

Activities since 2004 related to Graduate Studies

Jeffrey D. Mullen

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I. Academic History

Present Rank: Associate Professor

Education:

Ph.D., Virginia Polytechnic Institute & State University, Department of Agricultural and Applied Economics, Blacksburg, VA, 1999.

B.S., Northwestern University, Department of Economics, Evanston, IL, 1988.

Academic Positions:

Associate Professor, Department of Agricultural and Applied Economics, The University of Georgia, Athens, GA, 2008 - present.

Assistant Professor, Department of Agricultural and Applied Economics, The University of Georgia, Athens, GA, July, 2000 – 2008.

Other Professional Positions:

Consultant, Battelle, Columbus, OH, 2009 to present.

Consultant, City of Mountain Park, GA, 2006 to present.

Water Resources Specialist, U.S. Army Corps of Engineers, Alexandria, VA, 1999-2000.

Consultant, United States Department of Agriculture, Bi-National Agricultural Research Development (BARD) Fund, Washington, DC, 1999.

Program Assistant, Institute for Transportation and Development Policy, Washington, DC, 1991-1992.

United States Peace Corps Volunteer, Tikobo I, Ghana, 1988 – 1990.

II. Resident Instruction

Course Responsibilities

Graduate Courses Taught

AAEC 6210, Production Economics: Theory with Applications

A mathematically rigorous course in neoclassical production economics. Properties of production functions and issues related to their estimation are covered, along with constrained optimization techniques. Dynamic considerations and production under uncertainty are also addressed.

AAEC 6610, Quantitative Techniques in Agricultural Economics

A Master's level course in applied econometrics with an emphasis on understanding the derivation of parameter estimates and their statistical properties. Topics in multiple regression analysis, systems of equations, limited dependent variables, and hypothesis testing are covered. Using scalar and matrix algebra, problem sets involve writing, problem solving, and model estimation with SAS.

AAEC 6610L, Quantitative Techniques in Agricultural Economics Lab

A computer lab for applied econometrics that accompanies AAEC 6610. Topics in multiple regression analysis, systems of equations, and hypothesis testing are covered. Students are introduced to computer programming using SAS IML and Base SAS. Emphasis is placed on data management, data manipulation, model estimation, demonstration of fundamental statistical concepts, and the implication of violations of the Classical Linear Regression Model on the statistical properties of parameter estimates.

AAEC 6630 and 6630E, Quantitative Tools for Business Decisions

A course in quantitative tools for business decisions focused on the following topics: Statistical Tests, Regression, Linear Programming, Non-Linear Programming, Integer Programming, Forecasting, and Risk Modeling. These tools are introduced in lecture and then put to practical use in the computer lab using SAS and Excel.

ENVM 6800, Water Resource Economics

This course addresses fundamental issues related to water and the economic concepts and tools relevant to its allocation and use. Graduate students study complex models of urban water use, forecasting methods, industrial and agricultural water demand, and economic approaches to water quality issues. Water rights, international trade agreements, and water pricing are also covered in depth. Innovative teaching techniques include a series of interactive games illustrating the meaning of the Coase theorem and the power and limitations of market solutions, the efficiency properties of various auction institutions, and the design of nutrient trading programs. A series of homework assignments emphasize writing and data collection, analysis and presentation, culminating in a term paper. Graduate students from other departments

including Forestry, Ecology, and Environmental Design consistently enroll in this course.

ENVM 8750, Natural Resource and Environmental Economics

A Ph.D. course focused on the economics of renewable and non-renewable resources and the environment. Major topics include non-market valuation techniques, dynamic optimization, tradable pollution credits, fisheries, forests, and water.

Undergraduate Courses Taught

AAEC 2060, Economic Perspectives on the Environment and Natural Resources

An exploration of the relationships between a healthy environment and a healthy economy. Students gain conceptual insight, problem-solving skills, and general knowledge needed to better understand and solve environmental and natural resource issues and problems from an economic perspective that recognizes important linkages between economic, environmental, and ethical systems. Weekly homework assignments focus on current events at the local, state, national and international levels. Term projects entail group research and presentations of position papers in an interactive debate forum.

ENVM 3060, Principles of Resource Economics

Forests, farmland, fisheries, water, energy security and more. Students learn key concepts and policies related to renewable and depletable natural resources. The core of the class is inter-temporal analysis. Written and problem solving assignments reinforce readings and lectures, with a focus on current events and the long-run implications of today's policy decisions. The identification of stakeholder groups is stressed and the rhetorical aspects of their positions are discussed. A term paper and oral presentation are required. Weekly homework assignments focus on current events at the local, state, national and international levels.

