

Douglas H. Wrenn

Curriculum Vitae

Department of Agricultural Economics, Sociology, and Education
 The Pennsylvania State University
 115 Ferguson Building
 University Park, PA 16802
 Phone: 1-814-865-9216
 Fax: 1-814-865-3746
 Email: dhw121@psu.edu

EDUCATION

The Ohio State University, Columbus, Ohio, USA

Ph.D., Agricultural, Environmental, and Development Economics 12/2012
 Dissertation Title: "Three Essays on Residential Land Development"
 Advisor: Elena G. Irwin

M.A., Economics 08/2008

Eastern Mennonite University, Harrisonburg, Virginia, USA

B.S., Economics and Business Administration (Cum Laude) 04/2002

PROFESSIONAL APPOINTMENTS

The Pennsylvania State University, Department of Agricultural Economics, Sociology, and Education

Assistant Professor, Environmental and Resource Economics 7/2013-6/2019
 Associate Professor, Environmental and Resource Economics 7/2019-Present

The Ohio State University, Department of Agricultural, Environmental, and Development Economics

Postdoctoral Researcher (Advisor: Elena G. Irwin) 1/2013-7/2013
 Graduate Research Assistant 8/2007-12/2012

Mennonite Central Committee, Ukraine/Former Soviet Union

Coordinator of Economic Development 2/2003-4/2006

PUBLICATIONS (* Indicates student co-authored paper)

Peer-Reviewed Journal Articles

1. Simandjuntak*, Daniel, Edward C. Jaenicke, and Douglas H. Wrenn. 2024. "Pandemic-Induced Changes in Household-Level Food Diversity and Dietary Healthfulness in the U.S." (Accepted: PLOS ONE)
2. Wrenn, Douglas H. 2024. "The Effect of Natural Disasters and Extreme Weather on Household Location Choice and Economic Welfare." (Accepted: *Journal of the Association of Environmental and Resource Economists*). <https://www.journals.uchicago.edu/doi/10.1086/728887>

3. Brent, Daniel A., Yongwang* Ren, and Douglas H. Wrenn. 2024. "The Distributional Impact of FEMA's Community Rating System." *Agricultural and Resource Economic Review*. 53(1): 87-118.
<https://doi.org/10.1017/age.2023.37>
4. Pollack, Adam, Douglas H. Wrenn, Ian Sue Wing, and Christoph Nolte. 2023. "Potential Benefits of Remapping the Special Flood Hazard Area: Evidence from the U.S. Housing Market." *Journal of Housing Economics*. 61: 101956. <https://doi.org/10.1016/j.jhe.2023.101956>
5. Zhang, Bo*, Douglas H. Wrenn, Janak Joshi, and Edward C. Jaenicke. 2022. "Housing Wealth, Food Spending, and Diet Quality: Evidence from Panel Data." *Agricultural and Resource Economic Review*. (2022): 1-25. <https://doi.org/10.1017/age.2022.12>
6. Hoy, Kyle* and Douglas H. Wrenn. 2020. "The Effectiveness of Taxes in Decreasing Candy Purchases." *Food Policy*. 97: 101959. <https://doi.org/10.1016/j.foodpol.2020.101959>
7. Zaveri, Esha*, Douglas H. Wrenn, and Karen Fisher-Vanden. 2020. "The Impact of Water Access on Short-Term Migration in Rural India." *Australian Journal of Agricultural and Resource Economics*. 64(2): 505-532. <https://doi.org/10.1111/1467-8489.12364>
8. Wrenn, Douglas H., Klaiber, H. Allen and David A. Newburn. 2019. "Price Based Policies for Managing Residential Development: Impacts on Water Quality." *Resource and Energy Economics*. 58 (November): 101-115. <https://doi.org/10.1016/j.reseneeco.2019.101115>
9. Wrenn, Douglas H., Junjian Yi, and Bo Zhang*. 2019. "Housing Prices and Marriage Entry in China." *Regional Science and Urban Economics*. 74 (January): 118-130.
<https://doi.org/10.1016/j.regsciurbeco.2018.12.001>
10. Wrenn, Douglas H. and H. Allen Klaiber. 2019. "Space and Time: A Competing Risks Analysis of the Impact of Property Taxes and Zoning Restrictions on Residential Development." *International Economic Review*. 60(3): 1097-1130. <https://doi.org/10.1111/iere.12380>
11. Hoy, Kyle* and Douglas H. Wrenn. 2018. "Unconventional Energy, Taxation, and Interstate Welfare: An Analysis of Pennsylvania's Severance Tax Policy." *Energy Economics*. 73 (June): 53-65.
<https://doi.org/10.1016/j.eneco.2018.05.002>
12. Towe, Charles A., H. Allen Klaiber, and Douglas H. Wrenn. 2017. "Not My Problem: Growth Spillovers from Uncoordinated Land Use Policy." *Land Use Policy*. 67 (September): 679-689.
<https://doi.org/10.1016/j.landusepol.2017.06.019>
13. Zhang, Wendong, Douglas H. Wrenn, and Elena G. Irwin. 2017. "Spatial Heterogeneity, Accessibility, and Zoning: An Empirical Examination of Leapfrog Development." *Journal of Economic Geography*. 17(3): 547-570. <https://doi.org/10.1093/jeg/lbw007>
14. Wrenn, Douglas H., H. Allen Klaiber, and David A. Newburn. 2017. "Confronting Price Endogeneity in a Duration Model of Residential Subdivision Development." *Journal of Applied Econometrics*. 32(3): 661-682.
<https://doi.org/10.1002/jae.2546>
15. Zaveri, Esha*, Danielle Grogan, Karen Fisher-Vanden, Steve Froelking, Richard Lammers, Douglas H. Wrenn, Alexander Prusevich, and Robert Nicholas. 2016. "Invisible Water, Visible Impact: Groundwater Use and Indian Agriculture under Climate Change." *Environmental Research Letters*. 11(8):1-13.
<https://doi.org/10.1088/1748-9326/11/8/084005>

