

# Matias Damian Cattaneo

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## Academic Appointments

Princeton University.

Professor, Department of Operations Research and Financial Engineering (ORFE), 2019–present.

Associated Faculty, Department of Economics, 2019–present.

Affiliated Faculty, Center for Statistics and Machine Learning (CSML), 2019–present.

University of Michigan.

Professor, Department of Economics, 2017–2019.

Professor, Department of Statistics, 2017–2019.

Affiliated Faculty, Michigan Institute for Data Science, 2017–2019.

Associate Professor, Department of Statistics, 2015–2017.

Associate Professor, Department of Economics, 2013–2017.

Assistant Professor, Department of Economics, 2008–2013.

## Editorial Experience

Associate Editor.

*Econometrica*, 2019–present.

*Journal of Business & Economic Statistics*, 2019–present.

*Operations Research*, 2018–present.

*Econometric Theory*, 2017–present.

*Journal of the American Statistical Association* (T&M), 2015–present.

*Econometrics Journal*, 2014–present.

*Journal of Causal Inference*, 2013–present.

*Review of Economics and Statistics*, 2014–2020.

Guest Editor, *Journal of the American Statistical Association* (T&M), special issue, 2019–2020.

Guest Editor, *Advances in Econometrics*, volume 38, Emerald Group Publishing, 2016–2017.

## Education

Ph.D. in Economics, University of California at Berkeley, 2003–2008.

M.A. in Statistics, University of California at Berkeley, 2004–2005.

Master in Economics, Universidad Torcuato Di Tella, Argentina, 2001–2003.

Licentiate in Economics, Universidad de Buenos Aires, Argentina, 1996–2000.

## Monographs and Edited Volumes

1. A Practical Introduction to Regression Discontinuity Designs: Extensions, with Nicolas Idrobo and Rocio Titiunik, *Cambridge Elements: Quantitative and Computational Methods for Social Science*, Cambridge University Press, to appear, 2020.
2. A Practical Introduction to Regression Discontinuity Designs: Foundations, with Nicolas Idrobo and Rocio Titiunik, *Cambridge Elements: Quantitative and Computational Methods for Social Science*, Cambridge University Press, November 2019.
3. Regression Discontinuity Designs: Theory and Applications, with Juan Carlos Escanciano (eds.), *Advances in Econometrics*, volume 38, Emerald Group Publishing, May 2017.

## Main Publications

1. “Extrapolating Treatment Effects in Multi-Cutoff Regression Discontinuity Designs”, with Luke Keele, Rocio Titiunik and Gonzalo Vazquez-Bare.  
*Journal of the American Statistical Association*, forthcoming.
2. “A Random Attention Model”, with Xinwei Ma, Yusufcan Masatlioglu and Elchin Suleymanov.  
*Journal of Political Economy*, forthcoming.
3. “Simple Local Polynomial Density Estimators”, with Michael Jansson and Xinwei Ma.  
*Journal of the American Statistical Association*, forthcoming.
4. “Large Sample Properties of Partitioning-Based Series Estimators”, with Max Farrell and Yingjie Feng.  
*Annals of Statistics*, forthcoming.
5. “Characteristic-Sorted Portfolios: Estimation and Inference”, with Richard Crump, Max Farrell and Ernst Schaumburg.  
*Review of Economics and Statistics*, forthcoming.
6. “Optimal Bandwidth Choice for Robust Bias Corrected Inference in Regression Discontinuity Designs”, with Sebastian Calonico and Max Farrell.  
*Econometrics Journal*, forthcoming.
7. “Regression Discontinuity Designs using Covariates”, with Sebastian Calonico, Max Farrell and Rocio Titiunik.  
*Review of Economics and Statistics* 101(3): 442–451, July 2019.
8. “Two-step Estimation and Inference with Possibly Many Included Covariates”, with Michael Jansson and Xinwei Ma.  
*Review of Economic Studies* 86(3): 1095–1122, May 2019.
9. “Inference in Linear Regression Models with Many Covariates and Heteroscedasticity”, with Michael Jansson and Whitney Newey.  
*Journal of the American Statistical Association* 113(523): 1350–1361, September 2018.
10. “On the Effect of Bias Estimation on Coverage Accuracy in Nonparametric Inference”, with Sebastian Calonico and Max Farrell.  
*Journal of the American Statistical Association* 113(522): 767–779, June 2018.
11. “Kernel-Based Semiparametric Estimators: Small Bandwidth Asymptotics and Bootstrap Consistency”, with Michael Jansson.  
*Econometrica* 86(3): 955–995, May 2018.
12. “Alternative Asymptotics and the Partially Linear Model with Many Regressors”, with Michael Jansson and Whitney Newey.  
*Econometric Theory* 34(2): 277–301, April 2018.

