

# Keith Barnatchez

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## EDUCATION

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Harvard University, 2021-2026 (expected)

PhD Candidate in Biostatistics

Harvard University, 2021-2023

AM Biostatistics

Colby College, 2014-2018

BA Mathematical Sciences, Statistics Concentration

BA Economics-Mathematics, Honors thesis: *Employer Mandates and Firm Dynamics*

## ACADEMIC EXPERIENCE

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PhD Student Research Assistant, [Massachusetts General Hospital Biostatistics Center](#), 2022-Present

Research Assistant, [Federal Reserve Bank of Boston](#), Economists Jenny Tang and Viacheslav Sheremirov, 2018-2021

Summer Research Assistant, [Federal Reserve Board of Governors](#), Economists Leland Crane and Ryan Decker, 2017

Research Assistant, [Colby College Economics Department](#), Professor Robert Lester, 2016

## TEACHING EXPERIENCE

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Introduction to Statistical Methods (BST 201)

- **Fall 2023, Fall 2024** Head Teaching Fellow
- **Fall 2022** Teaching Fellow
- Average effectiveness score exceeding 4.9/5 across 3 years

## OTHER EXPERIENCE

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Teaching Assistant for Macroeconomic Theory, [Colby College Economics Department](#), 2017-2018

Data Analyst Summer Intern, [UnitedHealth](#) (formerly OmniClaim), 2016

Teaching Assistant for Introductory Statistics, [Colby College Mathematics & Statistics Department](#), 2016-2018

Teaching Assistant for Calculus I, [Colby College Mathematics & Statistics Department](#), 2015-2016

## HONORS

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Harvard Biostatistics Distinction in Teaching Award, 2023, 2024, 2025

Phi Beta Kappa, 2018

Mu Sigma Rho, 2018

Colby Economics Department Faculty Prize (for high scholarly attainment in economics), 2017

## PUBLICATIONS AND WORKING PAPERS

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**Barnatchez, K.**, Crane, L. D., & Decker, R. A. (2017). *An Assessment of the National Establishment Time Series (NETS) Database* (No. 2017-110, pp. 1-51). Board of Governors of the Federal Reserve System (US).

**Barnatchez, K.**, Nethery, R., Shepherd, B. E., Parmigiani, G., & Josey, K. P. (2024). *Flexible and Efficient Estimation of Causal Effects with Error-Prone Exposures: A Control Variates Approach for Measurement Error*. arXiv preprint arXiv:2410.12590.

**Barnatchez, K.**, Josey, K. P., Hejazi, N. S., Shepherd, B. E., Parmigiani, G., & Nethery, R. (2025). *Efficient Estimation of Causal Effects Under Two-Phase Sampling with Error-Prone Outcome and Treatment Measurements*. arXiv preprint arXiv:2506.21777.

## WORKS IN PROGRESS

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“Measurement Error in Causal Inference: A Review” (with Rachel Nethery and Kevin Josey)

## STATISTICAL SOFTWARE

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**Barnatchez, K.** *drcmd: Doubly-Robust Causal Inference With Missing Data*, R package. [Online]. Available: <https://github.com/keithbarnatchez/drcmd>.

## PRESENTATIONS

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“Measurement Error in Causal Inference: A Review” (with Rachel Nethery and Kevin Josey).  
Harvard Biostatistics Student Seminar Series, April 2023

“Estimating Causal Effects with a Mismeasured Exposure Using Control Variates.” ENAR Annual Spring Meeting, March 2024

“Efficient Estimation of Causal Effects Under Two-Phase Sampling with Error-Prone Outcome and Treatment Measurements.” ENAR Annual Spring Meeting, March 2025

## POSTERS

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“Estimating Causal Effects with a Mismeasured Exposure Using Control Variates.” American Causal Inference Conference, May 2024

“Efficient Estimation of Causal Effects Under Two-Phase Sampling with Error-Prone Outcome and Treatment Measurements.” American Causal Inference Conference, May 2025

## SERVICE ACTIVITIES

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**Journal Peer Reviewer:** Journal of Causal Inference, Cell Press: Patterns, Economic Modelling

## SKILLS

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Programming languages: Python (Base, Numpy, Pandas, Matplotlib and Tensorflow), R  
Software: Stata & Mata, LaTeX, Matlab