AAEC 4210, Production Economics: Theory with Applications

A mathematical, graphical and verbal examination of production economics through market equilibrium, this course provides students a thorough understanding of the neoclassical microeconomic theory of production under static certainty. Students develop skills for applying economic theory to various managerial and policy problems and gain an understanding of the implications of bringing time and uncertainty into economic decision making.

ENVM 4800, Water Resource Economics

In the context of water undergraduate students learn demand forecasting, how to incorporate uncertainty into economic analyses, the effects of externalities on social welfare, and alternative property rights regimes. Water quality and quantity issues are addressed. International trade agreements and water pricing are also covered in

depth. Students participate in market games demonstrating the social costs of externalities and when markets can and cannot overcome them. A series of homework assignments emphasize writing and data collection, analysis and presentation, culminating in a comparative analysis of water supply, water demand, and water institutions across three states. Undergraduate students from other departments including Economics, Forestry, Ecology, and Environmental Design consistently enroll in this course.

ENVM 4990, Energy Economics

This is an introductory course in energy economics. Topics include time preferences, renewable and non-renewable resource extraction models, externalities, impediments to alternative energy adoption, life-cycle analysis, greenhouse gas emissions, electricity markets, and more. The course includes a research project focused on energy, economics and sustainability. Students from all disciplines are welcome.

III. Scholarly Activities

Publications

Peer-Reviewed Journal Articles (* indicates a student under my direction)

*Huang, Yu-Kai, *Ranjit Bawa, Jeffrey D. Mullen, Nahal Hoghooghi, Latif Kalin, Puneet Dwivedi. (2022) “Designing Watersheds for Integrated Development (DWID): A stochastic dynamic optimization approach for understanding expected land use changes to meet potential water quality regulations,” *Agricultural Water Management*, Volume 271, <https://doi.org/10.1016/j.agwat.2022.107799>.

Mullen, Jeffrey D. and Luren Dong*. (2022) “Effects of state and federal policy on renewable electricity generation capacity in the United States,” *Energy Economics*, Volume 105, <https://doi.org/10.1016/j.eneco.2021.105764>.

Brown, Marilyn A., Puneet Dwivedi, Sudhagar Mani, Daniel Matisoff, Jacqueline E. Mohan, **Jeffrey Mullen**, Michael Oxman, Michael Rodgers, Richard Simmons, Blair Beasley, Lalith Polepeddi. (2021) “A framework for localizing global climate solutions and their carbon reduction potential,” *Proceedings of the National Academy of Sciences* Aug 2021, 118 (31) e2100008118; DOI: 10.1073/pnas.2100008118

Brown, Marilyn A., Blair Beasley, Fikret Atalay, Kim M. Cobb, Puneet Dwivedi, Jeffrey Hubbs, David M. Iwaniec, Sudhagar Mani, Daniel Matisoff, Jacqueline E. Mohan, **Jeffrey Mullen**, Michael Oxman, Daniel Rochberg, Michael Rodgers, Marshall Shepherd, Richard Simmons, Laura Taylor, L. Beril Toktay. (2021) “Translating a Global Emission-Reduction Framework for Subnational Climate Action: A Case Study from the State of Georgia,” *Environmental Management*. <https://doi.org/10.1007/s00267-020-01406-1>

Mullen, J.D. (2019). "Agricultural Water Policy During Drought: A Strategy for Including Groundwater Permits in Future Irrigation Buyout Auctions in the Flint River Basin," *Water*, 11, 151.

Lezzaik*, K., A. Milewski, and **J.D. Mullen** (2018). "The groundwater risk index: Development and application in the Middle East and North Africa region," *Science of the Total Environment*, Vol. 628–629:1149–1164.

Mullen, J.D., *K. Calhoun, and G. Colson (2017). "Preferences for Policy Attributes and Willingness to Pay for Water Quality Improvements Under Uncertainty," *Water Resources Research*, Vol. 53(4):2627-2642.

Atreya, A., W. Kriesel, and **J.D. Mullen** (2016). "Valuing Open Space in a Marshland Environment: Development Alternatives for Coastal Georgia." *Journal of Agricultural and Applied Economics*, 48 (4): 383-402. 2016.

Chen, T., M. Liu, Y. Takahashi, **J.D. Mullen**, and G.W.C. Ames (2015). "Carbon emission reduction and cost-benefit of methane digester systems on hog farms in China," *Journal of Environmental Planning and Management*, DOI: 10.1080/09640568.2015.1050484.

