

ROY GERNHARDT

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Placement Officer: Bilge Erten

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PhD Program Director: Mindy Marks

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Education

Northeastern University

Ph.D. Labor and Development Economics, from 2019 to August 2025

Boston University

M.A. Economics, 2018

B.A. Economics and Mathematics, *Cum Laude*, 2018

Minor in Computer Science, 2018

Minor in Physics (Computational Physics focus), 2018

Fields

Labor Economics and Development Economics

Structural Poverty, Game Theory & Conflict, AI & Machine Learning

References

Assoc. Prof. Mindy Marks

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Professor Sylvia Prina

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Job Market Paper

“*White Flight In The 21st Century*”

A national dataset of U.S. elementary school student demographics is used to demonstrate that white flight was still an important dynamic in the first two decades of the 21st century. On average, white schools reached the ‘tipping point’ - the point at which net white exodus begins and accelerates - at a white share around 95%. The paper exploits the sociological theory of Mediated Intergroup Contact to give a lower bound to the impact of anti-Black prejudiced stereotypes on white flight.

Teaching

Northeastern University

High Student Ratings

TRACE Survey rating of 4.86/5 for effectiveness (Teacher Rating and Course Evaluation)
higher than department and university averages of 4.4 and 4.5

RateMyProfessor.com rating of 5/5 and 100% of students would take his class again

Quotes: “Caring”, “Amazing lectures”, “Gives good feedback”

Instructor of Record

Microeconomic Theory, Instructor of Record, Spring 2025

Principles of Micro, Instructor of Record, Summer 2024

Principles of Macro, Instructor of Record, Summer 2024

Teaching Assistant

Principles of Micro, TA for Mike Stone, Spring 2024

Principles of Micro, TA for Frank Georges, Fall 2023

Teaching

Teaching Assistant, cont.

Principles of Micro, TA Grader for Gustavo Vincentini & Jill Dupree, Spring 2022
Economics of Conflict, TA Grader, Test Design, & Substitute for Jill Dupree, Spring 2022
American Economic History, TA & Substitute Lecturer for Jill Dupree, Spring 2022
Principles of Micro, TA for Frank Georges, Fall 2021
Principles of Micro, TA for Frank Georges, Spring 2021
Principles of Micro, TA for Mike Stone, Fall 2020
Principles of Micro, TA for Mike Stone, Spring 2020
Intermediate Macro, TA Problem Set Design & Grading for Jill Dupree, Fall 2019

Research Assistant

Boston Summer Youth Employment Program, Alicia Sasser-Modestino, 2022-2023

This program is a highly successful initiative by the City of Boston's Office of Youth Employment and Opportunity (YEO)

- Helped manage large internal dataset of ca. 4000 employees according to strict PII protocols
- Completed *JPAL Research Staff Training*
- Produced the design, deployment, and analysis of employee surveys before and after participation as well as parent and institutional participation surveys

Northeastern University, Silvia Prina, 2020-2021

- Assisted on project that became the *Government Shutdown and SNAP Disbursements* paper.
- Quickly promoted to *coauthor*.

Published Papers

“Government Shutdown and SNAP Disbursements: Effects on Household Expenditures”

Coauthored with Mindy Marks, Silvia Prina. *Review of Economics of the Household*, June 2024

The ability of SNAP eligible households to respond to a temporary change in benefit timing is tested. The paper exploits the 2018–2019 US government shutdown where all states were federally mandated to pay February SNAP benefits in January. This created a short-term windfall (two payments close to each other) followed by an abnormal gap during which no SNAP disbursements were received. Using a triple differences approach, expenditures are shown to be lower in February (relative to other months) 2019 (relative to 2018) for SNAP recipients (relative to near-eligible households). This finding is complemented by exploiting preexisting state-level differences in disbursement schedules that drove some states to temporarily alter the timing of the 2019 March and April SNAP disbursements. Diff-in-diff estimates show that SNAP eligible households in those states reduced spending. These findings are inconsistent with the permanent income hypothesis and suggest that the timing of benefits matters for household consumption.