13. “Comparing Inference Approaches for RD Designs: A Reexamination of the Effect of Head Start on Child Mortality”, with Rocio Titiunik and Gonzalo Vazquez-Bare.  
*Journal of Policy Analysis and Management* 36(3): 643–681, Summer 2017.
14. “Interpreting Regression Discontinuity Designs with Multiple Cutoffs”, with Luke Keele, Rocio Titiunik and Gonzalo Vazquez-Bare.  
*Journal of Politics* 78(4): 1229–1248, October 2016.
15. “Optimal Data-Driven Regression Discontinuity Plots”, with Sebastian Calonico and Rocio Titiunik.  
*Journal of the American Statistical Association* 110(512): 1753–1769, December 2015.
16. “Randomization Inference in the Regression Discontinuity Design: An Application to Party Advantages in the U.S. Senate”, with Brigham Frandsen and Rocio Titiunik.  
*Journal of Causal Inference* 3(1): 1–24, March 2015.
17. “Bootstrapping Density-Weighted Average Derivatives”, with Richard Crump and Michael Jansson.  
*Econometric Theory* 30(6): 1135–1164, December 2014.
18. “Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs”, with Sebastian Calonico and Rocio Titiunik.  
*Econometrica* 82(6): 2295–2326, November 2014.
19. “Small Bandwidth Asymptotics for Density-Weighted Average Derivatives”, with Richard Crump and Michael Jansson.  
*Econometric Theory* 30(1): 176–200, February 2014.
20. “A Martingale Decomposition for Quadratic Forms of Markov Chains (with Applications)”, with Yves Atchadé.  
*Stochastic Processes and their Applications* 124(1): 646–677, January 2014.
21. “Generalized Jackknife Estimators of Weighted Average Derivatives (with Discussions and Rejoinder)”, with Richard Crump and Michael Jansson.  
*Journal of the American Statistical Association* 108(504): 1243–1268, December 2013.
22. “Optimal Convergence Rates, Bahadur Representation, and Asymptotic Normality of Partitioning Estimators”, with Max Farrell.  
*Journal of Econometrics* 174(2): 127–143, June 2013.
23. “Optimal Inference for Instrumental Variables Regression with non-Gaussian Errors”, with Richard Crump and Michael Jansson.  
*Journal of Econometrics* 167(1): 1–15, March 2012.
24. “Robust Data-Driven Inference for Density-Weighted Average Derivatives”, with Richard Crump and Michael Jansson.  
*Journal of the American Statistical Association* 105(491): 1070–1083, September 2010.
25. “Efficient Semiparametric Estimation of Multi-valued Treatment Effects under Ignorability”.  
*Journal of Econometrics* 155(2): 138–154, April 2010.
26. “Probabilistic Modeling at the Wildland Urban Interface: The 2003 Cedar Fire”, with David Brillinger and Benjamin Autrey.  
*Environmetrics* 20(6): 607–620, September 2009.
27. “Housing, Health and Happiness”, with Sebastian Galiani, Paul Gertler, Sebastian Martinez and Rocio Titiunik.  
*American Economic Journal: Economic Policy* 1(1): 75–105, February 2009.

## Working Papers

1. “Smoothed Pairwise Difference Estimators: Distribution Theory and Bootstrap Inference”, with Michael Jansson and Kenichi Nagasawa.
2. “Prediction Intervals for Synthetic Control Methods”, with Yingjie Feng and Rocio Titiunik.
3. “Local Regression Distribution Estimators”, with Michael Jansson and Xinwei Ma.
4. “Bootstrap-Based Inference for Cube Root Asymptotics”, with Michael Jansson and Kenichi Nagasawa.
5. “Average Density Estimators: Efficiency and Bootstrap Consistency”, with Michael Jansson.
6. “On Binscatter”, with Richard Crump, Max Farrell and Yingjie Feng.
7. “Coverage Error Optimal Confidence Intervals for Local Polynomial Regression”, with Sebastian Calonico and Max Farrell.

