

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

Primary interests: Environmental Economics, Urban and Land Use Economics, Applied Econometrics

Secondary interests: Energy Economics, Industrial Organization

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 climate change accelerates, 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. "Impacts of water-related building moratoria on California's housing crisis." (Accepted: *Land Economics*)

- [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 do droughts 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

Professional Experience

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| Intern, Food and Agriculture Organization of the United Nations | 2019 |
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Research Experience

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

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| CED 201: Introductory Environmental and Resource Economics. <i>Douglas H. Wrenn</i> . | Spring 2024 |
| EMCH 210: Statics and Strength of Materials. <i>Samia Suliman</i> . | Spring 2021 |
| EMCH 212: Dynamics. <i>Christopher Kube</i> . | Fall 2020 |
| EMCH 212: Dynamics. <i>Gary Gray</i> . | Spring 2020 |

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
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Resource Economics and Public Policy
Pennsylvania State University
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Associate Professor of Environmental and
Resource Economics
Pennsylvania State University
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