Cory McCartan

Curriculum Vitae

November 2022

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

"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. *Nature Scientific Data* 9, 689 (2022).

"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*, Forthcoming.

"Comment: The Essential Role of Policy Evaluation for the 2020 Census Disclosure Avoidance System" with Christopher T. Kenny, Shiro Kuriwaki, Tyler Simko, Evan T. R. Rosenman, and Kosuke Imai. *Harvard Data Science Review*, Forthcoming.

"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).

Covered by the Associated Press, the Washington Post, the San Francisco Chronicle, and others.

"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

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

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

Covered by the Washington Post.

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

"Widespread Partisan Gerrymandering Mostly Cancels Nationally, but Reduces Electoral Competition," with Christopher Kenny, Tyler Simko, Shiro Kuriwaki, and Kosuke Imai. Under Review.

Works in Progress

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

"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, Christopher Kenny, and Tyler Simko.

Other Writing

"Candy cane shortages and the importance of variation." International Statistical Institute: *Statisticians React to the News* (December 21, 2021).

"Where will the rocket land?" International Statistical Institute: *Statisticians React to the News* (May 12, 2021).

"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 Find, 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

`tinytiger`: Lightweight Interface to TIGER/Line Shapefiles

`birdie`: Bayesian Instrumental Regression for Disparity Estimation

`wacolors`: Colorblind-friendly Palettes from Washington State

Presentations

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

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

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

Institute for Quantitative Social Science, Harvard University, Applied Statistics Workshop, Paper: 2022, 2021, 2020.

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.

First-year Ph.D. Student Mentor — 2020 –

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 Political Science Association, American Association for Public Opinion Research.

Other Experience

Data for Progress — 2022
Consultant, Midterm election modeling

American Civil Liberties Union of Ohio — 2021 – 2022
Consultant (with Prof. Kosuke Imai), *League of Women Voters of Ohio v. Ohio Redistricting Commission* (Ohio Supreme Court Cases 2021–1193 and 2021–1449).

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

Union of Grinnell Student Dining Workers — 2016 – 2019

Founder, President (2016–17), and Advisor to the Executive Board (2018–19)

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