Ramirez, O.A., **J.D. Mullen**, and A.J. Collart (2014). "Insights into the Appropriate Level of Disaggregation for Efficient Time Series Model Forecasting." *Journal of Applied Statistics*, 41(10):2298-2311.

Mullen, J.D., M. Lamsal, and G. Colson, "Green Roof Adoption in Atlanta: The Effects of Building Characteristics and Subsidies on Net Private, Public, and Social Benefits." *Environmental Science and Technology*, 47:10824-10831(2013).

*Ngugi, D., K. Annan, **J.D. Mullen**, and J. Bergstrom, "Forecasting Land Use: An Application of Four Models," *International Journal of Arts and Sciences*, 6(1):637–649 (2013).

*Ngugi, D., **J.D. Mullen**, and J. Bergstrom, "Land Use Change and the Economic Value of Water Quality," *International Journal of Business and Management Studies*, 2(1):23–39 (2013)

*Cai, R., **J.D. Mullen**, M.E. Wetzstein, J.C. Bergstrom, "Using a Climate Index to Measure Crop Yield Response," *Journal of Agricultural and Applied Economics*, 45(4):719-737 (2013).

*Cai, R., **J.D. Mullen**, M.E. Wetzstein, J.C. Bergstrom, "The Impacts of Crop Yield and Price Volatility on Producers' Cropping Patterns: A Dynamic Optimal Crop Rotation Model," *Agricultural Systems*, 116, (March 2013): 52-59.

Mullen, J.D., U. Bekchanov, B. Karali, D. Kissel, M. Risse, and K. Rowles. "Assessing the Market for Poultry Litter in Georgia: Are Subsidies Needed to Protect Water Quality?" *Journal of Agricultural and Applied Economics*, 43(4), (November 2011): 553–568.

*Sande, D., **J.D. Mullen**, M.E. Wetzstein, and J.E. Houston, "Environmental Benefits from Reduced Pesticide Use: A Case Study of Soil Fumigant in Florida Tomato Production." *International Journal of Environmental Research and Public Health*, 8(12), (December 2011): 4649-4661.

Mullen, J.D., Y. Yu, G. Hoogenboom, “Estimating the demand for irrigation water in a humid climate: A case study from the southeastern United States,” *Agricultural Water Management*, 96(10) (October 2009): 1421-1428.

Nickols, S.Y., **J.D. Mullen**, and L. Moshi “An Emerging Partnership for Addressing Chronic Conditions in the Ukerewe District, Tanzania” *Kappa Omicron Nu Forum on International Issues*, 18(1), (Spring 2009).

Centner, T.J., M.E. Wetzstein, and **J.D. Mullen**, “Small Livestock Producers with Diffuse Water Pollutants: Adopting a Disincentive for Unacceptable Manure Application Practices,” *Desalination*, 226, (2008): 66-71.

Centner, T.J., C.L.P. Fowler, L.M.Risse, M.E. Wetzstein, and **J.D. Mullen**, “Implementing Environmental Management Systems to Protect Water Quality from Animal Waste Nutrients,” *Environmental Research Journal* 1(2007): 333-344.

Mullen, J.D., J. Beckhusen, and K.C. Spurgeon, “A Hedonic Study of the Value of Irrigation Water in Georgia,” *Southwestern Journal of Economics*, 8(2), (January 2006): 135-142.

*Gonzalez-Alvarez, Y., A.G. Keeler, **J.D. Mullen**, “Farm Level Irrigation and the Marginal Cost of Water Use: Evidence from Georgia,” *Journal of Environmental Management*, Vol. 80(4), (September 2006): 311-317.

Mullen, J.D., C. Escalante, G. Hoogenboom, and Y. Yu, “Determinants of Irrigation Farmers’ Crop Choice and Acreage Allocation Decisions: Opportunities for Extension Service Delivery,” *Journal of Extension*, (October 2005).

Lawrence, T.M., **J.D. Mullen**, D.S. Noonan, and J. Enck, “Decision Factors Concerning Installation of Higher Efficiency Energy Consuming Equipment in Buildings,” *ASHRAE Journal*, (September 2005): S40-S46.

Mullen, J.D. and T.J. Centner, “Impacts of Adjusting Environmental Regulations with Diffuse Enforcement Authority: Confined Animal Feeding Operations and Environmental Quality,” *Review of Agricultural Economics*, 26 (2), (June 2004): 209-219.

