

# Christopher J. Challis

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## Education

DUKE UNIVERSITY  
Ph.D. Candidate, Department of Statistical Science  
*Expected Graduation June 2013*

BRIGHAM YOUNG UNIVERSITY  
B.S. Mathematics/Statistical Science, Magna cum laude, 2006

## Employment

STATISTICIAN January 2012 – Present  
Plehn Analytics  
Estimation algorithms for large economic and demographic datasets.

RESEARCH ASSISTANT May 2010 – Present  
Duke University Department of Statistical Science  
Probabilistic modeling of tertiary protein structure evolution and phylogenetics. Joint work with Professor Scott Schmidler.

RESEARCH ASSISTANT May 2011 – August 2011  
Lawrence Livermore National Laboratory  
Developed and implemented sequential learning algorithms for discrete sequence data with applications in cyber security.

TEACHING ASSISTANT Aug 2009 – April 2011  
Duke University Department of Statistical Science  
Courses: Data Analysis and Statistical Inference, Probability and Measure Theory, Probability and Statistics for Engineers

ACTUARIAL ANALYST Dec 2008 – Aug 2009  
Benefit Strategies Group

Created benefit and liability calculation systems for large multi-employer deferred compensation and welfare benefit plans.

ACTUARIAL ANALYST  
Mercer

May 2006 – Nov 2008

Worked with several teams to perform valuation of pension plan liabilities, workforce demographic projections, and validation of statistical modeling assumptions.

TEACHING ASSISTANT

Sep 2003 – Apr 2006

Brigham Young University Departments of Mathematics and Statistical Science  
Courses: Statistical Theory, Linear Algebra, Ordinary Differential Equations,  
Multivariate Calculus, Abstract Algebra

### **Selected Coursework**

Statistical Models  
Generalized Linear Models  
Statistical Inference  
Nonparametric Bayes

Applied Stochastic Processes  
Time Series  
Computational Biology  
Experimental Design

### **Programming**

R, C, SAS

### **Awards and Recognition**

ASA Student Paper Competition Winner, Bayesian Section, 2011  
Associate of the Society of Actuaries, 2010  
James B. Duke Fellow, Duke University, 2009  
National Merit Scholar, 2000  
Robert C. Byrd Scholar, State of Kansas, 2000  
Gordon B. Hinckley Presidential Scholar, Brigham Young University, 2000

### **Publications**

Challis CJ, Schmidler SC. A stochastic evolutionary model for Bayesian protein structure alignment and phylogeny. Accepted by *Molecular Biology and Evolution*.

Sales AP, Challis CJ, Prenger R, Merl D. Semisupervised classification of texts using particle learning for probabilistic automata. In *Bayesian Theory and Applications*, Eds. Damien P, Dellaportas P, Polson N, Stephens D, Oxford University Press.

Challis CJ, Prenger R, Merl D. 2011. Classified article internally released at Lawrence Livermore National Laboratory.

### **Invited Talks**

Bayesian Evolutionary Modeling of Protein Structures. ISBA 2012 World Meeting.

### **Contributed Poster Presentations**

Text classification with probabilistic deterministic finite automata. First place, Lawrence Livermore student poster session, August 2011.

### **References**

Scott Schmidler  
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