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# Academic appointments

# Harvard University

Professor, Department of Health Care Policy, Harvard Medical School, 2022–present Professor, Department of Biostatistics, Harvard School of Public Health, 2022–present Faculty Affiliate, Department of Statistics, Faculty of Arts and Sciences, 2017–present Associate Professor, Department of Biostatistics, Harvard School of Public Health, 2020–2022 Associate Professor, Department of Health Care Policy, Harvard Medical School, 2018–2022 Assistant Professor, Department of Health Care Policy, Harvard Medical School, 2017–2018

## **Columbia University**

Assistant Professor, Division of Decision, Risk, and Operations, Columbia Business School, 2013–2017

Assistant Professor (by courtesy), Department of Statistics, Faculty of Arts and Sciences, 2013–2017

## Education

Ph.D. Statistics, The Wharton School, University of Pennsylvania, 2013

M.A. Statistics, The Wharton School, University of Pennsylvania, 2011

M.A. Economics, Universidad de Chile, 2008

B.S. Mathematical Engineering, Universidad Católica de Chile, 2005; Maximum Distinction

# Publications

## Edited volume

 Zubizarreta, J. R., Stuart, E. A., Small, D. S., and Rosenbaum, P. R., Editors (2023), Handbook of Matching and Weighting Adjustments for Causal Inference, Chapman & Hall/CRC Press.

## Articles, statistics

[2] Cohn, E. R., Song., Z., and Zubizarreta, J. R. (2024), "Risk Set Matched Difference-in-Differences for the Analysis of Effect Modification in an Observational Study on the Impact of Gun Violence on Health Outcomes," *Annals of Applied Statistics*, accepted.

\*American Statistical Association Health Policy Statistics Student Paper Award, 2024.

- [3] Chattopadhyay, A., Cohn, E. R., and Zubizarreta, J. R. (2024), "One-Step Weighting to Generalize and Transport Treatment Effect Estimates to a Target Population," *The American Statistician*, in press.
- [4] Kim, K., Niknam, B., and Zubizarreta, J. R. (2024), "Scalable Kernel Balancing Weights in a Nationwide Observational Study of Hospital Profit Status and Heart Attack Outcomes," *Biostatistics*, in press.
- [5] Han, L., Li, Y., Niknam, B., and Zubizarreta, J. R. (2024), "Privacy-Preserving, Communication-Efficient, and Target-Flexible Hospital Quality Measurement," *Annals of Applied Statistics*, 18, 1337–1359.

\*American Statistical Association Health Policy Statistics Student Paper Award, 2023.

- [6] Chattopadhyay, A., and Zubizarreta, J. R. (2024), "Causation, Comparison, and Regression," *Harvard Data Science Review*, 6.1.
- [7] Han, L., Shen, Z., and Zubizarreta, J. R. (2023), "Multiply Robust Federated Estimation of Targeted Average Treatment Effects," *Advances in Neural Information Processing Systems (NeurIPS)*, 36.
- [8] Wang, Y., and Zubizarreta, J. R. (2023), "Large Sample Properties of Matching for Balance," Statistica Sinica, 33, 1-20.
- [9] Chattopadhyay, A., and Zubizarreta, J. R. (2023), "On the Implied Weights of Linear Regression for Causal Inference," *Biometrika*, 110, 615–629.

\*Dempster Student Prize, Harvard University, 2021.

- [10] Kim, K., and Zubizarreta, J. R., (2023) "Toward Fair and Robust Estimation of Optimal Treatment Regimes," *International Conference on Machine Learning (ICML)*.
- [11] Díaz, J. D., and Zubizarreta, J. R. (2023), "Complex Discontinuity Designs Using Covariates: Impact of School Grade Retention on Later Life Outcomes in Chile," *Annals of Applied Statistics*, 17, 67-88.
- [12] Kim, K., Kennedy, E. H., and Zubizarreta, J. R. (2022), "Doubly Robust Counterfactual Classification," Advances in Neural Information Processing Systems (NeurIPS), 35.
- [13] Cohn, E. R., and Zubizarreta, J. R. (2022), "Profile Matching for the Generalization and Personalization of Causal Inferences," *Epidemiology*, 33, 678-688.
   \*Young Investigator Award, Statistics in Epidemiology, American Statistical Association, 2021.
- [14] Niknam, B., and Zubizarreta, J. R. (2022), "Using Cardinality Matching to Design Balanced and Representative Samples for Observational Studies," *Journal of the American Medical Association*, 327, 173–174.
- [15] Bennett, M., Vielma, J. P., and Zubizarreta, J. R. (2020), "Building Representative Matched Samples with Multi-valued Treatments in Large Observational Studies," *Journal of Computational and Graphical Statistics*, 29, 744–757.

\*International Biometric Society ENAR Student Paper Award, 2019.

[16] Wang, Y., and Zubizarreta, J. R. (2020), "Minimal Dispersion Approximate Balancing Weights: Asymptotic Properties and Practical Considerations," *Biometrika*, 107, 93–105.

\*American Statistical Association Biometrics Student Paper Award, 2018.

- [17] Chattopadhyay, A., Hase, C. H., and Zubizarreta, J. R. (2020), "Balancing Versus Modeling Approaches to Weighting in Practice," *Statistics in Medicine*, 39, 3227–3254.
- [18] Resa, M. A., and Zubizarreta, J. R. (2020), "Direct and Stable Weight Adjustment in Non-Experimental Studies with Multivalued Treatments: Analysis of the Impact of an Earthquake on Posttraumatic Stress," *Journal of the Royal Statistical Society: Series A*, 183, 1387– 1410.
- [19] Miratrix, L. W., Wager, S., and Zubizarreta, J. R. (2018), "Shape-Constrained Partial Identification of a Population Mean Under Unknown Probabilities of Sample Selection," *Biometrika*, 105, 103–114.
- [20] Visconti, G., and Zubizarreta, J. R. (2018), "Handling Limited Overlap in Observational Studies with Cardinality Matching," Observational Studies, 4, 217–249.
   \*William Cochran Prize for the best paper published in Observational Studies in 2015-2019.
- [21] Aronow, P. M., Crawford, F. W., and Zubizarreta, J. R. (2018), "Confidence Intervals for Linear Unbiased Estimators Under Constrained Dependence," *Electronic Journal of Statistics*, 12, 2238–2252.
- [22] Zubizarreta, J. R., Small, D. S., and Rosenbaum, P. R. (2018), "A Simple Example of Isolation in Building a Natural Experiment," *Chance*, 31, 16–23.