Mullen, J.D., D.B. Taylor, M. Fofana, and D. Kebe, “A bio-economic model of long-run *Striga* control with an application to subsistence farming in Mali,” *International Journal of Pest Management*, 49(3), July-September, 2003, pp. 251-264.

Mullen, J.D., D.B. Taylor, M. Fofana, and D. Kebe, “Integrating Long-Run Biological and Economic Considerations into *Striga* Management Programs,” *Agricultural Systems*, May 2003, Vol. 76, Issue 2, pp. 787-795.

Mullen, J.D., G.W. Norton, and D.W. Reaves, “Economic Analysis of Environmental Benefits of Integrated Pest Management,” *Journal of Agricultural and Applied Economics*, Vol. 29 (2), Dec. 1997, pp. 243-253.

Peer-Reviewed Proceedings (* indicates a student under my direction)

Mullen, J.D., “State-wide Water Planning: The Georgia Experience,” *Journal of Agricultural and Applied Economics*, 43(3), (August 2011): 357–366.

*Lin, S., **J.D. Mullen**, and G. Hoogenboom, "Effects of Water Policy and Private Insurance Contracts on Supplemental Irrigation Management under Different Climate Scenarios," *Journal of Agricultural and Applied Economics*, 40 (2), (August 2008).

Centner, T.J., **J.D. Mullen**, and M.E. Wetzstein, "An Incentive for Adopting Best Management Practices for the Application of Manure to Land," *Proceedings of the 2007 Georgia Water Resources Conference*, Athens, GA, (March 2007): 451-454.

Center, T.J., M. Wetzstein, and **J.D. Mullen**, "Small livestock producers with diffuse water pollutants: Adopting a disincentive for unacceptable manure application practices," *Proceedings of the International Water Association Specialized Conference on Diffuse Pollution and Sustainable Basin Management*, Istanbul, Turkey, (September 2006).

*Spurgeon, Kyle C. and **J.D. Mullen**, "Estimating the Value of Irrigation Water in Georgia: A Hedonic Study," *Proceedings of the 2005 Georgia Water Resources Conference* Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia, (April 2005), <http://www.gwri.gatech.edu/conferences/previous-gwrc-conferences/gwrc-2005/>.

*Beckhusen, Julia, Joseph B. Goodenbery, Gerrit Hoogenboom, and **J.D. Mullen**, "Effects of Hurricanes Frances, Ivan and Jeanne on Georgia Irrigators," *Proceedings of the 2005 Georgia Water Resources Conference* Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia, (April 2005), <http://www.gwri.gatech.edu/conferences/previous-gwrc-conferences/gwrc-2005/>.

*Yu, Yingzhuo, **J.D. Mullen**, and Gerrit Hoogenboom, "Irrigation Management Strategies in Georgia," *Proceedings of the 2005 Georgia Water Resources Conference* Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia, Athens, Georgia, (April 2005), <http://www.gwri.gatech.edu/conferences/previous-gwrc-conferences/gwrc-2005/>.

Centner, Terence J., and **J.D. Mullen**, "Regulatory Responses to Potential Pollutants from Animal Feeding Operations: Opting Out of Costly Permitting Regulations," *Journal of Agricultural and Applied Economics*, 36 (2), (August 2004): 287-295.

Centner, Terence J. and **J.D. Mullen**, "Regulating the Disposal of Animal Manure to Safeguard Water Supplies," *Proceedings of the International Conference on Water Security for Future Generations*, Changchun, China, (July 2004): 43-44.

Published Book Reviews

Mullen, Jeffrey D., "Book Review: Economics and Ecological Risk Assessment: Applications to Watershed Management," *American Journal of Agricultural Economics*, 89 (1), (February 2007): 222-223.

Mullen, Jeffrey D., "Book Review: Multiple Criteria Analysis for Agricultural Decisions," *Agricultural Systems*, 82(1), (October 2004): 96-97.

Mullen, Jeffrey D., "Book Review: Pricing Irrigation Water: Principles and Cases from Developing Countries," *Journal of Agribusiness*, 22 (2), (Fall 2004).

Other Professional Publications

Hook, J., G. Hoogenboom, J., Paz, J.D. Mullen, J.B. Bergstrom, M. Risse, "Agricultural Irrigation Water Demand for Georgia's Major And Minor Crops 2011 Through 2050," available at <http://www.nespal.org/sirp/waterinfo/State/awd/agwaterdemand.htm>

Centner, T.J., C.L.P. Fowler, L.M. Risse, M.E. Wetzstein and J.D. Mullen, "Implementing Environmental Management Systems to Protect Water Quality from Animal Waste Nutrients," in *New Trends in Environmental Research* (Nova Science Publishers, Inc., 2009), chapter 9.

