## Andrea J. Kaplan


CONTACT INFORMATION

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RESEARCH INTERESTS

Computational Statistics, Markov Chain Monte Carlo Algorithms, Statistical Graphics, Bayesian Inference, Mixed Effects Models (Hierarchical/Multilevel Models)

EDUCATION

**Iowa State University**, Ames, Iowa USA

Ph.D., Statistics, May 2017

**The University of Texas**, Austin, Texas USA

M.A., Mathematics, December 2010

- Report Topic: "An Overview of Multilevel Regression"
- Advisors: Martha Smith, John Luecke

B.S., Mathematics (Option: Applied), May 2006

- Elements of Computing Certificate

HONORS AND AWARDS

University Honors and Dean's List Spring 2005 and 2006
National Science Foundation, Research Experiences for Undergraduates (REU) 2006

ACADEMIC EXPERIENCE

**Iowa State University**, Ames, Iowa USA

*Graduate Student* **August, 2012 - Present**
Includes Masters level coursework.

*Instructor* **January, 2013 - Present**
Course instructor for Introduction to Business Statistics. Responsible for lecture and the development of course notes, homework assignments, and exams. Approximately 80 students.

*Teaching Assistant* **August, 2012 - December 2012**
Coordinated a team of seven undergraduates to grade for Introduction to Business Statistics. Duties included creating a rubric each week and ensuring consistent grading across all sections.

**The University of Texas**, Austin, Texas USA

*Research Assistant* **April, 2011 - July, 2012**
Worked under Prof. Tasha Beretvas to conduct a simulation study assessing use of Bayesian estimation procedures to estimate a two-level cross-classified random effects model (CCREM) with correlated Level 2 residuals. Designed an R function that simulates cross-classified data and then utilizes OpenBUGS to estimate different models including: multiple membership, unconstrained multiple membership, uncorrelated-residuals CCREM, correlated-residuals CCREM, and a fully multivariate CCREM.

*Graduate Student* **August, 2006 - December, 2010**
Includes Masters level coursework and report research.

*Teaching Assistant* **August, 2008 - May 2009**
Lead 130 students in six weekly discussions with the analysis of concepts and introduction of ap-

plications for Calculus II and Introduction to Mathematics. Assisted faculty with the conduct and delivery of classroom material. Graded exams and supervised homework grader.

*Summer REU* **June, 2006 - August 2006**
Participant in Extensible Undergraduate Research in Communications Applications, a summer REU in the Department of Electrical Engineering sponsored by the National Science Foundation for research in the areas of Communications, Networks and Systems. Worked on optimization of binary erasure channels project with Prof. Sriram Vishwanath at the University of Texas.

*Research Assistant* **June, 2005 - March 2006**
Worked under Prof. Tasha Beretvas to identify different methods of effect size estimation and helped to evaluate the advantages and disadvantages of each method. Designed a JAVA program that facilitated data entry and assisted in other researchers' data analysis.

**Applied Research Laboratories**, Austin, Texas USA

*Graduate Research Assistant* **August, 2006 - February 2007**
Research with a concentration in active and passive data fusion. Programmed graphical work in signal processing using Matlab.

## Papers in preparation

**Kaplan, A.**, Hare, E., and Hofmann, H. Can you buy a president? Politics after the Tillman Act.
**Kaplan, A.**, and Beretvas, S. N. Bayesian Estimation of a Two-Level Cross-Classified Random Effects Model with Correlated Level Two Residuals: A Demonstration and Evaluation.

## Professional Experience

**Banks Information Group**, Austin, Texas USA

*Independent Contractor* **July, 2011 - July, 2012**
Developed web-based environmental GIS reporting tool for Phase I reporting. Additionally, developed and implemented a web-based tool to convert images to PDF files programatically. Utilized ESRI ArcSDE and .NET/C#, as well as Microsoft SQL Server for development.

**Sense Corp**, Austin, Texas USA

*Consultant* **July, 2009 - July, 2011**
Designed monthly subscriber activity forecasts across key markets at a top-five broadband telecommunications company using ARIMA time series modeling in R. Developed an automated process and custom web application designed for Business Intelligence (BI) Group use to run forecasts and analyze long-term trends in activity. Analyzed the effects of explanatory factors on elevated truck rolls and presented findings to corporate leadership. Provided BI Group with statistical insight including sample size estimation, forecasting, and analysis design using R and SPSS.

**Gelb Consulting Group**, Houston, Texas USA

*Intern Analyst* **June, 2008 - August, 2008**
Internal consultant focusing on revising several standard operating procedures, including regression and factor analysis. Produced and analyzed quantitative reports for several clients. Assisted analysis in extrapolating themes from survey data for qualitative reports.

## Computer Skills

- Mathematical Computing: R, BUGS, SAS, Matlab; some experience with SPSS.
- Languages: Java, SQL, C#, .NET; some experience with C and C++.
- Applications: LaTeX, ESRI ArcMap, Microsoft Office, Microsoft Sharepoint.

## Relevant Coursework

- Bayesian Statistics*
- Theory of Probability and Statistics I & II*
- Statistical Methods I & II*
- Introduction to Statistical Computing*
- Mathematical Statistics I & II*
- Theory of Probability*
- Applied Bayesian Analysis*
- Methods of Correlation and Regression*
- Integral Transforms*
- Methods of Real Analysis*
- Probability I
- Real Analysis I
- Linear Algebra and Matrix Theory
- Introduction to Mathematical Modeling
- Scientific Computation in Numerical Analysis
- Methods of Applied Mathematics
- Algebraic Structures I & II
- Theory of Functions of Complex Variables
- Introduction to Number Theory
- Partial Differential Equations and Applications
- Differential Equations
- Vector Calculus
- Error-Correcting Codes
- Logic, Sets, and Functions
- Elements of Computers & Programming
- Elements of Software Design

* Denotes graduate level coursework.