Agriculture: An Analysis of Great Plains Producers." *Computers and Electronics in Agriculture*. 23:3:189-204.

Hoag, D.L., J.C. Ascough, II., and W.M. Frasier. (April 1999). "Farm Computer Adoption in the Great Plains." *Journal of Agricultural and Applied Economics*. 31:1:57-67.

Willis, D.B., J. Caldas, W.M. Frasier, N.K. Whittlesey, and J.R. Hamilton. (1998). "The Effects of Water Rights and Irrigation Technology on Streamflow Augmentation Cost in the Snake River Basin." *Journal of Agricultural and Resource Economics*. 23:1:225-243.

Vickner, S.S., D.L. Hoag, W.M. Frasier, and J.C. Ascough II. (May 1998). "A Dynamic Economic Analysis of Nitrate Leaching in Corn Production under Nonuniform Irrigation Conditions." *American Journal of Agricultural Economics*. 80:397-408.

Frasier, W.M., D.L. Hoag, and J.C. Ascough, II. (1997). "Computer Use In Agriculture: Opportunities for Farm Advisors." *Journal of the American Society of Farm Managers and Rural Appraisers*. 19:50-54.

Frasier, W.M., and G.H. Pfeiffer. (November 1994). "Optimal Replacement and Management Policies for Beef Cows." *American Journal of Agricultural Economics*. 76:847-58.

**Refereed Chapters in Books:**

Schuck, E.C., W.M. Frasier, R.S. Webb, L.J. Ellingson and W.J. Umberger. (2008). "Adoption of More Technically Efficient Irrigation Systems as a Drought Response", in Water and Disasters. C. Gopalakrishnan and N. Okada (ed) Routledge Publishing, Oxford, UK. ISBN: 978-0415454261

Inman, D., R. Khosla, W.M. Frasier, D.G. Westfall, and B. Koch. (2007). "Evaluation of Profitability Across Site-Specific Management Zones in Irrigated Maize Production Fields". in Precision Agriculture '07. J. Stafford (ed) Wageningen Academic Publishers, The Netherlands. pp. 835-841. ISBN: 978-90-8686-024-1

Willis, D.B., J. Caldas, W.M. Frasier, N.K. Whittlesey and J.R. Hamilton. (December 2001). "The Effects of Water Rights and Irrigation Technology on Streamflow Augmentation Cost in the Snake River Basin," in Irrigated Agriculture And The Environment, edited by J.S. Shortle and R.C. Griffin. Edward Elgar Publishing, 296 pages. ISBN 1 84064 503 2

**Refereed Proceedings/Transactions:**

Nagaraj, N., W.M. Frasier, and R.K. Sampath. (June 26, 1999). "Groundwater Institutions in US and India: Sustainable and Equitable Resource Use." *Economic and Political Weekly*, pp. A93-A104.

Pfeiffer, G., M. Frasier, et al. (1992). "Optimal Replacement and Management Strategies for Beef Cows," in Nebraska 1992 Beef Cattle Report. Research Report MP 58. The University of Nebraska Agricultural Research Division.

Rasby, R., M. Frasier, et al. (1990). "Integrated Reproductive Management Demonstration Project 1984-1989," in Nebraska 1990 Beef Cattle Report. Research Report MP 55. The University of Nebraska Agricultural Research Division.

**Non-Refereed Journal Articles/Chapters/Proceedings/Transactions:**

Schuck, E. C., W.M. Frasier, and R. Webb. (June 2003). "Preliminary Summary of the 2002 Colorado Drought Survey," *Colorado Water*, Vol. 20, No. 3,: 8-11.

Frasier, W.M. (December 2000). "Water Wars of the New West," *Colorado Water*, Vol. 17, No. 6, pp. 22-27.

Frasier, W.M., D.L. Hoag, and J.B. Loomis. (August 2000). "Water Quantity and Quality Management and Policy in Western Irrigated Agriculture," *Colorado Water*, Vol. 17, No. 4, pp. 8-9.

**Other (e.g. lab texts, book reviews, technical reports, in-house reports):**

Frasier, W.M. (February 2014). "Economic Impact of Invasive Weed Species in Colorado." Final Report to Colorado Weed Management Association.

Ritten, John, Christopher Bastian, Marshall Frasier, Steve Paisley, and Mike Smith. (July 2011). "Two Common Drought Management Strategies and Some Considerations for Wyoming Cattle Producers." Bulletin B-1218. Cooperative Extension Service, College of Agriculture, University of Wyoming, Laramie.

Ritten, John, Christopher Bastian, Marshall Frasier, Steve Paisley, and Mike Smith. (July 2011). "Comparison of Alternative Cattle Management Strategies Under Long-Term Drought" Bulletin B-1219. Cooperative Extension Service, College of Agriculture, University of Wyoming, Laramie.

Ritten, John, Christopher Bastian, and Marshall Frasier. (July 2011). "Considerations for Preparing a Drought Management Plan for Livestock Producers." Bulletin B-1220. Cooperative Extension Service, College of Agriculture, University of Wyoming, Laramie.

Ritten, John, Christopher Bastian, and Marshall Frasier. (July 2011). "Price or Weather – Which Signal Should Livestock Producers Follow?" Bulletin B-1221. Cooperative Extension Service, College of Agriculture, University of Wyoming, Laramie.

Ritten, J. P., C.T. Bastian, W. M. Frasier, M. A. Smith, and S. I. Paisley. (June 2009). Managing Your Ranch During Drought: Implications from Long and Short Run Analyses, University of Wyoming Cooperative Extension.

Nagler, A., C.T. Bastian, J.P. Hewlett, S. Mooney, S.J. Paisley, M.A. Smith, M. Frasier, W. Umberger, P. Ponnameneni. (2007). *Multiple Impacts-Multiple Strategies: How Wyoming Cattle Producers are Surviving in Prolonged Drought*. University of Wyoming Cooperative Extension Service. April 2007. B-1178. (<http://ces.uwyo.edu/PUBS/B1178.pdf>)

Nagler, A., S. Mooney, C. Bastian, J. P. Hewlett, B. Aldridge, B. A. Sarchet, W. Umberger, M. Frasier, S. I. Paisley, M. A. Smith, P. Ponnameneni, D. T. Taylor, and T. Foulke. (June 2006). "Wyoming Beef Cattle Producers Survey – Final Report." Published by Department of Agricultural and Applied Economics, University of Wyoming, Laramie. pp: 1-142.

Frasier, W. M. (2005). "Impacts on Irrigated Agriculture of Federal Decisions Affecting Water Use in the South Platte River Basin." Submitted to USDA-ERS as Cooperative Agreement Final Report.

Schuck, E. and M. Frasier. (October 2003). "Management Responses by Agricultural Producers During the 2002 Drought," Agricultural and Resource Policy Report APR 03-10. Department of Agricultural and Resource Economics, Colorado State University.

Pritchett, J., M. Frasier and E. Schuck. (August 2003). "Third Party Compensation for Out-of-Basin Water Transfers: Comments on HB 03-1113." Agricultural and Resource Policy Report APR 03-08. Department of Agricultural and Resource Economics, Colorado State University.

Tranel, J.E., N.L. Dalsted, W.M. Frasier, S.E. Hine, D.A. Kaan, S.R. Koontz, J. Pritchett, A. Seidl, R.L. Sharp, D.A. Thilmany, and W.J. Umberger. (July 30, 2003). "A Strategic Plan for Educational Programming via Cooperative Extension." Colorado State University Cooperative Extension Report.

Hoag, D., M. Frasier, D. Kaan, S. Koontz, R. Sharp and J. Tranel. (April 2002). "Profit and Loss (PAL)." Technical Report No. TR 02-4, Agricultural Experiment Station, Colorado State University, Fort Collins.

Ward, F.A., R.. Young, R. Lacewell, P. King, M. Frasier, T. McGuckin, C. Dumars, J. Booker, J. Ellis, R. Srinivasan. (February 2001). "Institutional Adjustments for Coping with Prolonged and Severe Drought in the Rio Grande Basin." Technical Completion Report No. 317 from the New Mexico Water Resources Research Institute, New Mexico State University.

Frasier, W.M., R.M. Waskom, T.A. Bauder, and B.A. Jordan. (November 2001). "Estimated Cost of Adoption for Irrigation Pest, and Nutrient Best Management Practices in Colorado." Technical Report for the Colorado Department of Public Health and Environment from the Colorado Water Resources Research Institute, Colorado State University.

Bauder, T.A., R.M. Waskom, W.M. Frasier, and D.L. Hoag. (August 1999). "Irrigation Best Management Practices: What are Colorado Producers Using?" Agricultural Chemicals and Groundwater Protection Fact Sheet #19. Colorado State University, Colorado Department of Agriculture, and the Colorado Department of Public Health.

Frasier, W.M., R.M. Waskom, D.L. Hoag, and T.A. Bauder. (April 1999). "Irrigation Management in Colorado: Survey Data and Findings." Technical Report TR99-5, Colorado State University Agricultural Experiment Station.

Bauder, T.A., R.M. Waskom, W.M. Frasier, and D.L. Hoag. (April 1999). "Water Quality Best Management Practices: What are Colorado Producers Doing?" Agricultural Chemicals and Groundwater Protection Fact Sheet #18. Colorado State University, Colorado Department of Agriculture, and the Colorado Department of Public Health.

Smith, D.H., K. Klein, R. Bartholomay, I. Broner, G.E. Cardon and W.M. Frasier. (October 1996). "Irrigation Water Conservation: Opportunities and Limitations in Colorado." Completion Report No. 190, Colorado Water Resources Research Institute.

Frasier, W.M., J.B. Loomis, and O.M. Patton. (July 1995). "The Effect of Irrigation Water on the Value of Farmland in Northwest Colorado." Final Report to the U.S. Bureau of Reclamation.

Frasier, W.M., N.K. Whittlesey, and J.R. Hamilton. (1993). "Stream Flow Effects of Improving Irrigation Efficiency." Research report, Washington State University Agricultural Experiment Station.

Rasby, R., M. Frasier, et al. (June 1989). "Nebraska Integrated Reproductive Management (IRM) Demonstration Project 1984-1989." AnSci 89-1. The University of Nebraska Cooperative Extension Service.

## **CONTRACTS & GRANTS**

### **Externally-Funded Projects as PI and Co-PI**

(2016-2018) "Development of a Master of Science Program in Agricultural Economics with a Specialization in Veterinary Economics," Co-PIs: S. Koontz and J. Hadrich. American Veterinary Medical Association. \$400,000.

(2012-2013) "The Economic Impact of Invasive Species in Colorado: Phase I," PI: M. Frasier. Colorado Weed Management Association. \$14,500.

(2007-2012) "Agricultural Adventure at ARDEC: Transportation and Operations," PI: M. Frasier. Elanco Animal Health. \$5,000 annually.

(2008-2010) "Ecological and Economic Risk Assessment Decision Tool for Management of Bromus tectorum Invasions," PD: C. Brown; CoPis: G. Beck, M. Coughenour, M. Frasier, R. Roath, and M. Fernandez-Gimenez. USDA-NRI-CPG. \$497,496.

