

Stephen Berg

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Education

Pursuing Ph.D. in Statistics: 2014-present

M.S. Statistics, University of Wisconsin-Madison, 2017.

B.S. Mathematics, *summa cum laude*, Iowa State University, 2013.

Work Experience

2016-present: research assistant, advised by Professor Jun Zhu and Professor Murray Clayton. Working on spatial statistics problems in ecology involving Markov random fields, and stochastic approximation via Markov chains.

August 2015-August 2016: NHLBI Biostatistics Trainee, University of Wisconsin-Madison

January 2016-August 2016: Research rotation with Professor Paul Rathouz. With a collaborator from the Department of Surgery, assisted with analysis of Medicare readmission data and contributed to research paper.

August 2015-December 2015: Research rotation with Professor Jun Zhu, analyzed DNA methylation in breast cancer.

May 2015-August 2015: Research Assistant, Professor Jun Zhu.

Developed and documented CRAN package `automultinomial` for the analysis of spatially correlated categorical data

Teaching Experience

Fall 2018: Graduate student lecturer, Statistical Methods for Bioscience I (Stat 571)

Instructor for introductory statistics course for graduate student researchers in forestry, horticulture, and other environmental science disciplines

Spring 2015: TA, Introduction to Statistics (Stat 301)

Fall 2014: TA, Introduction to Statistics for Engineers (Stat 224)

For both Stat 224 and Stat 301, led discussion sections and taught introductory statistical concepts

Fall 2013-May-2014: Mathematics tutor volunteer, Iowa City High School, Iowa City

Helped students with math and science classes

Publications

Fernandes-Taylor, S., Berg, S., Gunter, R., Bennett, K., Smith, M.A., Rathouz, P.J., Greenberg, C.C., Kent, K.C. Thirty-day readmission and mortality among Medicare beneficiaries discharged to skilled nursing facilities after vascular surgery. *The Journal of Surgical Research*. 2018

Submitted

Berg, S., Zhu, J., Clayton, M.K., Shea, M.E., Mladenoff, D.J. A latent discrete Markov field approach for identifying and classifying historical forest communities based on spatial multivariate tree species counts. *Submitted*. 2018

Conference contributions

Shea, M.E., Mladenoff, D.J., Clayton, M.K., Berg, S., Elza, H. Are Ecotones Zones of Intermingling or Interdigitation? Pattern and Scale of Tree Species Co-occurrence in Wisconsin's Tension Zone. 2018 US-IALE annual meeting.

Computing

Software

automultinomial-an R package for regression and inference with spatially correlated discrete data, on CRAN and GitHub (<https://github.com/stephenberg/automultinomial>)

bcd-an R/Rcpp package for regressions with group lasso variable selection, on GitHub (<https://github.com/stephenberg/bcd>)

Languages

R, c++, Latex

Before graduate school

Spring 2012 through Summer 2013: undergraduate theoretical and computational chemistry research

Performed accurate quantum chemical calculations on silicon surfaces using the General Atomic and Molecular Electronic Structure System (GAMESS) software

Made and presented a research poster for the Iowa State Summer Research Symposium

Professor Mark Gordon's lab, Department of Chemistry, Iowa State University

Summer 2012: Department of Energy Science Undergraduate Laboratory Internship

University Honors Program Grant Committee member, Fall 2012-Spring 2013

Reviewed grant requests for Iowa State Honors Program funding from undergraduates and professors mentoring undergraduates, and met with the committee to discuss applications and funding decisions

Sales Clerk, Earl May Garden Center, summer 2011

Assisted customers with gardening questions, and performed cashier duties as needed

Performed general maintenance tasks throughout the store, including product arrangement and watering

Spring 2011: Undergraduate research, Professor Arthur Winter's lab, Dept. of Chemistry, Iowa State University

Performed and analyzed chemistry experiments, including synthesis and purification of ferrocene derivatives

Summer 2010: intern, University of Iowa Department of Public Health

Assisted with management of a database using SAS and Microsoft Access