- [23] Haneuse, S., Zubizarreta, J. R., and Normand, S. L. T. (2018), "On Assessing the Quality of Health Care Providers Using Time-Varying Patient Outcomes," invited commentary, *Biometrics*, 74, 1395–1397.
- [24] Zubizarreta, J. R., and Keele, L. (2017), "Optimal Multilevel Matching in Clustered Observational Studies: A Case Study of the School Voucher System in Chile," Journal of the American Statistical Association, 112, 547–560.
- [25] Hirshberg, D. A., and Zubizarreta, J. R. (2017), "On Two Approaches to Weighting in Causal Inference," invited commentary, *Epidemiology*, 28, 812–816.
- [26] Kilcioglu, C., and Zubizarreta, J. R. (2016), "Maximizing the Information Content of a Balanced Matched Sample in a Study of the Economic Performance of Green Buildings," *Annals* of *Applied Statistics*, 10, 1997–2020.
- [27] Resa, M. A., and Zubizarreta, J. R. (2016), "Evaluation of Subset Matching Methods and Forms of Covariate Balance," *Statistics in Medicine*, 35, 4961–4979.
- [28] Zubizarreta, J. R. (2015), "Stable Weights that Balance Covariates for Estimation with Incomplete Outcome Data," Journal of the American Statistical Association, 110, 910–922.

\*American Statistical Association Biometrics Student Paper Award, 2014. \*International Biometric Society ENAR Student Paper Award, 2014.

- [29] Hsu, J., Zubizarreta, J. R., Small, D. S., and Rosenbaum, P. R. (2015), "Strong Control of the Family-Wise Error Rate in Observational Studies that Discover Effect Modification by Exploratory Methods," *Biometrika*, 102, 767–782.
- [30] Keele, L., Titiunik, R., and Zubizarreta, J. R., (2015) "Enhancing a Geographic Regression Discontinuity Design Through Matching to Estimate the Effect of Ballot Initiatives on Voter Turnout," *Journal of the Royal Statistical Society: Series A*, 178, 223-239.
- [31] Zubizarreta, J. R., Small, D. S., and Rosenbaum, P. R. (2014), "Isolation in the Construction of Natural Experiments," *Annals of Applied Statistics*, 8, 2096-2121.
- [32] Zubizarreta, J. R., Paredes, R. D., and Rosenbaum, P. R., (2014) "Matching for Balance, Pairing for Heterogeneity in an Observational Study of the Effectiveness of For-profit and Not-for-profit High Schools in Chile," Annals of Applied Statistics, 8, 204-231.
   \*American Statistical Association Social Statistics, Government Statistics, and Survey Research Methods Sections Student Paper Award, 2013.
- [33] Yang, F., Zubizarreta, J. R., Small, D. S., Lorch, S. A., and Rosenbaum, P. R. (2014), "Dissonant Conclusions When Testing the Validity of an Instrumental Variable," *The American Statistician*, 68, 253-263.
- [34] Zubizarreta, J. R., Cerdá, M., and Rosenbaum, P. R. (2013), "Effect of the 2010 Chilean Earthquake on Posttraumatic Stress: Reducing Sensitivity to Unmeasured Bias Through Study Design," *Epidemiology*, 24, 79-87 (with discussion).

\*Kenneth Rothman Prize for the best paper published in Epidemiology in 2013.

\*Young Investigator Award, Statistics in Epidemiology, American Statistical Association, 2012.

- [35] Zubizarreta, J. R., Small, D. S., Goyal, N. K., Lorch, S. A., and Rosenbaum, P. R. (2013), "Stronger Instruments Via Integer Programming in an Observational Study of Late Preterm Birth Outcome," *Annals of Applied Statistics*, 7, 25-50.
- [36] Zubizarreta, J. R., (2012), "Using Mixed Integer Programming for Matching in an Observational Study of Acute Kidney Injury after Surgery," *Journal of the American Statistical Association*, 107, 1360-1371.

\*Deming Scholar Award, American Statistical Association, 2012.

[37] Zubizarreta, J. R., Neuman, M. D., Silber, J. H., and Rosenbaum, P. R. (2012), "Contrasting Evidence Within and Between Institutions that Supply Treatment in an Observational Study of Alternative Forms of Anesthesia," *Journal of the American Statistical Association*, 107, 901-915. \*Tom R. Ten Have Memorial Award, 2011.

\*American Statistical Association Health Policy Statistics Student Paper Award, 2011.

[38] Zubizarreta, J. R., Reinke, C. E., Kelz, R. R., Silber, J. H., and Rosenbaum, P. R. (2011), "Matching for Several Sparse Nominal Variables in a Case-Control Study of Readmission Following Surgery," *The American Statistician*, 65, 229-238.

# Articles, health policy and medicine

- [39] Wilcock, A. D., Zubizarreta, J. R., Wadhera, R. K., Yeh, R. W., Zachrison, K. S., Schwamm, L. H., and Mehrotra, A. (2024), "Factors Underlying the Reduction in Hospitalizations for Myocardial Infarction During the COVID-19 Pandemic," *Journal of the American Medical Association, Cardiology*, accepted.
- [40] Geng, F., McGarry, B., E., Rosenthal, M. B., Zubizarreta, J. R., Resch, S. C., and Grabowski, D. C. (2024), "Preferences for Post-Acute Care at Home versus Facilities: A Discrete Choice Experiment," *Journal of the American Medical Association, Health Forum*, accepted.
- [41] Song, Z., Zubizarreta, J. R., Giurato, M., Koh, K. A., and Sacks, C. A. (2023), "Firearm Injuries in Children and Adolescents: Changes in Health and Health Care Among Survivors and Family Members," *Health Affairs*, 42, 1541-1550.
- [42] Tang, M., Nakamoto, C. H., Stern, A. D., Zubizarreta, J. R., Marcondes, F. O., Uscher-Pines, L., Schwamm, L. H., and Mehrotra, L. (2023), "Effects of Remote Patient Monitoring Use on Care Outcomes among Medicare Patients with Hypertension," *Annals of Internal Medicine*, 176, 1465-1475.
- [43] Wilcock, A. D., Huskamp, H. A., Busch, A. B, Normand, S. L. T., Uscher-Pines, L., Raja, P. V., Zubizarreta, J. R., Barnett, M. L., and Mehrotra, A. (2023), "Use of Telemedicine and Quality of Care Among Medicare Enrollees With Serious Mental Illness," *Journal of the American Medical Association, Health Forum*, 4, e233648.
- [44] Puac-Polanco, V., Ziobrowski, H. N., Ross, E. L., Liu, H., Turner, B., Cui, R., Leung, L. B., Bossarte, R. M., Bryant, C., Joormann, J., Nierenberg, A. A., Oslin, D. W., Pigeon, W. R., Post, E. P., Zainal, N. H., Zaslavsky, A. M., Zubizarreta, J. R., Luedtke, A., Kennedy, C. J., Cipriani, A., Furukawa, T. A., and Kessler, R. C. (2023). "Development of a Model to Predict Antidepressant Treatment Response for Depression among Veterans," *Psychological Medicine*, 53, 5001–5011.
- [45] Ziobrowski, H. N., Cui, R., Ross, E. L., Liu, H., Puac-Polanco, V., Turner, B., Leung, L. B., Bossarte, R. M., Bryant, C., Pigeon, W. R., Oslin, D. W., Post, E. P., Zaslavsky, A. M., Zubizarreta, J. R., Nierenberg, A. A., Luedtke, A., Kennedy, C. J., and Kessler, R. C. (2023). "Development of a Model to Predict Psychotherapy Response for Depression among Veterans," *Psychological Medicine*, 53, 3591–3600.
- [46] Bossarte, R. M., Ross, E. L., Liu, H., Turner, B., Bryant, C., Zainal N. H., Puac-Polanco, V., Ziobrowski, H. N., Cui, R., Cipriani, A., Furukawa, T. A., Leung, L. B., Joormann, J., Nierenberg, A. A., Oslin, D. W., Pigeon, W. R., Post, E. P., Zaslavsky, A. M., Zubizarreta, J. R., Luedtke, A., Kennedy, C. J., and Kessler, R. C. (2023), "Development of a Model to Predict Combined Antidepressant Medication and Psychotherapy Treatment Response for Depression among Veterans," *Journal of Affective Disorders*, 326, 111–119.
- [47] Niknam, B., and Zubizarreta, J. R. (2023), "Examining Sources of Post-Acute Care Inequities with Layered Target Matching," *Health Services Research*, 58, 19-29.
- [48] Li, Y., Undurraga, E. A., and Zubizarreta, J. R. (2022), "Effectiveness of Localized Lockdowns in the COVID-19 Pandemic," *American Journal of Epidemiology*, 191, 812-824.
   \*American Statistical Association Health Policy Statistics Student Paper Award, 2022.