Kriesel, Warren, and Jeffrey D. Mullen, *Hedonic Price Analysis of Brownfield Redevelopment: Phase One Paulsen Street Substation, Savannah, Georgia*, Report submitted to Georgia Environmental Protection Division, (February 2006): 14 pages.

Lawrence, Thomas M., Jeffrey D. Mullen, Douglas S. Noonan, and Jay Enck, "Moving Beyond the First Cost Mentality," *Solar Today*, (Nov./Dec., 2005): 34-37.

Phillips, Willard S., John C. Bergstrom, Jeffrey H. Dorfman, and Jeffrey D. Mullen, *Analysis of Pilot Study Data for the Georgia Department of Natural Resources Coastal Resources Division in Relation to the Georgia Blue Crab Fishery*, (August 2004): 45 pages.

Convention Papers and Workshops (* indicates student under my direction)

Mullen, J.D., and *N. Chen, "Predicting Irrigation Water Use in Georgia with Crop Growth Simulation Models and Regression Analysis: A Comparative Analysis," Presented at Georgia Water Resources Conference, Athens, GA, April 19-20, 2017.

Mullen, J.D., and *A. Bose, "Economic and Water Use Effects of Alabama's Irrigation Equipment Tax Credit," University of Florida Water Institute Symposium, Gainesville, FL, February 16-17, 2016.

*Calhoun, K., J.D. Mullen, and G. Colson (2015). "Effects of Uncertainty on Support for Water Quality Improvement Programs," American Agricultural Economics Association Annual Meeting, San Francisco, CA, July 2015.

*Bose, A., J.D. Mullen, G. Colson, M. Magnan, and W. Kriesel (2015). "Economic and Environmental Impacts of Expanding Irrigation in the Southeast," American Agricultural Economics Association Annual Meeting, San Francisco, CA, July 2015.

*Froestschel, E., L. Kramer, J.D. Mullen, and S. Ferreira (2015). "Can Pesticide Use be Reduced by Managing Landscape Complexity?" 2015 EPA International Youth Environmental Conference, Atlanta, GA, 2015.

*Bonney, S.N., C.K. Jensen, J.D. Mullen, J. Dowd, C.S. Bartenstein, and K.A. Robinson, "The use of a stream-aquifer model (SAM2) and an endangered mussel damage function in order to recommend ground water valuation and policy changes for future Irrigation Reduction Auctions

in the Lower Flint River Basin, Georgia, United States,” American Water Resources Association Summer Specialty Conference on Environmental Flows, June 2013, Hartford, CT.

*Liao, H.Y. and J.D. Mullen, “Application of Fuzzy Synthetic Evaluation to Water Demand Forecasting,” Southern Agricultural Economics Association Annual Meeting, February 2013, Orlando, FL.

Borisova, T. and J.D. Mullen, “Water Resources: Any Hope Left?” Southern Agricultural Economics Association Annual Meeting, February 2013, Orlando, FL.

*Nielsen, B.L., J.D. Mullen, J. Dowd, and W. Wright, “Agricultural Groundwater Policy during Drought: A Spatially Differentiated Approach for the Flint River Basin,” American Agricultural Economics Association Annual Meeting, August, 2012, Seattle, WA.

Mullen, J.D., J.E. Houston, G. Colson, M. Lacy, O. Coulibaly, K. Sissoko, B. Tamboura, and A. Kanoute. “A Workshop on Food Security and Small-Enterprise Poultry Development in Mali.” Attended by more than 40 participants from the public sector, private sector, and NGO community in Mali. Bamako, Mali, June 2011.

*Cai, R., J.C. Bergstrom, J.D. Mullen, M. Wetzstein. “Assessing the Effects of Climate Change on Farm Production and Profitability: Dynamic Simulation Approach.” American Agricultural Economics Association Annual Meeting, Pittsburgh, PA, July 2011.

*Simpson, T., J. Drupple, M. Watson, B. Benson, J.D. Mullen. “Comparing Ecological Sensitivity with Stream Flow Rates in the Apalachicola-Chattahoochee-Flint River Basin.” American Agricultural Economics Association Annual Meeting, Pittsburgh, PA, July 2011.