(2003-2005) "Impacts on Irrigated Agriculture of Federal Decisions Affecting Water Use in the South Platte River Basin." USDA-Economic Research Service. \$20,000.

(2002-2003) "Rapid Response to the 2002 Drought in Colorado: Water Management Responses by Colorado Agricultural Producers." E.S. Schuck, Co-PI. National Oceanic and Atmospheric Administration (NOAA). \$5,000.

(2001) "Implementing Best Management Practices in Colorado's Irrigated Agriculture." R. Waskom, co-PI. Colorado Department of Public Health and Environment. \$9,960.

(2000-2003) "Multidisciplinary Precision Farming Strategies to Increase Profitability and Sustainability in Western Great Plains Irrigated Agriculture." R. Khosla, K. Fleming, D. Westfall, and D. Heerman, co-PIs. USDA-IFAFS. \$885,000.

(1998-1999) "Applications of Multivariate Statistics to Values-Objectives-Attitudes-Behavior (VOAB) Data." USDA-USFS, Rocky Mtn. Research Station. \$15,000.

(1998-2000) “Meeting Time-Dependent Instream Flow Requirements in a Fully Appropriated Multi-State River Basin.” R.A. Young, co-PI. Regional Water Resources Competitive Grants Program, Western Region, U.S. Geological Survey. \$291,932.

(1998-2001) “Business Index Reporting Service for Irrigation Districts & Canal Companies.” J. Wilkens-Wells and R. Anderson, co-PIs. USDA-CSRS Fund for Rural America. \$165,000.

(1996-1999) “Coping with Prolonged & Severe Drought in the Rio Grande River Basin.” R.A. Young, co-PI. Regional Water Resources Competitive Grants Program, Western Region, U.S. Geological Survey. \$54,204.

(1996-1997) “GPFARM Economic Modeling.” D.L. Hoag, co-PI. USDA-ARS Great Plains Systems Research Unit. \$18,262.

(1995-1996) “GPFARM Economic Modeling.” D.L. Hoag, co-PI. USDA-ARS Great Plains Systems Research Unit. \$26,000.

(1994-1995) “GPFARM Economic Modeling.” D.L. Hoag, co-PI. USDA-ARS Great Plains Systems Research Unit. \$27,500.

(1994-1995) “Hedonic Approach for Valuing Agricultural Water in Northeastern Colorado.” J.B. Loomis, co-PI. US Bureau of Reclamation. \$12,500.

### **Externally-Funded Projects as Co-Investigator**

(2010-2014) “Exotic Bromus grasses in agroecosystems of the western US: REE-net synthesis of current and future invasions, impacts, and management.” PD: M. Germino, Idaho State University. M. Frasier, collaborator. USDA-AFRI. \$200,000.

(2006-2009) “Developing a Model to Sustain Irrigated Agriculture While Meeting Increasing Urban Water Demand in Colorado,” T. Holtzer, N. Hansen, and J. Pritchett, PIs. Parker Water and Sanitation District. \$857,374.

(2006-2009) Economically and Environmentally Sustainable Cattle Production Practices During Multiple Years of Drought.” C. Bastian, PI. University of Wyoming, Agricultural Experiment Station Competitive Grants Program. \$58,670.

(2001-2004) “Hierarchical Strategies for Recovery of a Salinity-Threatened Irrigated Valley.” T. Gates, PI. USDA-NIR-CPG. \$189,900.

### **Internally-Funded Awards**

(2018-2020) “Economic Potential of Niche Forage Systems for Intensified Beef Cattle Production on High-Plains Ranch Operations.” D. Mooney, co-PI. Colorado Agricultural Experiment Station. \$46,668.

(2002-2005) “Multidisciplinary Research on Salinity Issues in the Arkansas River Valley.” E.S. Schuck, co-PI. Colorado Agricultural Experiment Station. \$210,000.

(1999-2002) "Salinity Management in the Arkansas River Basin." T. Gates, M. Laituri, L. Garcia, and J. Davis, co-PIs. Colorado State University Agricultural Experiment Station. \$210,000.

(1997) "Computer and Presentation Equipment to Facilitate Field-Level Collaboration." D.L. Hoag and D. Lybecker, co-PIs. Colorado State University Agricultural Experiment Station's Interdisciplinary Equipment Grant. \$25,712.

**PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS**

**Invited Presentations**

Fraser, W. M. (July 31-August 2, 2016). "Teaching Tips from Top Teachers: 2004 AAEA Award Recipients." Presented at the American Agricultural Economics Association Annual Meeting, Boston, MA

Fraser, W. M. (March 2 – 10, 2012). "The Economics of Adoption and Utilization of Precision Farming Technologies", Presented at Sino-US Workshop on Precision Agriculture, Beijing, China.

Fraser, W. M. (April 6, 2007). "The Changing Economics of Water" presented at the Southwest Water Conservation District's 25th Annual Water Seminar, Durango, CO. Approx. 230 in attendance.

Fraser, W. M. (July 24-27, 2005). "Teaching Tips from Top Teachers: 2004 AAEA Award Recipients." Presented at the American Agricultural Economics Association Annual Meeting, Providence, RI.

Schuck, E. and W.M. Fraser. (July 27-30, 2003). "Coping with Natural and Institutional Drought." Presented at the American Agricultural Economics Association Annual Meeting, Montreal, QB.

Fraser, W.M. (October 29, 2000). "Water Wars of the New West." Presented at the South Platte Forum, Longmont, Colorado.

Fraser, W.M. and J.F. Booker. (November 2, 2000). "Meeting Time-Dependent Instream Flow Requirements in a Fully Appropriated Multi-state River Basin: Water for Whoopers." Presented to the Wyoming Water Association Educational Seminar Program, Casper, Wyoming, (presented by Booker).

Fraser, W.M., A.M. Michelsen, R.G. Taylor, J.F. Booker and R.G. Huffaker. (August 8-11, 1999). "Evaluating Economic and Institutional Alternatives for Meeting Interstate ESA Instream Flow Requirements in the Platte River Basin." Principle paper presented at the 1999 annual meeting of the American Agricultural Economics Association, Nashville, TN.

Fraser, W.M. (November 12, 1998). "CSU Research as it Relates to Federal Issues." Invited presentation at the Colorado Water Congress Workshop on A Review of Federal Environmental Laws, Denver, CO.

Fraser, W.M. (February 12, 1998). "Economics of Precision Farming." Invited presentation at annual meeting of the Independent Agricultural Consultants of Colorado, Fort Collins, CO.

Fraser, W.M. (October 1, 1998). "Irrigation Management in Colorado." Presentation at the annual meeting of Colorado Water Officials Association, Steamboat Springs, CO.

Frasier, W.M., N.K. Whittlesey, and J.R. Hamilton. (July 1992). "The Role of Irrigation in Salmon Population Recovery in the Pacific Northwest: The Impact of Changes in Irrigation Efficiency." Invited paper for presentation to the Western Agricultural Economics Association, Edmonton, AB, CA.

### **Professional Meetings, Workshops, and Seminars**

Weiss, J., W.M. Frasier, and J. Hadrich. (July 9 – 11, 2017). "An Explanation of Variations in the Starting Salaries of Male and Female Veterinarians." Selected paper session at the Western Agricultural Economics Association Annual Meeting in Lake Tahoe, NV.

Holderieath, J. and W.M. Frasier. (June 5 – 7, 2016). "A Generalized Adoption Criteria for Multifunctional Land Uses in Production Agriculture", Annual Meeting of WERA72: Agribusiness Scholarship Emphasizing Competitiveness, Fort Collins, CO.

Frasier, W.M. (July 26-28, 2015). "Identifying Standards and Assessing Performance for Undergraduate Programs in Agricultural Business." Symposium organized for American Agricultural Economics Association Annual Meeting in San Francisco, CA.

Frasier, W. M. (July 26-28, 2015). "Learning Outcome Standards for Undergraduate Programs in Agricultural Business", Paper presented at the American Agricultural Economics Association Annual Meeting in San Francisco, CA.

Frasier, W. M, and H. Peterson. (June 21 – 23, 2015). "Learning Outcome Standards for Undergraduate Programs in Agricultural Business", Annual Meeting of WERA72 Agribusiness Scholarship Emphasizing Competitiveness, Las Vegas, NV.

Frasier, W. M. (July 27-29, 2014). "Identifying Standards and Assessing Performance for Undergraduate Programs in Agricultural Business." Symposium organized for American Agricultural Economics Association Annual Meeting in Minneapolis, MN.

Frasier, W. M. and H. Peterson. (July 27-29, 2014). "Learning Outcome Standards for Undergraduate Programs in Agricultural Business", Symposium presentation at the American Agricultural Economics Association Annual Meeting in Minneapolis, MN.

Frasier, W. M. (November 28 – 30, 2012). "Optimal Stocking Rate: The Significance of Scale and the Link to Profitability", Paper presented at the Colorado Section of the Society for Range Management Symposium: Strategic Grazing Management of Complex Adaptive Systems, Fort Collins, CO.

Frasier, W. M. (June 24 – 27, 2012). "Agribusiness Management Curriculum Review", Panelist at Joint Western Education and Research Activities (WERA) – 72 and Agribusiness Learning Outcome Group Meetings, Purdue University, West Lafayette, Indiana.

Frasier, W. M. (June 24 – 27, 2012). "Overview of Agribusiness Management Programs—Lessons from the CSU Program Review", Presented at Joint Western Education and Research Activities (WERA) – 72 and Agribusiness Learning Outcome Group Meetings, Purdue University, West Lafayette, Indiana.

Frasier, W. M. (May 14, 2012). "Cool Clay: Developing Online Content in Adobe Presenter", Presentation at CSU College of Agricultural Sciences Distance Workshop, Fort Collins, CO.

Verdone, M., and W. M. Frasier. (July 25-27, 2010). "Forget the Hoe: Managing Invasive Plant Species with Dynamic Programming", Poster presented at the American Agricultural Economics Association Annual Meeting in Denver, CO.

Ponnamaneni, P., C. T. Bastian, S. Mooney, J. P. Ritten, W. M. Frasier, S. I. Paisley, M. A. Smith, and W J. Umberger. (June 25-27, 2008). "Economically Sustainable Cattle Production Practices during Multiple Years of Drought and Differing Price Cycles", Selected paper session at the Western Agricultural Economics Association Annual Meeting in Big Sky, MT.

J. P. Ritten, W. M. Frasier, and C. T. Bastian. (June 25-27, 2008). "Determining Optimal Stocking Rates in Wyoming Using a Bellman Approach", Selected paper session at the Western Agricultural Economics Association Annual Meeting in Big Sky, MT.

Inman, D., R. Khosla, W.M. Frasier, D.G. Westfall, and B. Koch. (June 3-6, 2007). "Evaluation of Profitability Across Site-Specific Management Zones in Irrigated Maize Production Fields," Contributed paper to the European Conference on Precision Agriculture (ECPA), Skiathos, Greece.

