Bryan D. Martin

Contact Information

Department of Statistics
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Education

University of Washington, Seattle, Washington
Ph.D. Statistics Student

- Research topic: Statistical model development for compositional data applied to the microbiome
- Advisors: Daniela Witten and Amy Willis
- Coursework: Statistical machine learning, convex optimization, statistical inference, stochastic modeling, cluster analysis, Bayesian statistics, spatial statistics, statistical computing, applied regression

Macalester College, St. Paul, Minnesota
B.A. Honors Applied Mathematics & Statistics (summa cum laude), May 2015
B.A. Economics (summa cum laude), May 2015

- Coursework: Mathematical statistics, econometrics, signal processing, real analysis, Bayesian statistics, probability, numerical analysis

Publications

Martin, B. D., Addona, V., Wolfson, J., Adomavicius, G., & Fan, Y. (2017). Methods for real-time prediction of the mode of travel using smartphone-based GPS and accelerometer data. *Sensors*, 17(9), 2058.

Submitted

Tromas, N., Taranu, Z. E., **Martin, B. D.**, Willis, A., Greer, C. W., & Shapiro, B. J. Niche separation increases with genetic distance among bloom-forming cyanobacteria.

Li, Z., Hsiao, Y., Godwin, J., **Martin, B. D.**, Wakefield, J., Clark, S. J. Changes in the spatial distribution of the under five mortality rate: small-area analysis of 136 DHS Surveys in 33 countries in Africa and Asia.

Software

Martin, B. D., Li, Z. R. (2017). SUMMER: Spatio-Temporal Under-Five Mortality Methods for Estimation. R package.
Availability: CRAN and Github

Research Experience

University of Washington, Seattle, Washington
Research Assistant, May 2017–Present

- Advisors: Daniela Witten and Amy Willis
- Model development and statistical inference for compositional data applied to the microbiome
- Manuscript in progress

University of Washington, Seattle, Washington
Research Assistant, January 2017–May 2017

- Advisor: Jon Wakefield
- Used space-time models to combine data from multiple sources to provide reliable estimation of mortality rates using complex survey data

- Manuscript in progress

University of Washington, Seattle, Washington
Research Assistant, January 2016–January 2017

- Advisor: Elena Erosheva
- Developed a new unimodal mixed membership trajectory modeling algorithm
- Presented at the 2017 Joint Statistical Meetings and 2016 American Society of Criminology Conference
- Manuscript in progress

Macalester College Department of Statistics, St. Paul, Minnesota
Statistics Honors Thesis, May 2014–May 2015

- Advisor: Vittorio Addona
- Compared classification accuracy of various combinations of dictionary learning, classification algorithms, and dimension reduction algorithms
- Accepted for publication

Teaching Experience

University of Washington, Seattle, Washington
Statistics Tutor, September 2016–Present

- Drop-in tutoring provided for students in all undergraduate statistics courses, as well as related courses in other departments

University of Washington, Seattle, Washington
Teaching Assistant, September 2015–May 2016

- Statistics 221: Statistical Concepts & Methods for the Social Sciences

Macalester College, St. Paul, Minnesota
Supplemental Instructor, August 2014–December 2014

- Economics 361: Intermediate Microeconomic Analysis
- Planned and taught an optional supplementary two-hour weekly lecture on Sundays, maintained an average attendance of 60% of total enrollment
- Created practice problems and study exercises for students

Macalester College, St. Paul, Minnesota
Teaching Assistant, September 2013–May 2014 & January 2015–May 2015

- Mathematics 254: Probability and Mathematical Statistics
- Economics 361: Intermediate Microeconomic Analysis
- Economics 119: Principles of Economics

Conference Proceedings

Erosheva, E., **Martin, B. D.**, & Matsueda, R. L. Trajectory Models Revisited. *Joint Statistical Meetings*, Baltimore, MD (July 2017).

Martin, B. D., Erosheva, E., & Matsueda, R. L. A Comparison of Group-Based Trajectory Modeling Techniques. *The American Society of Criminology Annual Meeting*, New Orleans, LA (November 2016).

Martin, B. D. Machine Learning Algorithms for Predicting Mode of Transportation Using Smartphone Sensor Data. *Undergraduate Statistics Project Competition (USPROC) E-Conference* (October 2015). (Invited Plenary Speaker).

Martin, B. D., Phillips, A., Berlin, H., Kinney, M., Schadler, L. SmarTrAC: Activity Detection with Smartphone Sensor Data. Poster presentation, *Joint Meeting in Mathematics*, San Antonio,

TX (January 2015).

Other Talks and Presentations

Martin, B. D. Learning Local Dependence in Ordered Data. *Statistics PhD Oral Preliminary Examination – Statistical Learning*, presentation and defense, University of Washington, Seattle, WA (May 2017).

Martin, B. D. A Comparison of Machine Learning Algorithms for Mode of Transportation Classification. *Statistics Honors Thesis Defense*, public presentation and defense, Macalester College, St. Paul, MN (May 2015).

Martin, B. D. Price Discrimination by Race and Gender in Cambodian Bargain Economies. *Center for Khmer Studies Research Symposium*, Siem Reap, Cambodia (August 2013).

Honours and Awards

2017	University of Washington Center for Statistics and the Social Sciences Grant
2016–2017	NSF Graduate Research Fellow
2015	Third place in national Undergraduate Statistics Research Competition
2015	Konhauser Achievement Award in Mathematics *(top departmental award, Department of Mathematics, Statistics, and Computer Science, Macalester College)*
2015	Vasant Sukhatme Academic Excellence Award in Economics *(top departmental award, Department of Economics, Macalester College)*
2015	Phi Beta Kappa *(honors society for the liberal arts)*
2014	John M. Dozier Scholarship in Economics *(top departmental award offered to juniors, Department of Economics, Macalester College)*
2014	Omicron Delta Epsilon *(honors society for economics)*
2011–2015	DeWitt Wallace Distinguished Scholarship *(Macalester College)*
2011–2015	Macalester College Dean's List (all semesters)
2011–2015	National Merit Scholarship
2011–2015	Elks National Foundation Scholarship *(national scholarship)*

Skills

Advanced: R, LaTeX
Intermediate: C++, Bash, Stata, Excel
Basic: Python, MATLAB, Mathematica, HTML

Relevant Activities

- UW Statistical Learning Applied to Biostatistics Lab member (2017–present)
- UW Statistics Department PhD student peer mentor (2017–present)
- UW Statistics Department Website Committee Member (2017)
- Macalester College Students for Education Reform Board Member (2013–2015)
- Macalester College Students for Economic Justice Organizer (2014)
- Macalester College slacklining organization founder and president (2014–2015)