16. Wrenn, Douglas H., H. Allen Klaiber, and Edward C. Jaenicke. 2016. "Unconventional Shale Gas Development, Risk Perceptions, and Averting Behavior: Evidence from Bottled Water Purchases." *Journal of the Association of Environmental and Resource Economists*. 3(4): 779-817. (Lead article)
<https://doi.org/10.1086/688487>
17. Wrenn, Douglas H. and Elena G. Irwin. 2015. "Time is Money: An Empirical Examination of the Effects of Regulatory Delay on Residential Subdivision Development." *Regional Science and Urban Economics*. 51: 25-36. <https://doi.org/10.1016/j.regsciurbeco.2014.12.004>
18. Wrenn, Douglas H., Timothy W. Kelsey, and Edward C. Jaenicke. 2015. "Resident versus Non-Resident Employment Impacts Associated with Marcellus Shale Development." *Agricultural and Resource Economic Review*. 44/2 (August 2015) 1-19. (Lead Article; Winner, Best Article Award, 2016)
<https://doi.org/10.1017/S1068280500010194>
19. Wrenn, Douglas H. and Abdoul G. Sam. 2014. "Geographically and Temporally Weighted Likelihood Regression: Exploring the Spatiotemporal Determinants of Land Use Change." *Regional Science and Urban Economics*. 44: 60-74. <https://doi.org/10.1016/j.regsciurbeco.2013.10.005>
20. Wrenn, Douglas H. and Elena G. Irwin. 2012. "How Do Land Use Policies Influence Fragmentation? An Econometric Model of Land Development with Spatial Simulation." *Environmental Economics*. 3: 82-96.
https://www.businessperspectives.org/images/pdf/applications/publishing/templates/article/assets/4936/ee_2012_04_Wrenn.pdf