Ritten, J., W. M. Frasier, C. Bastian, W. Umberger, S. Mooney, M. Smith, and S. Paisley. (June 28-30, 2006). "Economically Sustainable Cattle Production Practices During Multiple Years of Drought," Selected Paper Session. Western Agricultural Economics Association Meetings. Anchorage, AK.

Ellingson L., E. Schuck, and W. M. Frasier. (July 24-27, 2005). "Comparison of Regional and Statewide Impacts on Salinity Mitigation in the Arkansas River Valley." Presented at the American Agricultural Economics Association Annual Meeting, Providence, RI.

Ellingson L., E. Schuck, and W. M. Frasier (July 6-8, 2005). "Regional Impact Evaluation of Salinity Mitigation Alternatives in the Arkansas River Valley." Presented at the Western Agricultural Economics Association Annual Meeting, San Francisco, CA.

Houk, E.E, W.M. Frasier, and E.C. Schuck. (June 30-July 2, 2004). "The Regional Effects of Waterlogging and Soil Salinization on a Rural County in the Arkansas River Basin of Colorado." Presented at the Western Agricultural Economics Association Annual Meeting, Honolulu, HI.

Ellingson, L.J., E.E. Houk, E.C. Schuck, and W.M. Frasier. (June 30-July 2, 2004). "Benefits of Controlling Saline Water in Colorado," Presented at the Western Agricultural Economics Association Annual Meeting, Honolulu, HI.

Frasier, W.M., E.C. Schuck, and W.J. Umberger. (July 11-16, 2003). "The Impact of the 2002 Drought on Colorado's Beef Industry," Presented at the Western Agricultural Economics Association Annual Meeting, Denver, CO.

Houk, E.E., W.M. Frasier, and E.C. Schuck . (July 11-16, 2003). "Linking Hydrologic and Economic Modeling to Evaluate Salinity Mitigation in the Arkansas River Basin," Presented at the Western Agricultural Economics Association Annual Meeting, Denver, CO.

Schuck, E.C., W.M. Frasier, G. Green, and B. Green. (July 11-16, 2003). "The Role of Water Quality and Institutional Structure in Irrigation Technology Choice." Presented at the Western Agricultural Economics Association Annual Meeting, Denver, CO.

Koch, B., R. Khosla, W.M. Frasier, and D. Westfall. (November, 2002). "The Economic Feasibility of Variable-Rate Nitrogen Application in Irrigated Corn Production." Presented at the American Society of Agronomy Annual Meetings, Indianapolis, IN.

Parsons, J.R., D.L. Hoag, W.M. Frasier, and S.R. Koontz. (July, 2002). "Variable Growth Impacts on Optimal Market Timing in All-Out Production Systems." Presented at the Western Agricultural Economics Annual Meetings, Long Beach, CA.

Houk, E.E., and W.M. Frasier. (July, 2002). "Identifying Cost-Effective Sources For Water Transfers From Agriculture To Endangered Species Preservation In The Platte River Basin." Presented at the Western Agricultural Economics Annual Meetings, Long Beach, CA.

Bauder, T., R. Waskom, and W.M. Frasier. (March 6-7, 2002). "Producer Adoption of Nutrient BMPs in Irrigated Agriculture." Presented at Western Nutrient Management Conference in Salt Lake City, UT.

Booker, J.F., W.M. Frasier, E.E. Houk, A. Michelsen, and R.G. Taylor. (June 27-30, 2001). "Costs of Supplying Water for Endangered Species Recovery." 2001 AWRA/UCOWR Summer Specialty Conference, Decision Support System for Water Resources Management. Snowbird, Utah.

Houk, E.E., W.M. Frasier, and R.G. Taylor. (October 29, 2000). "Valuing the Characteristics of Irrigation Water in the Platte River Basin." Poster presented at the South Platte Forum, Longmont, Colorado.

Houk, E.E., R.G. Taylor, and W.M. Frasier. (June 29-July 1, 2000). "Valuing the Characteristics of Irrigation Water in the Platte River Basin." Selected Paper of the 2000 Annual Meeting of the Western Agricultural Economics Association, Vancouver, British Columbia. (presented by Houk)

Park, D., A.F. Seidl, S. Davies, and W.M. Frasier. (June 29-July 1, 2000). "Environmental Policy Influences On Livestock Stocking And Location Decisions." Selected Paper of the 2000 Annual Meeting of the Western Agricultural Economics Association, Vancouver, British Columbia. (presented by Park)

Frasier, W.M. (October 13-15, 1999). "Politics and Academics: A Modern Alchemy in the Platte River Basin." Presented at the W-190 Technical Committee Meeting, Denver, CO.

Park, D., A.F. Seidl, and W.M. Frasier. (August 30-September 1, 1999). "The Effect of Environmental Regulation on the U.S. Livestock Industry." Presented at the US Geological Survey's AFO '99 Conference, Fort Collins, CO.

Frasier, W.M., N.K. Whittlesey, and M. English. (August 8-11, 1999). "Economic Impacts of Irrigation Application Uniformity in Controlling Nitrate Leaching." Presented at the American Society of Civil Engineers International Water Resources Engineering Conference, Seattle, WA.

Huffaker, R.G., W.M. Frasier, and J.R. Hamilton. (June 29 - July 2, 1999). "The Constitutionality of State Restrictions on Interstate Water Transfers," proceedings paper Water: Lessons of World Development, Universities Council on Water Resources 1999 Annual Conference, Kamuela, HI.

Michelsen, A.M., J.F. Booker, and W.M. Frasier. (June 29 - July 2, 1999). "Feasibility Of Alternatives To Manage Platte River Instream Flows To Accommodate Endangered Species." Proceedings paper Water: Lessons of World Development, Universities Council on Water Resources 1999 Annual Conference, Kamuela, HI.

Frasier, W.M., B. Conradie, and D.L. Hoag. (June 6-9, 1999). "Theoretical and Empirical Implications of Increasing Block Rates." Presented at 26th Annual American Society of Civil Engineers Water Resources Planning and Management Conference, Tempe, AZ.

Vickner, S.S., D.L. Hoag, W.M. Frasier, and J.C. Ascough II. (January 11-12, 1999). "Estimating the Economic Benefits of Uniformity-Improving Capital Investments in Irrigated Crop Enterprises: Implications for Producer Profits and Resource Conservation." Presented at the American Farm Bureau Federation's 80th Annual Convention, Albuquerque, NM.

Conradie, B., W.M. Frasier, and D.L. Hoag. (August 10-16, 1998). "Increasing Block Pricing and Residential Water Demand: Challenges in Estimation and Practice." Contributed paper to the Symposium of the International Association of Agricultural Economists, Badplaas, South Africa.

Shanahan, J., J. Johnson, M. Frasier, R. Cleymaet, B. Meroney, T. Doerge, and D. Fjell. (October 18-22, 1998). "Feasibility of Variable Rate Management of Corn Hybrids and Seeding Rates in the Great Plains." Paper presented at 90th Annual Meeting of the American Society of Agronomy, Baltimore, MD.

T.A. Bauder, R.M. Waskom, W.M. Frasier, K.L. Ring, and D.L. Hoag. (October 18-22, 1998). "Adoption of Irrigation Technology in Colorado: Is There a Research Gap?" Poster presented at 90th Annual Meeting of the American Society of Agronomy, Baltimore, MD.

Ward, F., W.M. Frasier, J.F. Booker, R. Lacewell, J. Ellis, and R.A. Young. (August 4-7, 1998). "Assessing Alternative Institutional Innovations for Coping with Drought on an Interstate River." Presented at Cross Currents in Water Policy, Universities Council on Water Resources, Hood River, OR.

Ward, F., W.M. Frasier, J.F. Booker, R. Lacewell, J. Ellis, and R.A. Young. (August 2-5, 1998). "Assessing Alternative Institutional Innovations for Coping with Drought on an Interstate River." Selected paper presented at the annual meeting of the American Agricultural Economics Assn., Salt Lake City, UT.

Frasier, W.M., R.M. Waskom, and K.L. Ring. (October 14-15, 1997). "A Survey of Irrigation Management in Colorado." Poster presented at South Platte Forum, Longmont, CO.

Vickner, S.S., D.L. Hoag, and W.M. Frasier. (August 6-9, 1995). "A Dynamic Optimization Model for Policy Analysis of Nitrate Leaching In Irrigated Corn Production." Selected paper presented at the annual meeting of the American Agricultural Economics Association, Indianapolis, IN.

Frasier, W.M., S. Oh, and N.K. Whittlesey. (July 1993). "Managing Nitrate Groundwater Pollution from Irrigated Agriculture." Selected paper for presentation to the annual meeting of the Western Agricultural Economics Association, Edmonton, AB.

Oh, S., Frasier, W.M., and N.K. Whittlesey. (May 1992). "Managing Nitrate Groundwater Pollution from Irrigated Agriculture." Poster presented at CSRS Review of Groundwater Quality, Phoenix, AZ.

Frasier, W.M., G.H. Pfeiffer, and A.M. Azzam. (July 1991). "Optimal Replacement and Management Strategies for Beef Cows." Selected paper for presentation to the Western Agricultural Economics Association, Portland, OR.

Frasier, W.M., G.H. Pfeiffer, et al. (August 1990). "Nebraska Integrated Resource Management Demonstration Herd Project." Selected paper for presentation to the American Agricultural Economics Association, Vancouver, BC.

**Extension/Outreach Meetings, Workshops, and Seminars**

Frasier, M. January 28, 2017. "Succession Planning from YOUR Seat at the Table," Colorado Farm Bureau Young Farmer and Rancher Conference, Loveland, CO. Approximately 60 in attendance.

Frasier, M. May 2, 2016. "Practicum #2: Business Planning." Colorado Ranching Legacy Program, Colorado Cattlemen's Association (CCA), Fort Collins, CO. Approximately 10 in attendance.

Frasier, M. September 24, 2015. "Economic Impact of Invasive Weed Species in Colorado." Boulder County Parks and Open Space Advisory Committee. Approximately 45 in attendance.

Frasier, M. March 29, 2015. "Enterprise Analysis/Unit Cost of Production." Colorado Ranching Legacy Program, Colorado Cattlemen's Association (CCA), Fort Collins, CO. Approximately 15 in attendance.

Frasier, M. January 7, 2015. "Income Tax Management: Don't Let the Tail Wag the Dog," Tri-State Cow/Calf Symposium, Yuma, CO. 81 registered attendees, approximately 100 in attendance.

Frasier, M. December 3, 2014. "Economic Impact of Invasive Weed Species in Colorado: Phase II," Colorado Weed Management Association (CWMA) Annual Conference. Colorado Springs, CO. Approximately 400 in attendance.

Frasier, M. December 4, 2013. "Economic Impact of Invasive Weed Species in Colorado: Phase I," Colorado Weed Management Association (CWMA) Annual Conference. Colorado Springs, CO. Approximately 400 in attendance.

