

# Dale T. Manning

## July 2025

University of Tennessee  
Baker School of Public Policy and Public Affairs  
Agricultural and Natural Resource Economics

Email: [dtmanning@utk.edu](mailto:dtmanning@utk.edu)

## Education

Ph.D. Agricultural and Natural Resource Economics, UC-Davis, June 2013.

Dates: September 2008-June 2013

Thesis: Microeconomic Linkages between Natural Resource Sectors and Other Sectors in Developing Economies

BSBA University of North Carolina, Chapel Hill, 2005, with second major in Environmental Studies

## Academic Employment

Assistant Professor, Department of Agricultural and Resource Economics, Colorado State University, August 2013-July 2019

Associate Professor, Department of Agricultural and Resource Economics, Colorado State University, August 2019- June 2024

Associate Professor, Baker School of Public Policy and Public Affairs, Agricultural and Natural Resource Economics, University of Tennessee, July 2024-present

## Other Professional Experience

Inter-American Development Bank Research Department Summer Dissertation Fellow, July-September, 2012. Teaching Assistant, Economics of Development, Fall 2011, UC-Davis.

Teaching Assistant, Collaborative Learning on the Interface of Mathematics and Biology (NSF), Fall 2010-Summer 2011, UC-Davis.

National Science Foundation (NSF) Responding to Rapid Environmental Change IGERT Trainee, Fall 2008-Summer 2010, UC-Davis.

The Mountain Institute, Huaraz, Peru Summer Internship, Summer 2009.

International Monetary Fund (IMF), Asia-Pacific Department Research Assistant, 2007-2008. Country Assistance and Technical Support, IMF, 2006.

## Teaching and Research Fields

Primary: Natural Resource Economics, Environmental Economics, Development Economics, Numerical Optimization  
Secondary: Econometrics, Microeconomic Theory

## Peer-Reviewed Publications

57) Muriqi, Diellza, Jude Bayham, Chris Goemans, Dale Manning, and Jordan Suter (2025). Inland Flooding in the United States: A Review of Research Related to Risk Management, Economic Behavior, and Data Resources. *Environmental Research Letters, Environmental Research Reviews*.

56) Charlton, Diane, Amanda Countryman, Dale T. Manning, and Sionegael Ikeme (2025). US employment exposure to domestic and foreign tariff changes under NAFTA. *Applied Economics Perspectives and Policy*.

55) Mulungu, Kelvin, Dale T. Manning, and Martina Bozzola (2025). Once Bitten, Twice Shy? Direct and Indirect Effects of Weather Shocks on Fertilizer and Improved Seed Use. *Food Policy*.

54) Sloggy, Matthew, Dale T. Manning, Chris Goemans, and Roger Claassen (2025). Insurance and Extraction Incentives in a Common Pool Resource: Evidence from Groundwater Use in the High Plains. *Journal of Environmental Economics and Management*.

53) Mulungu, Kelvin, Dale T. Manning, Chiza Kumwenda, Lukonde Mwelwa, and Lackson Mudenda (2025). Farm Production, Marketing, and Children's Nutritional Outcomes in Rural Zambia. *Agricultural Economics*.

52) Manning, Dale T. and Ed Barbier (2025). Natural capital and aggregate income growth. *Environment and Development Economics*.

51) Gharib, A.A., Arabi, M., Goemans, C., Manning, D.T. and Maas, A., 2024. Integrated water management under different water rights institutions and population patterns: Methodology and application. *Water Resources Research*, 60(11).

50) Rebecca Witinok-Huber, Kayleigh P. Keller, Egide Abimana, Cleophas Ahishakiye, Howard H. Chang, Christian L'Orange, Dale T. Manning, Richard Mori, Eddy Frank Muhirwa, Liliane Muhongerwa, Theoneste Ntakirutimana, Elisa Puzzolo, Casey Quinn, Ghislaine Rosa, Ky Tanner, Bonnie N. Young, Daniel Zimmerle, Egide Kalisak, John Volckens, and Maggie L. Clark (2024). Impact of randomly assigned "pay-as-you-go" liquefied petroleum gas prices on energy use for cooking: Experimental pilot evidence from rural Rwanda. *Energy for Sustainable Development*.

49) Amy W. Ando, Titus O. Awokuse, Nathan W. Chan, Jimena González-Ramirez, Sumeet Gulati, Matthew G. Interis, Sarah Jacobson, Dale Manning and Samuel Stolper (2024). Environmental and Natural Resource Economics and Systemic Racism. *Review of Environmental Economics and Policy*.

