

Antonio Linero

Assistant Professor
Department of Statistics and Data Sciences

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Professional Experience

- 2018 – Present **Assistant Professor**, *University of Texas at Austin*, Department of Statistics and Data Sciences.
- 2015 – 2018 **Assistant Professor**, *Florida State University*, Department of Statistics.

Education

- 2010–2015 **PhD, Statistics**, *University of Florida*.
Dissertation — *Nonparametric Bayes: Inference Under Nonignorable Missingness and Model Selection*
- 2005–2009 **BS, Finance**, *University of Florida*.
Minor—Statistics

External Funding

- 2022–2027 *CAREER: Foundations for Bayesian Nonparametric Causal Inference* (PI). Funded by the National Science Foundation (NSF-DMS 2144933). Total award \$400,002.
- 2018–2022 *The Science of Test* (PI Eric Chicken; PI on UT Subcontract). Funded by Department of Defense. Total award \$478,000.
- 2017–2020 *Leveraging Structural Information in Regression Tree Ensembles* (PI). Funded by the National Science Foundation (NSF-DMS 1712870). Total award \$100,000.
- 2016–2018 *Functional Analysis Tools (FATs)* (PI Eric Chicken). Funded by Department of Defense (SOT-FSU-FATs-16-06). Total award \$246,000.

Awards

- Spring 2016 **First Year Assistant Professor Award**, *Florida State University*.
Funding for summer research work.
- Spring 2015 **CLAS Dissertation Fellowship**, *University of Florida*.
Funding for writing of PhD dissertation.
- 2014 **Statistics Faculty Award**, *University of Florida*.
Awarded to “the best graduating PhD student” in the Department of Statistics.
- 2014 **Laplace Award**, awarded by the International Society for Bayesian Analysis and the Section of Bayesian Statistical Science of the American Statistical Association.
For best Bayesian student paper.
- 2014 **Student Travel Award**, awarded by the Section of Bayesian Statistical Science.
To attend the Joint Statistical Meeting.

Fall 2010–Spring 2011 **Mendenhall Fellow**, *University of Florida*.
Fellowship awarded to top incoming students.

Fall 2010–Spring 2013 **Grinter Fellow**, *University of Florida*.
Research and graduate program fellowship.

Service

2018 – Present **Associate Editor**, *Biometrics*.

2021 – 2023 **ENAR Student Paper Awards Committee Member**.

Referee, *American Statistician*, *Annals of Applied Statistics*, *Annals of Statistics*, *Bayesian Analysis*, *Biometrics*, *Biometrika*, *Computational Statistics and Data Analysis*, *International Journal of Approximate Reasoning*, *Journal of the American Statistical Association*, *Journal of Applied Statistics*, *Journal of Computational and Graphical Statistics*, *Journal of Epidemiology*, *Journal of the Korean Statistical Society*, *Journal of Machine Learning Research*, *Journal of the Royal Statistical Society, Series C*, *Journal of Statistical Distributions and Applications*, *Journal of Statistical Software*, *Operations Research*, *PLOS One*, *Psychological Methods*, *Sankhya Series A*, *Statistica Sinica*, *Statistical Methods in Medical Research*, *Statistical Science*, *Statistics and Computing*, *Statistics in Medicine*, *Technometrics*.

Teaching

At University of Texas at Austin

SDS 348 Computational Biology and Bioinformatics. Fall 2020

SDS 383D Statistical Modeling II. Spring 2020, Spring 2021

At Florida State University

STA5934 Bayesian Nonparametrics. Spring 2019

STA4442 Introduction to Probability. Fall 2015, Spring 2017, 2018

STA5168 Statistics in Applications 3. Fall 2016, 2017, 2018

STA3032 Engineering Statistics. Spring 2016

At University of Florida

STA4321 Introduction to Probability. Spring 2013

Students Advised

(★ → expected graduation)

Roumen Varbanov (2018, Co-advisor Eric Chicken), Junliang Du (2019, Co-advisor Debajyoti Sinha), Apurva Desai (2020, Co-advisor Adrian Barbu), Wright Shamp (2021, Co-advisor Eric Chicken), Ding Jiang (2021, Co-advisor Xin Zhang), Yinpi Li (2021, Co-advisor Debajyoti Sinha), Lexi Rene (2022★, Co-advisor Elizabeth Slate), Kaizong Ye (2022★, Co-advisor Fred Huffer).