Frasier, M. September 7, 2010. "Dynamic Modeling of Economic Decisions in Cheatgrass Management," Rocky Mountain Cheatgrass Management Project Stakeholder Field Day, Laramie, WY. Approximately 15 in attendance.

Frasier, M. w/ M. Verdone. December 3, 2009. "Modeling the Cheatgrass Management Decision," Rocky Mountain Cheatgrass Management Project Stakeholder Input Workshop, Cheyenne, WY. Approximately 40 in attendance.

Frasier, M. w/ C. Goemans. August 13, 2009. "Alternatives to Permanent Water Transfers," round table discussion with FRICO shareholders, Brighton, CO. Approximately 40 in attendance.

Frasier, M. January 12, 2008. "Economics in Agriculture," Agriculture 101, (in-service training (credit earning) for pre-school through high school teachers), sponsored by National Western Stock Show. Approximately 40 attending.

Frasier, M. November 10, 2007. "Teaching Agriculture in the Classroom: Ag Adventure Program at CSU," Agriculture 101, (in-service training (credit earning) for pre-school through high school teachers), sponsored by National Western Stock Show. Approximately 35 attending.

Frasier, M. 2006. Coordinated 2006 Nick Petry Workshop "Are Water Conflicts Inevitable?: Agriculture vs. Urban Colorado." Sponsored by the Western Center for Integrated Resource Management (WCIRM) and the National Western Stock Show (NWSS). (approximately 150 attending)

Frasier, M. April 14, 2005. "Update on Colorado Water Issues 2005," 2005 Independent Bankers of Colorado, Colorado Springs, CO. (approximately 75 attending)

Frasier, M. 10/21/04. "Update on Colorado Water Issues 2004," 2004 Ag Lenders' Meetings, LaJunta, CO. (approximately 120 attending six sessions)

Frasier, M. 10/20/04. "Update on Colorado Water Issues 2004," 2004 Ag Lenders' Meetings, Akron, CO.

Frasier, M. 10/19/04. "Update on Colorado Water Issues 2004," 2004 Ag Lenders' Meetings, Greeley, CO .

Frasier, M. 10/7/04. "Update on Colorado Water Issues 2004," 2004 Ag Lenders' Meetings, Grand Junction, CO.

Frasier, M. 10/6/04. "Update on Colorado Water Issues 2004," 2004 Ag Lenders' Meetings, Mancos, CO.

Frasier, M. 10/5/04. "Update on Colorado Water Issues 2004," 2004 Ag Lenders' Meetings, Monte Vista, CO.

Frasier, M. 11/20/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Insurance and Marketing Update Meetings, Brush, CO. (50 attending)

Frasier, M. 10/30/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Ag Lenders' Meetings, LaJunta, CO. (approximately 120 attending six sessions)

Frasier, M. 10/30/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Ag Lenders' Meetings, Grand Junction, CO.

Frasier, M. 10/29/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Ag Lenders' Meetings, Akron, CO.

Pritchett, J. 10/29/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Ag Lenders' Meetings, Dove Creek, CO.

Frasier, M. 10/28/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Ag Lenders' Meetings, Greeley, CO.

Pritchett, J. 10/28/03. "Agricultural Water Issues in Colorado: Thoughts and Comments," 2003 Ag Lenders' Meetings, Alamosa, CO.

Frasier, M. 9/13/03. "Understanding Referendum A," Buckeye Community Club, Wellington, CO. (30 attending)

Frasier, M. 9/10/03. "Understanding Referendum A," Larimer County Agricultural Advisory Board, Fort Collins, CO. (14 attending)

Frasier, M., and J. Pritchett. 2/6/2003. "Comments on GASP Well Shutdown and Proposed State Water Legislation," Northern Colorado Legislative Alliance, Windsor, CO. (approximately 30 attending)

Frasier, M., and J. Pritchett, 2/5/2003. "Comments on HB 03-1113," Technical Expert Testimony. Hearings of the Colorado House Agriculture Committee. Denver, CO. (approximately 50 attending)

Umberger, W.J. 11/1/02. "The Economics and Politics of Water in Colorado," 2002 Ag Lenders' Meetings, Grand Junction, CO.

Umberger, W.J. 10/31/02. "The Economics and Politics of Water in Colorado," 2002 Ag Lenders' Meetings, Mancos, CO.

Frasier, W.M. 10/17/02. "The Economics and Politics of Water in Colorado," 2002 Ag Lenders' Meetings, Alamosa, CO.

Kaan, D. 10/17/02. "The Economics and Politics of Water in Colorado," 2002 Ag Lenders' Meetings, Yuma, CO.

Frasier, W.M. 10/16/02. "The Economics and Politics of Water in Colorado," 2002 Ag Lenders' Meetings, LaJunta, CO. (104 attending all six sessions (items 2-7))

Kaan, D. 10/16/02. "The Economics and Politics of Water in Colorado," 2002 Ag Lenders' Meetings, Greeley, CO.

Frasier, W.M. 2/21/02. "An Economic Evaluation of Groundwater Institutions for the Northern High Plains," Ogallala Symposium, Sterling, CO. (200 attending)

Frasier, W.M. November 26, 2001. "Spreadsheets as Your Primary Tool for Analysis—A Beginner's Primer," presented at Colorado Farm Bureau Annual Meeting, Colorado Springs, Colorado. (55 estimated in attendance)

Frasier, W.M. November 26, 2001. "Enterprise Budgeting—Use and Understanding," presented at CSU Horticultural Agent training session, Brighton, Colorado. (20 estimated in attendance—presented by J. Tranel)

Frasier, W.M. October 5, 2001. "CSU's Ag Adventure at ARDEC: A Model for Extending Ag in the Classroom." presented at Colorado Science Teacher's Convention, Denver, Colorado. (26 in attendance at our breakout session)

Frasier, W.M. January 30, 2001. "Goal Setting: The First Step to Successful Resource Management," presented at Cow Camp, ARDEC. (45 estimated in attendance)

Frasier, W.M. February 15, 2000. "Salinity Economics," presented at Salinity Management in the South Platte Basin: A Workshop on Issues and Management, Greeley, Colorado. (45 estimated in attendance)

Frasier, W.M. March 18, 1998. "Irrigation Management in Colorado," presentation at workshop for irrigators in the Dolores Project, Yellow Jacket, Colorado. (35 estimated in attendance)

Frasier, W.M. January 9, 1998. "Economics of Precision Farming," presentation at 1998 Corn Clinic, Colorado State University Cooperative Extension, Fort Collins. (55 estimated in attendance)

Frasier, W.M. November 14, 1996. "Water and Economics." Paper presented at Ogallala Aquifer Symposium, Sterling, Colorado. (250 estimated in attendance)

**TEACHING:****Campus-based Courses Taught Fall 2012-Present**

Course	Title	Term	Credit Hours	Number Enrolled	Rating*	
					AAvg	BAvg
AREC 405	Agricultural Production Management	Spring 2018	3	33	--	--
AREC 408	Agricultural Finance	Spring 2018	3	41	--	--
AREC 305	Ag and Resource Enterprise Analysis	Fall 2017	3	54	96	0
AREC 615	Optimization Methods for Econ	Fall 2017	3	17	72	7
AGRI 181	Contemporary Agric Systems (AGRI 181 team taught w/ N. Clark--experimental)	Fall 2017	1	20	--	--
AREC 405	Agricultural Production Management	Spring 2017	3	33	92	2
AREC 305	Ag and Resource Enterprise Analysis	Fall 2016	3	43	86	3
AREC 615	Optimization Methods for Econ	Fall 2016	3	12	77	9
AREC 405	Agricultural Production Management	Spring 2016	3	37	95	0
AREC 305	Ag and Resource Enterprise Analysis	Fall 2015	3	53	95	1
AREC 615	Optimization Methods for Econ	Fall 2015	3	6	84	8
AREC 405	Agricultural Production Management	Spring 2015	3	32	84	4
AREC 305	Ag and Resource Enterprise Analysis	Fall 2014	3	46	96	0
AREC 615	Optimization Methods for Econ	Fall 2014	3	9	80	3
AGRI 636	Analyzing and Managing the Business	Fall 2014	3	16	91	2
AREC 405	Agricultural Production Management	Spring 2014	3	36	83	6
AREC 305	Ag and Resource Enterprise Analysis	Fall 2013	3	69	94	2
AREC 615	Optimization Methods for Econ	Fall 2013	3	7	55	18
AGRI 636	Analyzing and Managing the Business	Fall 2013	3	7	72	6
AREC 305	Ag and Resource Enterprise Analysis	Spring 2013	3	40	94	2
AREC 305	Ag and Resource Enterprise Analysis	Fall 2012	3	41	95	1
AGRI 192	Orientation to Agricultural Systems (AGRI 192 team taught w/ Enns & Fenwick)	Fall 2012	1	41	89	1
AGRI 636	Analyzing and Managing the Business	Fall 2012	3	16	92	1

\* Rating based on percent of responses with which students identified ratings better than Average ("Excellent" or "Above Average") (AAvg) or ratings less than "Average" ("Below Average" or "Poor") (BAvg) to questions evaluating quality of course and instructor.

**Campus-based Courses Taught Fall 2011- Spring 2012**

Course	Title	Term	Credit	Number	Rating*	
			Hours	Enrolled	AAvg	BAvg
AREC 405	Agricultural Production Management	Spring 2012	3	31	91	2
AREC 305	Ag and Resource Enterprise Analysis	Fall 2011	3	38	90	2
AGRI 192	Orientation to Agricultural Systems (AGRI 192 team taught w/ Enns & Fenwick)	Fall 2011	1	42	99	0
AGRI 636	Analyzing and Managing the Business	Fall 2011	3	14	94	0
AREC 305	Ag and Resource Enterprise Analysis	Spring 2011	3	39	84	3
<u>AREC 405</u>	<u>Agricultural Production Management</u>	<u>Spring 2011</u>	<u>3</u>	<u>20</u>	<u>92</u>	<u>1</u>

\* Rating based on percent of responses with which students identified ratings better than Average (“Excellent” or “Above Average”) (AAvg) or ratings less than “Average” (“Below Average” or “Poor”) (BAvg) to questions evaluating quality of course and instructor.

