

## Alexander McLain

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### Education

- Ph.D. in Statistics, Expected May 2008, The University of South Carolina, Columbia, SC  
Dissertation title: Accelerated Testing with Recurrent Events and Fundamental Issues in Marginal Models
  - Advisor: Dr. Edsel A. Peña
- M.S. in Statistics, December 2005, The University of South Carolina, Columbia, SC
- B.S. in Mathematics, May 2002, University of Massachusetts, Amherst, Massachusetts

### Research Interests

- Parametric and nonparametric methods in survival analysis; Recurrent events; Counting Processes; Applied Probability; Multiple Testing.

### Work in Progress

- Closure properties of hazard rate ordering for convoluted random variables with proportional hazards.
- Efficiency comparison of accelerated failure testing of single versus multiple events.

### Research Experience

- *Graduate Research Assistant*, “Estimation with recurrent event data,” Summer 2004, Summer 2007. Department of Statistics, University of South Carolina, supervised by Dr. Edsel Peña.
  - A student/professor research group that met semi-weekly to discuss and present various topics in recurrent events. These topics included, but were not limited to, the Koziol-Green model, marginal models, goodness of fit, multiple testing, Cox’s proportional hazards model, outlier detection, competing risks, and accelerated testing.
- *Graduate Research Assistant*, “Time Series Analysis of Market Data,” Summer 2005 to Summer 2006. Arcadia Analytics, Columbia, South Carolina, supervised by Dr. James Laughlin.
  - Conducted statistical analysis of product sales data using time series analysis, with methods ranging from ARIMA, to nonparametric models. Produced graphs and summaries using Excel and wrote reports describing results of statistical analysis.
- *Master’s Research Project*, “An Investigation into Multicollinearity using Variance Inflation Factor,” Summer 2005. Department of Statistics, University of South Carolina, supervised by Dr. Brain Habing.
  - An investigation of multicollinearity extending the work of Craney and Surles (2001), including a discussion of ways that collinearity can be detected with methods such as principal components, condition number and variance inflation factor. The second half uses Monte-Carlo simulation to develop model dependent variance inflation factor cutoff values.

## Contributed Talks

- *Accelerated Testing with Recurrent Events*
  - Eastern North American Region/International Biometric Society (ENAR), Atlanta, Georgia. March 2007.

## Contributed Posters

- *Marginal Models for Cox Proportional Hazards Regression*
  - Current and Future Trends in Nonparametrics, Columbia, South Carolina. October 2007.

## Teaching Experience, University of South Carolina

- *Instructor of Record*: Full lecture and grading responsibility for the courses
  - STAT 201, Elementary Statistics (Fall 2004, Spring 2005)  
Held full responsibilities for introductory statistics courses taught to non-math related majors. The courses focused on elementary ideas and concepts in statistics including experimental design, sampling methods, and inference.
  - STAT 509, Statistics for Engineers (Fall 2007)  
Held full responsibilities for course in basic probability and statistics with applications and examples in engineering. Topics include elementary probability, random variables and their distributions, random processes, statistical inference, curve fitting, prediction, correlation and application to quality assurance, reliability, and life testing.
- *Teaching Assistant*:
  - PSYC 709 and 710, Quantitative Methods Behavioral Data I and II, (Fall 2006, Spring 2007)  
Held full responsibility of weekly sessions which taught students how course material could be implemented in SAS. Topics include data manipulation, linear regression, ANOVA with effect coding, logistic regression, random effects models, and MCMC.
- *Lab Instructor* - Full responsibility for a weekly Computer Lab in Minitab (Fall 2003, Spring 2004)

## Awards

- College of Science and Mathematics Fellowship, 2003-2006
- College of Arts and Sciences Fellowship, 2006-2008
- Department of Statistics and University of South Carolina Graduate School Award to present a dissertation-based paper at the Eastern North American Region/International Biometric Society spring meeting, Atlanta, Georgia. March 2007. (\$500)

## Professional Affiliations

- American Statistical Association (ASA)
- Institute of Mathematical Statistics (IMS)
- International Biometric Society (ENAR)
- Mu Sigma Rho, Statistics Honor Society

## Computer Skills

- SAS, R, Excel, SPSS, Splus, Minitab, WinBugs
- L<sup>A</sup>T<sub>E</sub>X, Mathematica, Maple, Fortran

## References

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