José R. Zubizarreta

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Current employment

Assistant Professor, Division of Decision, Risk, and Operations, Columbia Business School, Jan 2014 – present

Affiliated Faculty, Department of Statistics, Columbia University, Oct 2013 – present

Affiliated Member, Institute for Data Sciences and Engineering, Columbia University, Jan 2014 – present

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; *Summa Cum Laude*

Journal articles

Statistical methodology

1. Zubizarreta, J. R., Small, D. S., and Rosenbaum, P. R. (2014), "Isolation in the Construction of Natural Experiments," *Annals of Applied Statistics*, forthcoming.
2. Keele, L., Titiunik, R., and Zubizarreta, J. R., (2014) "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*, forthcoming.
3. 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.
4. 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).

   **Winner of the Kenneth Rothman Prize for the best paper published in Epidemiology in 2013.*
5. 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.
6. 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.
7. 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.
8. 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.

Medical science

9. 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*, forthcoming.
10. 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.
11. 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.
12. Reinke, C. E., Kelz, R. R., Zubizarreta, J. R., M. Lanyu, Saynisch, P., F. A. Kyle, Even-Shoshan, O., Fleisher, L. A., and Silber, J. H. (2012), "Obesity and Readmission in Elderly Surgical Patients," *Surgery*, 152, 355-362.

Social science

13. Celhay, P., Sanhueza, C., and Zubizarreta, J. R. (2010), "Intergenerational Mobility of Income and Education: Chile 1996-2006," *Revista de Análisis Económico - Economic Analysis Review*, 25, 43-63.
14. Denis, A., and Prieto, J. J., and Zubizarreta, J. R. (2007), "Poverty Dynamics in Chile: Evidence from the Years 1996, 2001 and 2006, *Persona y Sociedad*," 21, 9-30. (In Spanish.)

Conference proceedings and technical reports

15. Zubizarreta, J. R. (2012), "Introduction to Matching in Observational Studies Using Mixed Integer Programming," *Transactions of the Annual Deming Conference on Applied Statistics.*
16. 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 Plan.

Statistical software

`mipmatch` package for `R`, available at www-stat.wharton.upenn.edu/~josezubi/

Awards and fellowships

Fellowships

Fulbright Scholarship, 2008-2012

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

Awards

Kenneth Rothman Prize for the best paper published in Epidemiology in 2013, 2014

Student Paper Award, Biometrics Section, American Statistical Association, 2014

Student Paper Award, International Biometric Society ENAR, 2014

Student Paper Award, Social Statistics, Government Statistics, and Survey Research Methods Sections, American Statistical Association, 2013

Deming Scholar Award, American Statistical Society/American Society for Quality, 2012

Young Investigator Award, Statistics in Epidemiology, American Statistical Association, 2012

President Gutmann Leadership Award, University of Pennsylvania, 2012

J. Parker Memorial Bursk Prize for Excellence in Research, Statistics Department, The Wharton School, 2011

Tom Ten Have Memorial Award, Atlantic Causal Inference Conference, 2011

Student Paper Award, Health Policy Statistics Section, American Statistical Association, 2011

Distinguished Thesis, Industrial and Systems Engineering, Universidad Católica de Chile, 2005

Presentations

Invited talks

Guest lecture for the graduate level course on empirical methods for operations research
Kellogg School of Management, Northwestern University, Jun 6, 2014

"Using Mixed Integer Programming for Matching in Observational Studies: Effect of the 2010 Chilean Earthquake on Posttraumatic Stress"
Department of Statistics, Columbia University, Dec 2, 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
Department of Statistics, Warwick University, England, Dec 16, 2012
Atlantic Causal Inference Conference, Johns Hopkins University, May 25, 2012
Mailman School of Public Health, Columbia University, Nov 29, 2011

"Effect of Prophylactic CPAP in Very Low Birth Weight Infants in South America"
Neocosur Conference, Buenos Aires, Argentina, Aug 24, 2013 (in Spanish)

"Estimation Strategies in Observational Studies"
Neocosur Conference, Buenos Aires, Argentina, Aug 23, 2013 (in Spanish)

"New Statistical Methods for Causal Inference in Observational Studies with Applications to the Social Sciences and Health Policy"
Columbia Business School, Feb 14, 2013

"Designing an Observational Study to be Less Sensitive to Unmeasured Biases: Effect of the 2010 Chilean Earthquake on Posttraumatic Stress"
Booth School of Business, University of Chicago, Jan 10, 2013
Department of Biostatistics, Johns Hopkins University, Jan 3, 2013
Department of Biostatistics, Columbia University, Dec 13, 2012
Department of Biostatistics and Epidemiology, McGill University, Nov 5, 2012

"Effect of the 2010 Chilean Earthquake on Posttraumatic Stress: Illustrating New Matching Methods for Clinical, Epidemiological and Health Outcomes Research"
Department of Psychiatry, Columbia University, Dec 12, 2012

Guest lecture on matching methods for the graduate level course on causal inference
Statistics Department, Columbia University, Oct 10, 2012

