

# Chase Joyner

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## Education

Ph.D. in Mathematical Sciences (Statistics) (4.0/4.0) Clemson University, Clemson, SC	May 2016 – Present
M.S. in Mathematical Sciences (Statistics) (4.0/4.0) Clemson University, Clemson, SC	Aug 2014 – May 2016
B.S. in Mathematical Sciences (Statistics) (3.89/4.0) Clemson University, Clemson, SC	Aug 2010 – 2014

## Research Experience: Clemson University

Research Assistant sponsored by Biorealm, Principal Investigator	Jan 2016 – Dec 2016
<ul style="list-style-type: none"><li>- Analyzed rice data provided from fields in Indonesia to develop a random effects model accounting for complex genetic similarity.</li><li>- Modeled the rice production and resistance to climate change in Indonesia.</li><li>- Simulated data in R using Clemson's cluster to validate the model.</li><li>- Techniques used: Expectation-Maximization algorithm, generalized linear models, and mixed effects models.</li></ul>	
Master's Thesis	Aug 2014 – May 2016
<ul style="list-style-type: none"><li>- Developed univariate and multivariate Bayesian models to estimate the optimal biomarker density threshold in pooled testing of individuals for various diseases.</li><li>- Implemented algorithms in R to estimate the parameters of these Bayesian models.</li><li>- Techniques used: Gibbs sampling, Metropolis-Hastings, and Bayesian iteratively reweighted least squares.</li></ul>	
Undergraduate Thesis	Aug 2013 – Aug 2014
<ul style="list-style-type: none"><li>- Analyzed Bayesian techniques and Markov chain Monte Carlo methods for inference.</li><li>- Documented the implementation of these methods and ran simulations.</li></ul>	

## Research Presentations

- Joyner, C. Assessing the relationship between SNPs and yield in various rice varieties.  
*Jakarta, Indonesia* (Nov 2016).
- Joyner, C. Bayesian approach of biomarker density estimation using pooled data.  
*Clemson University* (Feb 2016).

## Teaching Experience: Clemson University

Graduate Teacher of Record, MATH 1070: Differential and Integral Calculus	Spring 2017
Graduate Teacher of Record, MATH 1040: Precalculus and Introductory Differential Calculus	Fall 2016
Graduate Teacher of Record, MATH 1020: Introduction to Mathematical Analysis	Fall 2015
Graduate Teaching Assistant	Fall 2014 - Summer 2015
<ul style="list-style-type: none"><li>- Courses: Statistics for Science and Engineering (MATH 3020), Calculus of One Variable II (MATH 1080), and Differential and Integral Calculus (MATH 1070).</li></ul>	

## Professional Memberships

American Mathematical Society (AMS)

## References

- Christopher McMahan, Clemson University. Contact: [mcmaha2@g.clemson.edu](mailto:mcmaha2@g.clemson.edu).
- Robert Lund, Clemson University. Contact: [lund@g.clemson.edu](mailto:lund@g.clemson.edu).