Other Journal/Newsletter Outputs

1. Shortle, James, David Abler, Seth Blumsack, Jon Duncan, Corina Fernandez, Klaus Keller, Mahkameh Zarekarizi, Michael Nassry, Rob Nicholas, Matt Royer, Douglas H. Wrenn. "[Pennsylvania Climate Impacts Assessment Update](#)" 2020. *Environment and Natural Resources Institute*. Pennsylvania State University.
2. Fetter, T. Robert, Andrew L. Steck, Christopher D. Timmins, and Douglas H. Wrenn. 2019. "[Fracking Disclosures by Firms Spur Productivity, Slow Innovation](#)." *The NBER Digest*. April.
3. Fetter, T. Robert, Andrew L. Steck, Christopher D. Timmins, and Douglas H. Wrenn. 2017. "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." *Academy of Management Proceedings*. January: 17515. (Abstract Publication from Annual Meetings)
<https://doi.org/10.5465/AMBPP.2017.17515abstract>
4. Wrenn, Douglas H. 2014 (June). "Shale Development and Employment in Pennsylvania." Marcellus Employment." *North American Regional Science Council*. 2(1): 6.
5. Elena G. Irwin and Douglas H. Wrenn. 2012 (November). "Developing Spatially Disaggregate Models of Land Change for Policy Simulation." *UGEC Viewpoints*. 8: 41-44. Published by the Urbanization and Global Environmental Change Project, International Human Dimensions Programme.

Book Chapters

1. Fan, Qin and Douglas H. Wrenn. "Equilibrium Sorting Models." Haab, Ma, and Whitehead (ed.). [Handbook of Environmental Valuation](#). Edward Elgar Publishing Ltd. (Forthcoming 2024)

2. Irwin, Elena G., Geoffrey L. Buckley, Matthew Gnagey, David Newburn, Erin Pierce, and Douglas H. Wrenn. 2018. "Land Use Dynamics: Regulations and Norms." S. Pickett et al. (eds.), [Science for Sustainable City: Insights from Baltimore School of Urban Ecology](#).
3. Irwin, Elena G., and Douglas H. Wrenn. 2014. "An Assessment of Empirical Methods for Modeling Land Use." In: J.M. Duke and J. Wu (ed.), [The Oxford Handbook of Land Economics](#). Oxford Univ. Press. <https://doi.org/10.1093/oxfordhb/9780199763740.013.012>

Under Review/Submitted

1. Brent, Daniel A., Douglas H. Wrenn, Gabriel R. Lara*, and Joseph H. Cook. 2023. "[Peer Effects in Voluntary Environmental Programs: An Application to Urban Water Quality](#)." (Revisions Requested: *Journal of the Association of Environmental and Resource Economists*)
2. Shen*, Mingzhou, Karen Fisher-Vanden, and Douglas H. Wrenn. 2023. "Impacts of Water-Related Building Moratoriums on Housing Development in California." https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4638948 (Revisions Requested: *Land Economics*)
3. Chen, Sizhuo*, Ian Sue Wing, and Douglas H. Wrenn. 2024. "Housing Density Amplification of Wildfire Ignition Risk Across the Western U.S." https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4768108 (Submitted)
4. Mensah, Edouard, Douglas H. Wrenn, and Edward C. Jaenicke. 2024. "Hurricane Preparedness and Purchasing Behavior: The Role of Adaptation in the Coastal United States." (Submitted)
5. Hua, Junyi, H. Allen Klaiber, and Douglas H. Wrenn. 2024. "The Impacts of Agricultural Land Markets and Climate Change on Urban Development." https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4760450 (Submitted)

Manuscripts/Working

1. Wrenn, Douglas H. and Edouard Mensah. 2023. "Wildfire Risk and Home Prices: The Case of California Building Codes." (Manuscript)
2. Hua, Junyi*, H. Allen Klaiber, and Douglas H. Wrenn. 2023. "Urbanizing Agriculture, Additionality, and the Adoption of Agricultural Conservation Practices." (Manuscript)
3. Brent, Daniel A. and Douglas H. Wrenn. 2021. "The Distributional Effects of Floods on Property Prices." (In Preparation)
4. Brent, Daniel A. and Douglas H. Wrenn. 2022. "Financial Literacy and Academic Outcomes." (Manuscript). <https://ssrn.com/abstract=4078004>
5. Fetter, T. Robert, Andrew L. Steck, Christopher D. Timmins, and Douglas H. Wrenn. 2022. "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." (Manuscript) <https://doi.org/10.3386/w25401>

TEACHING

Ohio State University

Short Course: Using R for Econometric Analysis

Spring, 2011

Development Economics (AED Economics/International Studies 535)

Spring, 2010

Pennsylvania State University

Undergraduate

Introductory Environmental and Resource Economics (CED 201)

Spring, 2014-Present

Introductory Environmental and Resource Economics (CED 201)