\*International Biometric Society WNAR Student Paper Award, 2021.

[49] Song, Z., Zubizarreta, J. R., Giurato, M., Paulos, E., and Koh, K. A. (2022), "Health Care Spending, Utilization, and Morbidity After Nonfatal Firearm Injuries," *Annals of Internal Medicine*, 175, 795-803.

- [50] Jara, A., Undurraga, E. A., Zubizarreta, J. R., Gonzalez, C., Acevedo, J., Pizarro, A., Vergara, V., Flores, J. C., Suarez, P., Leighton, P., Eguiguren, P., Ríos, J. C., Garcia-Escorza, H., and Araos, R. (2022), "Effectiveness of CoronaVac in Children 3 to 5 Years During the SARS-CoV-2 Omicron Outbreak in Chile," *Nature Medicine*, 28, 1377–1380.
- [51] Wilcock, A. D., Schwamm, L. H., Zubizarreta, J. R., Zachrison, K. S., Uscher-Pines, L., Majersik, J. J., Richard, J. V., and Mehrotra, A. (2022), "Impact of the FAST Act on Billing for Telemedicine," *Health Affairs*, 41, 350-359.
- [52] Wilcock, A. D., Schwamm, L. H., Zubizarreta, J. R., Zachrison, K. S., Uscher-Pines, L., Richard, J. V., and Mehrotra, A. (2022), "Reperfusion Treatment and Stroke Outcomes in Hospitals with Telestroke Capacity," *Journal of the American Medical Association*, *Neurology*, 78, 527-535.
- [53] Jara, A., Undurraga, E. A., Zubizarreta, J. R., Gonzalez, C., Pizarro, A., Acevedo, J., Leo, K., Paredes, F., Bralic, T., Vergara, V., Mosso, M., Leon, F., Parot, I., Leighton, P., Suarez, P., Rios, J. C., Garcia-Escorza, H., and Araos, R. (2022), "Effectiveness of Homologous and Heterologous Booster Shots for an Inactivated SARS-CoV-2 Vaccine: A Large-Scale Observational Study," *Lancet Global Health*, 10, e798-e806.
- [54] Jara, A., Undurraga, E. A., Flores, J. C., Zubizarreta, J. R., Gonzalez, C., Pizarro, A., Ortuño-Borroto, D., Acevedo, J., Leo, K., Paredes, F., Bralic, T., Vergara, V., Leon, F., Parot, I., Leighton, P., Suarez, P., Ríos, J. C., Garcia-Escorza, H., and Araos, R. (2022), "Effectiveness of an Inactivated SARS-CoV-2 Vaccine in Children and Adolescents: A Large-Scale Observational Study," *Lancet Regional Health*, in press.
- [55] Kessler, R. C., Ruhm, C., Puac-Polanco, V., Hwang, I., Lee, S., Petukhova, M., Sampson, N., Ziobrowski, H. N., Zaslavsky, A. M., and Zubizarreta, J. R. (2022), "Estimated Prevalence and Correlates of Clinically Significant Anxiety-Depression among US Adults During the First Year of the COVID-19 Pandemic," *Journal of the American Medical Association, Network Open*, 5, e2217223.
- [56] Bossarte, R. M, Kessler, R. C., Nierenberg, A. A., Chattopadhyay, A., Cuijpers, P., Enrique, A., Foxworth, P. M., Gildea, S. M., Belnap, B. H., Haut, M. W., Law, K. B., Lewis, W. D., Liu, H., Luedtke, A. R., Pigeon, W. R., Rhodes, L. A., Richards, D., Rollman, B. L., Sampson, N. A., Stokes, C. M., Torous, J., Webb, T. D., and Zubizarreta, J. R., (2022), "The Appalachia Mind Health Initiative (AMHI): A Pragmatic Clinical Trial of Adjunctive Internet-Based Cognitive Behavior Therapy for Treating Major Depressive Disorder Among Primary Care Patients," *Trials*, 23, 520.
- [57] Rauh-Hain, J. A., Zubizarreta, J. R., Nitecki, R., Melamed, A., Fu, S., Jorgensen, K., Brady, P. C., Baker, V. L., Chavez Mac Gregor, M., Keating, N. L., and Giordano, S. H. (2022), "Survival Outcomes Following Pregnancy or Assisted Reproductive Technologies After Breast Cancer: A Population-Based Study," *Cancer*, 128, 3243-3253.
- [58] Puac-Polanco, V., Ziobrowski, H. N., Ross, E. L., Liu, H., Turner, B., Cui, R., Leung, L. B., Bossarte, R. M., Bryant, C., Joormann, J., Nierenberg, A. A., Oslin, D. W., Pigeon, W. R., Post, E. P., Zainal, N. H., Zaslavsky, A. M., Zubizarreta, J. R., Luedtke, A., Kennedy, C. J., Cipriani, A., Furukawa, T. A., Kessler, R. C. (2022), "Development of a Model to Predict Antidepressant Treatment Response for Depression Among Veterans," *Psychological Medicine*, 1-11.
- [59] Leung, L. B., Ziobrowski, H. N., Puac-Polanco, V., Bossarte, R. M., Bryant, C., Keusch, J., Liu, H., Pigeon, W. R., Oslin, D. W., Post, E. P., Zaslavsky, A. M., Zubizarreta, J. R., and Kessler, R. C. (2022), "Are Veterans Getting their Preferred Depression Treatment? A National Observational Study in the Veterans Health Administration," *Journal of General Internal Medicine*, 37, 3235-3241.
- [60] Zubizarreta, J. R., Umhau, J. C., Deuster, P., Brenner, L. A., King, A. Petukhova, M., Tizenberg, B., Upadhyaya, S. K., RachBeisel, J. A., Streeten, E., Kessler, R. C., and Postolache, T. T. (2021), "Evaluating the Heterogeneous Effect of a Modifiable Risk Factor on Suicide:

The Case of Vitamin D Deficiency," *International Journal of Methods in Psychiatric Research*, 31, e1897.

