

# Andrés Felipe Barrientos

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## Education

- PhD in Statistics, Pontificia Universidad Católica de Chile, Chile, 2012.
  - Thesis: "Theory and Applications of Dependent Nonparametric Bayesian Models for Bounded and Unbounded Responses."
  - Advisor: Fernando Quintana – Co-advisor: Alejandro Jara.
- Bachelor's Degree in Statistics, Universidad del Valle, Colombia, 2006.

## Research

### *Published Papers*

- Barrientos, A.F., Jara, A., Wehrhahn, C., (2017). Posterior convergence rate of a class of Dirichlet process mixture model for compositional data. *Statistics and Probability Letters*, 120, 45-51.
- Barrientos, A.F., Jara, A., Quintana, F.A. (2016). Fully nonparametric regression for bounded data using dependent Bernstein polynomials. *To appear in Journal of the American Statistical Association*.
- Barrientos, A.F., Jara, A., Quintana, F.A. (2015). Bayesian density estimation for compositional data using random Bernstein polynomials. *Journal of Statistical Planning and Inference*, 166, 116-125.
- González, J., Barrientos, A.F., Quintana, F.A. (2015) Bayesian nonparametric estimation of test equating functions with covariates. *Computational Statistics & Data Analysis*, 89, 222-244.
- Barrientos, A.F., Jara, A., Quintana, F.A. (2012). On the support of MacEachern's dependent Dirichlet processes and extensions. *Bayesian Analysis*, 7(2): 277–310.
- Barrientos, A.F., Olaya, J., González, V. (2007). A Spline Model for Electricity Demand Forecasting. *Revista Colombiana de Estadística*, 30(2): 187–202.

### *Book Chapters and Proceedings*

- Chen, Y., Machanavajjhala, A., Reiter, J.P., Barrientos, A.F. (2016) Differentially private regression diagnostics. *IEEE International Conference on Data Mining*.
- González, J, Barrientos, A.F., Quintana, F.A. (2015). A dependent Bayesian nonparametric model for test equating. *In Millsap, R.E., Bolt, D.M., van der Ark, L.A., Wang, W.-C. (Eds.) Quantitative Psychology Research*, 213–266. Springer.
- Jara, A., Barrientos, A.F. (2014). Bayesian nonparametric approaches for the analysis of compositional data based on Bernstein polynomials. *Proceedings of the 29th International Workshop on Statistical Modelling, Göttingen, Germany July 2014*.

## Research and Academic Experience

- Statistical Assistant, School of Engineering of Natural Resources and Environment, Universidad del Valle, Colombia, May 2003 – December 2007.

- Instructor, School of Industrial Engineering and Statistics, Universidad del Valle, Colombia, July 2006 – February 2008.
- Teaching Assistant, Pontificia Universidad Católica de Chile,
  - EPG3601, Advanced Statistical Computing, March – July 2010 and 2012.
  - EPG3343, Statistical Analysis with Missing Data, March – July 2011.
  - EPG3346, Bayesian Nonparametrics Methods, August–December 2011.
- Research Fellow, Pontificia Universidad Católica de Chile, October 2012 – October 2014.
- Visiting Research Fellow, University of Texas at Austin, November–December 2014.
- Postdoctoral Associate, Duke University, March 2015 – Present.

## Presentations

- Differential private sign and significance of regression coefficients, International Conference on Advances in Interdisciplinary Statistics and Combinatorics, USA, September 2016.
- Bayesian nonparametric approaches for the analysis of compositional data based on Bernstein polynomials, Joint Statistical Meeting, USA, August 2015.
- Bayesian goodness-of-fit testing for density regression, 10th Workshop in Bayesian Nonparametrics, USA, June 2015.
- Predictor-Dependent Inequality Modeling, Departmental Seminar, University of Texas at Austin, USA, October 2014.
- Bayesian density estimation for compositional data using random Bernstein polynomials, XL Jornadas Nacionales de Estadística, Chile, October 2013.
- Bayesian density estimation for compositional data using random Bernstein polynomials, Departmental Seminar, Collegio Carlo Alberto, Italy, July 2013.
- Bayesian density estimation for compositional data using random Bernstein polynomials, 9th workshop in Bayesian nonparametrics, The Netherlands, June 2013.
- On the support of MacEachern’s dependent Dirichlet processes, III Latin American Meeting on Bayesian Statistics and XXXVIII National Meeting of Statistics, Chile, October 2011.
- On the support of MacEachern’s dependent Dirichlet processes, 8th Workshop on Bayesian Nonparametrics, Mexico, June 2011.
- Dependent Bernstein polynomials for bounded density regression,
  - IX Congreso Latinoamerica de Sociedades de Estadística, Chile, October 2010.
  - IX Seminario Chileno de Estadística Bayesiana, Universidad de Talca, Chile, January 2011.

## Referee Experience

Biometrical Journal, Bayesian Analysis, Canadian Journal of Statistics, Computational Statistics & Data Analysis, Journal of Statistical Software, Electronic Journal of Statistics, and Journal of Official Statistics.

## Honors, Awards, and Fellowships

- Finalist for Savage Award, Theory & Methods, for best Bayesian dissertation, 2013.
- FONDECYT Fellowship No. 3130400, Chile, 2012.
- Maximum Distinction, PhD in Statistics, Pontificia Universidad Católica de Chile, Chile, 2012.

- "Bayesianos SOCHE" Young Investigator Award, Bayesian Section of the Chilean Society of Statistics, 2010.
- CONICYT Fellowship for Latinoamerican Doctoral Students, Chile, 2008.
- Best Undergraduate Student, Universidad del Valle, 2006.

## Direction of Research

Claudia Wehrhahn, PhD Thesis, co-advised with Alejandro Jara, 2013 to 2016 (Postdoctoral Associate, Departamento de Probabilidad y Estadística, IIMAS, UNAM, México.).