- 48) Ogle, Stephen, Richard T. Conant, Bart Fischer, Barbara K. Haya, Dale T. Manning, Bruce A. McCarl, and Tamara Jane Zelikova (2023). Policy Challenges to Enhance Soil Carbon Sinks: The Dirty Part of Making Contributions to the Paris Agreement by the United States. *Carbon Management*.
- 47) Ogle, Stephen, F. Jay Breidt, Stephen Del Grosso, Ram Gurung, Ernie Marx, Shannon Spencer, Stephen Williams, and Dale Manning (2023). Counterfactual Scenarios Reveal Historical Impact of Cropland Management on Soil Organic Carbon Stocks in the United States. *Scientific Reports*.
- 46) Mulungu, Kelvin and Dale T. Manning (2023). Impact of Weather Shocks on Food Security: How Effective are Forests as Natural Insurance? *Journal of Development Studies*.
- 45) Chomphosy, William Haden, Dale T. Manning, Stephan Weiler, and Stephanie Swift (2023). Optimal R&D investment in the management of invasive species, *Ecological Economics*
- 44) Gharib, Ahmed, Joey Blumberg, Dale T. Manning, Chris Goemans, and Mazdak Arabi (2023). Assessment of vulnerability to water shortage in semi-arid river basins: The value of demand reduction and storage capacity. *Science of the Total Environment*.
- 43) Lurbé, S., Burkhardt, J., Goemans, C., Manning, D. and Hans, L., (2022). Further evidence on social comparison and residential water use. *Water Resources and Economics*, p.100214.
- 42) Filippelli, Steven, Matthew Sloggy, Jody Vogeler, Dale Manning, Christopher Goemans, Gabriel Senay (2022). Estimation of field-scale irrigation withdrawals in the Ogallala aquifer. *Agricultural Water Management*.
- 41) Manning, Dale and Amy Ando (2022). Ecosystem Services and Land Rental Markets: Producer Costs of Bat Population Crashes. *Journal of the Association of Environmental and Resource Economists*
- 40) Burkhardt, Jesse and Dale Manning (2022). The Local Effects of Federal Law Enforcement Policies: Evidence from Sanctuary Jurisdictions and Crime. *Contemporary Economic Policy*.
- 39) Sloggy, Matthew, Jordan Suter, Mani Rouhi Rad, Dale T. Manning, and Christopher Goemans (2021). Changing climate, changing minds? The effects of natural disasters on public perceptions of climate change. *Climatic Change*.
- 38) Rouhi Rad, Mani, Dale T. Manning, Jordan F. Suter, Christopher Goemans (2021). Policy Leakage or Policy Benefit? Spatial Spillovers from Conservation Policies in Common Property Resources. *Journal of the Association of Environmental and Resource Economists*.
- 37) Hrozencik, Aaron, Dale T. Manning, Jordan F. Suter, Christopher Goemans (2022). Impacts of Block-Rate Energy Pricing on Groundwater Demand in Irrigated Agriculture. *American Journal of Agricultural Economics*.
- 36) Suter, Jordan, Mani Rouhi Rad, Dale Manning, Chris Goemans, and Matthew Sanderson (2021). Groundwater Depletion, Climate, and the Incremental Value of Groundwater. *Resource and Energy Economics*.
- 35) Apriesnig, Jenny, Dale Manning, Jordan Suter, Jeni Cross, and Sheryl Magzamen (2020). Academic Stars and Energy Stars, an Assessment of Student Academic Achievement and School Building Energy Efficiency. *Energy Policy*.