Mullen, J.D., and J. Drupple. “Valuing Weather Information Networks: Changes in Frost Damage and Mitigation Costs from Diminished Resolution.” Paper presented at Western Agricultural Economics Association Annual Meeting, Banf, Canada, June 2011.

Mullen, J.D., M. Al Hassan, and G. Hoogenboom. “Valuing Weather Information in Irrigated Agriculture.” Georgia Water Resources Conference, Athens, GA, April 2011.

*Cai, R., J.C. Bergstrom, J.D. Mullen, D. Shurley, M.E. Wetzstein. “How Do Precipitation and Irrigated Ratio Interactively Impact Corn Yield?” Georgia Water Resources Conference, Athens, GA, April 2011.

*Cai, R., J.C. Bergstrom, J.D. Mullen, D. Shurley, M.E. Wetzstein. “How Do Precipitation and Irrigated Ratio Interactively Impact Corn Yield?” Georgia Water Resources Conference, Athens, GA, April 2011.

Mullen, J.D. “Irrigation, Climate Change, and Water Quality.” American Water Summit, Atlanta, GA, 2011.

Mullen, J.D., “Statewide Water Planning: The Georgia Experience.” Paper presented at Southern Agricultural Economics Association Annual Meeting, Corpus Christi, Texas, February 2011.

*Lin, S., and J.D. Mullen, “Dynamic Optimization of Area Revenue Insurance and Consumption Smoothing.” Paper presented at the Agricultural & Applied Economics Association 2010 AAEA, CAES, & WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010.

*Sande, D., J.D. Mullen, and A. Matokole, “Environmental Benefits from Reduced Pesticide Use and Returns to Research: An Application to the U.S. Cotton Industry”, Paper presented at

Southern Agricultural Economics Association Annual Meeting, Orlando, Florida, February 6-9, 2010.

*Cai, R., J.D. Mullen, and J. Bergstrom, "Irrigated Acreage Projections in Georgia." Paper presented at Southern Agricultural Economics Association Annual Meeting, Orlando, Florida, February 6-9, 2010.

Mullen, J.D., and J. Drupple, "Valuing Weather Information Networks: Changes in Frost Damage and Mitigation Costs from Diminished Resolution." Paper presented at Center for Natural Resource and Environmental Policy Annual Meeting, New Orleans, LA, May, 2010.

*Al Hassan, M., J.D. Mullen, and G. Hoogenboom, "Valuation of Weather Information Networks," Poster prepared for presentation at the Agricultural & Applied Economics Association 2010 AAEA, CAES, & WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010.

Risse, L.M., J. D. Mullen, D. E. Kissel, K. L. Rowles, and S.E. Collier, "Assessing the Markets for Poultry Litter in Georgia: Are Subsidies Needed to Protect Water Quality?" Poster presented at the National Animal and Poultry Waste Management Symposium, Greensboro, North Carolina, September 26-28, 2010.

*Keiser, D., J.D. Mullen, J.B. Bergstrom, "Examining the Effects of Ecological and Political Boundaries on the Potential for Water Quality Trading: Lessons from a Southeastern Trading Framework," AAEA Milwaukee, WI 2009.

*Lin, S., J.D. Mullen, G. Hoogenboom, "Spatial and Temporal On-farm Risk Management—Crop Production Scheduling and Index Insurance Strategies," AAEA Milwaukee, WI 2009.

Kriesel, W., J.D. Mullen, "Alternative Housing Development Strategies in Georgia's Coastal Marshlands," AAEA Milwaukee, WI 2009.

*Sande, D., N. Kilungu, and J.D. Mullen, "Amenity Benefits and Public Policy: An Application to the Georgia Pecan Industry," SAEA Atlanta, GA 2009.

Vellidis, G., S. Crow, J.D. Mullen, P. Murphy, R. Lowrance, and D. Bosch, "A multi-criteria decision model for assessing conservation practice adoption," Joint International Agricultural Conference, Wageningen, The Netherlands, 2009.

Rowles, K., J.D. Mullen, and M. Risse, "Moving Poultry Litter: A Multidisciplinary Approach to Water Quality Incentive Design," USDA-CSREES National Water Conference, St. Louis, MO, 2009.

Mullen, J.D., "Managing Nutrient Loads from Poultry Litter in Vulnerable Watersheds," Georgia Water Resources Conference, Athens, GA, 2009.

Hook, J. E., G. Hoogenboom, J. Paz, M. Risse, J. Bergstrom, and J.D. Mullen, "Assessing Agricultural Groundwater Needs for the Future: Identifying Irrigated Area and Sources," Georgia Water Resources Conference, Athens, GA, 2009.