Fall, 2019-2020

Honors Environmental and Resource Economics (CED 297)

Spring, 2018-2019

Guest Lecture: AEREC 590

Fall 2013-2023

Guest Lecture: AEREC 597A – Topics in Environmental Economics

Fall, 2014

Guest Lecture: AEREC 597 – Workshop on Scanner Data

Spring 2018

Graduate

Applied Welfare Analysis (AEREC 597A)

Spring, 2014-2015

Applied Microeconometrics II (EEFE 530)

Spring, 2016-2019

Applied Microeconometrics I (EEFE 531)

Fall, 2019-Present

INVITED SEMINARS

1. Pennsylvania State University. Project Update Seminar. Program on Coupled Human and Earth Systems (PCHES). “Wildfire Risk and Home Prices: The Case of California Building Codes.” January 22nd, 2024.
2. Pennsylvania State University. Project Update Seminar. Program on Coupled Human and Earth Systems (PCHES). “Hurricane Preparedness and Purchasing Behavior: The Role of Adaptation in the Coastal United States.” December 15th, 2023.
3. Ohio State University. Webinar: Valuing Environmental Catastrophes. Extension Seminar for State and Local Officials. May 17th, 2023
4. Pennsylvania State University. Webinar: Environmental Economics. Extension Seminar for High School Teachers in the State of Pennsylvania. February 28th, 2023.
5. Pennsylvania State University, Energy, Environmental Economics, and Policy Seminar Series, “Peer Effects in Residential Green Infrastructure Adoption.” February 9th, 2022.
6. Pennsylvania State University, Laboratory for Economics Managements and Auctions Seminar Series, Smeal College of Business, “Financial Literacy, Academic Effort, and Student Debt.” February 3rd, 2022.
7. Pennsylvania Department of Environmental Protection, “Pennsylvania Climate Impacts Assessment Update.” Harrisburg, PA. February 25th, 2020.
8. Pennsylvania State University, Water Insights Seminar Series, “Price Based Policies for Managing Residential Development and Impacts on Water Quality.” April 3rd, 2018.
9. Andrew Young School of Policy Studies, Department of Economics, “Price Based Policies for Managing Residential Development and Impacts on Water Quality.” January 26th, 2018.

10. Zhang, Bo, Douglas H. Wrenn, and Edward C. Jaenicke. "House Prices, Food Purchases, and Diet Quality." Energy and Environmental Economics and Policy Seminar Series, Pennsylvania State University, October 11th, 2017.
11. Department of Business and Economics, Eastern Mennonite University, "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." October 5th, 2017.
12. Smeal College of Business, Pennsylvania State University, "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." September 27th, 2017.
13. Department of Applied Economics, Oregon State University, "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." May 19th, 2017.
14. Department of Agricultural and Applied Economics, Virginia Tech, "Price-Based Land Use Policies with Heterogeneous Development Outcomes: Impacts on Urban Land Use Patterns." December 2nd, 2016.
15. Department of Economics, Binghamton University, "Confronting Price Endogeneity in a Competing Risks Model of Residential Subdivision Development." September 30th, 2016.
16. Center for Urban Environmental Research and Education (CUERE), University of Maryland Baltimore County, Seminar Series, "Local Interactions versus Regulatory Delay: Evaluating Competing Explanations for Residential Land Development." November 22, 2013.