- 34) Manning, Dale T., Mani Rouhi Rad, Jordan Suter, Chris Goemans, Zaichen Xiang, and Ryan Baily (2020). Non-Market Valuation in Integrated Assessment Modeling: The Benefits of Water Right Retirement. *Journal of Environmental Economics and Management*.
- 33) Brown, Jason, Peter Maniloff, and Dale Manning (2020). Spatially variable taxation and resource extraction: The impact of state oil taxes on drilling in the US. *Journal of Environmental Economics and Management*. <https://www.kansascityfed.org/~media/files/publicat/reswkpap/pdf/rwp18-07.pdf?la=en>.
- 32) Zhong, Hua, Michael Taylor, Kimberly Rollins, Dale Manning, and Chris Goemans (2019). Who Pays for Water Scarcity? Evaluating the Welfare Implications of Water Infrastructure Investments for Cities. *The Annals of Regional Science*. *The Annals of Regional Science*, 63(3), 559-600.
- 31) Opalinski, Nicole, Aditi Bhaskar and Dale T. Manning (2019). Response of Municipal Water Use to Weather across the Contiguous US, *JAWRA*. <https://doi.org/10.1111/1752-1688.12801>.
- 30) Trout, Thomas J. and Dale T. Manning (2019). An Economic and Biophysical Model of Deficit Irrigation. *Agronomy Journal*. doi:10.2134/agronj2019.03.0209
- 29) Simon Meunier, Dale T. Manning., Dan Zimmerle, Loic Queval, Judith Cherni, and Philippe Dessante (2019). Determinants of the marginal willingness to pay for improved domestic water and irrigation in partially electrified Rwandan villages. *International Journal of Sustainable Development and World Ecology*.
- 28) Maas, Alexander, Chris Goemans, Jesse Burkhardt, and Mazdak Arabe (2019). Complements of the House: Estimating Demand-side Linkages between Residential Water and Electricity, *Water Resources and Economics*. <https://doi.org/10.1016/j.wre.2019.02.001>
- 27) Shepler, Ryan, Jordan Suter, Dale Manning, and Chris Goemans (2019). Private Actions and Preferences for Coordinated Groundwater Conservation in Colorado's Republican River Basin, *Journal of the American Water Resources Association*. <https://doi.org/10.1111/1752-1688.12741>
- 26) Hess, Joshua, Dale Manning, Terry Iverson, and Harvey Cutler (2019). Uncertainty, Learning, and Local Opposition to Hydraulic Fracturing. *Resource and Energy Economics*. <https://doi.org/10.1016/j.reseneeco.2018.11.001>
- 25) Manning, Dale, and Jordan Suter (2019). The Role of Well Capacity Constraints in Determining Gains from Groundwater Management. *Journal of Agricultural and Resource Economics*. DOI: 10.22004/ag.econ.281320
- 24) Behrer, A. Patrick, Dale T. Manning, and Andrew Seidl (2019). The Impact of Institutional and Land Use Change on Local Incomes in Chilean Patagonia." *Journal of Development Studies*. 55:2, 191-208, DOI: 10.1080/00220388.2017.1385766
- 23) Mutyasira, Vine, Dana Hoag, Dale Manning, and Dustin Pendell (2018). Assessing the Relative Sustainability of Smallholder Farming Systems in Ethiopian Highlands, *Agricultural Systems*. <https://doi.org/10.1016/j.agsy.2018.08.006>

- 22) Lauer, Stephen, Matthew Sanderson, Dale Manning, Jordan Suter, Aaron Hrozencik, Bridget Guerrero, Karina Schoengold, and Bill Golden (2018). Values and Groundwater Management in the Ogallala Aquifer Region. *Journal of Soil and Water Conservation*. doi: 10.2489/jswc.73.5.593
- 21) Mutyasira, Vine, Dana Hoag, Dustin Pendell, and Dale Manning (2018). Is Sustainable Intensification Possible? Evidence from Ethiopia. *Sustainability*.
- 20) Maniloff, Peter and Dale T. Manning (2018). State Severance Tax Competition and the Division of Natural Resource Rents. *Environmental and Resource Economics*.
- 19) Manning, Dale T., Salvador Lurbé, Louise H. Comas, Thomas J. Trout, Nora Flynn, and Steven J. Fonte (2018). Economic Viability of Deficit Irrigation in the Western US. *Agricultural Water Management* 196: 114-123.
- 18) Monger, Randall, Jordan F. Suter, Dale T. Manning, and Joel P. Schneekloth (2018). Retiring Land to Save Water: Participation in Colorado's Republican River Conservation Reserve Enhancement Program. *Land Economics* 94/1:36-51.
- 17) Manning, Dale T., J. Edward Taylor, and James Wilen (2018). General Equilibrium Tragedy of the Commons. *Environmental and Resource Economics* 69/1: 75-101.
- 16) Jessoe, Katrina, Dale T. Manning, and J. Edward Taylor (2018). Climate Change and Labor Allocation in Mexico: Evidence from Annual Fluctuations in Weather. *Economic Journal* 128: 230-261.
- 15) Hrozencik, Aaron, Dale T. Manning, Jordan Suter, Christopher Goemans, and Ryan Bailey (2017). The Heterogeneous Impacts of Groundwater Management Policies in the Republican River Basin of Colorado. *Water Resources Research* 53/12: 10757-10778.
- 14) Ademola, Adenle, Dale T. Manning, and Joseph Arbiol (2017). Mitigating Climate Change in Africa- Barriers to Financing Low-Carbon Development. *World Development* 100: 123-132.
- 13) Maas, Alexander S., Christopher G. Goemans, Dale T. Manning, Stephan Kroll, Thomas C. Brown (2017). Dilemmas, Coordination and Defection: How Uncertain Tipping Points Induce Common Pool Resource Destruction. *Games and Economic Behavior* 104: 760-774.
- 12) Maas, Alexander, Christopher G. Goemans, Dale T. Manning, Stephan Kroll, Mazdak Arabi and Mariana Rodriguez- McGoffina (2017). Evaluating the Effect of Conservation Motivations on Residential Water Demand. *Journal of Environmental Management* 196 (July): 394-401.
- 11) Manning, Dale T., Christopher Goemans, and Alexander Maas (2017). Producer Responses to Surface Water Availability and Implications for Climate Change Adaptation. *Land Economics* 93/4: 631-653.
- 10) Magzamen, Sheryl, Jennifer Cross, Jordan Suter, Adam Mayer, Stephanie Barr, Lenora Bohren, Brian Dunbar, Joshua Schaeffer, Dale T. Manning, and Stephen Reynolds (2017). A Multidisciplinary Research Framework on School Environment, Occupant Health and Performance. *Journal of School Health* 87/5: 376-387.
- 9) Maas, Alexander, Dale T. Manning, Christopher Goemans, and Andre Dozier (2017). Water Storage in a Changing Environment: The Impact of Allocation Institutions on Value. *Water Resources Research* 53/1: 672-687.

