Robert C. Foster

CONTACT INFORMATION	Office 03-132-345 Los Alamos National Laboratory www.robertcfoster.com	*Phone:* (505) 667-6055 *Work:* rcfoster@lanl.gov *Personal:* rcfoster@gmail.com

<small>RESEARCH INTERESTS</small>
Applications of statistical methods, with a focus on science applications in particular, Bayesian and empirical Bayesian methods, statistical programming, uncertainty quantification, and quantum computation.

<small>EDUCATION</small>

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
- The primary focus of my dissertation was on comparing and contrasting the ways that the uncertainty introduced from double use of the data (once for estimation of the hyperparameters, once in the resulting Bayesian analysis) has been accounted for, and incorporating many of these methods into a consistent framework. A new method was proposed for deriving empirical Bayesian intervals for means of natural exponential families with quadratic variance functions based on a modified version of intervals previously described by Carl Morris.

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
- The focus of my thesis was an analysis of a specific sequential test plan for data from a homogenous Poisson process to prior sensitivity and model misspecification.

B.S. in Mathematics and Statistics

Oklahoma State University, Stillwater, OK, May 2007

- Summa cum laude
- Minor in Computer Science
- 3.948 GPA

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

Postdoctoral Researcher, Oct. 2016 - Present
- Research topics include Beyond Moore's Law sources of uncertainty and the statistical properties of resulting errors from propagation of BML sources of uncertainty, 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
- Worked with various departments and groups at Iowa State University, including animal science and consulting with the agriculture experiment station (AES).

TEACHING   **Iowa State University**, Ames, IA USA
EXPERIENCE   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   **Foster, R.**, Vander Wiel, S., Livescu, V., and Bronkhorst, C., 'Towards Recre-
IN PREPARATION ation of Microstructure of Spatially Varying Materials from Orthogonal Sections, *Computational Materials Science* (Manuscript)

Foster, R., Weaver, B. and Gattiker, J., 'Quantum Computing in Statistics using the D-Wave Quantum Annealer," *The American Statistician* (In Preparation)

Foster, R., Weaver, B. and Gattiker, J. "Combining Observational and Computational Uncertainty in Stochastic Emulators," (In Preparation)

TECHNICAL   Abendroth, Lori; Marlay, Stephanie; Myers, Anthony J.W.; Elmore, Roger W.;
REPORTS   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; Albuquerque ASA spring meeting, Apr. 2018

PROFESSIONAL
MEMBERSHIP
- American Statistical Association

COMPUTER
EXPERTISE
Statistical Software: R, JMP, SAS, Matlab
Programming Languages: C, Java, Python
Applications: TeX, LaTeX, BibTeX, Microsoft Office
Operating Systems: Microsoft Windows, macOS, Unix