CONFERENCES

1. Shen, Mingzhou, Karen Fisher-Vanden, and Douglas H. Wrenn. "Impacts of Water-Related Building Moratoria on California's Housing Crisis." 2024 Pennsylvania State University Water Conference: Multidisciplinary Perspective on Water, March 14th, 2024.
2. Wrenn, Douglas H. H. Allen Klaiber, and Junyi Hua. "Additionality and the Adoption of Agriculture BMPs in the Face of Urbanization." 2024 Pennsylvania State University Water Conference: Multidisciplinary Perspective on Water, March 14th, 2024.
3. Shen, Mingzhou, Karen Fisher-Vanden, and Douglas H. Wrenn. "Impacts of Water-Related Building Moratoria on California's Housing Crisis." Selected paper for 11th Annual Summer Meetings of the Association of Environmental and Resource Economists, Portland, ME, May 31st-June 2nd, 2023.
4. Wrenn, Douglas H. "Additionality and the Adoption of Riparian Buffers in the Face of Urbanization." A Community on Ecosystem Services. Washington D.C., December 12-15, 2022.
5. Brent, Daniel A. and Douglas H. Wrenn. "Financial Literacy and Academic Outcomes." Selected paper for Advances with Field Experiments, Chicago, IL, June 8th-9th, 2022.
6. Brent, Daniel A. and Douglas H. Wrenn. "Peer Effects in Residential Green Infrastructure Adoption." Selected paper for 10th Annual Summer Meetings of the Association of Environmental and Resource Economists, Miami, FL, June 1st-3rd, 2022.
7. Brent, Daniel A. and Douglas H. Wrenn. "Financial Literacy and Academic Outcomes." Cherry Blossom Financial Education Institute. The George Washington University School of Business. Washington, DC. April 21st and 22nd, 2022.

8. Brent, Daniel A. and Douglas H. Wrenn. "Peer Effects in Residential Green Infrastructure Adoption." Selected paper for Meetings of American Economic Association, Virtual, January 6rd-8th, 2022.
9. Brent, Daniel A. and Douglas H. Wrenn. "The Distributional Effects of Floods on Property Prices." Selected paper for 9th Annual Summer Meetings of the Association of Environmental and Resource Economists, Virtual, June 2nd-4th, 2021.
10. Fetter, T. Robert, Andrew Steck, Christopher D. Timmins, and Douglas H. Wrenn. "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." Selected paper for Meetings of American Economic Association, San Diego, CA, January 3rd-5th, 2020.
11. Jayasekera, Deshamithra HW, Douglas H. Wrenn, and Karen Fisher-Vanden. "Worker Location Decisions by Skill Level: The Welfare Impacts of Weather Shocks and Industry Composition on the Demand for High and Low Skill Labor." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, Atlanta, GA, July 21st-23rd, 2019.
12. Wrenn, Douglas H., Sheila Olmstead, and Julian Plough. "Floods, Shifting Risk Perceptions, and Property Prices." Selected paper for 7th Annual Summer Meetings of the Association of Environmental and Resource Economists, Incline Village, NV, May 30th-31st, 2019.
13. Dong, Xiao, H. Allen Klaiber, Sathya Gopalakrishnan, Douglas H. Wrenn. "The Silence of Falling Trees: Hidden Forest Loss from Shale Gas Development." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, Washington, DC, July 30th-August 1st, 2018.
14. Wrenn, Douglas H. Allen Klaiber, and David A. Newburn. "Price Based Policies for Managing Residential Development: Impacts to Water Quality." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, Washington, DC, July 30th-August 1st, 2018.
15. Zaveri, Esha, Douglas H. Wrenn, and Karen Fisher-Vanden. "The Impact of Water Access on Short-Term Migration in Rural India." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, Chicago, Illinois, August 5th-August 7th, 2017.
16. Jaenicke, Edward C. and Douglas H. Wrenn. "Changes in Retail Organic Price Premiums from 2004 to 2010." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, Chicago, Illinois, August 5th-August 7th, 2017.
17. Zhang, Bo, Douglas H. Wrenn, and Edward C. Jaenicke. "The Great Recession, Healthy Food Purchases, and Obesity." Selected paper for Northeastern Agricultural and Resource Economics Association Annual Meeting, Washington, DC, June 11th-14th, 2017.
18. Wrenn, Douglas H. Allen Klaiber, and David A. Newburn. "Price Based Policies for Managing Residential Development: Impacts to Water Quality." Selected paper for 6th Annual Summer Meetings of the Association of Environmental and Resource Economists, Pittsburgh, Pennsylvania, May 31st-June 2nd, 2017.
19. Fetter, T. Robert, Andrew L. Steck, Christopher D. Timmins, and Douglas H. Wrenn. "Learning by Viewing? Social Learning, Regulatory Disclosure, and Firm Productivity in Shale Gas." Selected paper for 6th Annual Summer Meetings of the Association of Environmental and Resource Economists, Pittsburgh, Pennsylvania, May 31st-June 2nd, 2017.