- 8) Manning, Dale T. and John B. Loomis (2016). Consumer Preferences for Fixed versus Variable Quantities of Electricity: Joint Estimation of Contingent Quantity and Valuation Methods. *Environment and Development Economics* 21/6: 789- 811.
- 7) Manning, Dale T. and Hirotsugu Uchida (2016). Are Two Rents better than None? When Monopolies Correct ill-defined Property Rights. *Marine Resource Economics* 31/2: 141-164.
- 6) Manning, Dale T. and J. Edward Taylor (2015). Agricultural Efficiency and Labor Supply to Common Property Resource Collection: Lessons from rural Mexico. *Journal of Agricultural and Resource Economics* 40/3: 365-386.
- 5) Manning, Dale T., Peter Means, Daniel Zimmerle, Kathleen Galvin, John Loomis, and Keith Paustian (2015). Using Contingent Behavior Analysis to Measure Benefits from Rural Electrification in Developing Countries: An Example from Rwanda. *Energy Policy* 86: 393-401.
- 4) Manning, Dale T. and Joleen C. Hadrich (2015). An Evaluation of the Social and Private Efficiency of Adoption: Anaerobic Digesters and Greenhouse Gas Mitigation. *Journal of Environmental Management* 154: 70-77.
- 3) Manning, Dale T. and J. Edward Taylor (2014). Migration and Fuel Use in Rural Mexico. *Ecological Economics* 102: 126-136.
- 2) Manning, Dale T., J. Edward Taylor, and James E. Wilen (2014). Market Integration and Natural Resource Use in Developing Countries: A Linked Agrarian-resource Economy in Northern Honduras.” *Environment and Development Economics* 19/2: 133-155.
- 1) Wetzel, W., I. Lacher, D. Swezey, S. Moffitt, and D. Manning (2012). Analysis Reveals Potential Rangeland Impacts if Williamson Act Eliminated. *California Agriculture* 66/4: 131-136.

## Outreach Work and Publications

Van der Pol, Laura, Dale Manning, Francesca Cotrufo, Megan Machmuller. To make agriculture more climate-friendly, carbon farming needs clear rules. *The Conversation*. 2021.

<https://theconversation.com/to-make-agriculture-more-climate-friendly-carbon-farming-needs-clear-rules-160243>

IEEE Smart Village Entrepreneur Reporting Tool, with Rajan Kapur, Ron Bose, and Alan Mickelson

Chris Goemans, Bill Golden, Bridget Guerrero, Stephen Lauer, Dale Manning, Matt Sanderson, Karina Schoengold, Art Stoecker, Jordan Suter. (2017). *Groundwater Laws Across the Ogallala Aquifer Region*. Colorado Water.

Flynn, Nora, Louise Comas, Salvador Lurbe, Dale Manning, and Steven Fonte. 2017. “Investigating Deficit Irrigation as a Climate-Smart Farming Option.” *Colorado Water*, 34/5, pp. 22-25.