*Smith, Hillary, Jeffrey D. Mullen, and David Gattie, "Using Storm Water Management Bioretention Cells as Economic and Engineering Education Tools," USDA-CSREES National Water Conference, Reno, NV, February 3-5, 2008.

Kriesel, Warren, and Jeffrey D. Mullen, "Economics of Development Alternatives for Residential Subdivisions in Coastal Marshlands: The Case of Savannah, Georgia," North American Regional Science Association Annual Meeting, Savannah, GA, February 2008.

Mullen, Jeffrey D. Shanshan Lin, and Gerrit Hoogenboom, "Effects of Public Policy and Private Insurance on Supplemental Irrigation in a Humid Climate," SERA-30 Southern Natural Resource Economics Committee Annual Meeting, Washington, DC, May 22-23, 2008.

*Ngugi, Daniel, Jeffrey D. Mullen, and John Bergstrom, "Land Use Change American Agricultural Economics Association Annual Meeting, Orlando, FL, July 27-29, 2008. (Note: this paper was accepted for presentation but dropped from the agenda due to clerical error. Evidence of acceptance is available.)

Kriesel, Warren, and Jeffrey Mullen, "Economics of Alternative Marshland Development Options," Paper presented at NOAA conference, Coastal Zone '07, Portland OR, July, 2007.

Mullen, Jeffrey D., Terrence Centner, and Michael Wetzstein, "Environmental Mechanism Designs in a New Order of Regulatory Capitalism," American Agricultural Economics Association, Portland, OR, July 2007.

*Hill, Elizabeth, Samuel Pugh, and Jeffrey D. Mullen, "Use of the Hedonic Method to Estimate Lake Sedimentation Impacts on Property Values in Mountain Park and Roswell, GA," American Agricultural Economics Association, Portland, OR, July 2007.

*Lin, Shanshan, Jeffrey D. Mullen, and Gerrit Hoogenboom, "Potential Impact of Weather Derivatives on Irrigation Management in Georgia," 2nd National Forum on Socioeconomic Research in Coastal Systems, New Orleans, LA, May 2007.

*Beckhusen, Julia, Jeffrey D. Mullen, and Gerrit Hoogenboom, "U.S. Trends in Irrigation: 1984-2003," USDA-CSREES National Water Conference Research, Extension and Education for Water Quality and Quantity, Savannah, GA, January 28-February 1, 2007.

*Lin, Shanshan, Jeffrey D. Mullen, and Gerrit Hoogenboom, "Influence of Risk Aversion on Optimal Irrigation Management Strategies," USDA-CSREES National Water Conference Research, Extension and Education for Water Quality and Quantity, Savannah, GA, January 28-February 1, 2007.

*Beckhusen, Julia, and Jeffrey D. Mullen "A Modern Application of Hedonics for Valuing Irrigation," American Agricultural Economics Association, Long Beach, CA, July 2006.

Diaz, Horacio Savaria, Jack E. Houston, Jeffrey D. Mullen, and Forrest Steglin, "A Non-Market Valuation of an Ultra-Filtration System for Recycling Poultry Processing Chiller Water," USDA/CREES National Water Conference, San Antonio, TX, February 2006.

*Yu, Yingzhuo, Jeffrey D. Mullen, and Gerrit Hoogenboom, "Effect of Water Price on the Multicrop Production Decision: Applying Fixed Allocatable Input Model in Georgia," Southern Agricultural Economics Association Annual Meeting, Orlando, FL, February 2006.

*Spurgeon, Kyle C. and Jeffrey D. Mullen, "Estimating the Value of Irrigation Water in Georgia: A Hedonic Study," Georgia Water Resources Conference, Athens, GA, April 2005.

*Beckhusen, Julia, Joseph B. Goodenbery, Gerrit Hoogenboom, and Jeffrey D. Mullen, "Effects of Hurricanes Frances, Ivan and Jeanne on Georgia Irrigators," Georgia Water Resources Conference, Athens, GA, April 2005.

*Yu, Yingzhuo, Jeffrey D. Mullen, and Gerrit Hoogenboom, "Irrigation Management Strategies in Georgia," Georgia Water Resources Conference, Athens, GA, April 2005.

Center, Terence J., and Jeffrey D. Mullen, "Regulatory Responses to Potential Pollutants from Animal Feeding Operations: Opting Out of Costly Permitting Regulations," Southern Agricultural Economics Association Annual Meeting, Tulsa, OK, February 2004.