Publications in review

(★ → graduate student)

1. **Linero, A.R.** Generalized Bayesian Additive Regression Trees: Beyond Conditional Conjugacy. *Submitted*

2. **Linero, A.R.** and Zhang, Q. Mediation Analysis using Bayesian Tree Ensembles. *Minor Revision at Psychological Methods*.
3. Orlandi, V., Murray, J., **Linero, A.R.**, and Volfovsky, A. (2021+) Density Regression with Bayesian Additive Regression Trees. *Submitted*
4. **Linero A. R** and Antonelli, J.L. (2021+) The How and Why of Bayesian Nonparametric Causal Inference. *Submitted*.
5. **Linero, A.R.** (2021+) In Nonparametric and High-Dimensional Models, Bayesian Ignorability is an Informative Prior. *Reject and Resubmit at Journal of the American Statistical Association*.
6. Rene, L.* , **Linero, A.R.**, and Slate, E. (2021+) Causal Mediation and Sensitivity Analysis for Mixed Scale Data. *Submitted*.
7. Li, Y.* , **Linero, A.R.**, and Walker, S.G. (2021+) A Latent Slice Sampler on Multivariate Binary Spaces. *Reject and Resubmit at Journal of Computational and Graphical Statistics*.
8. Jiang, D.* , **Linero, A.R.**, and Zhang, X. (2021+) Envelope Methods for Missing Response Data in Multivariate Linear Models. *Submitted*.
9. Um, S.* , **Linero, A.R.**, Sinha, D., and Bandyopadhyay, D. (2021+) Bayesian Additive Regression Trees for Multivariate Skewed Responses. *Major Revision at Statistics in Medicine*.

Publications in press

(★ → graduate student)

1. Li, Y.* , **Linero, A.R.**, and Murray, J.S. (2020+) Adaptive Conditional Distribution Estimation with Bayesian Decision Tree Ensembles. *To appear in Journal of the American Statistical Association*.
2. **Linero, A.R.** and Du, J. (2021) Variable Selection for Bayesian Decision Tree Ensembles. In Tadesse, M. and Vanucci, M. (Eds.) *Handbook of Bayesian Variable Selection*. Chapman and Hall/CRC.
3. Wright, S.* , **Linero, A.R.**, and Chicken, E. (2021+) Bayesian Sequential Monitoring of Density Estimates. *To appear in Quality and Reliability Engineering International*.
4. **Linero, A.R.**, Basak, P.* , Li, Y.* , and Sinha, D. (2021) Bayesian Survival Tree Ensembles with Submodel Shrinkage. *To appear in Bayesian Analysis*
5. **Linero, A.R.** (2021) Simulation-Based Estimators of Analytically Intractable Causal Effects. *To appear in Biometrics*.
6. Basak, P.* , **Linero, A.R.**, Sinha, D., and Lipsitz, S.R. (2021) Semiparametric analysis of clustered interval-censored survival data using Soft Bayesian Additive Regression Trees (SBART). *To appear in Biometrics*.
7. Varbanov, R.* , Shamp, W.* , Chicken, E, **Linero, A.R.**, Yang, Y. (2020) Computationally Efficient Bayesian Sequential Function Monitoring. *Journal of Quality Technology*.
8. **Linero, A.R.**, Sinha, D., and Lipsitz, S.R. (2020) Semiparametric Mixed-Scale Models Using Shared Bayesian Forests. *Biometrics*, **76**(1), 131–144.

9. Hill, J., **Linero, A.R.**, and Murray, J. (2020) Bayesian Additive Regression Trees: A Review and Look Forward. *Annual Review of Statistics and Its Application*, **7**(1), 251–278.
10. Du, J.* and **Linero A.R.**, (2019) Incorporating Grouping Information into Bayesian Decision Tree Ensembles. In *Proceedings of the 36th International Conference on Machine Learning (ICML)*.
11. Du, J.* and **Linero A.R.**, (2019) Interaction Detection with Bayesian Decision Tree Ensembles. In *Proceedings of the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*.
12. Varbanov, R.*, Chicken, E., **Linero, A.R.**, and Yang, Y. (2019) A Bayesian Approach to Sequential Monitoring of Nonlinear Profiles Using Wavelets. *Quality and Reliability Engineering International*, **35**(3), 761–775.
13. **Linero, A.R.** and Yang, Y. (2018) Bayesian Regression Tree Ensembles that Adapt to Smoothness and Sparsity. *Journal of the Royal Statistical Society, Series B*, **80**(5), 1087–1110.
14. **Linero, A.R.**, Bradley, J.R, and Desai, A.S.* (2018) Multi-rubric Models for Ordinal Spatial Data with Application to Online Ratings. *Annals of Applied Statistics*, **12**(4), 2054–2074.
15. **Linero, A.R.** and Daniels, M.J. (2018) Bayesian Approaches for Missing Not at Random Outcome Data: The Role of Identifying Restrictions. *Statistical Science*, **33**(2), 198–213.
16. **Linero, A.R.** (2018) Bayesian regression trees for high dimensional prediction and variable selection. *Journal of the American Statistical Association*, **113**(522), 626–636
17. **Linero, A.R.** (2017) A Review of Tree-Based Bayesian Methods. *Communications for Statistical Applications and Methods*, **24**(6), 543–559.
18. Varbanov, R.*, Chicken, E., and **Linero, A.R.** (2017) Wavelet-Based Bayesian Profile Monitoring. *Proceedings of the 2017 Industrial and Systems Engineering Research Conference*.
19. **Linero, A.R.** (2017) Bayesian Nonparametric Analysis of Longitudinal Studies in the Presence of Informative Missingness. *Biometrika*, **104**(2), 371–341
20. Piekarewicz, J., **Linero, A.R.**, Giuliani, P., and Chicken, E. (2016) The power of two: Assessing the impact of a second measurement of the weak-charge form factor of ^{208}Pb . *Physical Reviews C*, **94**(3), 034316.
21. Daniels, M.J. and **Linero, A.R.** (2015) Bayesian nonparametrics for missing data in longitudinal clinical trials. In *Nonparametric Bayesian Inference in Biostatistics*.
22. **Linero, A.R.** and Daniels, M.J. (2015) A flexible Bayesian approach to monotone missing data in longitudinal studies with nonignorable missingness with application to an acute schizophrenia clinical trial. *Journal of the American Statistical Association*, **110**(509), 45–55.
23. **Linero, A.R** and Rosalsky, A. (2013) On the Toeplitz lemma, convergence in probability, and mean convergence. *Stochastic Analysis and Applications*, **31**(4), 684–694.