Manning, Dale, Aaron Hrozencik, Chris Goemans, and Jordan Suter. “An Economic Analysis of Management Strategies to Conserve Groundwater in the Republican River Basin of Colorado.”

Maas, Alex, Andre Dozier, Dale Manning, and Christopher Goemans. 2015. "The Value of Stored Water and Trading in the West: Lessons from the Colorado-Big Thompson Project." *Colorado Water*. 32/1 pp.5-7.

Wetzel, William C. Iara L. Lacher, Daniel S. Swezey, Sarah Myhre, and Dale Manning 2010. *Williamson Act Policy Brief*.

## Working Papers and Conference Publications

The fiscal impact of biodiversity loss and a pathway for conservation finance, with Eli Fenichel and Anya Nakhmurina.

Blumberg, J., Goemans, C. and Manning, D., 2022. *Producer Beliefs and Conservation: The Impact of Perceived Water Scarcity on Irrigation Technology Adoption* (No. w30080). National Bureau of Economic Research (previous version AAEA conference paper).

Private Value for Farmers of Increasing Soil Organic Carbon in Croplands of the United States, with Mani Rouhi Rad and Stephen Ogle.

What's Past is Prologue? The Effect of Prior Losses on Agricultural Risk Management, with Cal Bryan, Matt Sloggy, and Chris Goemans, AAEA conference paper.

Zimmerle, Dan and Dale T. Manning. "Potential for Methane Emissions Reductions by Addressing Large Emitters." 2015. *Energy Policy Research Conference Paper*.

Optimizing Rural Village Micro Grids to Provide Affordable and Reliable Renewable Electricity in Developing Countries, with Daniel Zimmerle. 2017. *IEEE Conference Paper*.

Unconventional Oil and Gas Development and Student Performance on Standardized Tests, with Gal Koss and Jordan Suter.

Assessing the Impacts of Recent Drought on Ecosystem Service-based Sectors, Criminal Activity, and Health Outcomes in Arizona, Colorado, New Mexico, and Utah, with Alex Maas, Chris Goemans and Jesse Burkhardt.

Natural Insurance and Weak Substitutability: Using Insurance Markets to Value Groundwater Stocks in Kansas, with Matt Sloggy.

Manning, Dale and Salvador Lurbe. *Demand Analysis of Central Grid Electricity Customers in Rwanda*, report prepared for off-grid electricity supplier in Rwanda.

Learning through Experience: The Impact of Technology Reliability on Adoption and Use, with Salvador Lurbe and Jesse Burkhardt.

Manning, Dale. *Urban Growth and Rural Welfare: Accounting for Resource Competition and Trade Linkages*.

Filipski, M., Manning, D., Taylor, J., Diao, X., & Pradesha, A. 2013. "Evaluating the Local Economywide Impacts of Irrigation Projects." *IFPRI Discussion Paper Series 01247*.

An Experimental Approach to Assessing the Influence of Information about Conservation Impacts, with Aaron Hrozencik, Jordan Suter, and Chris Goemans.

Optimizing Rural Village Micro Grids to Provide Affordable and Reliable Renewable Electricity in Developing Countries: An Application to Rwanda, with Daniel Zimmerle, and Sule Amadu

Manning, Dale. Carbon Leapfrogging in Less-Developed Countries

## Work in Progress

The Impact of Foreign and Domestic Tariffs on Rural Labor Markets

The economic impacts of inland floods

Capitalization of nonmarket environmental values

The costs and benefits of land use policies in Tennessee

## Presentations and Conferences (as Presenter)

AAEA Summer conference, July 2025, The Cost of Wild Pigs on Cropland in the Southeast US.

Invited Seminar, OSU, Spring 2025, The fiscal impact of biodiversity loss and a pathway for conservation finance

Invited seminar, VT, Spring 2025, The fiscal impact of biodiversity loss and a pathway for conservation finance

W5133, 2025, The fiscal impact of biodiversity loss and a pathway for conservation finance

Conservation lab presentation, UTK Fall 2024

Invited Seminar, UTK, Spring 2024

W5133, 2024

W5133, 2023

Guest lecture for engineering students, Universidad Tecnológica Nacional, Facultad Regional Santa Cruz: Economía de los Recursos Naturales y del Medioambiente, November 30th, 2022.

Análisis de políticas y shocks naturales en el sector agropecuario, CEPROCOR, November 28th, 2022.

Servicios ecosistémicos y el mercado de alquiler de la tierra el costo agrícola del colapso de población de murciélagos, Environmental Economics and Climate Change at the Catholic University, Buenos Aires, October 18th 2022.