- [61] Zachrison, K. S., Richard, J. V., Wilcock, A. D., Zubizarreta, J. R., Schwamm, L. H., Uscher-Pines, L., and Mehrotra, A. (2021), "Is Hospital Adoption of Telestroke Associated with Changes in the Stroke System of Care?" *Journal of the American Medical Association, Network Open*, 4, e2126612-e2126612.
- [62] Gondi, S., Wright, A. A., Landrum, M. B., Meneades L., Zubizarreta, J. R., Chernew, M .E., and Keating, N. L. (2021), "Assessment of Patient Attribution to Care from Medical Oncologists, Surgeons or Radiation Oncologists Following a New Cancer Diagnosis," *Journal* of the American Medical Association, Network Open, 4, e218055-e218055.
- [63] Keating, N. L., Cleveland, J. L. F., Wright, A. A., Brooks G. A., Meneades L., Riedel L., Zubizarreta, J. R., Landrum, M. B. (2021), "Reliability and Correlations of Quality Measures for Oncology Cancer Care: Implications for Alternative Payment Models," *Journal of the American Medical Association, Network Open*, 4, e212474-e212474.
- [64] Patel, S. Y., Huskamp, H. A., Barnett, M. L., Zubizarreta, J. R., Zachrison, K. S., Busch, A. B., Wilcock, A. D., and Mehrotra, A. (2021). "Association between Telepsychiatry Capability and Treatment of Patients with Mental Illness in the Emergency Department," *Psychiatric Services*, 73, 403-410.
- [65] Ziobrowski, H. N., Leung, L. B., Bossarte, R. M., Bryant, C., Keusch, J., Liu, H., Puac-Polanco, V., Pigeon, W. R., Oslin, D. W., Post, E. P., Zaslavsky, A. M., Zubizarreta, J. R., and Kessler, R. C. (2021), "Comorbid Mental Disorders, Depression Symptom Severity, and Role Impairment Among Veterans Initiating Depression Treatment Through the Veterans Health Administration," Journal of Affective Disorders, 290, 227-236.
- [66] Wilcock, A. D., Zachrison, K. S., Schwamm, L. H., Uscher-Pines, L., Zubizarreta, J. R., and Mehrotra, A. (2020), "Trends among Rural and Urban Medicare Beneficiaries in Care Delivery and Outcomes for Acute Stroke and Transient Ischemic Attacks, 2008-2017," *Journal of the American Medical Association, Neurology*, 29, 863–871.
- [67] Kessler, R. C., Bossarte, R. M., Luedtke, A., Zaslavsky, A. M., and Zubizarreta, J. R. (2020), "Suicide Prediction Models: A Critical Review of Recent Research with Recommendations for the Way Forward," *Molecular Psychiatry*, 25, 168–179.
- [68] Kessler, R. C., Bossarte, R. M., Luedtke, A., Zaslavsky, A. M., and Zubizarreta, J. R. (2019), "Machine Learning Methods for Developing Precision Treatment Rules," *Behaviour Research and Therapy*, 120.
- [69] Gondi, S., Wright, A. A., Landrum, M. B., Zubizarreta, J. R., Chernew, M. E., and Keating, N. (2019), "Multimodality Cancer Care and Implications for Episode Payments in Cancer," *American Journal of Managed Care*, 25, 537–538.
- [70] Hu, W, Chan, C., Zubizarreta, J. R., and Escobar, G. (2018), "An Examination of Early Transfers to the ICU Based on a Physiologic Risk Score," *Manufacturing & Service Operations Management*, 20, 531-549.

\*Honorable Mention for the MSOM Responsible Research Award, 2021.

\*Runner-up Industry Studies Association Ralph Gomory Best Industry Studies Paper Award, 2019.

\*Runner-up INFORMS Pierskalla Best Paper Award, 2017.

\*Finalist for INFORMS MSOM Student Paper Award, 2017.

[71] Hu, W, Chan, C., Zubizarreta, J. R., and Escobar, G. (2018), "Incorporating Longitudinal Comorbidity and Acute Physiology Data in Template Matching for Assessing Hospital Quality: an Exploratory Study in an Integrated Health Care Delivery System," *Medical Care*, 56, 448-454.

- [72] Rosellini, A. J., Dussaillant, F., Zubizarreta, J. R., Kessler, R., and Rose, S. (2018), "Predicting Posttraumatic Stress Disorder Following a Natural Disaster," *Journal of Psychiatric Research*, 96, 15-22.
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- [74] Neuman, M. D., Rosenbaum, P. R., Ludwig, J. M., Zubizarreta, J. R., and Silber, J. H. (2014), "Anesthesia Technique, Mortality, and Length of Stay After Hip Fracture Surgery," *Journal* of the American Medical Association, 311, 2508-2517.
- [75] Kelz, R. R., Reinke, C. E., Zubizarreta, J. R., Wang, M., Saynisch, P., Reese, P., Even-Shoshan, O., Reese, P. R., Fleisher, L. A., and Silber, J. H. (2013) "Acute Kidney Injury, Renal Function, and the Elderly Obese Surgical Patient: A Matched Case-Control Study," *Annals of Surgery*, 258, 359-363.
- [76] Goyal, N. K., Zubizarreta, J. R., Small, D. S., and Lorch, S. A. (2013), "Length of Stay and Readmission Risk for Late Preterm Infants: An Instrumental Variable Approach," *Hospital Pediatrics*, 3, 7-15.
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### **Book chapters**

- [78] Cohn., E. R., Ben-Michael, E., Feller, A., and Zubizarreta, J. R. (2023), "Balancing Weights for Causal Inference," in *Handbook of Matching and Weighting Adjustments for Causal Inference*, Chapman & Hall/CRC.
- [79] Rosenbaum, P. R., and Zubizarreta, J. R. (2023), "Optimization Techniques in Multivariate Matching," in *Handbook of Matching and Weighting Adjustments for Causal Inference*, Chapman & Hall/CRC.
- [80] Mozer, R., Rubin, D. B., and Zubizarreta, J. R. (2020), "Statistical Inference for Causal Effects in Clinical Psychology: Fundamental Concepts and Analytical Approaches," in *Handbook of Research Methods in Clinical Psychology*, Cambridge University Press, 415-425.
- [81] Paredes, R. D., Volante, P., Opazo. M. O., and Zubizarreta, J. R. (2013), "Shared Financing in the Chilean Subsidized Education," in: *Proposals for Chile*, Ediciones UC, 51-83. (In Spanish.)
- [82] Rodríguez, C., Domínguez, P., Undurraga, E., and Zubizarreta, J. R. (2009), "Identification and Characterization of Vulnerable Populations: Elements for the Measurement of Risk," in: *Towards the Bicentenary: Proposals for Chile*, Ediciones UC, 305-328. (In Spanish.)