Short Courses

- 6/27/2021 **ISBA**, *Advanced Topics in Variable Selection and Model Averaging*.
Invited
- 01/12/2022 **ISBA Section on Biostatistics and Pharmaceutical Statistics**, *Bayesian Survival Tree Ensembles with Submodel Shrinkage*.
- 11/30/2021 **Binghamton University**, *BART Methods for Fully-Nonparametric Problems*.
- 9/17/2021 **Universidad Miguel Hernández de Elche**, *BART Methods for Fully-Nonparametric Problems*.
- 5/06/2021 **Bocconi University**, *BART Methods for Fully-Nonparametric Problems*.
- 3/15/2021 **Rice University**, *BART Methods for Fully-Nonparametric Problems*.
- 2/12/2021 **University of Louisville**, *BART Methods for Fully-Nonparametric Problems*.
- 12/15/2020 **ICSA**, *BART Methods for Fully-Nonparametric Problems*.
- 3/23/2020 **ENAR**, *Simulation-Based Estimators of Intractable Causal Effects*.
- 6/04/2019 **Ohio State University**, *Bayesian Nonparametric Methods for Longitudinal Outcomes Missing Not at Random*.
- 5/24/2019 **Virginia Tech**, *Finding and Leveraging Structure using Bayesian Decision Tree Ensembles*.
- 2/05/2019 **University of Texas at Austin**, *Theory and Practice for Bayesian Regression Tree Ensembles*.
- 1/24/2019 **University of Michigan**, *Theory and Practice for Bayesian Regression Tree Ensembles*.
- 1/22/2019 **University of Minnesota**, *Theory and Practice for Bayesian Regression Tree Ensembles*.
- 1/11/2019 **Duke University**, *Theory and Practice for Bayesian Regression Tree Ensembles*.
- 1/08/2019 **University of Florida**, *Theory and Practice for Bayesian Regression Tree Ensembles*.
- 12/15/2018 **CM Statistics**, *Finding and Leveraging Structure with Bayesian Decision Tree Ensembles*.
- 7/30/2018 **JSM**, *Bayesian Regression Tree Ensembles that Adapt to Smoothness and Sparsity*.
- 6/11/2018 **ISNPS**, *Bayesian Regression Tree Ensembles that Adapt to Smoothness and Sparsity*.
- 5/19/2018 **IISA**, *Bayesian Regression Tree Ensembles that Adapt to Smoothness and Sparsity*.
- 12/17/2017 **CM Statistics**, *Bayesian Regression Tree Ensembles that Adapt to Smoothness and Sparsity*.
- 11/3/2017 **UT Austin**, *Bayesian Regression Tree Ensembles that Adapt to Smoothness and Sparsity*.
- 8/1/2017 **Joint Statistical Meeting**, *Sensitivity Analysis for Longitudinal Clinical Trials with Nonmonotone Missingness*.
- 7/17/2017 **EcoSta**, *Bayesian regression trees for high-dimensional prediction and variable selection*.

- 12/10/2016 **CM Statistics**, *Bayesian Nonparametric Analysis of Longitudinal Studies with Informative Missingness.*
- 9/29/2016 **University of Florida Statistics Symposium**, *Bayesian Regression Trees for High Dimensional Prediction and Variable Selection.*
- 6/12/2016 **ICSA Applied Statistics Symposium**, *Bayesian Regression Trees for High Dimensional Prediction and Variable Selection.*
- 2/11/2015 **University of California at Irvine**, *Flexible Bayesian Analysis in the Presence of Nonignorable Missingness.*
- 2/9/2015 **Texas A&M University**, *Flexible Bayesian Analysis in the Presence of Nonignorable Missingness.*
- 1/28/2015 **University of Illinois at Urbana-Champaign**, *Flexible Bayesian Analysis in the Presence of Nonignorable Missingness.*
- 1/20/2015 **Arizona State University**, *Flexible Bayesian Analysis in the Presence of Nonignorable Missingness.*
- 1/12/2015 **Florida State University**, *Flexible Bayesian Analysis in the Presence of Nonignorable Missingness.*

Contributed

- 2014 **Joint Statistical Meeting**, *A Flexible Bayesian Approach to Monotone Missing Data in Longitudinal Studies with Informative Dropout with Application to a Schizophrenia Clinical Trial.*