Revealed Tillage Decisions and Implications for Agricultural GHG Abatement, w4133, Hood River, OR, April 26th, 2022.

Soil Organic Carbon and US Cropland Value, w4133, remote, March 5th, 2021.

Ecosystem Services and Agricultural Land Rental Markets: The Producer Cost of Bat Population Crashes, w4133, Athens, GA, February 13th, 2020.

Spillovers from Conservation Programs in a Common Property Resource, w4133, Santa Fe, NM, February 21st, 2019.

“A Spatial-Dynamic Economic Analysis of Groundwater Management Policies,” Invited Seminar, Natural Resources Ecology Lab, Fort Collins, CO. May 2, 2018

Taxation and Investment: Evidence from the Oil Sector, W4133, Austin, TX. February 23, 2018

Taxation and Investment: Evidence from the Oil Sector, Invited Seminar, Bozeman, Montana. March 26, 2018

Taxation and Investment: Evidence from the Oil Sector, Invited Seminar, Anchorage, Alaska. March 30, 2018 Presentation of economic analysis of climate policy, Government of Vietnam. Summer 2017, Fort Collins.

Ohio State Seminar Series, invited presenter, 4/7/2017, A Spatial-Dynamic Economic Analysis of Groundwater Management Policies

W-3133 2017: Heterogeneous Resource Access and Water Conservation Policy Support in the Republican River Basin of Colorado

W-3133 2016: A Basin-wide Spatially-explicit Model of Groundwater Use in the Ogallala Aquifer Quarterly Update to CSU VPR: Rural Village Micro Grid Catalyst for Innovative Partnerships, 2015

Epidemiology Lunch and Learn: Smart Village Micro Grids: An Energy-Based Approach to Rural Development, 2015 Latin American Conference on Energy and Resource Economics, 2015, General Equilibrium Tragedy of the Commons AAEA, 2015, Climate Change and US Agriculture: Accounting for Surface Water Irrigation

Presentation for Ministry of State for Energy, Kigali, Rwanda, Smart Village Micro Grid Program

W-3133, 2015, Comparing WTP for Infrastructure using Contingent Behavior and Contingent Valuation

Front Range Energy Camp, 2015, State Severance Tax Competition and the Division of Natural Resource Rents

CSU Economics Seminar, 2015, Climate Change and Labor Allocation in Mexico: Evidence from Annual Fluctuations in Weather

Colorado School of Mines, 2014, Climate Change and Labor Allocation in Mexico: Evidence from Annual Fluctuations in Weather

WCERE, 2014, Climate Change and Labor Allocation in Mexico: Evidence from Annual Fluctuations in Weather AAEA, 2014, Climate Change and Labor Allocation in Mexico: Evidence from Annual Fluctuations in Weather Front Range Energy Camp, 2014, Split Incentives and Energy Use with a Payment Threshold

CU Environmental and Resource Economics Conference, 2013, Climate Change and Labor Allocation in Mexico: Evidence from Annual Fluctuations in Weather

IAEE/USAEE North American Conference, Anchorage, AK.

AERE 2013 Summer Conference: Banff, Migration and fuel use in rural Mexico

Workshop on Rural Economy of Mexico, Mexico City, December 2012, Economic Linkages and Fuelwood Use

Final Evaluation of Honduran Sustainable National Tourism Program. Presented to Honduran National Tourism Institute, October, 2012.

Inter-American Development Bank: Research Department Dissertation Fellows Presentation, August 2012, Migration and fuel use in rural Mexico.

AERE 2012 Summer Conference: Asheville, NC, Market integration and natural resource use in developing countries: a linked agrarian-resource economy in Northern Honduras.

UC-Davis Brown-bag Series, April, 2012, Market integration and natural resource use in developing countries: a linked agrarian-resource economy in Northern Honduras

Invited poster, Rangeland Science Symposium, UC-Davis January, 2012. Land-Use Impacts of the California Land Conservation Act of 1965

UC-Davis IGERT Fall Conferences, 2009-2010, 2012.

UC-Davis Conference on Land-Use Impacts of the California Land Conservation Act of 1965 (The Williamson Act), September, 2010 (planned and presented).

## Awards

WAEA Best Publication Award, 2018.

IAEE/USAEE Best Student Paper, Anchorage, July 2013

National Science Foundation (NSF) Responding to Rapid Environmental Change IGERT bridge fellowship, September 2012-2013, UC-Davis.

Erika C.H. Meng Scholarship Fund for Development Policy and Research, May 2012. UC-Davis and Humanities Graduate Research Award, September 2011-June 2012.

