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

**Primary author*

"Farmer response to policy induced water reductions: Evidence from the Colorado River", *Journal of Environmental Economics and Management* 2024.

"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	*Scheduled* 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. This paper shows that while short run drought shocks can adversely affect high water-use power plants, the subsequent increase in wholesale prices is mitigated by long run changes in the mixture of generating technologies. I first estimate the short run impact of drought shocks on the Texas electricity market (ERCOT), showing that high water use plants reduce production with direct drought exposure while dry cooled power plants substitute for the lost generation. This change in generation is associated with a 30% increase in wholesale prices. I also provide suggestive evidence that firms adapt to future drought risk by shifting investment towards less water-intensive technologies. I then estimate a model of investment and production in electricity markets which is novel in incorporating drought as a determinant of production costs. I find that in line with the reduced form results, endogenous adaptation reduces investment in high water use plants by up to 20%, and increases investment in dry cooled plants. However, I find that this investment shift is insufficient to mitigate the increase in prices during drought shocks. The findings from this paper are informative for several policy areas, from optimal investment in renewable technologies to environmental inequities arising from pollution exposure.