

PEDRO H. C. SANT'ANNA

<https://psantanna.com/>

pedro.h.santanna@vanderbilt.edu

psantanna@microsoft.com

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EMPLOYMENT

2021 – Present	Senior Researcher, Microsoft, Seattle, WA, USA
2015 – Present	Assistant Professor, Vanderbilt University, Nashville TN, USA.
2018 – 2019	Visiting Assist. Professor, Cowles Foundation, Yale University, New Haven CT, USA.

EDUCATION

2011 – 2015	Ph.D. in Economics, Universidad Carlos III de Madrid, Spain
2009 – 2011	Master in Economics, Universidad Carlos III de Madrid, Spain
2005 – 2009	B.A. in Economics, Ibmec-MG, Brazil

RESEARCH INTERESTS

Causal Inference, Econometric Theory, Semi and Nonparametric Methods, Applied Econometrics

PUBLICATIONS AND WORKING PAPERS

Publications

1. “Distribution Regression in Duration Analysis: an Application to Unemployment Spells” (with Miguel A. Delgado and Andrés García-Suaza), *Econometrics Journal* (Forthcoming), 2021.
2. “Difference-in-Differences with Multiple Time Periods” (with Brantly Callaway), *Journal of Econometrics*, vol. 225(2), p. 200-239, 2021.
(This supersedes the previous version titled: “Difference-in-Differences with Multiple Time Periods and an Application on the Minimum Wage and Employment”, 2018)
3. “The role of parallel trends in event study settings: An application to environmental economics” (with Michelle Marcus), *Journal of the Association of Environmental and Resource Economists*, vol. 8(2), p. 235–275, 2021.
4. “Doubly Robust Difference-in-Differences Estimators” (with Jun B. Zhao), *Journal of Econometrics*, vol. 219 (1), p. 101-122, 2020.
5. “Nonparametric Tests for Treatment Effect Heterogeneity with Censored Data”, *Journal of Business & Economic Statistics*, vol. 39(3), 816-832, 2021.
(This supersedes the previous version titled: “Nonparametric Tests for Conditional Treatment Effect Models with Duration Outcomes”, 2014).

6. "Specification Test for the Propensity Score" (with Xiaojun Song), *Journal of Econometrics*, vol. 210 (2), p. 379-404, 2019.
7. "Testing for Uncorrelated Residuals in Dynamic Count Models with an Application to Corporate Bankruptcy", *Journal of Business & Economic Statistics*, vol. 35 (3), p. 349-358, 2017.

Working Papers

8. "What's Trending in Difference-in-Differences? A Synthesis of the Recent Econometrics Literature" (with Jonathan Roth, Alyssa Bilinski, and John Poe), 2022.
9. "Difference-in-Differences with a Continuous Treatment" (with Brantly Callaway and Andrew Goodman-Bacon), 2021
10. "Efficient Estimation for Staggered Rollout Designs" (with Jonathan Roth), 2021.
11. "When Is Parallel Trends Sensitive to Functional Form?" (with Jonathan Roth), 2021; **Resubmitted**
12. "Testing Instrument Validity in Marginal Treatment Effects Models" (with Minghai Mao), 2020.
13. "Specification tests for generalized propensity scores using double projections" (with Xiaojun Song), 2020; **R&R**
14. "Covariate Distribution Balance via Propensity Scores" (with Xiaojun Song and Qi Xu), 2020; **Resubmitted.**
15. Program Evaluation with Right Censored Data, 2016; **R&R**

STATISTICAL SOFTWARE

1. staggered: An R Package to efficiently estimate causal effects in settings with randomized treatment timing, available at <https://github.com/jonathandroth/staggered>
2. DRDID: An R Package to compute doubly robust difference-in-differences estimators, available at <https://pedrohcg.github.io/DRDID/>
3. did: An R Package to compute average treatment effects in difference-in-differences design, available at <https://bcallaway11.github.io/did/>.
4. IPS: Covariate Distribution Balance via Integrated Propensity Scores, available at <https://github.com/pedrohcg/IPS>.
5. pctest: An R Package to assess the goodness of fit of parametric propensity score models, available at <https://github.com/pedrohcg/pctest>.

6. kmte: An R package for Treatment Effects with Censored Outcomes, available at <https://github.com/pedrohcg/kmte>

TEACHING EXPERIENCE

(A) Regular Courses:

- ECON 1510: Intensive Economic Statistics, Vanderbilt. Fall 2015, Fall 2016, Fall 2017.
First Statistics course at undergraduate level.
- ECON 3035: Econometric Methods, Vanderbilt. Spring 2020, Summer 2020, Spring 2021
First Econometrics course at undergraduate level, with introduction to R.
- ECON 6600: Econometrics, Vanderbilt. Spring 2017.
First Econometrics course at master (GPED) level.
- ECON 8310: Econometrics I, Vanderbilt. Spring 2016, Spring 2017, Spring 2018.
First course in Econometrics at Ph.D. level
- ECON 9320: Nonparametric and semiparametric econometrics, Vanderbilt. Fall 2017, Fall 2019.
Second year Ph.D. course covering an introduction to empirical process and semi and nonparametric methods, with focus on causal inference.