## **Technical reports**

- [83] Zubizarreta, J. R. (2010), "Child Poverty in Chile: A Look at its Trends, Dynamics and Impact on Educational Outcomes," Center for Social Research of Un Techo para Chile, 8, 13-21. (In Spanish.)
- [84] Zubizarreta, J. R. (2009), "Educational Outcomes of the Children of the Poor: the Chilean Case," background paper prepared for the *Human Development Report 2008/2009 for Latin America and the Caribbean*, United Nations Development Programme.

#### Submitted work

- [S1] Ben-Michael, E., Feller, A., Hirshberg, D. A., and Zubizarreta, J. R., "The Balancing Act in Causal Inference," *submitted*.
- [S2] Chattopadhyay, A., Greiffer, N., and Zubizarreta, J. R., "1mw: Linear Model Weights for Causal Inference," *invited revision*.

- [S3] Chattopadhyay, A., Imai, K., and Zubizarreta, J. R., "Design-Based Inference for Generalized Network Experiments with Stochastic Interventions," *submitted*.
- [S4] Chattopadhyay, A., Morris, C. N., and Zubizarreta, J. R., "Balanced and Robust Randomized Treatment Assignments: The Finite Selection Model for the Health Insurance Experiment and Beyond," *invited revision*.
- [S5] Chattopadhyay, A., Morris, C. N., and Zubizarreta, J. R., "Randomized and Balanced Allocation of Units into Treatment Groups Using the Finite Selection Model for R," *submitted*.
- [S6] Hirshberg, D. A., Maleki, A., and Zubizarreta, J. R., "Minimax Linear Estimation of the Retargeted Mean," *invited revision*.
- [S7] Kim, K., Mishler, A., and Zubizarreta, J. R., "Counterfactual Mean-Variance Optimization," submitted.
- [S8] Kim, K., and Zubizarreta, J. R., "Causal Subgroup Discovery with Balance Control," submitted.
- [S9] Li, Y., Resa, M. A., and Zubizarreta, J. R., "Stable Estimation of Time-Varying Treatment Effects with Weights that Balance Covariate Histories in Marginal Structural Models," *invited revision*.

\*American Statistical Association Social Statistics, Government Statistics, and Survey Research Methods Sections Student Paper Award, 2017.

- [S10] Niknam, B., and Zubizarreta, J. R., "Hospital Variation in Percutaneous Coronary Intervention Use and Quality of AMI Care," *submitted*.
- [S11] Rosenbaum, P. R., and Zubizarreta, J. R., "Effect Aliasing in Observational Studies," submitted.
- [S12] Zubizarreta, J. R., Li, Y., Keating, N. L., and Landrum, M. B., "Targeted Quality Measurement of Health Care Providers," *invited revision*.

## Statistical software

- [R1] depinf package for R, with Peter Aronow and Forrest Crawford
- [R2] designmatch package for R, with Cinar Kilcioglu
- [R3] fsm package for R, with Ambarish Chattopadhyay and Carl Morris
- [R4] 1mw package for R, with Ambarish Chattopadhyay and Noah Greifer
- [R5] mipmatch package for R
- [R6] msbw package for R, with Yige Li
- [R7] sbw package for R, with Yige Li and Mohammed-Amine Allouah
- [R8] scbounds package for R, with Luke Miratrix and Stefan Wager

# Awards, fellowships, and grants

# Awards

See above under Journal Publications

## Fellowships

Fellow of the American Statistical Association, Elected 2022

Initiative on Data Science in Business and Economics, 2016-17 Visiting Fellow, Chicago Booth, 2017

The Wharton School, University of Pennsylvania, Graduate Fellow, 2009-2013

Fulbright-CONICYT Scholarship, 2008-2012

### Grants as Principal Investigator

"Fast and Robust Weighting Methods for Targeted Comparative Effectiveness Research," Patient-Centered Outcomes Research Institute (PCORI), 2023-2026 (USD 1,050,000)

"Towards a New Generation of Matching Methods for Comparative Effectiveness Research," Patient-Centered Outcomes Research Institute (PCORI), 2020-2023 (USD 1,047,436)

"New Statistical Methods for Causal Inference in the Social Sciences and Public Policy," Alfred P. Sloan Foundation, 2018-2021 (USD 327,033)

"New Methods for Causal Inference in Randomized and Observational Studies," Alfred P. Sloan Foundation, 2015-2017 (USD 43,767)

"Educational Outcomes of the Children of the Poor: the Chilean Case," Human Development Report 2008/2009 for Latin America and the Caribbean, United Nations Development Plan, 2008-2009 (USD 8,000)

# Grants as Co-Principal Investigator

"Causal Inference with Complex Treatment Regimes: Design, Identification, Estimation, and Heterogeneity," Alfred P. Sloan Foundation, PI Prof. Francesca Dominici, 2020-2021

"Leveraging EHR Data to Evaluate Key Treatment Decisions to Prevent Suicide Related Behaviors," NIH, PI Prof. Ronald Kessler, 2019-2023

"The Impact of Telestroke on Patterns of Care and Long-Term Outcomes," NIH, PI Prof. Ateev Mehrotra, 2019-2023

"Machine Learning for Health Outcomes and Quality of Care in Low-Income Populations," NIH/1DP2MD012722, PI Prof. Sherri Rose, 2017-2022

"Alzheimer's Disease and Related Dementia Care within the Medicare Program," NIH, PI Prof. John Hsu, 2018-2023

"Improving Feasibility and Efficiency of Quality Measurement in Oncology Practices," Laura and John Arnold Foundation, PI Prof. Nancy Keating, 2017-2020

"Medicare in a Restructured Delivery System," NIH, PI Prof. Joseph Newhouse, 2015-2020

# Teaching experience

# As Instructor

"Design of Experimental and Non-experimental Studies" (Ph.D.), Department of Statistics, Harvard University (Fall 2019, Spring 2020, Spring 2021, Spring 2022, Spring 2023)

"Health Policy (Core)" (Ph.D.), Department of Health Care Policy, Harvard Medical School (Spring 2019, Spring 2020, Spring 2021, Spring 2022) (Guest Instructor)

"Causal Inference" (Ph.D.), Division of Decision, Risk and Operations, Columbia Business School (Spring 2014, Fall 2015, Fall 2016)

"Managerial Statistics" (M.B.A.), Division of Decision, Risk and Operations, Columbia Business School (Fall 2015, Fall 2016)

"Introduction to Econometrics and Statistical Inference" (M.A., Ph.D.), Division of Decision, Risk and Operations, Columbia Business School (Fall 2014)

"Applied Econometrics" (undergraduate), Dept. of Industrial and Systems Engineering, Universidad Católica de Chile (Spring 2007, Fall 2008)