20. Hoy, Kyle and Douglas H. Wrenn. "Unconventional Energy, Taxation, and Interstate Welfare: An Analysis of Pennsylvania's Severance Tax Policy." Energy and Environmental Economics and Policy Seminar Series, Pennsylvania State University, October 19th, 2016.
21. Wrenn, Douglas H., H. Allen Klaiber, and Edward Jaenicke. "Unconventional Shale Gas Development, Risk Perceptions, and Averting Behavior." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, Boston, Massachusetts, July 31st-August 2nd, 2016.
22. Zaveri, Esha, Douglas H. Wrenn, and Karen Fisher-Vanden. "Water in the Balance: The Impact of Water Infrastructure on Agricultural Adaptation to Rainfall Shocks in India." Selected paper presented at the Annual Meetings of the Applied and Agricultural Economic Association, Boston, Massachusetts, July 31st-August 2nd, 2016.
23. Wrenn, Douglas and H. Allen Klaiber. "Meeting Water Quality Standards by Altering Land Use Patterns: An Analysis of Price vs. Quantity Based Policy Instruments." Selected paper for 5th Annual Summer Meetings of the Association of Environmental and Resource Economists, Breckenridge, CO, June 9-11, 2016.
24. Wrenn, Douglas H., Timothy W. Kelsey, and Edward C. Jaenicke. 2016. "Resident versus Non-Resident Employment Impacts Associated with Marcellus Shale Development." Energy Days Poster Presentation, Pennsylvania State University, May 19th, 2016.
25. Wrenn, Douglas H., H. Allen Klaiber, and David A. Newburn. "Confronting Endogeneity in a Duration Model of Residential Subdivision Development." Selected paper presented at the Annual Meetings of the Agricultural and Applied Economics Association, San Francisco, CA, July 26-28, 2015.
26. Hoy, Kyle and Douglas H. Wrenn. "Energy Demand and Severance Taxation in Pennsylvania." Selected paper for Northeastern Agricultural and Resource Economics Association Annual Meeting, Newport, RI, June 28th-30th, 2015.
27. Zaveri, Esha, Danielle S. Grogan, Karen Fisher-Vanden, Steve Frolking, and Douglas H. Wrenn. "Adaptability of Irrigation to Changing Monsoon in India: How Far Can We Go?" Selected paper for Northeastern Agricultural and Resource Economics Association Annual Meeting, Newport, RI, June 28th-30th, 2015.
28. Wrenn, Douglas H., H. Allen Klaiber, and Edward Jaenicke. "Unconventional Shale Gas Development, Risk Perceptions, and Averting Behavior: Evidence from Bottled Water Purchases." Selected paper for the 4th Annual Summer Meetings of the Association of Environmental and Resource Economists, San Diego, CA, June 3-5, 2015.
29. Jaenicke, Edward C., Douglas H. Wrenn, and H. Allen Klaiber. "Unconventional Shale Gas Development, Risk Perceptions, and Averting Behavior: Evidence from Bottled Water Purchases." Water Conference, Pennsylvania State University Water Conference, April 22nd, 2015.
30. Wrenn, Douglas H., H. Allen Klaiber, and David A. Newburn. "Confronting Endogeneity in a Duration Model of Residential Subdivision Development." Selected paper presented at the 61st Annual North American Meetings of the Regional Science Association International, Washington, D.C., November 12-14, 2014.
31. Zaveri, Esha, Karen Fisher-Vanden, Douglas H. Wrenn, and Robert E. Nicholas. "Adapting to Monsoon Variability in India: The Case for Irrigation." Selected paper for Northeastern Agricultural and Resource Economics Association Annual Meeting, Morgantown, WV, June 1st-3rd, 2014.

32. Wrenn, Douglas H., Elena G. Irwin, and David A. Newburn. "The Structural Effects of Zoning in Residential Land Markets." Selected paper for the 3rd Annual Summer Meetings of the Association of Environmental and Resource Economists, Banff, Alberta, Canada, June 6-8, 2013.

HONORS AND AWARDS

1. Winner, Best Article Award, Agricultural and Resource Economics Review, Northeastern Agricultural and Resource Economics Association, (2016).
2. Winner, 27th Charles M. Tiebout Prize in Regional Science, Western Regional Science Association, (2013).
3. Winner, North American Regional Science Council (NARSC) Graduate Student-Led Paper Competition, (2012).

