John R. Lewis

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Education

2009–2014 **Statistics**, *The Ohio State University*, Columbus, OH, *Ph.D. & M.S.*

2006–2008 **Mathematics**, *Miami University*, Oxford, OH, *M.S.*

2002–2006 **Education & Mathematics and Statistics**, *Miami University*, Oxford, OH, *B.A. & B.S, Magna cum Laude.*

Ph.D. Dissertation

title *Bayesian Restricted Likelihood Methods*

advisors Dr. Steven N. MacEachern and Dr. Yoonkyung Lee

Experience

2014–Present **Senior Member of the Technical Staff**, *Sandia National Laboratories*, Albuquerque, NM.

2011–2014 **Research Assistant**, *Nationwide Center for Advanced Customer Insights, Fisher College of Business, The Ohio State University*, Columbus, OH.

2012 **Summer Student Intern**, *JPMorgan Chase & Co.*, Columbus, OH.

2010–2011 **Teaching Assistant**, *The Ohio State University*, Columbus, OH.

2010 **Research Assistant**, *Summer Undergraduate Mathematical Sciences Research Institute, Miami University*, Oxford, OH.

2008–2009 **Mathematics Teacher**, *Dupont Manual High School, Jefferson County Public Schools*, Louisville, Kentucky.

2006–2008 **Teaching Assistant**, *Miami University*, Oxford, OH.

Publications

Journals

J. Derek Tucker, Lyndsay Shand, and John R. Lewis. Bayesian modeling of self-exciting point processes with missing temporal histories. *Spatial Statistics (accepted).*

J.D. Tucker, John R. Lewis, and A. Srivastava. Elastic functional principal component regression. *Statistical Analysis and Data Mining: The ASA Data*

Science Journal, pages 1–15.

John R. Lewis, Adah Zhang, and Christine M. Anderson-Cook. Comparing multiple statistical methods for inverse prediction in nuclear forensics applications. *Chemometrics and Intelligent Laboratory Systems*, 175:116–129, 2018.

Edward V. Thomas, John R. Lewis, Christine M. Anderson-Cook, Tom Burr, and Michael S Hamada. Selecting an informative/discriminating multivariate response for inverse prediction. *Journal of Quality Technology*, 49(3):228–243, 2017.

John R. Lewis, Dusty Brooks, and Michael L. Benson. Methods for uncertainty quantification and comparison of weld residual stress measurements and predictions. *ASME 2017 Pressure Vessels and Piping Conference*, 6B: Materials and Fabrication, 2017.

John R. Lewis, Steven MacEachern, and Yoonkyung Lee. Robust inference via the blended paradigm. In *JSM Proceedings, Section on Bayesian Statistical Science*, pages 1773–1786, 2012.

Technical Reports

Aubrey C. Eckert-Gallup, John R. Lewis, Nevin S. Martin, Lauren B. Hund, Andrew J Clark, Dusty M. Brooks, and Paul E. Mariner. xLPR scenario analysis report. SAND2017-2854, Sandia National Laboratories, Albuquerque, New Mexico 87185 and Livermore, California 94550, March 2017.

John R. Lewis and Dusty Brooks. Uncertainty quantification and comparison of weld residual stress measurements and predictions. SAND2016-10932, Sandia National Laboratories, Albuquerque, New Mexico 87185 and Livermore, California 94550, October 2016.

John R. Lewis, Steven MacEachern, and Yoonkyung Lee. Bayesian Restricted Likelihood Methods. Technical Report Technical Report No. 878, Department of Statistics, The Ohio State University, 2014.

