Robert Baluja

Department of Economics, University of Arizona

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Research Fields

Environmental Economics, Industrial Organization, Labor Economics

Education

University of Arizona — Tucson, AZ
Ph.D. (M.A. en route) - Economics — *Expected 2025*

University of California, San Diego — La Jolla, CA
B.S. - Mathematics & Economics; Summa Cum Laude — *2020*

Working Papers

Escape the Heat: The Dynamics of Migration as Adaptation to Climate Change

Climate change will lead to large changes in global weather patterns and extreme events. The damages from such changes will be spatially heterogeneous, implying that migration can be a valuable form of adaptation. Its value and responsiveness to different policy levers are open empirical questions. To provide answers, I specify and estimate a dynamic life-cycle model of migration within Mexico. I combine the life-cycle model with a non-stationary and spatially heterogeneous model of the climate, and allow for both myopic and fully informed and rational expectations of its future progression. Estimation makes use of a rich sample of life histories, covering the years 1950–2019, and follows a nested full-solution pseudo-maximum likelihood routine. I combine the estimated model with full-count census data to simulate forward population movements through 2038 under a variety of counterfactual scenarios. These simulations highlight the importance of migration in limiting the damages of climate change. First, I find that predicted warming under a business-as-usual climate scenario will cause the lifetime value of migration, for the average young man in Mexico, to increase by over 80% by 2038. Similarly, I find that the ability to migrate reduces expected lifetime climate damages for this same group by 27%, with this reduction increasing to 32% by 2038. I conclude by using the model to understand the welfare implications of various migration subsidy schemes. I find that policies that effectively exploit the option value of future opportunities induce large net welfare improvements.

PFAS-Contaminated Drinking Water Harms Infants

with Bo Guo, Wesley Howden, Ashley Langer, and Derek Lemoine
In revision for *Science*

There is evidence of widespread human exposure to per- and polyfluoroalkyl substances (PFAS) but limited evidence of human health impacts. Using data on all New Hampshire births from 2010–2019, we show that receiving water that has flowed beneath a PFAS-contaminated site increases first-year infant mortality by 161% [95% CI: 70–251%], the chance of a birth before 28 weeks of gestational age by 120% [95% CI: 30–210%], and the chance of birthweight below 1,000 g by 152% [95% CI: 48–257%]. Extrapolating to the contiguous U.S., PFAS contamination imposes annual social costs of approximately $8 billion. These health costs are substantially larger than the cost of removing PFAS from the public water supply.

Presentations

2024: AERE Summer Conference, University of Arizona Econometrics Lunch
2023: AERE@OSWEET, AERE@WEAI, AZ ENREE Workshop, Columbia University IO Colloquium, Sacramento Economics Roundtable, 2nd Summer School on the Economics of Migration
2022: CU Environmental & Resource Economics Workshop
2019: UCSD Faculty Mentor Program Symposium, UCSD Undergraduate Research Conference

Visits

2023: PER-IO Graduate Student Visitor, Department of Economics, Columbia University

Grants and Awards

2024: Dror Research Excellence Award, AERE Travel Scholarship, GPSC Travel Grant
2023: AEA Mentoring Program Travel Grant
2022: Steve Manos Prize for Best Second-Year Paper, GPSC Travel Grant
2020: Phi Beta Kappa

Research Experience

Research Assistant — University of Arizona
Prof. Ashley Langer — *Spring 2022 - Present*

Research Assistant — University of Arizona
Prof. Derek Lemoine — *Spring 2022 - Fall 2023*

Research Assistant — University of California, San Diego
Prof. Philip Roeder — *Spring 2019*

Teaching

Instructor of Record

Microeconomic Analysis for Business Decisions - Spring 2025 (Online)

Macroeconomic and Global Institutions and Policy - Summer 2024 (Online)

Basic Economic Issues - Summer 2023 (In-Person)

Teaching Assistant

Environmental Economics - Spring 2024

Economics of Sports - Spring 2023

Mathematical Economics (PhD) - Fall 2021, Fall 2022

Math Camp (PhD) - Summer 2022

Economics of Strategy - Fall 2020, Spring 2021

Climate Science & Economics: How Should Policy Control Warming? - Fall 2021

Basic Economic Issues - Fall 2020

Skills Summary

Programming Languages: Julia, Python, R

(Non-Programming) Languages: English (Native), Spanish (Conversational)