**Online Courses Taught**

Course	Title	Term (Enrollment)
AREC 305	Ag and Resource Enterprise Analysis	FA08(4); SP10(7); SP11(23); FA11(14); SP12(11); FA12(16); SP13(22); FA13(24); FA14(23); FA15(19); FA16(33); FA17(22)
AGRI 636	Analyzing and Managing the Business	SP09(2); FA11(7); FA12(13); FA13(14); FA14(22); FA15(14); FA16(15); FA17(15)

**Campus-Based Courses Taught Fall 2007-2010**

Course	Title	Term	Credit	Number Enrolled	Rating*	
			Hours		%A	%D
AREC 305	Ag and Resource Enterprise Analysis	Spring 2010	3	36	92	2
AREC 405	Agricultural Production Management	Spring 2010	3	29	90	3
AGRI 192	Orientation to Agricultural Systems (AGRI 192 team taught w/ Enns & Fenwick)	Fall 2009	1	29	--	-
AGRI 636	Analyzing and Managing the Business	Fall 2009	3	11	90	2
AREC 405	Agricultural Production Management	Spring 2009	3	30	94	1
AREC 305	Ag and Resource Enterprise Analysis	Fall 2008	3	37	95	1
AGRI 192	Orientation to Agricultural Systems (AGRI 192 team taught w/ Enns & Fenwick)	Fall 2008	1	32	--	-
AGRI 636	Analyzing and Managing the Business	Fall 2008	3	19	94	2
AREC 305	Ag and Resource Enterprise Analysis	Spring 2008	3	40	93	2
AREC 405	Agricultural Production Management	Spring 2008	3	27	88	1
AREC 305	Ag and Resource Enterprise Analysis	Fall 2007	3	39	97	1
AGRI 636	Analyzing and Managing the Business	Fall 2007	3	11	96	2
AGRI 192	Orientation to Agricultural Systems	Fall 2007	1	19	93	1
AGRI 292	Transfer Seminar (AGRI 292 team taught w/ N. Irlbeck, responsible for 35% development & delivery)	Fall 2007	1	93	--	-
EA 405	Agricultural Production Management	Spring 2007	3	37	**	**
EA 342	Econ Analysis of Water Resources (EA 342 team taught w/ L. Ellingson, responsible for 30% development & delivery)	Spring 2007	3	34	97	0
A 640	Integrated Resource Management Plan (A 640 team taught w/ IRM team, responsible for 40% development & delivery)	Spring 2007	3	4	100	0
A 636	Analyzing and Managing the Business	Fall 2006	3	7	100	0
EA 305	Ag and Resource Enterprise Analysis	Fall 2006	3	39	87	4
A 192	Orientation to Agricultural Systems	Fall 2006	2	18	93	1

\* Rating based on percent of responses with which students Agree or Strongly Agree (%A) or Disagree or Strongly Disagree (%D) to questions evaluating quality of course and instructor. Beginning Spring 2011 questions were rephrased to be answered on a scale that ranges from "Excellent" to "Poor", centered on "Average".

## Course Syllabi, Assignments, and Other Materials

Every course that I teach is developed around the following six statements which are the very foundations of my teaching philosophy. This list is not drawn from any formal instructional training or from a book. It is intensely personal. It is drawn from experience—life-long experience as a student, mentor, observer, advisor, citizen, and teacher. This is not an exhaustive list and there is significant overlap among items. I present this not as a recipe for success, but as elements that I view as critical in being effective in my teaching.

*Promote understanding.* In a typical collegiate course, we frequently focus too much on conveying disciplinary information (facts). Care must be exercised to assure that the student understands the why's and how's of the subjects that we teach. Interaction with students in-class, out-of-class, and through creative assignments and exams are essential to this end.

*Context is important.* To promote understanding, it is essential to cast new material within a context that the students can understand. In an introductory phase this context should be consistent with common student experience. However, students should learn to use this knowledge in new contexts beyond the pedagogic examples of introduction.

*Challenge appropriately.* Students need to be shown that they can achieve beyond their experience, otherwise there will be no growth. The dynamics of context (as per above) can help dramatically. Introducing new, less familiar, contexts can push students out of their comfort zone and allow for real discovery to take place resulting in much deeper-rooted learning that promotes understanding. Care must be taken, however, to assure reasonable success. An inappropriate, uncontrolled push beyond most students' capabilities will greatly undermine previous success.

*Presentation is everything.* In preparing for class, whether for the period or the semester, great care must be given to presentation. Materials must be organized logically and presented clearly. However, the teacher demonstrates not only subject matter, but his/her attitude toward it. To be highly effective, teacher must effuse enthusiasm and a sense of purpose for the subject. If the teacher can't demonstrate this, how can students be expected to embrace these views?

*Students are human.* A teacher should make every effort to know their students as people—their origins, goals in life, concerns as students and as citizens. This connection helps students to be at ease as they undertake learning. Students understand that the teacher wants to facilitate success rather than serve as a threat or obstacle to completing a course requirement. This philosophy does not imply relaxing standards. In my experience, students are more willing to step up to greater challenges in the class when they truly feel that you are on their side.

*Teaching does not end in the classroom.* To prepare students for life-long learning, teachers must be involved with students outside of the classroom—through academic advising, advising student organizations, participating in campus activities, or socializing with students. This provides opportunities to demonstrate real-world applicability of disciplinary material as well as extending the human experience. These are the encounters our students will remember.

Course materials that exemplify these principles are available upon request.

### Peer Evaluations of Teaching

The Department of Agricultural and Resource Economics does not have a formal peer evaluation process. From time to time I have had the good fortune to work with a number of colleagues in a classroom setting. I have asked two who have had the greatest opportunity to witness my teaching and who are recognized as outstanding teachers themselves to comment on their observations. Their letters are available upon request with some relevant excerpts provided here.

*“Marshall Frasier is an excellent teacher, whether his audience is first semester freshmen adjusting to campus life (i.e. AGRI 192 Orientation to Agriculture Systems) or advanced graduate students engaged in the vagaries of dynamic optimization and economics (i.e., AREC 540 Economics of Natural Resources). Dr. Frasier consistently receives the highest teaching evaluations in our department. In the hallways of CSU, students advise their contemporaries into Frasier’s class because “he’s tough and will make you work, but you’ll learn more from him than anyone else.” Dr. Frasier’s course sections are always among the first to fill and are often over-subscribed, an indication that his instruction is in high demand. He has prepared and taught at least twelve distinctly different courses since his initial appointment, including two brand new preparations in the Spring of 2007 – a notable task for a senior faculty member who has earned the right to stay within previous course offerings. Frasier’s sheer joy and tenacity in designing and implementing these courses is impressive.”*

*“In the Spring of 2003, I had the unique (and very valuable) opportunity to jointly teach AREC 305 Enterprise Analysis with Marshall Frasier. Enterprise Analysis is a course that extends accounting principles to management decision making; that is, students are taught to assemble, verify, assimilate and make management decisions based on financial information. The course objectives focus on problem solving rather than rote memorization and regurgitation. Marshall Frasier’s emphasis on experiential learning and his Socratic teaching style stand apart from typical instruction. Initially, students are uncomfortable in his class – Marshall calls on students directly and asks challenging questions. Within a few class periods however, all students are engaged in lively discussions of the issue at hand. Students appreciate opportunities to engage in practical, hands-on learning activities and rise to the occasion when challenged to perform.”*

**Quote from a Letter of Support by Dr. James Pritchett, Associate Professor Department of Agricultural and Resource Economics, Colorado State University**

*“Marshall has a diverse teaching record in terms of handling a mix of theoretical and applied courses at both the undergraduate and graduate level. My particular experience comes from having worked with Dr. Frasier to combine his EA305 – Farm and Ranch Records and Analysis course with my AN 478 – Beef Production course in building across discipline teams to solve a series of case study problems. My experience with Dr. Frasier can only be described as positive. It is easy to talk about crossing discipline boundaries, but an entirely different game to actually accomplish the task. We worked together for nearly 6 months in advance of last fall semester to prepare the case studies and build a system that would produce a desirable student experience. Marshall exemplified collegiality during the project. I found him to be creative, accountable, and willing to take risks with the goal of providing a more valuable learning environment. Marshall is able to successfully interact with a variety of students, is effective at setting and maintaining high standards, and at motivating students to give their best effort. I have worked with Marshall on a variety of committees and believe he is motivated by a desire to serve his students, his profession and the university. He is an excellent colleague and a trusted friend. I have learned from his work in the classroom and believe that he will continue to have a long and lasting impact on our students.”*

**Quote from a Letter of Support by Dr. Tom Field, Professor Department of Animal Science, Colorado State University**

**Selected Written Comments from Anonymous ASCSU Student Course Surveys**

*Marshall was a great teacher. I wish we had more professors like him. He shows a genuine interest in each of his students learning processes. He truly cares whether or not we are learning what he is teaching. Thank you.*

*Good instructor; is willing to help. Economics was difficult for me and Marshall Frasier helped me to understand it better. Thank you!*

*Marshall has helped me more than any other professor has in my 3 years at CSU. He is easy to understand and is patient with the class's questions. I not only got to know him as a professor but I also made a friend. When you consider a prof as a friend it's easier to learn and communicate.*

*It has to be difficult and frustrating to force feed info to students who don't want to be here. Marshall has really made efforts above and beyond the call of duty to help those students and others who struggle to succeed in the class. I don't like or enjoy econ-but Marshall's presentations and willingness to help made it quite bearable. Thank you, Marshall!*

*I felt that Dr. Marshall Frasier did an excellent job of teaching this class. I feel I learned a great deal, understood the material and will be able to retain this information. The course content, homework assignments, quizzes and tests were a very good reflector of what the course is about. Also, I always felt that Dr. Frasier made a great effort to be available to help outside of class (including giving review sessions). I would recommend to other students to take him as an instructor.*

*I really enjoyed this course. This is the first time when everything really came together for all of my economics courses and I understand. I appreciated all of the help I received from Professor Frasier about ideas that were not very clear. He was always very willing to help!*

*For the first time I actually enjoyed an economics class! Thanks.*

*I usually am not a great econ student nor do I enjoy that mush. Marshall took the boredom out and I actually learned something. I like the idea of homeworks, really helps me understand the material.*

*Dr. Frasier runs a very good class. He makes sure everyone understands what is going on before moving on. He helps you whenever he can-which is very helpful in this class. I enjoyed this class a lot.*

*One of the best teachers I have had at Colorado State.*

*Marshall is by far the best econ professor I have ever had. This is the only time in 4 econ classes I have actually understood and enjoyed. Thanks-*

*Marshall is an excellent teacher. He immediately put effort into knowing his students. He is very knowledgeable and very organized—thus making everything easy to understand.*

*Of all my classes I had to take for my last semester, economics wasn't supposed to be my best and favorite class. Marshall made learning beneficial as well as interesting. As it turns out it was the only class that I actually learned a lot in and never had to dread going to the class. Marshall you've made this an enjoyable class for me. Thank you.*

*Before taking this class I was very apprehensive since I haven't had a good experience in past economics courses. I thoroughly enjoyed Marshall. He explains things in a very helpful manner and is very receptive to student questions. Please recognize him for his accomplishments.*

*I admit I was very skeptical of this course even before it started. Actually though I learned a lot, especially information that will help me some day open my own business. Thanks for taking time to explain concepts to me and understanding in this difficult situation. Although your tests were very difficult, I found the challenge fun and exciting. Thanks.*

*Of all the economic classes I have taken at CSU, by far this was the most beneficial to me. Finally, I have practical and useful knowledge for managing a business.*

*Mr. Frasier is very concerned about our learning and success. He goes out of his way to know his students on a first name basis and is an outstanding professor.*

*This material was not easy, however Dr. Frasier was effective at presenting it in different forms to make it understandable to everyone. I like how he used the homeworks to force us to work through and understand the material. This class was a challenge and I felt I learned a lot.*

*Excellent class! Being in a class where thoughtful discussion was encouraged was very motivating—it kept us involved & interested. One of the most valuable parts of the class was its discussion of economic tools at a practical/real world level. Thanks for the excellent class!*

*This is a good class in which I learned a lot. Dr. Frasier managed to draw together ideas from environmental economics, micro and production, and even policy. He made a fine job of giving me the confidence that I understand how the field fits together instead of just memorizing a lot of disjointed irrelevancies. The most impressive thing was that he gave us the freedom to explore wild ideas, while at the same time keeping the bus on the road and on schedule. Thank you, Dr. Frasier.*

*Dr. Frasier has caused me to change my view of former Cornhuskers. He did an excellent job of presenting material in a context which was easy to follow for a non-economics major such as myself. Excellent class, very useful material was covered.*

*This course was one essential class for me; and I am very pleased with Dr. Frasier and his presentation. Was very helpful in every manner and gave time beyond office hours. His practical approach and incorporating it with the theory was one of the mixes that we don't see in graduate classes any more. Thanks Dr. Frasier.*

### Examples of Course Improvements

For a number of years I have had responsibility for teaching AREC 305, Agricultural and Resource Enterprise Analysis (formerly known as Farm and Ranch Records and Analysis), and AREC 405, Agricultural Production Management. Historically, these two courses focused exclusively on farm-level examples but have been modified to provide appropriate training for students in the modern agricultural world.

