KYLE C. BURRIS

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EDUCATION

Ph.D. Statistical Science, *Duke University* Expected 2019
Certificate in College Teaching

M.S. Statistical Science, *Duke University* 2018

B.S. Mathematics, B.A. Economics, *Wheaton College (IL)* 2015
Summa Cum Laude
Academic GPA: 3.97/4.0

RESEARCH EXPERIENCE

Research Assistant August 2017 - Present
Department of Statistical Science, Duke University *Durham, NC*

· Advisor: Peter Hoff
· Project: Develop an efficient adaptive confidence interval procedure with guaranteed frequentist coverage for areal spatial data
· Project: Develop methodology for multiple imputation of mixed data subject to expert-defined constraints

Research Assistant January 2017 - Present
Department of Psychiatry and Behavioral Sciences, Duke University *Durham, NC*

· Advisors: Jerry Reiter and Greg Appelbaum
· Project: Explore the relationship between sensorimotor metrics and on-field performance in MLB baseball and develop a Bayesian hierarchical model to compare minor league players across leagues
· Project: Explore the pattern of variation in sensorimotor differences by level of expertise, gender, and sport type in a large cohort of athletes

Research Assistant June 2016 - May 2017
Triangle Census Research Network, Duke University *Durham, NC*

· Advisor: Jerry Reiter
· Project: Extend constrained Bayesian edit-imputation methodology to incorporate flexibly specified measurement error models

TEACHING EXPERIENCE

Instructor of Record May 2017 - August 2017
Duke University *Durham, NC*

· Taught two 25 student sections of STA 101 during Summer 2017 Terms I and II
· Created unique lecture materials, application exercises, exams, and an applied data science project

Statistics MOOC Developer May 2016 - April 2017
Duke University *Durham, NC*

· Collaborated with four statistics professors to develop the Statistics with R Specialization on Coursera
· Provided support and learning objectives to the nearly 90,000 people enrolled in the MOOC

Teaching Assistant August 2013 - Present
Duke University & Wheaton College *Durham, NC & Wheaton, IL*

· Duke: STA 102 - Intro to Biostatistics, STA 112 - Data Science, STA 863 - Advanced Statistical Computing
· Wheaton: MATH 245 - Linear Algebra, MATH 263 - Statistics I, ECON 371 - Game Theory

Mathematics Bootcamp Instructor August 2016, August 2017, August 2018
Duke University *Durham, NC*

· Taught and developed curriculum for a probability theory and linear algebra bootcamp, taken by incoming MS and PhD students

Data Plus Mentor May 2017 - July 2017
Duke University *Durham, NC*

· Supervised a team of undergraduates on a research project in collaboration with professors from the EE department and medical school
· Project: Classify patient doppler ultrasound signals as healthy or unhealthy using a combination of feature extraction and machine learning algorithms

INDUSTRY EXPERIENCE

Research and Development Intern May 2018 - August 2018
Cleveland Indians Baseball Club *Cleveland, OH*

· Developed novel time-series methodology for within-season evaluation of professional baseball players.
· Collaborated with player development, baseball operations, and scouting on an as-needed basis.

Product Development Intern May 2013 - August 2013
ICM, Inc. *Colwich, KS*

· Specified an areal spatial data model to forecast corn stover yields in Midwestern counties
· Designed a financial model to help the company select an optimal plant location

TECHNICAL STRENGTHS

Limited Experience	MATLAB, SAS, Stata, Java
Working Knowledge	Python, Tensorflow, C++, LaTeX, Git, JAGS/Stan, SQL
Advanced Knowledge	R

PUBLICATIONS

Burris, K., Vittetoe, K., Ramger, B., Suresh, S., Tokdar, S., Reiter, J., Appelbaum, G. *Sensorimotor abilities predict on-field performance in professional baseball.* Nature Scientific Reports, 8(1), 2018.

Burris, K. and Coleman, J. (2018). *Out of gas: quantifying fatigue in MLB relievers.* Journal of Quantitative Analysis in Sports, 14(2), pp. 57-64.

Burris, K. and Hoff, P. *Exact adaptive confidence intervals for small areas.* Journal of Survey Statistics and Methodology (under revision), 2019.

Burris, K., Liu, S. and Appelbaum, G. *Visual-motor expertise in athletes.* Journal of Sports Sciences (under review), 2019

Burris, K. and Hoff, P. *Copula modeling for constrained multiple imputation of mixed data.* (in preparation), 2019.

Burris, K. and Hoff, P. *A Trajectory Planning Algorithm for Quantifying Space Ownership in Professional Football.* (in preparation), 2019.

PRESENTATIONS

MIT Sloan Sports Analytics Conference (Boston, MA) 2018
Eye on the ball: the relationship between sensorimotor abilities and on-field performance in professional baseball

Duke Statistical Science Seminar (Durham, NC) 2018
Exact adaptive confidence intervals for small area inference

New England Symposium for Sports in Statistics (Cambridge, MA) 2017
Out of gas: quantifying reliever fatigue in MLB baseball

Duke Graduate School Preliminary Exam (Durham, NC) 2017
Measurement error modeling specification in Bayesian data editing

Duke Statistical Science Seminar (Durham, NC) 2016
Numerical integration of win probability curves: A stochastic matrix model for football rankings

Wheaton College Economics Spring Symposium (Wheaton, IL) 2014
The effect of the NFL scouting combine on the professional labor market

Summer Institute of Biostatistics Poster Symposium (New York, NY) 2014
Breast cancer classification using fine-needle aspiration testing

AWARDS/ACCOMPLISHMENTS

Research Papers Finalist, *MIT Sloan Sports Analytics Conference* 2018
First Place, Analytics Division, *TruMedia Baseball Hackathon* 2017
Statistical Science Fellowship, *Duke University* 2015
Angeline J. Brandt Award for Excellence in Mathematics, *Wheaton College* 2015
Wheaton College Scholastic Honor Society Inductee, *Wheaton College* 2015