

Cory McCartan

Curriculum Vitae

December 2022

CONTACT INFORMATION	Department of Statistics, Harvard University 1 Oxford St, Ste 400 Cambridge, MA 02138	(425) 770-9244 cmccartan@fas.harvard.edu corymccartan.com
------------------------	---	---

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

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

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. <i>Nature Scientific Data</i> 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

birdie: Bayesian Instrumental Regression for Disparity Estimation

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	<p>Joint Statistical Meetings, Invited Paper Panel: 2022, 2021.</p> <p>Society for Political Methodology, Annual Meeting, Paper: 2022; Poster: 2022, 2021.</p> <p>American Association for Public Opinion Research, Annual Meeting, Poster: 2022.</p> <p>Institute for Quantitative Social Science, Harvard University, Applied Statistics Workshop, Paper: 2022, 2021, 2020.</p>												
TEACHING	<p>Harvard University</p> <table><tr><td>STAT 117: Introduction to Biostatistics</td><td>Spring 2021</td></tr><tr><td colspan="2"><i>Awarded a Certificate of Distinction in Teaching</i></td></tr><tr><td>STAT 221: Monte Carlo Methods & Other Computational Tools for Statistical Learning</td><td>Fall 2020</td></tr></table> <p>Grinnell College</p> <table><tr><td>MAT 215: Linear Algebra</td><td>Fall 2017 and Spring 2019</td></tr><tr><td>MAT 310: Statistical Modeling</td><td>Fall 2018</td></tr><tr><td>Grinnell College Math Lab</td><td>2018 – 2019</td></tr></table>	STAT 117: Introduction to Biostatistics	Spring 2021	<i>Awarded a Certificate of Distinction in Teaching</i>		STAT 221: Monte Carlo Methods & Other Computational Tools for Statistical Learning	Fall 2020	MAT 215: Linear Algebra	Fall 2017 and Spring 2019	MAT 310: Statistical Modeling	Fall 2018	Grinnell College Math Lab	2018 – 2019
STAT 117: Introduction to Biostatistics	Spring 2021												
<i>Awarded a Certificate of Distinction in Teaching</i>													
STAT 221: Monte Carlo Methods & Other Computational Tools for Statistical Learning	Fall 2020												
MAT 215: Linear Algebra	Fall 2017 and Spring 2019												
MAT 310: Statistical Modeling	Fall 2018												
Grinnell College Math Lab	2018 – 2019												
HONORS AND AWARDS	<p><i>Best Statistical Software Award</i>, for developing statistical software that makes a significant research contribution, for redist software, awarded by the Society for Political Methodology, 2022.</p>												
SERVICE	<table><tr><td>Harvard Statistics Graduate Council</td><td>2020 –</td></tr><tr><td>Organized Ph.D. student retreat and research “lightning talks,”</td><td>2020 and 2021.</td></tr><tr><td>First-year Ph.D. Student Mentor</td><td>2020 –</td></tr><tr><td>Harvard Graduate Students Union – UAW Local 5118</td><td>2019 – 2021</td></tr><tr><td>Elected member, Bargaining Committee, 2020–2021 and 2021–2024 contracts.</td><td></td></tr><tr><td>Interim chair, Finance and Benefits Committee, 2020.</td><td></td></tr></table> <p>Reviewer: <i>Sloan Foundation</i>.</p>	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.	
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.													
MEMBERSHIP	<p>American Statistical Association, Society for Political Methodology, American Political Science Association, American Association for Public Opinion Research.</p>												
OTHER EXPERIENCE	<table><tr><td>Data for Progress</td><td>2022</td></tr><tr><td>Consultant, Midterm election modeling</td><td></td></tr><tr><td>American Civil Liberties Union of Ohio</td><td>2021 – 2022</td></tr><tr><td colspan="2">Consultant (with Prof. Kosuke Imai), <i>League of Women Voters of Ohio v. Ohio Redistricting Commission</i> (Ohio Supreme Court Cases 2021–1193 and 2021–1449).</td></tr></table>	Data for Progress	2022	Consultant, Midterm election modeling		American Civil Liberties Union of Ohio	2021 – 2022	Consultant (with Prof. Kosuke Imai), <i>League of Women Voters of Ohio v. Ohio Redistricting Commission</i> (Ohio Supreme Court Cases 2021–1193 and 2021–1449).					
Data for Progress	2022												
Consultant, Midterm election modeling													
American Civil Liberties Union of Ohio	2021 – 2022												
Consultant (with Prof. Kosuke Imai), <i>League of Women Voters of Ohio v. Ohio Redistricting Commission</i> (Ohio Supreme Court Cases 2021–1193 and 2021–1449).													

University of Washington eScience Institute Data Science for Social Good Fellow	Summer 2019
Union of Grinnell Student Dining Workers Founder, President (2016–17), and Advisor to the Executive Board (2018–19)	2016 – 2019
University of Connecticut REU Participant, Department of Mathematics	Summer 2018
Fred Hutchinson Cancer Research Center Lead Intern, Department of Biostatistics	Summer 2017
Grinnell College Department of Mathematics Course Grader	2017
Cray, Inc. Intern, Chapel language testing	Summer 2015