I began teaching AREC 305 in 1998. Very soon after I began teaching this course, it became clear that the opportunity for learning was much greater than was being realized. Over the years, three major changes have been introduced. First, because the course focuses on financial analysis, it was clear that the subject matter should be made applicable to a much broader set of circumstances than farmers and ranchers. Examples throughout the course are now selected from a broad range of agribusiness enterprise, main street business, and personal finance. Many farm examples are still prevalent because of their easy interpretation even for those less familiar with farm production. Second, the original organization of the course tended to follow a standard accounting philosophy of introducing accounting techniques and finally arriving at useful analysis relatively late in the semester. I have adopted a strategy of becoming VERY goal oriented with every new tool introduced in the class starting with the most general questions and Socratically working our way back to the accepted design for the tool as though we had no reason for doing so other than our own curiosity/interest. Finally, with the advent of computer lab availability and the importance of basic spreadsheet analysis for employers of our students, I heavily modified the course laboratory such that every lab exercise now begins with a blank spreadsheet. Over the course of the semester students develop a number of templates for financial statements and budgets that are used to analyze problems in and out of the context presented in lecture. The course, now renamed, has become a foundation for most upper division courses in our department.

With over twenty years of teaching AREC 305, I am very comfortable with the class and the ease with which I can modify the course on the fly. A decade ago I taught AREC 405 for the first time—it was a bit of a shock to be knocked out of that comfort zone. I had forgotten the growing pains of learning how students best learn a topic and how miserable the experience can be for students and the instructor when it doesn't work well. AREC 405 had been taught in a very traditional manner for a number of years. My intent was to modify the course along the same three veins as described for AREC 305 above. Most of AREC 405 is centered around mathematical programming applications (primarily LP) that are designed to draw out the use of economic theory in managerial decisions. With AREC 305 as a prerequisite for this course, I knew what students should be able to do coming into this class. I developed new problem sets in the pattern described above where models are constructed starting from a blank Excel workbook. The underlying theory and mechanisms were developed in lecture through Socratic discussion and applications were taken from a broad perspective of agricultural business. On paper, the course looked great—in practice it flopped. Simultaneously I overshot the students' ability and selected a poor path for developing a firm understanding of the underlying method. By the end of the sixth week, we were near mutiny. Fortunately, adjustments in the topic outline salvaged the course and final projects were amazingly well done. While the “big” adjustments seem to have worked well, this experience underscores the importance of getting the “little” things right as well. I am sure I learned more than they did. In the years since, I have redesigned the course with good success in creating the student experience that I sought initially.

These lessons continue to inform my approach to every new course development activity that I inherit. I've managed to avert some of these problems, others I've managed to repeat. In all cases, the courses improve with each additional offering.

### **Development of New Courses**

My years of service to University Curriculum Committee and the College of Agricultural Sciences Academic Affairs committee honed my understanding and focus on purpose-built courses and programs of study. I have actively helped faculty members in the Department and College develop a number of new courses. My earliest “best” experience in developing a new course that I taught would be what is now AGRI 192, Orientation to Agricultural Systems, frequently referred to as “Freshman Seminar” in our college. I taught one of the six to nine of these sections that were offered each fall. This is a course that was built by committee over the years, though the committed core of that committee was really three of us in the College. Because of its “service” nature and “lite” disciplinary content there are many who wouldn’t view this as a worthy course. I choose to highlight this course because of this disconnect between the tremendous positive impact we’ve witnessed and the perception of faculty regarding its merit.

The core purpose of the course was to prepare incoming students for the success that they deserve to have in their college career. This was NOT a hand-holding course. From the first day of class, students were challenged to take ownership of their education and think critically about what they want from their college career. There were a series of exercises designed to actively engage them in activities that would move them toward their goals.

The overall outline for the course breaks down into roughly four topic areas: self awareness, careers, college choices, and industry issues. First, activities are designed to help students evaluate themselves—strengths, weaknesses, proclivities, goals, values—from their own perspective, something that many have not done. From here we begin to discuss life after college, ultimately focusing on career objectives. Students are challenged to begin their investigation of career opportunities, evaluating how various careers match with where they really want to be in life. Now that we’re thinking about careers, we can begin the discussion of what it takes to be hired into the career which quickly begs the question: how do I become that person in the next four years? Activities are designed to expose students to the myriad of opportunities that build the various skill sets and create documented evidence of those skills. Students are challenged to begin to plan for those activities that build the skills that they need. Finally, students are challenged to consider the broad array of issues that lie on the horizon for agriculture, specifically, and society in general.

With over ten years of experience of students in our college participating in this course, the evidence, while mostly anecdotal, was clear. Students were graduating with far fewer regrets for what they didn’t do because they didn’t know about it soon enough. Student engagement in extracurricular activities was greater, earlier allowing deeper development of skills that prepare them for the job market and life in general. Students were more effective in what they take from advising sessions because they come better prepared, focused on how their program of study affects them. While there is little professional reward to teaching one of these sections, there is clearly a benefit that accrues to our students.

### **Development of New Teaching Techniques**

One of the dimensions of teaching that has long interested me is the integration of cross-disciplinary content into the curriculum. I have worked to incorporate interdisciplinary content at many levels ranging from cross-course activities between courses in Ag Economics and Animal Sciences, as noted in Field’s peer evaluation above, to developing and presenting a full-fledged Master’s program in Integrated Resource Management (IRM).

As member of the Executive Committee for the IRM program, I have been responsible for many development and coordination activities of which many are non-typical. Worth special note, the IRM

program innovates in two dimensions. First, each of the eleven courses in the program are designed and sequenced to develop a disciplinary base of understanding and explicitly leverage the interdisciplinary connections that require considerably more coordination than typical courses. Second, because of the interconnected nature of the courses and a non-traditional student audience, the campus-based courses were taught sequentially in intensive two-week short courses rather than concurrent semester-long offerings, creating new opportunities for learning but also new challenges for faculty. We have since moved to an exclusive online offering of the program that has prepared many students for productive professional careers.

### **Integration of Service Learning**

In 2003, the *Ag Adventure* program (described in Mentoring section below) first created the opportunity for students in A 192, Orientation to Agricultural Systems (our “Freshman Seminar”), to participate in the event. I worked closely with the *Ag Adventure* planning team and all AGRI 192 instructors to create an experience where the AGRI 192 students would be trained to teach third grade students (generally with an urban background) about defined topics in agriculture. This provided an opportunity for the AGRI 192 students to interact with a population who was not familiar with agriculture (this includes third graders, their teachers, and their parents—many of whom also attended). While the benefit to the elementary students is obvious, the CSU students learned a great deal as well ranging from how little the typical urban person knows about agriculture to how rewarding it can be to teach someone something new. Most AGRI 192 students come away with new perspectives that were not provided in classroom-only activities. Participation in the event also provides an opportunity for reflection and discussion that was not possible before. This AGRI 192-*Ag Adventure* partnership has functioned continuously since its inception and is expected to carry on for as long as *Ag Adventure* continues.

### **Written Comments from Students Regarding Teaching**

*(Selected Quotes from CSU Student Letters in support of award nominations over the past ten years)*

*“Dr. Frasier was memorable in class and emphasized knowing the concept versus memorizing the material. His style of teaching and testing taught me to truly understand the topics and fuse together what I had learned to solve other problems. ... Dr. Frasier has a knack for identifying what students will be good at and how to approach them to get quality work from them. Dr. Frasier had an immense background of knowledge and he is able to pass that information to students in a challenging environment that ultimately leads to true understanding.”* **Sara Dutton, former CSU student majoring in Agricultural Business**

*“Dr. Frasier’s knowledge is great and he has a talent many professors lack in being able to teach the students in a way that is fun, challenging, and can be applied in a practical situation and encouraging students to do just that.”* **Krista Schiferns, former CSU student majoring in Agricultural Business & Animal Sciences**

*“In the classroom, Dr. Frasier radiated an enthusiasm for teaching. He was always prepared for class and his lecturers were both engaging and informative. As both a student and a teaching assistant in Dr. Frasier’s classes, I remember that he would go to great lengths to ensure that his students not only learned the material, but were also able to apply the lessons in real life.”* **Stacy Loutzenhiser, former CSU student majoring in Agricultural Business & Animal Sciences**

*From my first interactions with Dr. Frasier in the classroom, his passion for the subjects he taught and the overall success of his students was obvious. He brought an unprecedented creativity and experience into the classroom which engaged exploration and interest in the subjects. Additionally, Dr. Frasier was always open to questions and discussion during class, but was sure to leave ample time before and after in case further assistance was necessary. He was fair and honest in his grade assessments and never showed favoritism to his*

*students. Each student was given the same opportunities as everyone else, which further amplified his influence and overall successes in his classes.”* **Shonda Anderson, former CSU student majoring in Agricultural Business & Ag Education**

*“Dr. Frasier has the ability to communicate difficult ideas in a manner that creates confidence and motivates students to strive for a deeper understanding. He uses a variety of techniques from theoretical discussions, to empirical observations, to computer analysis to enhance the learning environment. He employs whatever skills are necessary to “reach” his students. More importantly though, Dr. Frasier does not lecture to the class as much as he discusses with the class. This helps to eliminate any intimidation factor and fosters a feeling of trust between student and teacher. As a result, Dr. Frasier’s class operates in an environment of openness and mutual respect. This is what makes Dr. Frasier a teacher in the true sense of the word. Dr. Frasier’s teaching does not end when the classroom door shuts. It merely moves to his office. Dr. Frasier is available to students for discussion, questions, clarifications, or just to be there when a student needs advice. He understands that what is learned in the classroom is only part of what is needed.”* **Group letter from Graduate Students in the Department of Agricultural and Resource Economics.**

### **Participation in Professional Development Activities Related to Teaching**

I have been a member of the Teaching, Learning, and Communications (TLC) section of the American Agricultural Economics Association (AAEA). Since the creation of the section, I have attended the TLC sessions at every annual meeting that I’ve attended, gathering valuable information about methods of teaching in our discipline and interacting with colleagues from across the country regarding topics from curriculum development to the state of the discipline. I have been an invited presenter and have been nominated to serve as co-chair for the section. Commitments to developing programs at CSU have limited my ability to engage as much at the national level as I would like.