### Short courses

"Causal Inference," Doctoral School in Statistics and Applied Probability (CUSO), Switzerland, Sep 3-6, 2023

"Combining Information for Causal Inference," (with Issa Dahabreh) CAUSALab, Harvard T.H. Chan School of Public Health, Jun 26-30, 2023

"Design and Analysis of Observational Studies of Causal Effects," Brandeis/Harvard Substance Use Disorder Center, Jun 2, 2023

"Tutorial on Causal Inference," Harvard Data Science Annual Conference, Nov 15, 2022

"New Weighting Methods with Improved Internal and External Validity in Empirical Research," Society for Research in Educational Effectiveness (SREE) Spring Conference, Sep 26, 2021

"Introduction to Causal Inference," Harvard Data Science Annual Conference, Oct 24, 2019

"Design of Matched Studies with Improved Internal and External Validity," ENAR Spring Meeting, Mar 24, 2019

"New Matching Methods for Causal Inference," International Meeting of the Psychometric Society, Jul 09, 2018

"New Matching Methods for Causal Inference," Society for Research in Educational Effectiveness (SREE) Spring Conference, Feb 28, 2018

"Recent Developments in Causal Inference," International Conference in Health Policy Statistics, Charleston, Jan 10, 2018

"New Matching Methods for Causal Inference," MDEpiNet PPP Annual Meeting, Food and Drug Administration (FDA), Oct 17, 2017

"New Matching Methods for Causal Inference," Atlantic Causal Inference Meeting, University of North Carolina at Chapel Hill, May 23, 2017

"New Matching Methods for Causal Inference," UK Causal Inference Meeting, University of Essex, England, April 4, 2017

"Optimal Designs for Causal Inference Using Integer Programming," Center for Mathematical Studies, Kellogg School of Management, Northwestern University, Oct 31-Nov 1, 2016

"Design of Observational Studies," International Workshop on Applied Statistics, Bogotá, Colombia, Apr 23-24, 2015 (in Spanish)

"New Methods for Causal Inferences in the Health and Social Sciences," Columbia Global Center/PUC, Santiago, Chile, Aug 19, 2014 (in Spanish)

# Student advising and student collaborations

# Ph.D. students

Magdalena Bennett (Department of Education Policy and Social Analysis, Teachers College at Columbia University, 2020; joint work and thesis committee member)

Nikhil Bhat (Division of Decision, Risk and Operations, Columbia Business School, 2014; thesis committee member)

Zach Branson (Department of Statistics, Harvard University, 2019; joint work and thesis committee member)

Ambarish Chattopadhyay (Department of Statistics, Harvard University, 2022; joint work and advisor)

Jonathan Che (Department of Statistics, Harvard University, 2023; thesis committee member)

Nathan Cheng (Department of Statistics, Harvard University, 2027 (expected); joint work and co-advisor with Prof. Lucas Janson)

Eric Cohn (Department of Biostatistics, Harvard University, 2024; joint work and advisor)

Juan Díaz (Department of Statistics, Harvard University, 2019; joint work and advisor)

Eric Dunipace (Department of Biostatistics, Harvard University, 2021; joint work and coadvisor with Prof. Lorenzo Trippa)

Fangli Geng (Department of Health Care Policy, Harvard University, 2024; thesis committee member)

David Hirshberg (Department of Statistics, Columbia University, 2018; joint work and coadvisor with Prof. D. Madigan and Prof. A. Maleki)

Wenqi Hu (Division of Decision, Risk and Operations, Columbia Business School, 2017; joint work and co-advisor with Prof. C. Chan)

Ta-Wei Huang (Marketing Unit, Harvard Business School, 2025 (expected); thesis committee member)

Cinar Kilcioglu (Division of Decision, Risk and Operations, Columbia Business School, 2016; joint work and co-advisor with Prof. C. Maglaras)

Yige Li (Department of Biostatistics, Harvard University, 2024; joint work and advisor)

Yuzhou Lin (Department of Statistics, Harvard University, 2027 (expected); joint work)

Susanna Makela (Department of Statistics, Columbia University, 2016; joint work and thesis committee member)

Debmalya Mandal (Department of Computer Science, Harvard University, 2019; joint work and thesis committee member)

Reagan Mozer (Department of Statistics, Harvard University, 2019; joint work)

Bijan Niknam (Department of Health Care Policy, Harvard University, 2023; joint work and advisor)

Maria Resa (Department of Statistics, Columbia University, 2016; joint work and co-advisor with Prof. D. Madigan)

Zach Shahn (Department of Statistics, Columbia University, 2015; joint work and thesis committee member)

Zhu Shen (Department of Biostatistics, Harvard University, 2026 (expected); joint work and advisor)

Wenqi Shi (Department of Statistics, Harvard University, 2028 (expected); joint work)

Noémie Sportiche (Department of Health Care Policy, Harvard University, 2023; thesis committee member)

Sofía Vega (Department of Biostatistics, Harvard University, 2025 (expected); thesis committee member)

Giancarlo Visconti (Department of Political Science, Columbia University, 2017; joint work and thesis committee member)

Yixin Wang (Department of Statistics, Columbia University, 2020; joint work)

Sophie Woodward (Department of Biostatistics, Harvard University, 2027 (expected); joint work and co-advisor with Prof. F. Dominici)

Xiao Wu (Department of Biostatistics, Harvard University, 2020; thesis committee member)

Yi Zhang (Department of Statistics, Harvard University, 2025 (expected); joint work and thesis committee member)

Shen Zhu (Department of Biostatistics, Harvard University, 2026 (expected); joint work and advisor)

#### **Postdoctoral students**

Kwangho Kim, Harvard University, 2020–2023 Shasha Han, Harvard University and Peking University, 2020–2021

# **Professional activities**

# **Editorial positions**

Associate Editor, Journal of the Royal Statistical Society, Series B, 2024–present Associate Editor, Annals of Applied Statistics, 2023–present Associate Editor, Biometrics, 2020–present Associate Editor, Journal of Computational and Graphical Statistics, 2019–present Associate Editor, Observational Studies, 2018–present

## Reviewer

American Economic Review American Journal of Epidemiology American Journal of Psychiatry American Journal of Political Science American Statistician Annals of Applied Statistics Annals of Epidemiology Annals of Internal Medicine Annals of Statistics Annals of Surgery Annals of Operations Research **Biometrics** Biometrika **Biostatistics** BMC Medical Research Methodology Communications in Statistics - Theory and Methods Computational Statistics and Data Analysis Engineering Applications of Artificial Intelligence Epidemiology Epidemiologic Methods Health Services and Outcomes Research Methodology Journal of Applied Econometrics Journal of Causal Inference Journal of Computational and Graphical Statistics Journal of Econometrics Journal of Educational and Behavioral Statistics Journal of Machine Learning Research Journal of Research on Educational Effectiveness Journal of the American Statistical Association, Applications and Case Studies Journal of the American Statistical Association. Theory and Methods Journal of the Royal Statistical Society, Series A (Statistics in Society) Journal of the Royal Statistical Society, Series B (Statistical Methodology) Journal of the Royal Statistical Society, Series C (Applied Statistics) Lifetime Data Analysis Management Science NeurIPS **Observational Studies Operations** Research PLOS ONE Psychometrika Review of Economics and Statistics Statistica Sinica Statistical Science Statistical Methods in Medical Research Statistics and Computing Statistics and Public Policy Statistics in Medicine

