Cory McCartan

Curriculum Vitae

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Contact Information

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Education

Harvard University 2019 –
Ph.D. in Statistics, expected May 2023. Advisor: Kosuke Imai.
A.M. in Statistics, March 2021.

Grinnell College 2015 – 2019
B.A. in Mathematics, with honors.

Publications

"Recalibration Of Predicted Probabilities Using the 'Logit Shift': Why does it work, and when can it be expected to work well?" with Evan T. R. Rosenman and Santiago Olivella. *Political Analysis*, Conditionally accepted.

"The use of differential privacy for census data and its impact on redistricting: The case of the 2020 U.S. Census," with Christopher T. Kenny, Shiro Kuriwaki, Tyler Simko, Evan T. R. Rosenman, and Kosuke Imai. *Science Advances* 7:41 (2021).

"Geodesic Interpolation on Sierpinski Gaskets," with Caitlin M. Davis, Laura A. LeGare, and Luke G. Rogers. *Journal of Fractal Geometry* 8:2 (2021).

Working Papers

"Simulated redistricting plans for the analysis and evaluation of redistricting plans in the United States," with Christopher Kenny, Tyler Simko, Shiro Kuriwaki, George Garcia III, Kevin Wang, Melissa Wu, and Kosuke Imai.

"Measuring and Modeling Neighborhoods," with Jacob R. Brown and Kosuke Imai.

"Sequential Monte Carlo for Sampling Balanced and Compact Redistricting Plans," with Kosuke Imai. Under Review.

Works in Progress

"Individual and Differential Harm in Redistricting," with Christopher T. Kenny

"Estimation of Racial Disparities When Race is Not Observed," with Kosuke Imai, Daniel E. Ho, and Jacob Goldin.

"Two-stage Experiments and Stochastic Intervention," with Shusei Eshima and Kosuke Imai.

"Regression of the Conditional Median," with Xiao-Li Meng.

"Algorithm-Assisted Redistricting Methodology" (book), with Kosuke Imai, Christo-

pher Kenny, and Tyler Simko.

Other Writing

"Who's the most electable Democrat? It might be Warren or Buttigieg, not Biden." *The Washington Post* (October 23, 2019).

"I-405 Express Toll Lanes: Usage, benefits, and equity," with Shirley Leung, C.J. Robinson, Kiana Roshan Zamir, Vaughn Iverson, and Mark Hallenbeck. Technical report for the Washington State Department of Transportation (2019).

Software

`redist`: Simulation Methods for Legislative Redistricting

`redistmetrics`: Redistricting Metrics

`easycensus`: Quickly Extract and Marginalize U.S. Census Tables

`PL94171`: Tabulate P.L. 94-171 Redistricting Data Summary Files

`adjustr`: Stan Model Adjustments and Sensitivity Analyses using Importance Sampling

`conformalbayes`: Jackknife(+) Predictive Intervals for Bayesian Models

`alarmdata`: Download, Merge, and Process Redistricting Data

`blockpop`: Estimate Census Block Populations for 2020

`ggredist`: Scales, Palettes, and Extensions of `ggplot2` for Redistricting

`wacolors`: Colorblind-friendly Palettes from Washington State

Presentations

Joint Statistical Meetings, Invited Paper Panel: 2021, 2022.

Society for Political Methodology, Annual Meeting, Paper: 2022; Poster: 2021, 2022.

American Association for Public Opinion Research, Annual Meeting, Poster: 2022.

Institute for Quantitative Social Science, Harvard University, Applied Statistics Workshop, Paper: 2020, 2021.

Teaching

Harvard University

STAT 117: Introduction to Biostatistics — Spring 2021
Awarded a Certificate of Distinction in Teaching

STAT 221: Monte Carlo Methods & Other Computational Tools for Statistical Learning — Fall 2020

Grinnell College

MAT 215: Linear Algebra — Fall 2017 and Spring 2019

MAT 310: Statistical Modeling — Fall 2018

Grinnell College Math Lab — 2018 – 2019

Service

Harvard Statistics Graduate Council 2020 –
Organized Ph.D. student retreat and research "lightning talks," 2020 and 2021.

Harvard Graduate Students Union – UAW Local 5118 2019 – 2021
Elected member, Bargaining Committee, 2020–2021 and 2021–2024 contracts.
Interim chair, Finance and Benefits Committee, 2020.

Reviewer: *Sloan Foundation*.

Membership

American Statistical Association, Society for Political Methodology, American Association for Public Opinion Research.

Work Experience

University of Washington eScience Institute Summer 2019
Data Science for Social Good Fellow

University of Connecticut Summer 2018
REU Participant, Department of Mathematics

Fred Hutchinson Cancer Research Center Summer 2017
Lead Intern, Department of Biostatistics

Grinnell College Department of Mathematics 2017
Course Grader

Cray, Inc. Summer 2015
Intern, Chapel Language Testing