## Statistical Software Articles

1. “**mvte**: Estimation and Inference for Multi-valued Treatment Effects”, with Sebastian Calonico.
2. “Binscatter Regressions”, with Richard Crump, Max Farrell and Yingjie Feng.
3. “Analysis of Regression Discontinuity Designs with Multiple Cutoffs or Multiple Scores”, with Rocio Titiunik and Gonzalo Vazquez-Bare.
4. “**lpdensity**: Local Polynomial Density Estimation and Inference”, with Michael Jansson and Xinwei Ma.
5. “**lspartition**: Partitioning-Based Least Squares Regression”, with Max Farrell and Yingjie Feng.  
*R Journal*, forthcoming.
6. “**nprobust**: Nonparametric Kernel-Based Estimation and Robust Bias-Corrected Inference”, with Sebastian Calonico and Max Farrell.  
*Journal of Statistical Software* 91(8): 1–33, October 2019.
7. “Power Calculations for Regression Discontinuity Designs”, with Rocio Titiunik and Gonzalo Vazquez-Bare.  
*Stata Journal* 19(1): 210–245, March 2019.
8. “Manipulation Testing Based on Density Discontinuity”, with Michael Jansson and Xinwei Ma.  
*Stata Journal* 18(1): 234–261, March 2018.
9. “**rdrobust**: Software for Regression Discontinuity Designs”, with Sebastian Calonico, Max Farrell and Rocio Titiunik.  
*Stata Journal* 17(2): 372–404, June 2017.
10. “Inference in Regression Discontinuity Designs under Local Randomization”, with Rocio Titiunik and Gonzalo Vazquez-Bare.  
*Stata Journal* 16(2): 331–367, June 2016.
11. “**rdrobust**: An R Package for Robust Nonparametric Inference in Regression-Discontinuity Designs”, with Sebastian Calonico and Rocio Titiunik.  
*R Journal* 7(1): 38–51, June 2015.
12. “Robust Data-Driven Inference in the Regression Discontinuity Design”, with Sebastian Calonico and Rocio Titiunik.  
*Stata Journal* 14(4): 909–946, December 2014.
13. “Estimation of Multivalued Treatment Effects under Conditional Independence”, with David Drukker and Ashley Holland.  
*Stata Journal* 13(3): 407–450, September 2013.

## Reviews, Comments, and Other Publications

1. “Regression Discontinuity Designs: A Review”, with Rocio Titiunik. Coming soon.
2. “A Guide to Regression Discontinuity Designs in Medical Applications” with Luke Keele and Rocio Titiunik. Coming soon.
3. “The Regression Discontinuity Design”, with Rocio Titiunik and Gonzalo Vazquez-Bare. Handbook of Research Methods in Political Science and International Relations, eds. L. Curini and R. J. Franzese, Sage Publications.
4. “Econometric Methods for Program Evaluation”, with Alberto Abadie. *Annual Review of Economics* 10: 465-503, August 2018.
5. “Introduction”, with Juan C. Escanciano. Regression Discontinuity Designs: Theory and Applications, *Advances in Econometrics*, volume 38, Emerald Group Publishing, pp. ix–xxv, May 2017. Introduction prepared for edited volume on RD designs.
6. “The Choice of Neighborhood in Regression Discontinuity Designs”, with Gonzalo Vazquez-Bare. *Observational Studies* 2: 134–146, December 2016. Invited discussion accompanying reprint of “Regression-Discontinuity Analysis: An Alternative to the Ex Post Facto Experiment” by D. L. Thistlethwaite and D. T. Campbell.
7. “Book Review”. *Journal of the American Statistical Association* 111(515): 1363, September 2016. Invited book review of Causal Inference for Statistics, Social, and Biomedical Sciences: An Introduction by G. W. Imbens and D. B. Rubin.
8. “Comment”, with Richard Crump. *Journal of Business & Economic Statistics* 32(3): 324–329, July 2014. Invited comment on “HAC Corrections for Strongly Autocorrelated Time Series” by U. Müller.
9. “Rejoinder”, with Richard Crump and Michael Jansson. *Journal of the American Statistical Association* 108(504): 1265–1268, December 2013. Rejoinder of invited comments and discussions of “Generalized Jackknife Estimators of Weighted Average Derivatives”.
10. “Efficient Estimation of the Dose-Response Function under Ignorability using Subclassification on the Covariates”, with Max Farrell. Missing-Data Methods: Cross-sectional Methods and Applications, *Advances in Econometrics*, volume 27, ed. D. Drukker, Emerald Group Publishing, pp. 93–127, December 2011.
11. “Multi-valued Treatment Effects”. The New Palgrave Dictionary of Economics Online, eds. S. N. Durlauf and L. E. Blume, Palgrave Macmillan, July 2010.
12. “Multi-valued Treatment Effects”. Encyclopedia of Research Design, ed. N. J. Salkind, Sage Publications, pp. 855–857, June 2010.
13. “Matching”. Encyclopedia of Research Design, ed. N. J. Salkind, Sage Publications, pp. 758–761, June 2010.