Trials

## Service

Co-Chair, Harvard Data Science Initiative Post-Doctoral Fellow Selection Committee, 2024

Center for Computational Biomedicine (CCB) Faculty Advisory Committee, Harvard Medical School, 2024–present

National Science Foundation/Methodology, Measurement, and Statistics (NSF/MMS) Advisory Panel, 2023–present

Admissions Committee, Health Policy PhD, Harvard University, 2023-present

Review Committee, Agency for Healthcare Research and Quality (AHRQ) National Research Service Award (NRSA) Trainees Research Conference, 2022

Scientific Committee, International Conference in Health Policy Statistics, American Statistical Association, 2021–2022

Secretary, Health Policy Statistics Section, American Statistical Association, 2021–2024

Roundtable Leader, Joint Statistical Meetings, Statistics in Epidemiology Section, American Statistical Association, 2021

Standing Committee on Health Policy, Faculty of Arts and Sciences, Harvard University, 2020– present

Research Team Member, iCOVID Chile, icovidchile.cl, 2020-2022

Admissions Reviewer, Statistics PhD, Harvard University, 2018–present

Admissions Reviewer, Harvard Data Science Initiative, Postdoctoral Fellows, Harvard University, 2020–present

Reviewer, National Science Foundation (NSF), Methodology, Measurement, and Statistics (MMS) Program, 2018, 2019

Reviewer, Patient-Centered Outcomes Research Institute (PCORI), Methods Panel, 2018, 2019, 2021, 2022

Thomas R. Ten Have Award Committee, Atlantic Causal Inference Conference, 2015, 2018, 2019

Reviewer, British Medical Research Council, 2018

Paper Review Committee Member, Society for Research on Educational Effectiveness, 2017, 2018

Byar Award Committee Member, Biometrics Section, American Statistical Association, 2017

Student Awards Committee Member, International Conference in Health Policy Statistics, 2017, 2020

Organizing Committee Member, Causal Inference Conference, Statistics Department, Columbia University, 2016–2017

Session Chair, INFORMS Annual Meeting, 2016

Faculty Computing Committee Member, Columbia Business School, 2015–2017

Empowering Research Committee Member, Columbia Business School, 2015–2017

Assistant Program Director for the Encuentros Conference, MIT Media Lab, 2013

# Presentations

# 2024

Econometrics Seminar, CEMFI, Spain, May 20, 2024

Department of Biostatistics, University of Washington, May 9, 2024

Board on Health Care Services, National Academies of Sciences, Engineering, and Medicine, Washington, DC, Apr 25, 2024

Department of Statistics, University of Florida, Apr 9, 2024

Department of Biostatistics, Harvard T.H. Chan School of Public Health, Mar 28, 2024

Institute for Quantitative Social Science, Harvard University, Mar 28, 2024

Causal Inference Seminar, Harvard Data Science Initiative, Mar 7, 2024

Decision Sciences, Fuqua School of Business, Duke University, Feb 21, 2024

## 2023

Annual Meeting of the Chilean Society for Public Policy, Dec 15, 2023

Department of Mathematics & Statistics, Boston University, Nov 30, 2023

Department of Statistics, Harvard University, Nov 27, 2022

Board on Life Sciences, National Academies of Sciences, Engineering, and Medicine, Washington, DC, Oct 30, 2023

Department of Biostatistics, University of Michigan, Oct 19, 2023

Survey Research Center, University of Michigan, Oct 17, 2023

Online Causal Inference Seminar, Oct 9, 2023

International Conference on Econometrics and Statistics (EcoSta), Tokyo, Japan, Aug 2, 2023 WHO World Mental Health Consortium (WMH-ICS) Annual Meeting, Harvard Medical School, July 11, 2023

AcademyHealth Annual Research Meeting, Seattle WA, Jun 25, 2023

Department of Industrial and Systems Engineering, Universidad Católica de Chile, May 15, 16, 2023

Healthcare Markets and Regulations Lab Seminar, Harvard Medical School, Apr 26, 2023 Deep Statistics (Stat 288), Harvard University, Apr 25, 2023 Machine Learning Network of European Data Scientists, Apr 24, 2023
European Causal Inference Meeting, Norway, Apr 19, 2023
School of Health and Related Research, University of Sheffield, England, Apr 17, 2023
Center for Computational Biomedicine, Harvard Medical School, Jan 17, 2023

## 2022

Online Causal Inference Seminar, Dec 6, 2022
Department of Statistics, Harvard University, Nov 4, 2022
Department of Statistics, Iowa State University, Oct 3, 2022
Department of Statistics, Columbia University, Sep 19, 2022
Department of Biostatistics, University of Pennsylvania, Sep 13, 2022
Department of Economics, University of Chile, Sep 2, 2022
AcademyHealth Annual Research Meeting, Washington DC, Jun 7, 2022
AcademyHealth Annual Research Meeting, Washington DC, Jun 5, 2022
Institute for Quantitative Social Science, Harvard University, Mar 23, 2022
Causal Inference Seminar, Boston University, Mar 14, 2022
CAUSALab Kolokotrones Circle, Harvard T.H. Chan School of Public Health, Mar 11, 2022
Center for Statistics and the Social Sciences, University of Washington, Mar 9, 2022
Mental Health Research Network, Mar 2, 2022

## $\boldsymbol{2021}$

Tepper School of Business, Carnegie Mellon University, Dec 3, 2021
Annual Congress of the Chilean Society of Infectiology, Santiago, Chile, Nov 24, 2021
CAUSALab Inaugural Symposium, Harvard T.H. Chan School of Public Health, Nov 5, 2021
Department of Statistics, Harvard University, Oct 15, 2021
Online Causal Inference Seminar, Sep 28, 2021
Dana-Farber Cancer Institute, Sep 21, 2021
Applied Statistics Symposium, International Chinese Statistical Association, Sep 13, 2021
Joint Statistical Meetings, Seattle, Aug 10, 2021
Joint Statistical Meetings, Seattle, Aug 9, 2021
Yau Mathematical Sciences Center, Tsinghua University, China, May 20, 2021
Department of Health Care Policy, Harvard Medical School, Apr 12, 2021
Yau Mathematical Sciences Center, Tsinghua University, China, Mar 25, 2021
HIV Working Group, Harvard University, Feb 5, 2021
Causal Inference Research Group, University of North Carolina at Chapel Hill, Feb 5, 2021