Locally, I participate in the Colorado Agricultural College Teachers Association (CACTA) which meets annually (more or less) to bring together faculty from all colleges in Colorado who teach courses in agriculture. I work particularly closely with faculty at Northeastern Junior College in helping them develop course work that appropriately prepares their students for transfer to a four-year school in agriculture.

Recently I was invited to conduct a workshop session on *Ag Adventure* (detailed below) as part of the Teaching Sustainability through Service Learning Conference at CSU.

### **Other Evidence**

I have always been interested in curriculum design and development. My particular interest in integrating teaching across disciplines led to my involvement in the Integrated Resource Management program (noted above) and the development of coordinated check sheets for advising students interested in double majors in the College (sample check sheets in appendix). Working closely with faculty in Animal Sciences and Soil and Crop Sciences, I was able to broker an arrangement where students with majors in Agricultural Business and one of the other disciplines noted now follow a single check sheet to complete their dual programs of study. An important feature of this arrangement is that both departments take full advisory responsibility for their part of the bargain and strongly support student engagement in the sister department. Due largely to the double major programs, the number of majors in our department has increased by nearly 50 percent while the national trend is downward for students in our majors. Further, over two thirds of our students now graduate with two or more majors.

Because of my engagement in teaching, advising, and curriculum development it was natural for me to assume the role of Undergraduate Coordinator in our department in 2001 when the former coordinator

retired. Since that time I have become engaged in curriculum development at the College and University level, serving on the respective curriculum committees for a number of years. As an active member of both committees, I have contributed meaningfully in a number of areas including development of the latest All University Core Curriculum, protocols for development of on-line and distance education, creation of our first year experience for incoming freshmen and transfer students, and University student record systems to name a few. Whether at the Department, College, or University level, my single goal is always to create the best possible learning environment for students enrolled in our programs.

**ADVISING:****STUDENT ADVISING/GRADUATE SUPERVISION****UNDERGRADUATE STUDENTS**

Prior to our department's move to a professional advising model in 2012 I carried an assigned advising load of over fifty students (and informal load of nearly double that) for many years. Since then our advisors have done a great job of dispersing that responsibility for all faculty members. I continue to meet with many students in an informal mentoring role. I also have chaired and served on a number Honors committees and have supervised a number of internships and independent studies.

**GRADUATE STUDENTS:**

Current Graduate Advisees:

Xin Luo, M.S.

Current Graduate Committee Memberships (excluding those chaired):

0 # Plan C  
4 # Plan B  
1 # MS/MA  
2 # PhD

Graduate Committee Memberships (for past 5 years, not including those above)

0 Plan C  
4 # Plan B  
7 # MS/MA  
5 # PhD

Graduate Degrees Completed Under Your Supervision (past 5 years):

Janie Weiss, 2017, M.S.  
Jason Holderieath, 2017, PhD  
Brent Miller, 2017, MAg  
Michael Verdone, 2016, PhD  
Troy Bockelmann, 2016, MS  
Linda Novak, 2015, MAg  
Beth Kessler, 2013, MS

**Evaluations from Faculty and Professional Peers***(Selected Quotes from Faculty Letters written in support of award nominations submitted in the past )*

*"In the Dept. of Agricultural and Resource Economics, faculty members advise both undergraduate and graduate students. Advising, in its simplest form, is assisting students when planning coursework. Dr Frasier carries DARE's heaviest advising load; he routinely has sixty-five official advisees and serves as an unofficial adviser to many. Outstanding students seek Marshall as a mentor, he routinely counsels honors students in preparation of their theses. Yet, his commitment and compassion for all students is remarkable and goes beyond the ordinary – men and women challenged by learning disabilities, academic deficiencies, financial struggles, or simply overwhelmed by the rigors of University life find a champion in Dr. Frasier."*

**Quote from a Letter of Support by Dr. James Pritchett, Associate Professor Department of Agricultural and Resource Economics, Colorado State University**

*"In my ten years as department chair, I have seen no more enthusiastic and capable teaching and advising than that done by Dr. Marshall Frasier. He always has time for students. He has their best interests at the forefront of his professional activity. He is a leader in making positive changes in our educational offerings. He is a fine teacher and advisor."*

**Quote from a Letter of Support by Dr. S. Lee Gray, former Chair of the Department of Agricultural and Resource Economics and former Associate Dean of the College of Agriculture Sciences and, Colorado State University**

*"Marshall is one of the strongest assets the department has for undergraduate teaching. He is a favorite student advisor, he has stepped up to lead us concerning our curriculum matters inside the department and at the college level, and has actively participated in every single undergraduate teaching matter that needed attention since he arrived. Students seek Marshall out as an advisor because he has invested the time to learn about other courses around the college and can offer informed, meaningful advice that students relate to. In the classroom, Marshall is very professional and engaging. During the times that I have seen him lecture, his explanations were easy to follow and he bolstered the learning process with lots of examples and intuition. Students look up to Marshall almost like a father figure because of the personal interest he takes in them and because they respect his advice. ... Marshall goes way beyond what is required in the classroom without asking for extra reward or recognition because he cares deeply about helping students learn. This extra work could have easily jeopardized his chances for making tenure, but this did not dissuade him."*

**Quote from a Letter of Support by Dr. Dana L. Hoag, Professor, Department of Agricultural and Resource Economics, Colorado State University**

**Comments from Student Advisees***(Selected Quotes from Student Letters of Support of promotion to Professor)*

*"I remember the first time I met Dr. Marshall Frasier he said, "Don't let your classes get in the way of your education." It has taken me three years to figure out what that means, but working outside the classroom has truly been one of the most valuable parts of my education. Dr. Frasier is truly the advocate in the department for experiential learning, and I consider him an essential part of the department in that capacity. He has been able to extend the notion of how to balance the important in-class time and the essential experiential learning." **Sara Dutton, former student and advisee***

*"...Dr. Frasier was not my assigned Academic Advisor; instead, I often sought his opinions because I ultimately trusted his judgments and advice with concern to my academic and professional future. Because I was double majoring in Agricultural Education and Agricultural Business, my schedules*

*and departmental dynamics were at times difficult to manage, and Dr. Frasier helped to simplify and resolve several issues. Additionally, he offered advice and clarity to my professional decisions, and guided me in some of my most important professional life choices and difficult situations. Most importantly, Dr. Frasier became a mentor and friend.” **Shonda Anderson, former student***

*“Dr. Frasier served as my academic advisor and as a committee member for my honors thesis. From our first meeting to my graduation exit interview, Dr. Frasier was a source of sound advice and wise counsel for me. Whether I was choosing academic coursework or evaluating career opportunities, Dr. Frasier challenged me to explore my options and consider the potential outcomes. Always willing to offer a different perspective, Dr. Frasier was an invaluable source of guidance to me throughout my undergraduate career.” **Stacy Loutzenhiser, former CSU student and advisee***

### **Descriptions of Mentoring Activities**

Charged with training tomorrow’s leaders, I firmly believe that the typical student experience at our institution **must** engage students outside of the classroom. Since the day I arrived at CSU in December 1993, I have worked to create opportunities that empower students to become the best citizens and leaders that they can—to help them succeed. To do so, however, students must also be given the chance to fail. My job is to make sure that failure, when it happens, is not fatal to their efforts, but rather forms the hearth upon which future successes are forged.

Successful mentoring requires tremendous effort. Its very nature requires a personal relationship. To successfully service the number of students in an undergraduate program, means must be found to extend the mentor relationship as efficiently as possible. I have found that my key to this success is to exploit formal and informal arrangements that leverage relationships with others. Student organizations and internship programs provide that mechanism.

In 1994 I helped a group of students create the AgriBusiness Association (ABA), our departmental undergraduate organization. There had not been a club in this department for more than a decade before I arrived. The organization is still vibrant today, thirteen years later with an active membership of around 40 students. I served as advisor to this group from its creation until 1998, 2005-2007, and again 2008-2010. Over the years this group has generated numerous participatory activities near and far including National Spring Break Industry Tours, tours of local businesses, employment workshops, and plenty of good times. This club embodies the heart and soul of students interested in agricultural business.

Internships provide an important opportunity for students to receive practical training and to begin to reconcile what they learn in the classroom with what happens in the “real world”. As undergraduate coordinator for the Department, I am the *de facto* coordinator for the internship program. We encourage a very entrepreneurial spirit among our students in developing their own internship experience. I oversee the contracting between the student, the cooperator, and the department to assure that each student is properly prepared for the experience and receives fair academic credit. Through heavy emphasis in departmental advising, most of our students are now graduating with internship experience (approximately 30 per year).

I have had the good fortune to work with a number of high-achieving students at CSU. The University Honors Program provides an opportunity for these students to achieve beyond what they might in a generic undergraduate experience. I have served on a number of Honors committees and have directed four Honors theses to completion (J. Jordan, R.J. Tiedeman, H. Moss, S. Dominick). I was also responsible for developing the Department’s Track II Honors Program which was approved in 2006.

All of the preceding activity provided the basis for what I feel is my single most important accomplishment in mentoring—advising the *Agricultural Adventure* program. Details of the program are provided in the appendix and can also be accessed at <http://www.agriculturaladventure.com>.

In summary this program integrates many elements including classroom learning, outreach, professional development, service learning, school spirit, and event management. It follows few rules of “traditional” student engagement. First offered in 2001, *Ag Adventure* is a student-developed, student-run event that services elementary students in northern Colorado. This year (2013) nearly two thousand third grade students were brought to the University’s Agricultural Research, Development, and Education Center (ARDEC) and sequenced through a series of standards-based Learning Centers that use agriculture to teach toward third grade standards in math, science, and social sciences. Student involvement includes a core planning committee of eight individuals with defined committee responsibilities that meet year-round (7:00 am meetings on Thursday mornings), clubs throughout the College who provide content for the Learning Centers, and all Freshmen Seminar students who are trained and participate in presenting the Learning Centers on the day of the event. ALL participation on the part of CSU students (over 250) is voluntary! Direct faculty involvement is limited to my advisement of the core planning committee, faculty advisors for participating clubs in the College, and Freshman Seminar instructors. The event, designed by our students to heighten awareness of elementary teachers and their teachers and parents about agriculture, more importantly provides an opportunity for our students to develop skills on many levels that can be demonstrated as they enter the job market. In 2007 *Ag Adventure* explored several new ventures in taking a “lite” version of the event to the National Western Stock Show where over 20,000 students from the Denver-metro area will be serviced and a “virtual” *Ag Adventure* to provide web-based support for those who cannot attend and a “cookbook” for other groups who want to create their own *Ag Adventure*. After several years of engagement in these latter two events, the core planning group decided to spin these out as stand-alone activities sponsored by the College of Ag Sciences so that they could remain focused on the ARDEC event. Again, ALL of this is student conceived and student developed. My role is to empower them to do so.