Jastro-Shields Research Scholarship, September 2011-June 2012.

## Funded Grants

AFRI: Effects Of Trade Policy On Rural Employment And Wages. PIs: Amanda Countryman, Diane Charlton, and Dale Manning. \$405,089 (active as of January 2023)

EDF: Assessing equity in access of Midwestern farmers to the US voluntary soil carbon sequestration market \$339,495 (active as of January 2023)

FFAR-Noble: Metrics, Management and Monitoring: An Investigation of Rangeland and Pasture Soil Health and its Drivers, \$19 million, \$3.5 million at CSU. (active as of January 2023)

NSF: The Intermountain West Transformation Network, a National Science Foundation – Sustainable Regional Systems Program, \$15 million, \$2,722,855 at CSU. (active as of January 2023)

AFRI: Inferring the Supply of Greenhouse Gas Abatement from US Commodity Producers in The Corn Belt Using Observed Practice Choices: Implications for Carbon Offset Programs, \$499,478. (active as of January 2023)

Sustainable Household Energy Adoption in Rwanda (SHEAR): Promoting Rural Health with Solar and Gas. 2019-2024. NIH/NIEHS Co-investigator. R01ES029995, \$3,277,813. (active as of January 2023)

CSU VPR Catalyst for Innovative Partnership: \$199,909: The Soil Carbon Solutions Center: Enhancing livelihoods and mitigating climate change through cutting-edge research, tools, and implementation, Co-Applicant (active as of January 2023)

NIFA CAP. Evaluating Alternative Water Institution Performance in Snow-Dominated Basins: Are Food Production Systems at Risk from Changing Snow Water Availability. PIs: Kimberly Rollins, Adrian Harpold, Gi-Eu Lee, Loretta Singletary, Michael Taylor, Dale Manning, Chris Goemans, Seshadri Rajagopal. CSU budget: \$565,662. (active as of January 2023)

AFRI: Crop Insurance and Groundwater Consumption in the Ogallala Aquifer Region, \$496,805.

CSU Water Center, Quantifying the Scope and Impact of Permanent Agricultural dry-up due to Rural to Urban Water Transfers Co-PIs: Dale Manning, Drew Bennett, Sarah Parmar, and Steven Filippelli. PI: Michael Falkowski, July 2017- June 2018. \$24,873.

Borlaug Fellowship: \$24,081: Evaluating a Water Conservation Text Messaging Service in Moulouya River Basin. CSU VPR Quarterly Funding: \$14,535: Assessing the Global Impacts of Predicted Fishery Decline, Co-PI

CSU Water Center Seed Grant: \$23,813: Evaluating alternative water and nutrient management strategies as climate-smart agricultural options for Colorado and beyond.

CBEAR: \$21,974: Evaluating the Impact of Economic Research Results on Attitudes Related to Groundwater Management Policies: A Randomized Control Trial

NIFA CAP: \$2.4 million: Sustaining Agriculture through Adaptive Management Resilient to a Declining Ogallala Aquifer and Changing Climate

Environmental Protection Agency: \$999,287: Sustainable Places, Health, and Research in Schools, Co-PI  
CSU VPR Catalyst for Innovative Partnership: \$198,567: Rural Village Micro Grids, Co-PI

CSU VPR Quarterly Funding: \$10,200: Rural Village Micro Grid Project Catalyst, Lead PI

NIFA Agricultural and Food Research Initiative: Water for Agriculture: \$498,392.76: Rural to Urban Water Transfers, Climate Change and the Future of Rural Agricultural Economies in the Semi-Arid West: A Comparative Regional Analysis, Co-PI (CSU Lead), until December 2017.

Colorado Water Conservation Board: \$159,882: Economic Analysis of Groundwater Pumping Policies in the Republican River Basin, Co-PI, until December 2016.

USDA-USFS-Rocky Mtn. Research Station – CO: \$55,840: Modeling Forest Ecosystem Services and Demand for Water in Large Landscapes, Lead PI, until July 2019.

CSU Water Center Seed Grant: \$7,450: Inter-temporal Allocation of Water and Adaptation to Climate Change, lead PI.

CSU Energy Institute Seed Grant: \$15,600: To Frack or Not To Frack: An Analysis of Local Opposition to Hydraulic Fracturing, Co-PI.