GRANTS

Approved/Funded

1. "Understanding Multistressor and Multiscale Drivers of Feedbacks, Cascading Failures, and Risk Management Pathways within Complex MSD System." Penn State University Department of Energy. Program PI: Karen Fisher-Vanden. Role: Co-PI. PSU Amount: \$17,500,000. Dates: 8/1/2021-7/30/2026.
2. "Using Financial Literacy to Reduce Student Debt." Barnes and Noble Education Fund. PIs: Danny Brent and Douglas Wrenn. Total Amount: \$15,000. Dates: 10/01/2021-09/30/2022.
3. "Using Financial Literacy to Reduce Student Debt." Second-Year Enhancement Program. Pennsylvania State University. PIs: Danny Brent and Douglas Wrenn. Total Amount: \$7,500. Dates: 09/01/2021-05/31/2022.
4. "Food Resilience in the Face of Catastrophic Global Events." Open Philanthropy Project. Program PI: Charles Anderson. Role: Co-PI. Total Amount: \$3,064,660. Dates: 05/01/2020-03/31/2024.
5. "Pursuing Opportunities for Long-Term Artic Resilience for Infrastructure and Society (POLARIS)." National Science Foundation. Program PI: Guangqing Chi. Role: Co-PI. Total Amount: \$3,000,000. Dates: 01/01/2020-12/31/2023.
6. "Thriving Agricultural Systems in Urbanized Landscapes." U.S. Department of Agriculture. Program PI: David Abler. Role: Co-PI. Total Amount: \$9,986,159. Dates: 04/01/2019-03/31/2024.
7. "Pennsylvania 2018 Climate Change Impact Assessment". Pennsylvania Department of Environmental Quality (DEP). Program PI: James Shortle. Role: Co-PI investigating impact of extreme weather on infrastructure in Pennsylvania. Total Amount: \$91,403 Dates: 07/01/2019-12/31/2019.
8. "A Multi-Model, Multi-Scale Research Program in Stressors, Responses, and Coupled Dynamics and the Energy-Water-Land Nexus and for Concentrated, Interdependent Infrastructures." Penn State University-Stanford University-Department of Energy. Program PI: John Weyant and Karen Fisher-Vanden. Role: Co-PI. PSU Amount: \$8,925,155. Dates: 8/1/2016-7/30/2021.

9. Horace T. Woodward Faculty Development Fund in Agricultural Science (Travel Grant). Pennsylvania State University. Amount: \$1,815. Dates: 07/2017-06/2018.
10. “How Does an Exogenous Change in Retail Market Structure and Other Food Environment Characteristics Affect the Healthfulness of Consumer Food Purchases?” USDA Economic Research Service. PI: Edward C. Jaenicke. Role: Co-PI. Total Amount: \$60,000. Dates: 09/01/2016-08/31/2018.
11. Horace T. Woodward Faculty Development Fund in Agricultural Science (Travel Grant). Pennsylvania State University. Amount: \$1,775. Dates: 07/2016-06/2017.
12. “Modeling Residential Land and Housing Supply and Integration of Structural Urban Demand and Supply Models.” Cooperative Agreement, U.S. Forest Service USDA Northern Research Station and the Baltimore Ecosystem Study (BES) Long-Term Ecological Research Program. PI: Douglas H. Wrenn. Amount: \$25,000. Dates: 07/01/2015-01/31/2017.
13. “A Household-Level Longitudinal Investigation into the Food Environment’s Impact on Food and Behavior and Health.” SEED Grant Proposal, Pennsylvania State University. Program PI: Jennifer Van Hook. Role: Co-PI. Amount: \$20,000. Dates: 06/1/2015-10/31/2016.
14. Horace T. Woodward Faculty Development Fund in Agricultural Science (Travel Grant). Pennsylvania State University. Amount: \$1,400. Dates: 07/2014-06/2015.

