

Lena Harris

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EDUCATION **Ph.D. Economics** 2025 (Expected)
University of Rochester
M.A. Economics 2021
University of Rochester
B.A. Economics, International Affairs, French 2017
University of Colorado, Boulder
Honors in Economics

RESEARCH INTERESTS Environment and Resource Economics, Health Economics, Public Policy

PUBLISHED PAPERS “Farmer response to policy induced water reductions: Evidence from the Colorado River”, *Journal of Environmental Economics and Management* 2024.
**Primary author*

“Limited Impact of Roadway Construction and Traffic Congestion on Nearby Housing Prices” with Max Harleman, Mary Willis, Perry Hystad, and Elaine Hill, *Transport Policy* 2024.

“Roadway construction as a natural experiment to examine air pollution impacts on infant health” with Elaine Hill*, Max Harleman, Grace Sventek, Mary Willis, Beate Ritz, Erin J Campbell, and Perry Hystad, *Environmental Research* 2024

“A population-based cohort study of electronic tolling, traffic congestion, and adverse birth outcomes” with Mary Willis*, Erin Campbell, Mira Chaskes, Ethan Sawyer, Max Harleman, Beate Ritz, Elaine Hill, and Perry Hystad, *Environment International* 2023.

“Changes in socioeconomic disparities for traffic-related air pollution exposure during pregnancy over a 20-year period in Texas” with Mary Willis*, Elaine Hill, Collette Ncube, Erin Campbell, Max Harleman, Beate Ritz, and Perry Hystad, *JAMA Network Open* 2023.

“Changes in traffic congestion and air pollution due to major roadway infrastructure improvements in Texas” with Max Harleman*, Mary Willis, Beate Ritz, Perry Hystad, and Elaine Hill, *Science of the Total Environment* 2023.

“A population-based cohort study of traffic congestion and infant growth using connected vehicle data” with Mary Willis*, David Schrank, Chunxue Xu, Beate Ritz, Elaine Hill, and Perry Hystad, *Science Advances* 2022.

WORKING PAPERS “Drought and Investment in Electricity Markets” (Job Market Paper)

WORKS IN PROGRESS “Lake Desiccation and Pregnancy Loss” with Mary Willis

CONFERENCES, TALKS, AND WORKSHOPS	Allied Social Science Associations	<i>Scheduled</i> 2025
	Association of Environmental and Resource Economists Annual Summer Conference	2024
	USDA Economic Research Service, CU Environmental and Resource Economics Workshop, Western Economic Association International, Association of Environmental and Resource Economists Annual Summer Conference, Eastern Economic Association	2023
	International Society for Environmental Epidemiology	2022
AWARDS AND SCHOLARSHIPS	Summer Research Grant, University of Rochester	2023, 2024
	AS&E Supplemental Professional Development Funding, University of Rochester	2023
	Library Data Grant, University of Rochester	2021
	Economics Department Ph.D. Fellowship and Tuition Scholarship, University of Rochester	2019-2024
	Katherine J. Lamont Scholarship, University of Colorado	2016-2017
	Richard and Amanda W. Smoot Endowed Scholarship, University of Colorado	2016
	Dean's Scholars, University of Colorado	2014-2017
CU Esteemed Scholars Scholarship, University of Colorado	2013-2017	
TEACHING EXPERIENCE	Instructor	
	Econometrics, Undergraduate	Summer 2022
	Teaching Assistant	
	Research in Applied Econometrics, Graduate	Spring 2022, 2023, 2024
	Public Finance, Undergraduate	Spring 2023
	Economic Statistics, Undergraduate	Fall 2022
	Principles of Economics, Undergraduate	Spring 2022
Econometrics, Undergraduate	Fall 2021	
RESEARCH EXPERIENCE	Short Term Consultant at the World Bank (Poverty and Equity Group)	2021-2023
	Research Assistant for Prof. John Singleton, UR	2023
	Research Assistant for Prof. Nese Yildiz, UR	2022
	Research Assistant for Prof. Elaine Hill, UR	2020-2023
	Research Assistant for Prof. Carol Shiue, CU	2017
OTHER	Activities	Department Student Council 2023-2024
	Nationality	American
	Languages	English (native), French (conversational)
	Hobbies	Gardening, hiking, sewing
ACADEMIC REFERENCES	Elaine Hill (co-chair) Department of Economics University of Rochester elaine.hill@urmc.rochester.edu	Lisa Kahn (co-chair) Department of Economics University of Rochester lisa.kahn@rochester.edu
	John Singleton Department of Economics University of Rochester john.singleton@rochester.edu	

Drought and Investment in Electricity Markets

Job Market Paper

Worsening drought under climate change may pose a threat to electricity markets, since thermal electricity generation can be an extremely water intensive process. Endogenous changes in the types of technologies used to generate electricity may mitigate this threat, but this adaptation is largely overlooked in the existing literature. This paper studies the impact of drought on electricity markets accounting for both the direct impact on production and the indirect effect through technological adaptation. To estimate the production effect, I exploit temporal variation in drought conditions to show that drought shocks shift generation away from high water use thermal plants, and are associated with up to a 30% increase in wholesale prices. To incorporate technological adaptation, I estimate a model of investment and production in the Texas electricity market, which is novel in incorporating drought as a determinant of production costs. I apply counterfactual climate change scenarios to the model and find that worse future drought decreases investment in high water use plants by up to 20%, and increases investment in higher emissions, dry cooled plants. The findings in this paper highlight the importance of accounting for endogenous changes to the grid, both with respect to optimal policy implementation and measuring grid emissions.

Farmer Response to Policy Induced Water Reductions: Evidence from the Colorado River

Published in Journal of Environmental Economics and Management

Surface water supplies are becoming increasingly strained, pushing policy makers to find solutions to facilitate reductions in water use though there is limited evidence on how farmers respond to policy induced variation in surface water supplies. This paper uses a difference-in-differences framework to compare the response of farmers to a bundle of policies reducing deliveries from the Colorado River by 35%. I find that on average, farmers reduce the amount of land planted but plant more water intensive crops leading to a minimal reduction in total estimated water use compared to the counterfactual. Additionally, there is strong suggestive evidence that farmers are using groundwater to offset a significant amount of the surface water loss. These findings have important consequences for understanding the relative trade-offs policy makers face when implementing policies that protect surface water sources.