

HANNAH RHODENHISER

270 Bay State Road

Boston MA 02215 USA

Cell: (734) 353-3287

Email: hmrh@bu.edu

Web site: <https://sites.google.com/view/hannahrhodenhiser>

EDUCATION

Ph.D., Economics, Boston University, Boston MA, May 2026 (expected)

Dissertation Title: *Essays in Macro Environmental Economics*

Dissertation Committee: David Lagakos, Masao Fukui, Pascual Restrepo

B.S., Honors Economics (*with Distinction*), University of Michigan, Ann Arbor MI, 2017

FIELDS OF INTEREST

Macroeconomics, Environmental Economics

WORKING PAPERS

[“Averting Deforestation At Scale: The Macroeconomics of Payments for Ecosystem Services,”](#)
October 2025. Job Market paper.

[“Homework in Climate Economics: Household Production, Environmental Preferences, and Climate Policy,”](#) (with Stephie Fried and David Lagakos), February 2025.
Revise & resubmit at *Review of Economics and Statistics*.

[“Forecasting U.S. Economic Activity with a Small Information Set,”](#) (with Daniel Cooper and Giovanni Olivei), June 2025, *submitted*.

[“Measuring Household Wealth in the Panel Study of Income Dynamics: The Role of Retirement Assets,”](#) (with Daniel Cooper and Karen Dynan), August 2019.

WORK IN PROGRESS

“The Green Revolution and Fertility: Sub-National Estimates in Sub-Saharan Africa”

“Nature versus Knowledge: Immigrant Specialization and Agricultural Production”

PRESENTATIONS

Federal Reserve Bank of Boston, 2024

AERE Summer Conference, 2025

Green Line Macro Meeting, 2025

Bentley Applied Macro Workshop, 2025 (scheduled)

Lafayette College, 2025 (scheduled)

FELLOWSHIPS AND AWARDS

Dissertation Fellowship, Federal Reserve Bank of Boston, Spring 2024
High Honors in Economics, University of Michigan, 2017
James B. Angell Scholar, University of Michigan, 2017
University Honors, University of Michigan, 2014, 2015, 2016
Caldwell Poetry Prize, University of Michigan, 2015, 2016, 2017

WORK EXPERIENCE

Research Fellow, Robert King, Boston University, Fall 2025
Research Fellow, Masao Fukui, Boston University, Fall 2024
Graduate Intern, Daniel Cooper, Federal Reserve Bank of Boston, Summer 2021
Senior Research Assistant, Daniel Cooper, Federal Reserve Bank of Boston, 2018-2020
Research Assistant, George Fenton, University of Michigan, 2017
Research Assistant, Elaine Lande, University of Michigan, 2016

REFeree EXPERIENCE

Journal of Political Economy

TEACHING EXPERIENCE

Teaching Fellow, Department of Economics, Boston University
Macroeconomic Theory 1 (Ph.D.), Fall 2021, Fall 2022, Fall 2023
Macroeconomic Theory (M.A.), Spring 2022, Spring 2023
International Trade, Spring 2025
Dynamic Macroeconomics, Spring 2025

COMPUTER SKILLS: Stata, Matlab, R, Python, SQL, Latex

CITIZENSHIP: United States

REFERENCES

David Lagakos

Department of Economics
Boston University
Phone: (617) 353-8903
Email: lagakos@bu.edu

Masao Fukui

Department of Economics
Boston University
Phone: (857) 500-3712
Email: mfukui@bu.edu

Pascual Restrepo

Department of Economics
Yale University
Email:
pascual.restrepo@yale.edu

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Averting Deforestation At Scale: The Macroeconomics of Payments for Ecosystem Services (Job Market Paper)

Payments for Ecosystem Services are a tool for reducing carbon emissions from deforestation by paying households to conserve forest. Empirical evaluations have found small-scale subsidy programs to have a large impact on deforestation. However, little is known about the general equilibrium effect of implementing these policies at scale. I develop a quantitative model of smallholders with dynamic incentives for land use to study the general equilibrium impact of at-scale forest subsidies. The quantified model implies that an at-scale intervention has only one sixth of the impact on the level of forest of a local intervention offering the same subsidies. This is because the intervention increases the equilibrium price of wood products, increasing households' incentive to deforest. However, the duration of subsidy payments is a crucial determinant of their cost-effectiveness: Comparing long-term and short-term interventions with the same total cost, long-term interventions can more than double the increase in the level of forest. Next, equilibrium price effects also shape the cost-effectiveness of targeting subsidies to the most-responsive households. Finally, at-scale interventions are more progressive than local interventions because equilibrium price changes favor households with low land productivity.

Homework in Climate Economics: Household Production, Environmental Preferences, and Climate Policy

(with Stephie Fried and David Lagakos)

This paper studies emissions from household energy use, which account for one third of U.S. emissions. We draw on a new survey to document that some households purchase energy-saving equipment because, in addition to cutting energy costs, they want to reduce emissions. We build a macro-environmental model in which emissions result from home production tasks involving either clean or dirty equipment, and some households have distaste for their own emissions. We analyze the most cost-effective subsidy on clean equipment. We show that changes in households' emissions distaste have similar effects on household emissions as a modest sized carbon tax.

The Green Revolution and Fertility: Sub-national Estimates in Sub-Saharan Africa

The Green Revolution (GR) was characterized by the development of new higher yielding varieties of crops suited to the climates of developing countries. Pairing fertility microdata and data on local agricultural production, I construct a sub-national measure of GR treatment which depends on the crop-level effects of the GR on yields, a crop's share of local production, and the importance of agriculture in the area. Based on my sub-national estimates, I find that the aggregate effect of the GR varies substantially across 20 countries in Sub-Saharan Africa. While some countries experienced large negative effects of the GR on fertility, matching the cross-country findings in the literature, others experienced precisely estimated zero effects or large positive effects. The effects of the GR on fertility are always negatively related to effects on educational attainment, suggesting that education is one important mechanism through which the GR affects fertility. These results complicate the recent consensus in the literature that Malthusian dynamics are no longer present.