SERVICE

Reviewer – Journals

American Journal of Agricultural Economics
 Applied Economic Perspectives and Policy
 Canadian Journal of Agricultural Economics
 Demography
 Ecological Economics
 Energy Economics
 Environmental and Resource Economics
 Growth and Change
 Journal of the Association of Environmental and Resource Economists
 Journal of Environmental Economics and Management
 Journal of Regional Science
 Land Economics
 Land Use Policy
 National Science Foundation
 National Tax Journal
 Oxford Handbook Series
 Regional Science and Urban Economics
 Review of Environmental Economics and Policy
 Urban Studies

Editorial Council: Land Economics

2021-2024

Reviewer – Papers, Abstracts, and Theses for Professional Meetings

Northeastern Agricultural and Resource Economics Association Thesis Award
 Agricultural and Applied Economics Association (AAEA)

2015-2017

2017-Present

Association of the Environmental and Resource Economists (AERE)	2016-Present
Topics Leader – AAEA Summer Meetings – Econometrics and Statistics	2018-2020

Graduate Student Advising

2013-2016	Esha Zaveri (Post-Doc, Stanford University, 2016-2018; World Bank, 2018-Present)
2014-2017	Kyle Hoy (Assistant Professor, Shepherd University)
2015-2019	Bo Zhang (Plymouth Rock Assurance, Overstock)
2018-2020	Darrah Peklak (Master's) (Standard and Poor's)
2016-2022	Harshanee Jayasekera (Post-Doc, University of Nebraska)
2020-Present	Sizhou Chen
2020-Present	Yongwang Ren (Co-Advisor)
2022-Present	Yuhui Jeong

Dissertation Committee

2014-2016	Iryna Demko (Post-Doc, the Ohio State University, 2016-2018; Research Associate, Cleveland State University, 2018-Present)
2015-2017	Ben Scharadin (Lecturer, Washington and Lee University, 2017-Present)
2016-2018	Aaron Cook (Lecturer, Penn State University)
2018-2019	Zefeng Dong (Wells Fargo)
2018-2020	Yang Yu (Assistant Professor, Montana State University)
2018-2020	Xuan Chen (Amazon)
2018-2020	Xuetao Huang (Employment Security Department of Washington State)
2020-2022	Tanji Hwang
2020-2022	Abdel Traore (McKinsey & Company)
2021-2023	Daniel Simandjuntak (New Castle University, Research Associate)
2020-2023	Asif Rasool (New Mexico Department of Taxation)
2020-Present	Gabe Lara
2022-Present	Josh Reed
2022-Present	Mingzhou Shen
2023-Present	Tiemeng Ma
2023-Present	Xialing Zhao
2024-Present	I-Hung Kuan

Outside Committee Member

2016-2019	Hamid Firooz (Economics Department)
2016-2019	Hamed Atrianfar (Economics Department)
2020-2021	Junghee Choi (Higher Education)
2020-2021	Kelvin Amon (Mississippi State, Agricultural Economics)
2021-2022	Adam Pollack (Boston University)
2017-2022	Oladipo Ositelu (Energy and Mineral Engineering)
2019-2023	Lu Yang (Smeal College of Business)
2020-2023	Julian Plough (UT-Austin, Public Policy)
2019-2024	Terrence O'Brien (Smeal College of Business)
2020-2024	Rui Wan (Smeal College of Business)
2022-Present	Lewis McLean (Economics Department)
2023-Present	Davide Luparello (Economics Department)

Departmental Service: Agricultural Economics, Sociology, and Education, PSU

2014-2017	Energy and Env. Economics and Policy Seminar Committee
2014	AEREC PhD First-Year Qualifying Exam Committee
2013-2014	CED Committee
2024-Present	CED Committee
2018-2021, 2024	EEFE PhD First-Year Qualifying Exam Committee, Chair
2014-2024	EEFE Graduate Committee
2020-2023	EEFE, Director of Graduate Studies
2015-2019	AESE (Ag. Econ.) Hiring Committee
2022	AESE (Ag. Econ.) Hiring Committee, Chair
2023	AESE (Ag. Econ.) Hiring Committee

Affiliations

08/2013-Present	Institute for Energy and the Environment (Penn State)
08/2016-Present	Population Research Institute (Penn State)
01/2020-Present	First Street Foundation Flood Lab

PROFESSIONAL AFFILIATIONS

Agricultural and Applied Economics Association (AAEA)
 American Economic Association (AEA)
 Association of Environmental and Resource Economists (AERE)