Zeyang Dong

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Education

University of Maryland, College Park Sep 2020 – Present
Ph.D. in Agricultural and Resource Economics (Expected 2027)
Dissertation: Three Essays on Environmental and Energy Economics
Dissertation Chair: Joshua Linn

University of Maryland, College Park May 2025
M.S. in Agricultural and Resource Economics

Georgetown University Sep 2017 – May 2019
M.S. in Economics

Shanghai Maritime University Sep 2012 – Jun 2016
B.A. in Marine and Logistics Economics

Research Fields

Energy and Environmental Economics, Industrial Organization, Applied Econometrics

Working Papers

- Wind Integration and Short-Run Market Power in Wholesale Electricity Markets: Evidence from ERCOT (Job Market Paper)

  Abstract: Renewable integration can reduce conventional generators' market power by reshaping the residual demand they face. Using detailed generator-level bidding and operating data from ERCOT, this paper examines how wind generation affects conventional generators' bidding behavior, wholesale electricity prices, and welfare. I develop a model of strategic bidding that distinguishes static market power from dynamic operating considerations. The empirical results show that a 1 GW increase in expected wind generation is associated with a $1.38/MWh reduction in conventional generators' bid markups, approximately 30 percent of the average markup. A model-based decomposition identifies changes in residual demand as the primary mechanism. Counterfactual simulations show that a 1 GW increase in wind capacity reduces wholesale electricity prices by $2.48/MWh, accounting for conventional generators' strategic bidding responses to wind integration. However, static market power substantially limits the welfare gains: annual welfare increases by $289 million under strategic bidding, compared with $626 million in a benchmark without static market power.
- Assessing Air Quality Disparities in California Using Satellite-Based Ozone Measures
- Decomposing the Effects of Technological Innovation on Agricultural Groundwater Extraction (with Lars Olson)
- How Do Residential Greenhouse Gas Mitigation Technologies Affect Electricity Prices and Consumer Welfare? (with Jing Liang, Joshua Linn, and Yueming Qiu)

Research and Professional Experience

- Graduate Research Assistant – Professor Lars Olson Jun 2021 – Aug 2025
  University of Maryland, College Park
- Graduate Research Assistant – Professor Joshua Linn Sep 2024 – Jan 2025
  University of Maryland, College Park
- Graduate Research Assistant – Professor Neslihan Uler Aug 2020 – Jan 2021
  University of Maryland, College Park
- Short-Term Consultant, World Bank Group Aug 2019 – May 2020

Teaching Experience

University of Maryland, College Park 2021 – 2026

Undergraduate Courses

AREC 280 — Harvesting Big Data to Examine Agriculture and Climate Change (Grader, 2026)
AREC 380 — Data Science for Environmental and Resource Economics (Grader, 2026)
AREC 365 — World Hunger, Population, and Food Supplies (TA, Spring 2021)
HNUH 258A — Harvesting Big Data to Examine Agriculture and Climate Change (Honors Program) (TA, Fall 2022)

Graduate Courses

ECON 603 — Microeconomic Analysis I (TA, Fall 2021)
ECON 604 — Microeconomic Analysis II (TA, Spring 2022, Spring 2023)

Other Research Projects

Climate Vulnerability of Maryland Agriculture Jun 2023 – Aug 2024
University of Maryland

- Analyzed historical climate impacts on agricultural productivity and projected future impacts using CMIP6 scenarios.

Predicting Poverty in Data-Scarce Environments May – Aug 2019
Georgetown University & World Bank

- Applied penalized regression, regression trees, and neural networks to predict household poverty.

Poverty Imputation Using Vietnam LSMS Microdata Jan – Apr 2019
Georgetown University

- Evaluated supervised and unsupervised learning methods for poverty imputation using household survey data.

Conference Presentations and Participation

- 2026 World Congress of Environmental and Resource Economists (WCERE), Portugal — Presentation
- 2024 Association of Environmental and Resource Economists (AERE), Washington, DC — Presentation
- 2023 Agricultural & Applied Economics Association (AAEA), Washington, DC — Attendance

Awards and Grants

- Jacob K. Goldhaber Travel Grant, 2026
- International Conference Student Support Award (ICSSA), 2026

Technical Skills

Programming: R, Stata, MATLAB
Methods: Panel Data, Causal Inference, Structural Models, Spatial Econometrics, Machine Learning
Tools: LaTeX, Excel, PowerPoint

Languages

English (fluent); Chinese (native)