## External Research Grants

National Science Foundation (NSF), Principal or co-Principal Investigator.

1. Grant [SES-1947805](#), \$284,851, 2020–2023.
2. Grant [SES-1628883](#), \$334,290, 2016–2019.

3. Grant [SES-1459931](#), \$190,000, 2015–2018.
4. Grant [SES-1357561](#), \$276,756, 2014–2017.
5. Grant [SES-1122994](#), \$283,922, 2011–2014.
6. Grant [SES-0921505](#), \$104,395, 2009–2012.

## Honors and Awards

Stata Journal Editors’ Prize, 2019.

*Fellow*, Center for Econometrics and Microdata Practice (CEMP), Jinan University, 2017.

*Statistical Software Award* for developing statistical software that makes a significant research contribution, Society for Political Methodology, 2017.

*Citation of Excellence Award* for highly cited papers relating to the areas of Business Management, Finance, Accounting, Economics and Marketing, Emerald Group Publishing, 2017.

Paper: “Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs”.

*Gosnell Prize* for best work in methodology presented at any political science conference during the preceding year, Society for Political Methodology, 2015.

Paper: “Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs”.

Selected annual discussion paper with rejoinder in the *Journal of the American Statistical Association* (Theory and Methods), American Statistical Association, 2013.

Paper: “Generalized Jackknife Estimators of Weighted Average Derivatives”.

*Graduate Fellow*, American Academy of Political and Social Science, 2006.

Keynote and Invited Session Presentations.

Keynote speaker, West Indies Economic Conference, 2021.

“Econometrics” session, LACEA/LAMES Meeting, Econometric Society, 2019.

“Econometrics” session, LACEA/LAMES Meeting, Econometric Society, 2018.

Keynote speaker, IZA-CREST-OECD Workshop on Labor Market Policy Evaluation, 2018.

“Program Evaluation” session, LACEA/LAMES Meeting, Econometric Society, 2017.

“Advances in Econometrics” session, European Meeting, Econometric Society, 2017.

Invited speaker, Big Data Summer Institute, School of Public Health, University of Michigan, 2017.

Keynote speaker, Latin American Workshop in Econometrics, Econometric Society, 2016.

“JASA Theory and Methods” session, Joint Statistical Meetings, 2013.

“Young Scholars” session, LACEA/LAMES Meeting Econometric Society, 2009.

Princeton University.

Schmidt DataX Research Award, CSML, 2019–2020.

University of Michigan.

Best Professor in a Graduate Class (awarded by Ph.D. students), 2014, 2015, 2019.

Associate Professor Support Fund Award, 2016.

Distinguished Faculty Seminar Award, 2014.

MITRE Faculty Research Award Program, 2013, 2014, 2015, 2016, 2017, 2018.

Rackham Faculty Research Grant, 2010.

Spring/Summer Research Grants Program, 2009.

University of California at Berkeley.

Chancellor’s Dissertation-Year Fellowship, 2007.

Teaching Effectiveness Award, 2007.

Outstanding Graduate Student Instructor Award, 2006.

Graduate Division Summer Grant, 2006 and 2007.

Dean’s Normative Time Fellowship, 2006.

Eliot J. Swan Prize for best performance in first year Ph.D. program, 2005.  
Block Grant Fellowship, 2003.

Universidad de Buenos Aires, Argentina.

Diploma de Honor (cum laude), 2000.

PROPAI/UBACyT Fellowship, 1998 and 1999.

## Statistical Software

1. Regression Discontinuity Designs: `rdrobust`, `rddensity`, `rdlocrand`, `rdmulti`, `rdpower`.
2. Robust Bias-Corrected Nonparametric Inference: `nprobust`, `lpdensity`, `lspartition`.
3. Binscatter: `binsreg`.
4. Multi-valued Treatment Effects under Ignorability: `mvte`, `poparms`.
5. Random Attention: `ramchoice`.

- <https://cattaneo.princeton.edu/software>

## Students and Advising

- <https://cattaneo.princeton.edu/students>

## Teaching Experience

- <https://cattaneo.princeton.edu/teaching>

## Short Courses and Workshops

- <https://cattaneo.princeton.edu/short-courses>

## Presentations and Invited Conferences

- <https://cattaneo.princeton.edu/talks>

## Professional and University Service

- <https://cattaneo.princeton.edu/service>

## Other Professional Activities

- <https://cattaneo.princeton.edu/other>

## Personal Information

Born May 1978, Buenos Aires, Argentina. U.S. naturalized citizen since 2018.

Married to Rocio Titiumik. Two daughters, Lucero (born 2009) and Maite (born 2011).