Cory McCartan

Curriculum Vitae

June 2023

CONTACT (425) 770-9244 corymccartan.com Information corymccartan@nyu.edu The Pennsylvania State University EMPLOYMENT Expected 2024 **Assistant Professor of Statistics New York University** 2023 - 2024Center for Data Science Data Science Assistant Professor / Faculty Fellow EDUCATION **Harvard University** 2019 - 2023 Ph.D., Statistics, 2023. Advisor: Kosuke Imai. A.M., Statistics, 2021. **Grinnell College** 2015 - 2019 B.A., Mathematics, with honors.

Publications

"Sequential Monte Carlo for Sampling Balanced and Compact Redistricting Plans," with Kosuke Imai. *Annals of Applied Statistics*, Forthcoming.

Covered by the Washington Post, Quanta Magazine.

- "Widespread Partisan Gerrymandering Mostly Cancels Nationally, but Reduces Electoral Competition," with Christopher Kenny, Tyler Simko, Shiro Kuriwaki, and Kosuke Imai. *Proceedings of the National Academy of Sciences* 120:25 (2023).
- "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* 1-11 (2023).
- "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*, Special Issue 2 (2023).
- "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. *Scientific Data* 9:689 (2022).
- "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

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

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

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

"Evaluating Bias and Noise Induced by the U.S. Census Bureau's Privacy Protection Methods," with Christopher T. Kenny, Shiro Kuriwaki, Tyler Simko, and Kosuke Imai.

"Making Differential Privacy Work for Census Data Users," with Tyler Simko and Kosuke Imai.

"Finding Pareto Efficient Redistricting Plans with Short Bursts."

Works in Progress

"Studying Officeholders' Perceived Geographic Constituencies," with Jacob R. Brown and Hunter E. Rendleman.

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

"Algorithm-Assisted Redistricting Methodology" (book), with Kosuke Imai, Christopher Kenny, and Tyler Simko.

OTHER WRITING

"Researchers need better access to US Census data," with Tyler Simko and Kosuke Imai. *Science*, 380:6648 (2023).

"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

birdie: Bayesian Instrumental Regression for Disparity Estimation

causaltbl: Tidy Causal Data Frames and Tools

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

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: 2023, 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

Fall 2020

Tools for Statistical Learning

Grinnell College

MAT 215: Linear Algebra MAT 310: Statistical Modeling Grinnell College Math Lab Fall 2017 and Spring 2019 Fall 2018

2018 - 2019

Honors and Awards

DS

Best Statistical Software Award, for developing statistical software that makes a significant research contribution, awarded to the redist software package by the Society for Political Methodology, 2022.

SERVICE

Harvard Statistics Graduate Council

2020 - 2023

Organized Ph.D. student retreat and research "lightning talks," 2020 and 2021.

First-year Ph.D. Student Mentor

2020 – 2023

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: Election Law Journal, Sloan Foundation.

Membership

American Statistical Association, Society for Political Methodology, American Political Science Association.

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