In Progress

Daniel Ries, John R. Lewis, Adah Zhang, Christine M. Anderson-Cook, Wagner Wilkerson, Marianne Gregory L., Julie Gravelle, and Jacquelyn Dorhout. Utilizing distributional measurements of material characteristics from sem images for inverse prediction. *Nuclear Materials Science Workshop issue of JNMM (under revision).*

John R. Lewis, Steven MacEachern, and Yoonkyung Lee. Bayesian restricted likelihood methods: Conditioning on insufficient statistics in Bayesian regression. *Bayesian Analysis (under revision).*

J.D. Tucker, John R. Lewis, C. King, and S. Kurtek. A geometric approach for computing tolerance bounds for elastic functional data. *Journal of Applied Statistics (under review), available on ArXiv e-prints.*

Presentations

- "Statistics and Pre-detonation Nuclear Forensics at Sandia", *Georgia Tech ISyE*, Atlanta GA. Sept. 19, 2018
- "Bayesian Modeling of Self-Exciting Marked Point Processes with Missing Histories", *ISBA World Meetings (Poster Session)*, Edinburgh, Scotland. June 26, 2018.
- "Bayesian Modeling of Self-Exciting Marked Point Processes with Missing Histories", *University of New Mexico, Statistics Colloquium*, Albuquerque, NM. March 6, 2018.
- "Statistical Applications at Sandia", *University of Illinois Urbana - Champaign*, Champaign, Illinois, Sept. 27, 2017.
- "Handling Missing Data in Self-Exciting Temporal Point Processes" *Joint Statistical Meetings*, Baltimore, Maryland, July 29 - August 3, 2017.
- "R Projects", *Statistical Sciences Internal Seminar, Sandia National Laboratories*, July 18, 2017.
- "Experimental Design", *NTNFC Monthly Webinar Series*, July, 17 2017.
- "Selecting an Informative/Discriminating Multivariate Response for Inverse Prediction" *Joint Statistical Meetings*, Chicago, Illinois, July 30-August 4, 2016.
- "The Blended Paradigm: Robust Bayesian Modeling using Non-Sufficient Statistics" *Craig Cooley Memorial Prize Talk*, The Ohio State University, Statistics Department, Columbus, Ohio, April 8, 2014.
- "Bayesian Restricted Likelihood Methods", Nationwide Center for Advanced Customer Insights, Fisher College of Business, The Ohio State University, Columbus, Ohio, April 8, 2014.
- "Bayesian Inference via the Blended Paradigm" *Joint Statistical Meetings*, Montréal, Québec, Canada, August 3 - 8, 2013.
- "Robust Inference via the Blended Paradigm" *Joint Statistical Meetings*, San Diego, California, July 28-August 2, 2012.

Honors and Awards

2018 NNSA Defense Programs Award of Excellence, Team Member (Sandia)

2014 Craig Cooley Memorial Prize (Ohio State University)

2009 University Fellowship (Ohio State University)

2009 Lubrizol Foundation Fellowship (Ohio State University)

2008 Graduate Assistant Effective Teaching Award (Miami University)

2008 Faculty Prize (Miami University)

2006 Graduation with Distinction (Miami University)

2006 Alumni Senior Prize (Miami University)

2005 Mary Jeanette and Clifford Harvey Scholarship (Miami University)

2004 J. Paul and John P. Albert Scholarship (Miami University)

2004 Koehler Prize in Mathematics (Miami University)

Service

2017-2018 ASA Albuquerque Chapter Constitution Committee Member

2014–Present Journal Reviewer: Bayesian Analysis, Journal of VV and UQ, Applied Stochastic Models in Business and Industry, Journal of Nuclear Materials

2012-2013 Student Co-President, Department of Statistics, The Ohio State University

2010, 2011 Science Fair Judge, State Science Day, Ohio Academy of Science

Computing

Stat. Comp. R, Python, MATLAB, SAS, JMP

Systems Mac OS, Linux, Windows

Typesetting LaTeX, Markdown

Soft. Dev. *brlm* - an R package for Bayesian Restricted Likelihood Methods (https://github.com/jrlewi/brlm)

Continuing Education

Neural Networks and Deep Learning by deeplearning.ai on Coursera. Certificate earned on Saturday, November 3, 2018 2:53 PM GMT

Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera. Certificate earned on Friday, December 14, 2018 9:42 PM GMT