(B) Invited Mini-Courses:

- Difference-in-Differences, Statistical Horizons, June 2021, September 2021, October 2021.
- Econometric Methods for Randomly Censored Data, Academia Sinica (Taiwan), November 2019.
- Recent Advances in Program Evaluation, Xiamen University (China), June 2017.

(C) Guest Lectures:

- Recent Advances in Difference-in-Differences, Economics Department, University of Washington, Spring 2022.
- Difference-in-Differences with multiple time periods, Economics Department, University of Toronto, Spring 2021.
- Event-Study and Parallel Trends, Economics Department at Vanderbilt University (PhD applied-micro course), Fall 2020.
- Introduction to Difference-in-Differences, Biostatistics Department at Vanderbilt University, Spring 2020.
- Introduction to Treatment Effect Models, Economics Department at Yale University, Spring 2019.

(D) PhD Advising (Committee member):

- Qi Xu, Dissertation Committee Member, in progress, Vanderbilt
- Trang T. Hoang, Dissertation Committee Member, 2021, Vanderbilt.
(Initial placement: Federal Reserve Board).
- Jun B. Zhao, Dissertation Committee Member, 2021, Vanderbilt.
(Initial placement: University of Alabama).
- Minghai Mao, Dissertation Committee Member, 2021, Universidad Carlos III de Madrid.

(Initial placement: Liaoning University, China).

- Harold D. Chiang, Dissertation Committee Member, 2020, Vanderbilt.
(Initial placement: University of Wisconsin, Madison).
- Tam V. Bui, Dissertation Committee Member, 2020, Vanderbilt.
(Initial placement: Happy Elements, San Francisco).
- Jason Campbell, Dissertation Committee Member, 2018, Vanderbilt
(Initial placement: University of San Diego).

SEMINARS AND CONFERENCEES

2022: (1) U Washington (CSSS, *Scheduled – January*), (2) Queen Mary (*Scheduled – May*), (3) Northwestern (*Scheduled – May*), (4) Chicago Booth (*Scheduled – May*), (5) EU Commission – JRC (*Scheduled – June*).

2021: (1) Durham Business School, (2) U Cambridge, (3) Emory, (4) U Delaware, (5) U Florida, (6) Microsoft, (7) U Toronto, (8) Harvard/MIT, (9) New York Camp Econometrics, (10) USC, (11) U Notre Dame, (12) UC Berkeley, (13) Insper, (14) U of Rochester, (15) U of Washington (CHOICE) , (16) Ifo Munich, (17) DiD Online Reading group (U Ottawa), (18) University of Munich, (19) Electronic Health Economics Colloquium (online), (20) United Nations University – WIDER, (21) Summer Meeting of the Econometric Society (online), (22) IAAE (online), (23) CMU-U Pitt (joint seminar), (24) Stata Conference, (25) U Rosario, (26) John Hopkins University (Biostatistics), (27) Urban Institute, (28) North Carolina A&T State U (Stats), (29) Health Econometrics Conference, (30) U Washington (Econ), (31) LACEA-LAMES, (32) U Virginia, (33) SEA, (34) XVII Escola de Modelos de Regressão (Plenary Presentation), (35) One World YoungStats Webinar.

2020: (1) Warwick, (2) Stanford, (3) St. Gallen, (4) UC Irvine, (5) Southern Economic Association (online), (6) UFPel (Brazil), (7) SBE Online Seminar (Brazil), (8) CUHK-Shenzhen, (9) UC Davis.

2019: (1) UT Austin, (2) SUNY Albany, (3) New York Camp Econometrics XIV (Clayton, NY), (4) U Chicago, (5) IAAE (Cyprus), (6) CEME conference at UCLA, (7) Southern Methodist U., (8) Advances in Econometrics - UCL/Vanderbilt conference (Nashville, TN), (9) UC3M (Madrid, Spain), (10) IZA/CREST Conference on Labor Market Policy Evaluation (Bonn, Germany); (11) Academia Sinica (Taipei, Taiwan), (12) CMStatistics (London, UK).