While I can write volumes about what I believe to be the merits of mentoring, it seems to me that the most important result is how it affects the student experience. Some of them speak for themselves:

*“...he pushed students to take ownership of the program and make the most of the experience. As a member of the Ag Adventure committee, I can testify to Dr. Frasier’s passion for fulfilling the mission of a land grant university. His passion for research, education, extension, and service played a vital role in motivating us to develop and implement the Ag Adventure program. I know that Dr. Frasier’s involvement in the program has been an integral part of its continued success.” Stacy Loutzenhiser, former CSU student, 2004-2005 Ag Adventure co-chair*

*“...He has taken a hands off approach that allows us as students to learn and develop leadership in the most effective way. Dr. Frasier has great insight into the needs that go into a production like Ag Adventure and has a strong vision for what we are able to produce. Also, he will only accept the best that we can do once he has that vision. Dr. Frasier is truly an asset in his commitment to learning outside the classroom.” Sara Dutton, former student, 2007 Ag Adventure planning committee*

*“...As advisor of the Agri-business Association, Dr. Frasier seemed to know the right times to give us our reins and when to pull back. He offered his home for social events and meetings and involved his family in our activities. It is my understanding that Dr. Frasier gave new life to ABA when he became the lead advisor and served as advisor for four years. Without his tireless efforts, the ABA may well have perished at Colorado State University. ... Dr Frasier exhibits great care for students. He always makes time for me when I have a burning question or concern. He may not answer the question*

*directly for me, but he provides other questions and considerations that make the problem, and perhaps the solution clearer. ... From a student's perspective, Dr. Frasier is a tremendous asset to the Department of Agricultural and Resource Economics as well as Colorado State University." Megan Bruch, former undergraduate and graduate student in Agricultural and Resource Economics*

*"...Dr. Frasier's commitment to the AgriBusiness Association initiated my connection with Dr. Frasier. ...The first meeting I attended was initially intimidating, but Dr. Frasier made me feel comfortable and was one of the main reasons that I kept coming back. During his time as advisor, Dr. Frasier helped me develop my ability to talk with people and organize events, both of which are invaluable in my current job. He really helped prepare me for the working world. His enthusiasm and caring shine through in everything he does, in every capacity he holds at Colorado State. ... Dr. Frasier was one of the professors I respected the most at Colorado State. While he was not my advisor, his door was always open for me to ask him questions, no matter the subject, and I could always expect an honest, candid answer. Due to his many responsibilities he did not always have the time to talk to me—HE MADE THE TIME! He respected me not only as a student, but also as a person, which anyone can appreciate." Wendy Gerk, former undergraduate student in Agricultural and Resource Economics*

#### **OTHER ACTIVITIES/ACCOMPLISHMENTS – TEACHING/ADVISING**

In 2004 I served as Faculty-in-Residence for CSU's Study Abroad program at Lincoln University near Christchurch, New Zealand. The experience was transformative beyond my wildest imagination—for myself and my students. Twenty-one CSU students participated in the program for the semester-long experience. My role and responsibilities included recruiting students to participate, evaluating applications, pre-trip advising, on-site advising and mentoring, teaching in Lincoln University courses, collaborating with Lincoln faculty and staff to build this and other program opportunities, and follow-up evaluation upon return. Since returning from New Zealand, I have worked hard to promote study abroad opportunities throughout the College and University. I have been invited to formally present an overview of the Lincoln Program to groups of students (numbering from 15 to 150) no fewer than fifty times. No student escapes my courses or advising without having been seriously challenged to consider participating in a study abroad program before graduation. The growth in students that I witnessed first-hand while at Lincoln convinced me that there are few other opportunities that allow students as much development as a well conceived and supported study abroad experience.

*"While in New Zealand, Dr. Frasier encouraged us to learn from and savor the experiences provided by studying in a different culture. If not for his influence, I would likely not have studied overseas. Looking back, I consider it one of the greatest experiences of my college career. After returning to Fort Collins, he has continued to promote the program and recruit other students to study overseas." Stacy Loutzenhiser, Study Abroad participant*

## **COMMITTEES**

### *University*

- University Curriculum Committee, member, 2005-2009; alternate 2001-2005
- Western Center for Integrated Resource Management (IRM)
  - IRM Executive Committee, 2005-present
  - IRM Core Committee, 2000-present
  - IRM Graduate Program development team, 2001-2002
  - IRM Special Assistant Professor search committee, 2000-2001
  - Undergraduate Curriculum Committee, 1999-2000
- Jack Cermak Advising Awards Selection Committee, 2007, 2008, 2013
- CSU "Paint the A" coordinator, 2008-present
- Program Review Team, external faculty member
  - Journalism and Technical Communication, 2018
  - Forest and Rangeland Stewardship, 2016
- Precision Farming Research Group 1996-2003
- Water Outreach Executive Committee, 1999-2000

### *College of Agricultural Sciences*

- Agricultural Adventure at ARDEC, advisor, 2001-2013; 2016-present
- Alpha Gamma Rho, Rho Chapter academic advisor, 2013-present
- Academic Affairs Committee, 1999-2015;2018-present; chair 2001-2003.
- CAS Scholarship Committee, 2016-present.
- CAS Study Abroad Programming, 2004-present.
- CAS Experiential Learning Committee, member and chair, 2017-present.
- Northeastern Junior College Recruiting/Advising, 2000-2015;2018-present.
- Computer Coordinating Committee 1996-present
- Departmental and College Commencement Marshal (repeatedly since 1997)
- Search committees:
  - Beef Systems faculty (Beckett), Department of Animal Science, 2015-2016
  - Meat Science faculty (Delmore), Department of Animal Science, 2012-2013
  - Instructional Technology Coordinator (May), College of Agricultural Sciences, 2012-2013
  - Vice Provost/Dean College Ag Sciences (Johnson), 2002-2003.
- Colorado FFA, State Farm Management CDE chair, 2006-2009;2018
- Colorado FFA, State Sales Competition co-chair, 1999-2005.
- Ag Council advisor, 1999-2001, 2008-2009. 2015-2017
- Committee for Enhancement of Resident Instruction, 2001
- Committee for Enhancement of Applied Research and Outreach, 2001
- CACTA, 2000-2001, 2006, 2011, 2012, 2017, 2018
- Statewide Articulation Agreement Committee: Agricultural Business, 2012
- Undergraduate Task Force 1997-1998
- Teaching Improvement and Evaluation Committee, 1998
- Inservice training for county extension personnel, 1997
- Graduate Discovery Internship program mentor, 1997
- Computer Support Search Committee, 1995

### *Department of Agricultural and Resource Economics (DARE)*

- Undergraduate Coordinator, 2001-present
- Executive Committee, 2002-2004; 2006-present.
- DARE Program Review: Undergraduate Program lead writer and presenter, 2012

## DARE faculty search committees:

- Department Head (Chouinard), 2015-2016
- Energy Economics (Burkhardt), 2015-2016
- Ag Finance (Bonanno), 2014-2015, chair
- Natural Resource Economics, 2012-2013
- Agricultural Economics, chair, 2006-2007
- Water Resource Economics, 2006-2007
- Agricultural Business, 2005-2006
- Natural Resource Economics, 2000-2001
- Agricultural Marketing, 1997

## DARE staff search committees:

- Academic Support Coordinator (Calderwood), 2012
- Director of Undergraduate Programs, (Moyer) 2010, (Poet) 2012, (Hartmann) 2016

## Faculty mentoring committees

- D. Mooney, 2017-present, chair
- M. Martin, 2013-present
- A. Bonanno, 2016-2017
- J. Hadrich, 2012-2016, chair

## DARE Hall of Fame Committee, 2017-present

Undergraduate Curriculum Committee, 1996-present; chair 2000-2006, 2009-present.

## Technology/Web Committee, 2003-2011.

Natural Resources PhD Field Exam committee (winter and summer, 1995-2008; 2015-2016)

PhD Preliminary Exam committee (winter and summer 2003-2005)

Strategic Planning Committee, Undergraduate Program rep., 2004-2006

Computer Committee, chair, 1994-2003

Extension Planning Committee, 2002-2003

E.10.7 Tenure Review Committee, 2003

Graduate Committee, 1998-2002

Computer budget software (PAL) development team, 1997-2000

Agribusiness Association (ABA) Advisor, 1994-1998; 2005-2007; 2008-2010; 2013-present

ABA Industry Tour sponsor, Spring Break 1995, 1998, 2010

DARE/Animal Science dual major development subcommittee, 1996-1998

DARE Outreach proposal team, 1997-1998

### **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

American Agricultural Economics Association (AAEA), member, 1989-present

Teaching, Learning, & Communications (TLC) nominations committee, 2013

Teaching, Learning, & Communications (TLC) co-chair nominee, 2007

Selected Papers review committee, 2005,2006

Western Agricultural Economics Association (WAEA), member, 1989-present

WAEA Teaching Awards Committee, member 2013, 2016, 2017; chair, 2013, 2016

WAEA Council, member, 1997-1999

WAEA Thesis Award Committee, 1995

WERA72, member 2013-present; secretary 2014; v. president 2015; president & host, 2016

Gamma Sigma Delta, member, 1982-present

CSU Chapter membership committee, chair 1998-2003

National Agricultural College Teacher's Association (NACTA), member

Alpha Zeta, Honor Society

Phi Kappa Phi, Honor Society

W-190/W-178/WRCC-90 Regional Project -- Water Conservation, Competition, and Quality in Western Irrigated Agriculture, 1994-2006; secretary 2000, vice chair, 2001, chair 2002

Reviewer: *American Journal of Agricultural Economics, Review of Agricultural Economics, Canadian Journal of Agricultural Economics, Water Resources Research, Water Resources Bulletin, and Journal of Agricultural and Resource Economics, Journal of American Water Resources Association.*

#### **OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH**

Sino-US Faculty Exchange, Beijing, China, March 2012.

Technical Expert for Colorado Attorney General's Water Rights Division, Case No. 2005CW125, July 2007

Technical Expert Testimony. Hearings of the Colorado House Agriculture Committee on potential impacts of HB 03-1113. Denver, CO February 5, 2003

Great Plains System Research Unit (USDA-ARS) Liaison Committee, 1994-2000

Colorado Water Resources Research Institute Agricultural Water Conservation Task Force, 1994-1996