

Xianru Han

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EDUCATION

University of Maryland, College Park, MD <i>Ph.D. in Agricultural and Resource Economics</i>	08/2020 - present
Columbia University, New York, NY <i>M.A. in Statistics</i>	09/2018 - 02/2020
University of Maryland, College Park, MD <i>B.S. in Agricultural and Resource Economics & Statistics</i>	08/2016 - 05/2018
China Agricultural University, Beijing, China <i>B.A. in Economics</i>	09/2014 - 06/2016

FIELDS OF SPECIALIZATION

Environmental & Energy Economics, Applied Econometrics

RESEARCH EXPERIENCE

Research Assistant for Anna Alberini, University of Maryland	06/2024 - 01/2025
Research Assistant for Rebecca Epanchin-Niell, University of Maryland	07/2022 - 01/2024
Research Assistant for Kenneth L. Leonard, University of Maryland	01/2021 - 08/2021
Research Assistant for Jack Willis, Columbia University	05/2019 - 12/2019
Research Assistant for Martin Rotemberg, New York University	05/2019 - 12/2019

WORKING PAPERS

The Distributional Effects of Tighter Regulations: New Evidence from the Sugarcane Burning in Florida

Abstract: Environmental regulations shape the spatial distribution of pollution, influencing the burden on different communities. In South Florida, wind-based sugarcane burning regulations have historically favored wealthier, densely populated areas by limiting burning during specific wind conditions. In 2019, additional restrictions were introduced to limit burning on days with low air quality. By using satellite fire data and Aerosol Optical Depth (AOD) data, I assess the impact of these stringent restrictions on burning and air pollution. Results reveal a 41% decrease in burning on restricted days within the main cultivation area, potentially leading to increased burning on days without restrictions. This unintended consequence exacerbates air quality issues for the region's most vulnerable populations. The study reveals regulatory enhancements inadvertently worsen environmental inequities, highlighting the need for environmental justice policies that address historical and systemic discrimination affecting pollution distribution.

A Burning Issue: The Effects of Wildfire Smoke Exposure on Consumer Behavior and Sales of Medical Supplies (joint with Wenying Li and Haoluan Wang), Revise and Resubmit, *Environmental and Resource Economics*

Abstract: Wildfire events have increased in frequency and severity across the United States in recent decades. While a growing literature has documented the effects of wildfire smoke exposure on a wide range of health and socioeconomic outcomes, little is known about its impact on consumer behavior and household demand for adaptation in healthcare. We combine a newly developed and digitized dataset on daily wildfire smoke PM2.5 concentrations across the contiguous United States during 2006-2019 with weekly Nielsen retail scanner data to quantify how wildfire smoke exposure affects retail sales of air purifiers, bottled water, cold remedies, nasal products, cough products, and nutritional products. We find a positive and statistically significant impact of wildfire smoke exposure on the retail sales of these products. Dynamic effects are evident as wildfire smoke exposure in previous weeks also increases current sales. Nonlinear effects arising from the varying intensity of wildfire smoke exposure also reveal distinct patterns of demand for adaptation. We further explore how the effects of wildfire smoke exposure vary with socio-demographic characteristics, focusing on social vulnerability and highlighting the implications of environmental justice. Our results underscore the need for proactive policies to address the increased demand for medical and healthcare products as household adaptive measures during the wildfire season, particularly targeting socioeconomically vulnerable populations who may be prone to limited access to other preventive measures against wildfire.

PUBLICATIONS

Xianru Han, Haoluan Wang, Jiaao Yu (2024). [Navigate through the Haze: Wildfire Smoke Exposure and Metrorail Ridership](#). *Transportation Research Part D: Transport and Environment*, 133: 104309.

WORKS IN PROGRESS

- Movements of CO₂-intensive goods across more and less regulated jurisdictions

CONFERENCE & SEMINAR PRESENTATION

- 2024: Nordic Annual Environmental and Resource Economics (NAERE) Workshop, Climate Economics Pipeline Workshop, AERE Summer Conference
- 2023: Heartland Environmental & Resource Economics Workshop, The Race, Ethnicity and Place Conference, 24th CU Environmental & Resource Economics Workshop, AAEA Annual Meeting, AERE Summer Conference, Interdisciplinary Ph.D. Workshop in Sustainable Development (IPWSD)
- 2022: UMD AREC Egg Timer
- 2021: Berkeley/Sloan Summer School in Environmental and Energy Economics

TEACHING EXPERIENCE

- Teaching Assistant, Applied Microeconomics (graduate), University of Maryland, Spring 2022, Spring 2024
- Teaching Assistant, Gender in Economics and Development (undergraduate), University of Maryland, Fall 2021
- Teaching Assistant, Applied Machine Learning for Financial Modeling (graduate), Columbia University, Spring 2020
- Academic Math Tutor, ASCDU, University of Maryland, Spring 2017, Fall 2017, Spring 2018

PROFESSIONAL SERVICE

- Referee for Energy Economics
- UMD AREC First Year PhD Student Mentor (2023-2024)
- UMD AREC Search Committee for Assistant Director for the PhD Program (2023)

HONORS & SCHOLARSHIPS

University of Maryland, College Park

- Dean's fellowship 2020, 2023, 2024
- Jacob K. Goldhaber Travel Grant 2023
- Magna Cum Laude Honor Graduate 2018
- Ray A. Murray Scholarship 2016 - 2018

China Agricultural University

- China Merited Undergraduate Student Scholarship 2014 - 2016
- China National Scholarship 2014 - 2015

SKILLS

R, Stata, Matlab, Python, SQL, JavaScript

Last updated: July 2, 2024