"Estimation of the Effect of Prophylactic CPAP on Very Low Birth Weight Infants Using Matching"
Neocosur Conference, Buenos Aires, Argentina, Aug 25, 2012 (in Spanish)

"How Income Stratification is Perpetuated Accross Generations? The Contribution of Longitudinal Surveys"
Expansiva Workshop, Santiago, Chile, Jun 26, 2008 (in Spanish)

"A First Household Panel Survey in Chile: Methodological Considerations"
Institute of Social and Economic Research, University of Essex, England, Mar 28, 2007

Contributed talks

"Stable Weight Adjustment for Causal Inference and Estimation with Incomplete Data"
Eastern and North American Region/International Biometric Society Spring Meeting, Baltimore, Mar 17, 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"
Joint Statistical Meetings, Montreal, Aug 4, 2013

"Designing an Observational Study to be Less Sensitive to Unmeasured Biases: Effect of the 2010 Chilean Earthquake on Posttraumatic Stress"
Joint Statistical Meetings, San Diego, Aug 1, 2012

"Contrasting Evidence Within and Between Institutions that Supply Treatment in an Observational Study of Alternative Forms of Anesthesia"
International Conference on Health Policy Statistics, Cleveland, Oct 9, 2011
Joint Statistical Meetings, Miami, Aug 1, 2011

Posters

"Matching for Balance, Pairing for Heterogeneity in an Observational Study of the Effectiveness of For-profit and Not-for-profit High Schools in Chile"
Atlantic Causal Inference Conference, Harvard University, May 20, 2013

"Introduction to Matching Using Mixed Integer Programming in Observational Studies"
Deming Conference, Atlantic City, Dec 4, 2012

"Weight Adjustment in Longitudinal Studies of Treatment Effects Via Quadratic Programming"
Time for Causality Workshop, University of Bristol, England, Apr 12, 2012

"Contrasting Evidence Within and Between Institutions that Supply Treatment in an Observational Study of Alternative Forms of Anesthesia"
Atlantic Causal Inference Conference, University of Michigan, May 19, 2011
Causal Inference in Health Research Workshop, Centre de Recherches Mathématiques, Canada, May 9, 2011

"Causal Inference with Missing Data: A Bayesian Nonparametric Approach"
Borrowing Strength: Theory Powering Applications – Conference in Honor of Larry Brown, University of Pennsylvania, Dec 15, 2010
Penn Research in Machine Learning Conference, University of Pennsylvania, Oct 1, 2010
Joint Statistical Meetings, Vancouver, Canada, Aug 3, 2010
Machine Learning Summer School, University of Cambridge, England, Sep 3, 2009

Teaching experience

As Instructor

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

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

As Teaching Assistant

"Introductory Statistics" (undergraduate), The Wharton School, University of Pennsylvania (Fall 2012)

"Ordinary Differential Equations" (undergraduate), Faculty of Mathematics, Universidad Católica de Chile (Spring 2004)

"Electricity and Magnetism" (undergraduate), Faculty of Physics, Universidad Católica de Chile (Spring 2001, Fall 2002)

"Graphical Design in Engineering" (undergraduate), Dept. of Mechanical Engineering, Universidad Católica de Chile (Fall 2001)

Past employment

Instructor (convertible to Assistant Professor on the tenure track in Jan 2014), Division of Decision, Risk and Operations, Columbia Business School, Jul 2013 – Dec 2013

Research Assistant (part-time), Prof. P. R. Rosenbaum, and Prof. J. H. Silber, Department of Statistics, The Wharton School, University of Pennsylvania, Jun 2010 – Jun 2013

Research Assistant (part-time), Prof. J. L. Hill, Center for Promotion of Research Involving Innovative Statistical Methodology, NYU, Jun 2009 – Aug 2009

Coordinator Area of Economic Studies (full-time), Social Observatory Universidad Alberto Hurtado, Santiago, Chile, Jan 2007–Mar 2008

Associate Researcher (part-time), Social Observatory Universidad Alberto Hurtado, Santiago, Chile, May 2005–Dec 2006

Research Assistant (part-time), Prof. R. D. Paredes, Universidad Católica de Chile, May 2005–Dec 2006

Coordinator of Voluntary Teachers (full-time), Infocap (NGO for workers in poverty), Santiago, Chile, Jan 2005–Jan 2006

Professional activities

Reviewer

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 B (Statistical Methodology)

Journal of the Royal Statistical Society: Series C (Applied Statistics)

Biometrics

Epidemiology

Health Services and Outcomes Research Methodology

Service

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

PhD Student Representative on the Wharton Doctoral Programs Executive Committee, 2011-2012

PhD Student Representative on the Q-Review Meeting of the Statistics Department, University of Pennsylvania, Jan 2011–Apr 2011

Volunteer at the conference "Borrowing Strength: Theory Powering Applications – Conference in Honor of Larry Brown," University of Pennsylvania, Dec 15-17, 2010

Memberships

American Statistical Association

ENAR, International Biometric Society