# 2020

Department of Biostatistics and Informatics, Colorado School of Public Health, Nov 11, 2020 Department of Statistics, UC Berkeley, Oct 14, 2020 COVID-19 Modeling Workshop, Chile, Sep 14, 2020 Joint Statistical Meetings, Philadelphia, Aug 6, 2020 Department of Health Care Policy, Harvard Medical School, Jun 1, 2020 Department of Biostatistics, Harvard T.H. Chan School of Public Health, Apr 3, 2020 Kolokotrones Symposium, Harvard T.H. Chan School of Public Health, Feb 7, 2020

## 2019

International Conference on Computational and Methodological Statistics, London, England, Dec 16–18, 2019

SAMSI Causal Inference Workshop, Duke University, Dec 9–11, 2019 Optimization-Conscious Econometrics Conference, University of Chicago Nov 16, 2019 Healthcare Markets and Regulations Lab, Harvard Medical School, Oct 7, 2019 Kolokotrones Circle, Harvard T.H. Chan School of Public Health, Apr 26, 2019 MRC Biostatistics Unit, University of Cambridge, England, Apr 11, 2019 Statistical Laboratory, University of Cambridge, England, Apr 10, 2019 School of Medicine, University of Nottingham, England, Apr 8, 2019 Economics, Pricing and Revenue Optimization, Amazon, Feb 20, 2019 Biostatistics Department, College of Public Health, Ohio State University, Feb 15, 2019 Radcliffe Institute, Harvard University, Jan 29, 2019

# $\mathbf{2018}$

Heinz College, Carnegie Mellon University, Nov 26, 2018
Department of Health Care Policy, Harvard Medical School, Nov 20, 2018
Department of Statistics, The Wharton School, University of Pennsylvania, Nov 14, 2018
Center for Statistical Sciences, Brown University, Nov 5, 2018
Department of Biostatistics, Vanderbilt University, Aug 29, 2018
Joint Statistical Meetings, Vancouver, Canada, Jul 30, 2018
WHO World Mental Health Survey Initiative Annual Meeting, Boston, Jul 13, 2018
Harvard Business School, Harvard University, Mar 20, 2018
Harvard Catalyst Biostatistics Symposium, Harvard University, Mar 1, 2018
Institute for Quantitative Social Science, Harvard University, Feb 7, 2018
HIV Working Group, Harvard University, Feb 1, 2018
International Conference in Health Policy Statistics, Charleston, Jan 11, 2018

## 2017

Ministry of Health, Gobierno de Chile, Dec 23, 2017 (in Spanish)
School of Medicine, Universidad Católica de Chile, Dec 23, 2017 (in Spanish)
International Conference on Computational and Methodological Statistics, London, England, Dec 18, 2017
Causal Inference Group, Harvard T.H. Chan School of Public Health, Nov 15, 2017
Department of Statistics, Harvard University, Oct 16, 2017
Neocosur Conference, Buenos Aires, Argentina, Aug 18, 2017 (in Spanish)
Marketing Department, Columbia Business School, April 27, 2017
Operations Research Center, MIT, April 20, 2017
Data Science Symposium, Uber, San Francisco, Mar 2, 2017
Econometrics and Statistics Group, Booth School of Business, University of Chicago, Feb 14, 2017
Machine Learning Group, Duke University, Jan 25, 2017
Health Care Policy Department, Harvard Medical School, Jan 10, 2017

### 2016

INFORMS Annual Conference, Nashville, Nov 14, 2016
MEDS, Kellogg School of Management, Northwestern University, Nov 2, 2016
Joint Statistical Meetings, Chicago, Aug 31, 2016
Neocosur Conference, Buenos Aires, Argentina, Aug 19, 2017 (in Spanish)
Atlantic Causal Inference Conference, NYU, May 27, 2016
Causal Inference Group, UC Berkeley, May 20, 2016
Marketplace Optimization Sciences Division, Uber, San Francisco, May 19, 2016
Social Enterprise Leadership Forum, Columbia Business School, Apr 22, 2016
Department of Economics, University of Chile, Jan 11, 2016
Pediatrics Division, Universidad Católica de Chile, Jan 07, 2016 (in Spanish)

### 2015

Biostatistics Department, Johns Hopkins University, Dec 8, 2015
Statistics Department, Duke University, Dec 4, 2015
Heinz College, Carnegie Mellon University, Nov 9, 2015
INFORMS Annual Conference, Philadelphia, Nov 1, 2015
Neocosur Conference, Buenos Aires, Argentina, Aug 22, 2015 (in Spanish)
DO&IT, Robert H. Smith School of Business, University of Maryland, May 1, 2015
International Workshop on Applied Statistics, Bogotá, Colombia, Apr 25, 2015
UK Causal Inference Meeting, University of Bristol, England, Apr 16, 2015
Statistical Laboratory, University of Cambridge, England, Apr 9, 2015
SREE, Washington DC, Mar 6, 2015
Institution for Social and Policy Studies, Yale University, Mar 5, 2015

## 2014

INFORMS Annual Conference, San Francisco, Nov 10, 2014
Neocosur Conference, Buenos Aires, Argentina, Aug 30, 2014 (in Spanish)
Joint Statistical Meetings, Boston, Aug 5, 2014
ENAR/International Biometric Society Spring Meeting, Baltimore, Mar 17, 2014
Kellogg School of Management, Northwestern University, Jun 6, 2014

# 2013

Department of Statistics, Columbia University, Dec 2, 2013 Neocosur Conference, Buenos Aires, Argentina, Aug 24, 2013 Neocosur Conference, Buenos Aires, Argentina, Aug 23, 2013 Joint Statistical Meetings, Montreal, Aug 4, 2013 Sociology Department, University of Pennsylvania, Apr 16, 2013 Columbia Business School, Feb 14, 2013 Department of Statistics, Harvard University, Feb 4, 2013 Heinz College, Carnegie Mellon University, Jan 28, 2013 Teachers College, Columbia University, Jan 25, 2013 Department of Statistics, Stanford University, Jan 22, 2013 Statistical Laboratory, University of Cambridge, England, Jan 18, 2013 Department of Statistics, London School of Economics, England, Jan 15, 2013 Department of Statistics, University of Oxford, England, Jan 14, 2013 Booth School of Business, University of Chicago, Jan 10, 2013 Department of Biostatistics, Johns Hopkins University, Jan 3, 2013

# $\mathbf{2012}$

Department of Statistics, Warwick University, England, Dec 16, 2012 Department of Psychiatry, Columbia University, Dec 12, 2012 Atlantic Causal Inference Conference, Johns Hopkins University, May 25, 2012 Mailman School of Public Health, Columbia University, Nov 29, 2011 Department of Biostatistics, Columbia University, Dec 13, 2012 Department of Biostatistics and Epidemiology, McGill University, Nov 5, 2012 Statistics Department, Columbia University, Oct 10, 2012 Neocosur Conference, Buenos Aires, Argentina, Aug 25, 2012 (in Spanish) Joint Statistical Meetings, San Diego, Aug 1, 2012