Research Papers

“Catchment If You Can: Demographic Consequences of Mandatory School Choice”

Coauthored with Mindy Marks, Silvia Prina. Anticipated journal submission Fall 2025

This paper uses a two-way fixed effects approach to show that lottery-based school choice programs which do not guarantee seats in local schools encourage high socioeconomic status families to emigrate from those school districts.

Research Papers

“Leveraging AI in Economics Education: A Pedagogical Case Study” – In progress,
Anticipated journal submission Fall 2025, Coauthored with ChatGPT 4o

The integration of artificial intelligence (AI) is explored as a pedagogical tool in undergraduate economics education, specifically in fostering critical thinking and conceptual understanding. Over the course of a summer session in 2024 and spring of 2025, students participated in a series of AI-driven projects designed to encourage deep exploration of economic principles such as those proposed by Adam Smith, John Maynard Keynes, and modern economic frameworks. The methodology involved a structured conversational approach where students engaged in dialogue with AI, using a keyword-based game to initiate the interaction, followed by deductive synthesis and open-ended discussions. Preliminary findings suggest that AI-assisted conversations not only reinforced learning outcomes but also potentially helped bridge the gap between rote memorization and critical analysis. This case study aims to provide a foundation for future research on the role of AI in higher education and its potential to augment the classroom experience.

“On the Equivalence of Neural and Production Networks”

Coauthored with Bjorn Persson, <https://arxiv.org/abs/2005.00510>, November 2021

This paper identifies the mathematical equivalence between economic networks of Cobb-Douglas agents and Artificial Neural Networks. It explores two implications of this equivalence under general conditions. First, a burgeoning literature has established that network propagation can transform microeconomic perturbations into large aggregate shocks. Neural network equivalence amplifies the magnitude and complexity of this phenomenon. Second, if economic agents adjust their production and utility functions in optimal response to local conditions, market pricing is a sufficient and robust channel for information feedback leading to macro learning.

Presentations

“Government Shutdown and SNAP Disbursements: Effects on Household Expenditures”

LERA/ASSA, January 2022

Economics PhD Workshops 2022, 2023

“White Flight in the 21st Century”

Economics PhD Workshops, Northeastern University, 2023, 2025

“Catchment If You Can: Demographic Consequences of Mandatory School Choice”

Economics PhD Workshops, Northeastern University, 2023, 2025

Employment

Instructor of Record, Economics Department, Northeastern University, Boston, 2023-present

Music Minister, First Church Congregational Church, Sandwich MA, 2013-present

Leads and shapes the musical and media elements of services and performances, Production, Organization and Management of ca. 40 volunteers and one employee

Music Instructor, Self-Employed, Massachusetts, 2005-2016

Highly competent and engaging multi-instrumental music teacher. Taught in student residences, Kept a full student roster with a waiting list

Music Minister, Kingdom Church, Brockton MA, 2004-2005

Directed a music program consisting of a dozen highly skilled musicians and media team, Led music team during church services, Performed all over New England with band, Produced radio show weekly for public airing

Skills

Data & Econometrics

- Extensive and expert use of STATA and R
- Data security and privacy / PII
- Custom programmed algorithms in C++ and SQL (*e.g. bootstrap/jackknife, Multiple OLS*)
- Experience with large datasets (*e.g. Nielsen Consumer Panel, ~11M observations per year*)
- Experience with PII protocols (*e.g. Boston Summer Youth Employment Program*)

Programming

- Expert in algorithms, complexity theory, and optimization
- Languages utilized: C++, C, Fortran, Java, Python, Julia, Visual Basic, PHP, SQL, Octave, R
- Web scraping in several languages

Machine Learning / AI

- Custom implementations of Feedforward Neural Networks
- Constructive Neural Networks
- Bayesian Machine Learning
- K-means Clustering
- Dimensionality Reduction through Principle Component Analysis
- Support Vector Machines, Recommender Systems