Mingzhou Shen

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Education

Ph.D. Energy, Environmental, and Food Economics, Pennsylvania State University — 2025 (Expected)

M.S. Civil Engineering, Zhejiang University — Dec. 2019

B.E. Civil Engineering, Zhejiang University — Jun. 2016

Research Interests

Energy and Environmental Economics, Urban Economics, Labor Economics, Empirical Industrial Organization, Causal Inference

Teaching Fields

Microeconomics, Econometrics, Environmental and Resource Economics, Urban and Land Use Economics, Energy Economics, Geographic Information Systems, Applied Computational Economics, Empirical Industrial Organization

Job Market Paper

Drought responses in the Western United States: Household location choice and housing market feedback.

Abstract: As the threat of climate change intensifies, the Western U.S. is expected to experience more frequent and severe droughts. This looming crisis underscores the need to understand how households may adapt. In this study, I apply a residential sorting model to examine how drought-induced water shortages influence household location choices in the region. My findings are multifaceted: First, households experience significant disutility from living outside their birth states, with preference varying by demographics. Second, water shortages influence household location decisions by both lowering utility and raising rents. This prompts households to relocate to areas where higher net incomes and other desirable amenities can offset these adverse effects. Third, households are willing to pay $0.12 to avoid an additional gallon of unmet water demand annually, with elderly households and homeowners willing to pay more. This study emphasizes the crucial role of megadroughts in shaping population distribution in the Western U.S.

Publications

Peer-Reviewed Journal Articles

[1] Shen, M., Fisher-Vanden, K. and Wrenn, D. 2025. "Impacts of water-related building moratoria on California's housing crisis." (forthcoming at *Land Economics*) https://doi.org/10.3368/le.101.1.112023-0122R

[2] Yi, N., Shen, M., Erdely, D. and Cheng, H. 2020. "Stretchable gas sensors for detecting biomarkers from humans and exposed environments." *TrAC Trends in Analytical Chemistry*, 133, 116085. https://doi.org/10.1016/j.trac.2020.116085

[3] Lü, C., Zhang, Y., Zhang, H., Zhang, Z., Shen, M. and Chen, Y. 2019. "Generalized optimization method for energy conversion and storage efficiency of nanoscale flexible piezoelectric energy harvesters." *Energy Conversion and Management*, 182, 34-40. https://doi.org/10.1016/j.enconman.2018.12.058

[4] Zhang, H., Shen, M., Zhang, Y., Chen, Y. and Lü, C. 2018. "Identification of static loading conditions using piezoelectric sensor arrays." *Journal of Applied Mechanics*, 85(1), 011008. https://doi.org/10.1115/1.4038426

Book

[1] FAO and CAAS. 2021. Carbon neutral tea production in China – Three pilot case studies. *FAO*. (Contributor). https://doi.org/10.4060/cb4580en

Working Papers and Work in Progress

[1] Shen, M. "How does drought shape land-use regulations? Evidence from the Wharton regulation survey."

[2] Ma, Z. and Shen, M. "The impact of non-GMO labeling on consumer demand for wine: Evidence from a choice experiment."

Presentations

2024 AERE Summer Conference; WEAI Annual Conference; AAEA Annual Meeting; CU Environmental and Resource Economics Workshop; Penn State Water Conference; Penn State Energy and Environmental Economics and Policy Initiative Seminar

2023 AERE Summer Conference; WEAI Annual Conference; Cornell Northeast Workshop on Energy Policy and Environmental Economics

2022 Environmental Politics and Governance Conference

Research Experience

Pennsylvania State University, Research Assistant for Karen Fisher-Vanden 2021–Present

Teaching Experience

CED 201: Introductory Environmental and Resource Economics. Douglas H. Wrenn. Spring 2024
Teaching Assistant and Guest Lecturer

EMCH 210: Statics and Strength of Materials. Samia Suliman. Spring 2021
Teaching Assistant

EMCH 212: Dynamics. Christopher Kube. Fall 2020
Teaching Assistant

EMCH 212: Dynamics. Gary Gray. Spring 2020

Teaching Assistant

Professional Experience

Intern, Food and Agriculture Organization of the United Nations 2019

Scholarships and Awards

Graduate Student Travel Award, Pennsylvania State University 2024

Longenecker Award, Pennsylvania State University 2020

Outstanding Graduates, Zhejiang University 2016

Corporate Scholarships for Outstanding Students, Enterprises 2015/2017/2018

Service

Penn State Energy, Environmental, and Food Economics Graduate Student Association 2022-present

Penn State Water Council 2023-present

Penn State Alumni Association - Blue & White Society 2020–2023

Skills

Software: Python, R, MATLAB, Stata, ArcGIS, GAMS

Languages: English (fluent), Mandarin (native)

References

Dr. Karen Fisher-Vanden (advisor)
Distinguished Professor of Environmental and Resource Economics and Public Policy
Pennsylvania State University
kaf26@psu.edu

Dr. Qin Fan
Professor of Economics
California State University, Fresno
qfan@csufresno.edu

Dr. Douglas H. Wrenn
Associate Professor of Environmental and Resource Economics
Pennsylvania State University
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