Centner, Terence J. and Jeffrey D. Mullen, "Regulating the Disposal of Animal Manure to Safeguard Water Supplies," International Conference on Water Security for Future Generations, Changchun, China, July 2004.

IV. Service

Journal Reviewer

Agricultural and Resource Economics Review
Agricultural Systems
Canadian Water Resources Journal
Climate Research
Ecological Engineering
Ecosystem Services
Environmental Policy
International Journal of Pest Management
International Journal of Public Policy
Journal of Agribusiness
Journal of Agricultural and Applied Economics
Journal of Agricultural and Resource Economics
Journal of American Water Resources Association
Journal of Regional Analysis and Policy
Land Economics
Resource Modeling
Review of Agricultural Economics
Waste Management
Water Resource and Management
Water Resources Research

Service to Professional Associations

American Agricultural Economics Association Annual Meeting
Topic Leader
Selected Paper Reviewer

Southern Agricultural Economics Association Annual Meeting
Selected Paper Reviewer

SERA-30 Southern Natural Resource Economics Committee
President
Vice President
Annual Meeting Chair

Georgia State Water Plan
Agricultural Water Use Forecast Leader for Economics

Georgia Water Resources Conference
Selected Paper Reviewer

Georgia Weather Network Advisory Committee Member

Bio-Energy Education Taskforce Member (UGA, CAES)

Louisiana Board of Regents' Research Competitiveness Subprogram
External Reviewer

JP Campbell Advisory Committee Member (UGA, CAES)

Expert Panel Member for publication, *Charging for Water Use in Canada: A Workbook of the Central Principles, Key Questions, and Initial Steps*

Graduate Committee Chair (AAEC)

Graduate Curriculum Committee Chair (UGA, CAES)

Computer Committee Chair (UGA, AAEC)

Graduate Program Committee (UGA, AAEC)

Econometrics Ph.D. Qualifying Examine Committee (UGA, AAEC)

Microeconomics Ph.D. Qualifying Exam Committee (UGA, AAEC)

V. External Funding Awards

2020 Georgia Department of Natural Resources
Forecasting Irrigation Water Demand to 2050
PI, Grant Total: \$25,000 over 9 months; AAEC: \$25,000

2016 Georgia Department of Natural Resources
Forecasting Irrigation Water Demand to 2050
PI, Grant Total: \$25,000 over 9 months; AAEC: \$25,000

2011 United States Department of Agriculture, National Institute of Food and Agriculture
Impacts of On-Site Wastewater Treatment Systems on Water Quality and Quantity in
Urbanizing Watersheds
Co-PI, Total: \$653,000 over 3 years; AAEC: \$66,000

2010 United States Department of Agriculture, National Institute of Food and Agriculture
Migration of Agricultural Production Back to the Southeast
PI, Grant Total: \$128,000 over 4 years; AAEC: \$128,000

2009 United States Department of Agriculture, Federal Crop Insurance Corporation
Risk Management of Fruit Crops through Prediction of Frost Conditions in Georgia
Cooperator, Total: \$250,000 over 3 years; AAEC: \$32,000

2008 Georgia Department of Natural Resources
Forecasting Irrigation Water Demand to 2050
Co-PI, Grant Total: \$220,500 over 9 months; AAEC: \$55,000

- 2007 Georgia Soil and Water Conservation Service
The Potential for Nutrient Trading in Georgia
Co-PI
Grant Total: \$154,000 over 18 months; AAEC: \$43,000
- 2006 Georgia Sea Grant
Economic Analysis of Alternative Development Options for Coastal Georgia
Co-PI
Grant Total: \$42,000 over 1 year; AAEC: \$42,000
- 2006 Georgia Department of Natural Resources
Hedonic Price Analysis of Brownfield Redevelopment: Phase One
Co-PI
Grant Total: \$20,000 over 2 months; AAEC: \$20,000
- 2006 United States Department of Agriculture
Long-Term Water Quality Responses to Conservation Practices in Nested Coastal Plains
Watersheds
Cooperator
Grant Total: \$659,845 over 3 years; AAEC: \$40,000
- 2005 United States Department of Agriculture
Agricultural Water Use: Decision Support Tools for Water Conservation
Co-PI
Grant Total: \$240,000 over 3 years; AAEC: \$55,000
- 2005 United States Department of Agriculture
Risk Management of Fruit Crops through Prediction of Frost Conditions in Georgia
Cooperator
Grant Total: \$350,000 over 3 years; AAEC: \$35,000