Robert C. Foster

CONTACT INFORMATION

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Los Alamos National Laboratory
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Ph.D. statistician with a strong applied background in the sciences and engineering, skilled communicator, and excellent team member.

RESEARCH INTERESTS

Applied statistical methods with a focus on science and engineering applications, Bayesian and empirical Bayesian methods, statistical programming, uncertainty quantification, and quantum computation.

EDUCATION

Ph.D. in Statistics

Iowa State University, Ames, IA, October 2016

- Thesis title: Topics in Empirical Bayesian Analysis
- Adviser: Mark S. Kaiser
- 3.65 GPA

M.S. in Statistics

Iowa State University, Ames, IA, December 2010

- Thesis title: Simulation Analysis of a Bayesian Test Plan for Sequential Data from a Homogeneous Poisson Process
- Adviser: Alyson Wilson
- 3.65 GPA

B.S. in Mathematics and Statistics

Oklahoma State University, Stillwater, OK, May 2007

- Summa cum laude
- Minor in Computer Science
- 3.948 GPA
- Honors college degree

RESEARCH EXPERIENCE

Los Alamos National Laboratory, Los Alamos, NM
CCS-6, Statistical Sciences group

Postdoctoral Researcher, Oct. 2016 - Present

- Research topics include sources of uncertainty for computation techniques that lie "Beyond Moore's Law" and the statistical properties of resulting errors from propagation of BML uncertainties, simulation of microstructures from samples of additively manufactured materials, and applications of quantum computing in statistics.

Iowa State University, Ames, IA
Department of statistics

Research Assistant, 2007-2010

- Consulted with various departments and research groups at Iowa State University, including animal science and the agriculture experiment station (AES).

Teaching Experience

Iowa State University, Ames, IA USA
Department of Statistics

Instructor **August 2010 to May 2016**

- Principles of Statistics: Fall 2010, Spring 2011, Summer 2011, Fall 2011, Spring 2012, Summer 2012
- Probability and Statistics for Computer Science: Fall 2012, Spring 2013, Fall 2013, Spring 2014
- Engineering Statistics: Fall 2014
- Probability and Statistical Inference for Engineers: Spring 2015, Spring 2016

Publications in Preparation

Foster, R., Weaver, B. and Gattiker, J., 'Applications of Quantum Computing in Statistics," *The American Statistician* (Manuscript)

Foster, R., Vander Wiel, S., Livescu, V., and Bronkhorst, C., 'Towards Recreation of Microstructure of Spatially Varying Materials from Orthogonal Sections, *Computational Materials Science* (Manuscript)

Technical Reports

Foster, R., Weaver, B., Picard, R., and Gattiker, J., 'Beyond Moore's Law Uncertainty," LA-UR-18-28596 (2018)

Abendroth, Lori; Marlay, Stephanie; Myers, Anthony J.W.; Elmore, Roger W.; and **Foster, Robert C.**, "*Regional Corn Planting Date Recommendations for Iowa*" (2010). Iowa State Research Farm Progress Reports. 410.

Invited Talks

Towards Recreation of Microstructure in Additively Manufactured Materials, International Conference on Plasticity, Jan. 2018

Towards Recreation of Microstructure in Additively Manufactured Materials, Albuquerque ASA spring meeting, Apr. 2018

Contributed Talks

Applications of Quantum Computing in Statistics, Joint Statistical Metings, Aug. 2019 (Forthcoming)

Poster Sessions	**Foster, R.**, Vander Wiel, S., Livescu, V., and Bronkhorst, C., 'Towards Random Generation of Microstructures of Spatially Varying Materials from Orthogonal Sections,' Computational Data Science Approaches for Materials 2019
	Foster, R., Weaver, B., Picard, R., and Gattiker, J., 'Uncertainty, Noise, and Beyond Moore's Law ," CoDA 2018 - Conference on Data Analysis
	Foster, R., Vander Wiel, S., Livescu, V., and Bronkhorst, C., 'Generation of Spatially Varying Digital Microstructures for Additively Manufactured Materials,' 2017 Materials Capability Review on Manufacturing Science
Other Cited Works	Blog post 'Confidence Interval for wOBA Based on the Multinomial Model', cited in VanDerwerken, D., ' Slugging percentage is not a percentage – and why that matters,' *The American Statistician* (2019)
Professional Membership	• American Statistical Association
Computing Expertise	Statistical Software: R, JMP, SAS, Matlab Programming Languages: Python, Java, C Applications: TEX, LATEX, BIBTEX, Microsoft Office Operating Systems: Microsoft Windows, macOS, Unix