2018: (1) Texas A&M, (2) Boston College, (3) NYU, (4) U. of Iowa, (5) Identification in Econometrics (Nashville, TN), (6) Yale, (7) Syracuse, (8) Carleton U., (9) IAAE (Montreal, Canada), (10) Latin American Workshop in Econometrics of the Econometric Society (Lima, Peru), (11) Canadian Econometrics Study Group (Ottawa, Canada), (12) Latin American Meeting of the Econometric Society (Guayaquil, Ecuador), (13) Southern Economic Association Annual Conference (Washington, DC), (14) Triangle Econometrics Conference (Chapel Hill, NC).

2017: (1) Vanderbilt (Biostatistics), (2) Princeton, (3) Asia Meeting of the Econometric Society (Hong Kong), (4) SETA (Beijing, China), (5) IAAE (Sapporo, Japan), (6) MEG 2017 (College Station, TX), (7) Southern Economic Association (Tampa, FL)

2016: (1) Latin American Workshop in Econometrics of the Econometric Society (Montevideo, Uruguay), (2) Indiana University (Bloomington, IN), (3) IAAE (Milan, Italy), (4) MEG 2016 (Urbana-Champaign, IL)

2015: (1) Mannheim U., (2) Collegio Carlo Alberto, (3) Paris School of Economics, (4) SUNY Binghamton, (5) Kansas State, (6) Vanderbilt U., (7) Universidad Autonoma de Barcelona, (8) North America Winter Meeting of the Econometric Society (Boston, MA).

2014: (1) European Winter Meeting of the Econometric Society (Madrid), (2) Symposium Spanish Economic Association (Palma de Mallorca), (3) Tilburg University, (4) Universidad Carlos III de Madrid, (5) European Meeting of the Econometric Society (Toulouse), (6) 16th ZEW Summer Workshop for Young Economists (Mannheim), (7) 20th ENTER Jamboree (Stockholm)

Before 2014: (1) Universidade de São Paulo (Ribeirão Preto, 2013), (2) 15th Brazilian Time Series and Econometrics School (Teresopolis, 2013), (3) UC3M (2013), (4) Spanish Stata Users Group Meeting (Madrid, 2010), (5) IV Encontro CAEN-EPGE (Fortaleza, 2009)

HONORS AND AWARDS

2016	Zellner Thesis Award. Best Ph.D. thesis in Econometrics for the years 2014 - 2015 awarded by the Business and Economic Statistics Section of the American Statistical Association.
2015	Ph.D. in Economics, cum laude, UC3M, Spain
2013	1st Place at Econometric Game (UC3M Team Captain), Amsterdam, Netherlands.
2012-2015	PIF Scholarship, Universidad Carlos III de Madrid, Spain.
2012	Finalist at Econometric Game (UC3M Team Captain), Amsterdam, Netherlands.
2012	FPI Scholarship, Spanish Ministry of Science and Technology, Declined.
2011	Outstanding Teaching Assistant Awards 2010-2011, UC3M, Spain.
2009-2012	Graduate Program Scholarship, UC3M, Spain.
2009	BA in Economics, Summa cum laude, IBMEC-MG, Brazil

PROFESSIONAL ACTIVITIES

Referee:

Anonymous Referee for the following journals: AEJ Policy, Annals of Applied Statistics, American Economic Review, AER: Insights, American Political Science Review, Biometrika, Brazilian Review of Finance, Econometrica, Econometric Reviews, Economic Letters, Electronic Journal of Statistics, Empirical Economics, Health Service Research, Journal of the American Statistical Association, Journal of the Association of Environmental and Resource Economists, Journal of Business & Economic Statistics, Journal of Econometrics, Journal of Applied Econometrics, Journal of Causal Inference, Journal of Economic Behavior & Organization, Journal of Financial Econometrics, Journal of Multivariate Analysis, Journal of Political Economy, Journal of the Royal Statistical Society: Series

B, Quantitative Economics, Quarterly Journal of Economics, Review of Economics and Statistics, Review of Economics Studies, Scandinavian Journal of Statistics.

Referee for the NSF, 2019.

Conference/Seminars:

Nov/2021: Session organizer and discussant, Southern Economic Association Conference

Mar/2021: Discussant, London Law & Finance Seminar Series

Jan/2021: Discussant, The Gary Chamberlain Online Seminar in Econometrics

Nov/2020: Session organizer, Southern Economic Association Conference

Nov/2019: Econometrics committee, Latin American Meeting of the Econometric Society

Nov/2018: Session organizer, Southern Economic Association Conference

Dec/2017: Econometrics committee, Annual Meeting of the Brazilian Econometric Society

Nov/2017: Session Organizer, Southern Economic Association Conference

University Services:

Member of the T. Aldrich Finegan Best Honors Thesis Prize Selection Committee, Vanderbilt University, 2016-2017 and 2017-2018.

Member of the Econometrics Recruiting Committee, Vanderbilt University, 2016 – 2017.

Ph.D. Admissions Committee, Vanderbilt University, 2015