## Submitted Grants

Effects of agricultural to urban water transfers on salinity. With Ryan Bailey and Aditi Bhaskar. \$500,000. (not funded)

NIFA. Performance of Water Institutions under Increasing Variability of Snowfed Systems in the Intermountain West. PIs: Kimberly Rollins, Adrian Harpold, Gi-Eu Lee, Loretta Singletary, Michael Taylor, Dale Manning, Chris Goemans, Seshadri Rajagopal. \$499,998. (not funded)

AFRI: Evaluating Supply Chain Interventions to Enhance the Sustainability of US Agricultural Production with Climate Change, \$4 million. (not funded)

NASA: \$250,000: Reducing the Health Costs of Wildfire Smoke through Improved Information: An Experimental Analysis (not funded)

FONERWA: Smart Village Micro Grid Program in Rwanda, 2017, \$4 million

FONERWA: Smart Village Micro Grid Program in Rwanda, 2016, \$3.5 million (not funded)

## Administrative and Leadership Experience

Interim director, Center for Energy, Transportation, and Environmental Policy, 2025-present

Soil Carbon Solutions Center, Founding Member and Leadership Team, 2020-2024

CSU College of Agriculture Technology Committee, 2015-2024

Faculty Search Committee, CSU DARE, 2015

Honors Curriculum Committee, 2014

Graduate Student Symposium Steering Committee, 2014 Quantitative Exam Committee, 2013-2018

Environment and Natural Resource Exam Committee, 2013-2016

Professional Service and Memberships

Associate deputy editor, Climatic Change, January 2023-present Editorial Council, Land Economics, 2020-present

W-4133 President, 2018

W-3133 Vice President, 2017 W-3133 Secretary 2016 Referee for AAEA meetings

Agricultural and Applied Economics Association, member Association of Environmental and Resource Economists, member International Association for Energy Economics, member

Referee for The Pacific Conference for Development Economics (PACDEV), 2012. Referee for WAEA meetings

Reviewer for SoGES, CSU

Reviewer for Inter-American Development Bank Operational Research

Reviewer for PNAS, JAWRA, Environmental and Resource Economics, Journal of Agricultural and Resource Economics, World Development, Journal for the Association for Environmental and Resource Economists, Applied Economic Perspectives and Policy, Energy, Land Economics, Energy Economics, Water Resources Research, American Journal of Agricultural Economics, Environment and Development Economics, Journal of Environmental Economics and Management, Marine Resource Economics, Canadian Journal of Soil Science

## Student Committees

University of Tennessee:

Lindsey Hickok-Perry, ARE

University of Illinois:

Yifan Peng, Agricultural and Consumer Economics

Colorado State University:

Sione Ikeme, DARE

Yvette Uwineza, DARE

Innocent Vomitadyo

Erica Patterson (outside member), PhD, Soil and Crop Sciences

Ellie Ellis (outside member), PhD, Soil and Crop Sciences

Michelan Wilson (outside member), PhD Student, ECON

Siddharth Kishore (chair), PhD Student, DARE

Ming Wang (chair), PhD student, DARE

Di Sheng, doctoral student, DARE, defended

Jeff Davis (outside member), doctoral student, ECON

Jake Salcone (outside member), doctoral student HDNR

Kevin Crofton (outside member), doctoral student ECON

Gal Koss, Masters student in DARE, graduated

Devon Cassetty (outside member), Masters student, West Texas A&M, graduated

Hwayoung Jeon (outside member), ECON, graduated

Nicole Opalinski (outside member), Masters student in civil engineering, graduated. Kelvin Mulungu, PhD student in DARE, graduated

Christopher Keyes (outside member), doctoral student ECON, graduated

Kelvin Mulungu, doctoral student, DARE, graduated.

Alex Maas (Co-Chair), doctoral student, graduated 2017, assistant professor at University of Idaho Aaron

Hrozencik (Co-Chair), doctoral student, graduated, researcher at Economic Research Service. Josh Hess (outside member), doctoral student ECON, graduated.

Brody Hatch (outside member), doctoral student ECON, graduated 2017

Misti Sharpe, doctoral student, graduated.

Vine Mutyasira, doctoral student, graduated.

Jenny Apriesnig, doctoral student, graduate 2017, assistant professor at Michigan Tech.

Salvador Lurbe (Chair), graduated, researcher at Mountain Data Group

Ryan Levitt (outside member), doctoral student ECON, graduated, researcher at Mountain Data Group.

Randall Monger, Masters' Student, graduated 2016

Patrick Behrer (graduated 2014, PhD student at Harvard), Masters' Student Sam

Collie (graduated 2015, PhD student at UCSB), Masters' Student

Brian Quay (left program, 2015), doctoral student