

Jason Zhu

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Education

Ph.D. in Agricultural and Resource Economics, University of California, Davis	Expected Mar 2027
M.S. in Agricultural and Resource Economics, University of California, Davis	June 2021
B.S. in Environmental Economics and Policy, University of California, Berkeley	May 2020

Skills & Software

Methods	Causal Inference; Statistical Inference; Quasi-Experimental Design; Econometric and Statistical Modeling; Geospatial Analysis; Revenue Analysis; Data Analytics & Visualization; Corporate Finance; Business Valuation
Tools	R; Stata; SQL; Python; Matlab; ArcGIS; Aeolus; SPSS; Excel

Experience

Research

Fracking Boom and High School Students' Educational Attainment

This paper studies how local resource booms affect human capital accumulation in Colorado. I use geospatial software to construct a novel spatial dataset by overlaying the plausibly exogenous shale endowment with school district boundaries. I designed and implemented a difference-in-differences model to quantify the impact of resource booms on human capital, identifying a 0.65 percentage point decrease in dropout rates and a 0.22 increase in ACT scores; heterogeneous analysis concludes larger gains for under-represented minorities. I projected that these educational improvements translate to a \$280 million aggregate increase in lifetime earnings and tax revenues. Higher teacher quality and local revenues are the main channels explaining the results. Falsification tests confirmed that residential sorting and migration did not bias the results. These findings have important policy implications on how to help students achieve in resource-rich regions.

Corn Expansion: Atrazine Exposure and Infant Health in the U.S.

This paper estimates the causal effect of atrazine exposure on fetal health. To address the endogeneity issue, I construct a novel shift-share Instrumental variable that interacted the pre-policy crop pattern with ethanol price shock exploiting the Renewable Fuel Standard. I engineered a comprehensive dataset by integrating restricted-access natality records with local economic indicators; I find that a kg/km^2 increase in atrazine application lowers the average birthweight by 2.3 grams. This paper also investigates groundwater pollution channels linking the drinking water violation records and find that violation counts increase by 0.0026, which translate to 50% increase. These findings highlight the need for additional regulations in atrazine applications.

Work in Progress: Spraying to the Market: Price Shocks, Crop Substitution, and the Demand for Agricultural Chemicals

Investigating how crop prices and input costs influence agricultural chemical use, using price data containing millions of observations.

Industry

TikTok — Business Analyst Intern (Ph.D.)

Jun-Sep 2026

Advertising Performance Content & Services · Global Data Science

- Built the team's first centralized advertising dashboard in **Aeolus** (ByteDance's in-house BI platform) with 500+ charts across four business pillars, using **SQL**-based custom metrics and filters, giving 30+ managers and colleagues a shared source for tracking revenue and product performance.
- Built an **automated** daily revenue monitoring system that flags major changes, identifies the key driving advertisers, and supplies account-level product metrics for investigation; validated its first run against a manual check.
- Developed AI-agent workflows that compile historical revenue and advertising performance reports for top advertisers, reducing manual data collection for account reviews.
- Created reusable AI-agent skills for chart generation and biweekly promotional-list updates, reducing the

team's manual dashboard maintenance by about four hours per week.

Teaching

Instructor of Record

Development Economics, UC Davis

Spring 2026

- Designed and delivered a 10-week course for 200 students; prepared lectures, course materials, problem sets, and examinations.
- **Supervised four** teaching assistants across eight discussion sections, established grading standards, and coordinated assessments and course administration.

Teaching Assistant

Corporate Finance (E. Edwards), UC Davis

Winter 2026, Spring 2025

Economics of Agricultural Sustainability (D. Sumner), UC Davis

Winter 2025

Economics of Business Regulation (S. Sutterland), UC Davis

Fall 2024

Development Economics (S. Boucher), UC Davis

Spring 2024, Fall 2025

Econometric Theory and Applications (E. Taylor), UC Davis

Winter 2023, Spring 2023

Agricultural Labor (E. Taylor), UC Davis

Spring 2021

Intermediate Microeconomics (R. Goodrich, K. Novan, S. Sutterland, A. Shenoy), UC Davis

Fall 2020, Fall 2021, Fall 2022, Fall 2023, Winter 2024

Other Research and Professional Activities

University of California, Berkeley

Fall 2019, Spring 2020

Undergraduate Student Researcher

- Advised by Jeffrey Perloff, Distinguished Professor of Agricultural and Resource Economics

Presentations and Conferences

Agricultural & Applied Economics Association Annual Meeting

2026

UC Davis Natural Resource Policy Lab

2025

Giannini Foundation of Agricultural and Resource Economics Student Conference

2024

Fellowship

ARE Summer Research Fellowship

2025, 2024

UC Davis ARE Grad Travel Award

2024

UC Davis Provost's Fellowship

2022, 2021

References

Eric Edwards (Chair) – Associate Professor

Dept. of Agricultural and Resource Economics, University of California, Davis
ecedwar@ucdavis.edu

Katrina Jessoe – Associate Professor

Dept. of Agricultural and Resource Economics, University of California, Davis
kkjessoe@ucdavis.edu

Scott Carrell – Professor

Dept. of Economics, University of Texas at Austin
scott.carrell@austin.utexas.edu

Additional Information

Certificate: Certificate for Entrepreneurship and Technology issued by UC Berkeley

Languages: English (native), Mandarin (native), Cantonese (native)

Citizenship: U.S. Citizen