

## College of Science

**RÉSUMÉ** - D. Andrew Brown

### PERSONAL DATA

**Associate Professor**

School of Mathematical and Statistical Sciences

Clemson University

Clemson, SC 29634-0975

(864) 656-1716

### EDUCATION

Ph.D., University of Georgia, 2013, Statistics

M.S., University of Georgia, 2010, Statistics

B.S., Georgia Institute of Technology, 2006, Applied Mathematics

### PROFESSIONAL EXPERIENCE

Clemson University, 2019 - Current, Associate Professor (with tenure)

Clemson University, 2013 - 2019, Assistant Professor

Statistical and Applied Mathematical Sciences Institute, 2016, Visiting Research Fellow

University of Georgia, 2011 - 2013, Graduate Teaching Assistant

University of Georgia, 2008 - 2013, Teaching Assistant

Vistakon, Johnson & Johnson Vision Care, 2011, Biostatistics Intern

Porsche Cars North America, 2007 - 2008, Information Technology Intern

School of Mathematics, Georgia Institute of Technology, 2005 - 2006, Undergraduate  
Research Assistant

### MEMBERSHIPS

Member, International Society for Bayesian Analysis, ISBA (2013 - Current)

Member, Eastern North American Region of the International Biometric Society,  
ENAR (2013 - Current)

Member, American Statistical Association, ASA (2008 - Current)

Member, Institute of Mathematical Statistics, IMS (2010 - 2018)

## PROFESSIONAL ACTIVITIES

Referee for the following journals:

*Annals of Applied Statistics*  
*Applied Stochastic Models in Business and Industry*  
*Bayesian Analysis*  
*Biometrics*  
*Computer Methods in Applied Mechanics and Engineering*  
*IIEE Transactions*  
*INFORMS Journal on Computing*  
*Journal of the American Statistical Association*  
*Journal of Statistical Planning and Inference*  
*NeuroImage*  
*PLoS ONE*  
*SIAM/ASA Journal on Uncertainty Quantification*  
*Statistical Analysis and Data Mining*  
*Statistics in Medicine*

Invited Book Reviewer for *Biometrics*

American Statistical Association, Uncertainty Quantification Interest Group  
Treasurer-Elect (Beginning 2020)

International Society for Bayesian Analysis, Industrial Statistics Section Treasurer  
(2018 - 2019)

South Carolina Chapter of the American Statistical Association, Treasurer (2017 -  
Current)

National Institute of Statistical Sciences, Clemson University Primary Liaison  
(2017 - Current)

Clemson University Student Chapter of the American Statistical Association,  
Faculty Officer (2017 - 2019)

Educational Testing Service Advanced Placement Statistics Exam, Reader (2013, 2014,  
2016, 2017, 2019)

Session Organizer for the ASA/IMS SPES Spring Research Conference (2019)

Session Chair at the following conferences:

Joint Statistical Meetings (2015, 2017, 2019)  
Workshop on Statistical Perspectives of Uncertainty Quantification (2017)  
Eastern North American Region of the International Biometric Society (ENAR)  
Spring Meeting (2017)

Clemson University Partial Differential Equations Graduate Student Seminar,  
Participant (2016 - 2018)

SAMSI Optimization program working group on Inverse Problems, Member (2016  
- 2017)

SAMSI Statistical, Mathematical, and Computational Methods for Astronomy working  
group on Uncertainty Quantification and Astrophysical Emulation, Member (2016  
- 2017)

SAMSI Challenges in Computational Neuroscience working group on Computational Approaches to Large-Scale Inverse Problems with Applications to Neuroscience, Member (2015 - 2016)

SAMSI Challenges in Computational Neuroscience working group on Clinical Brain Imaging, Member (2015 - 2016)

SAMSI Challenges in Computational Neuroscience working group on Functional Imaging and Functional Connectivity, Member (2015 - 2016)

University of Georgia fMRI Statistics Research Group, Member (2009 - 2013)

University of Georgia Statistics Club, Member (2008 - 2013)

University of Georgia Statistics Club, Secretary (2009 - 2010)

## PUBLICATIONS

### Refereed Journal Publications<sup>1</sup>

#### PUBLISHED

1. Prabhu, S., Ehrett, C.\*, Javanbarg, M., **Brown, D. A.**, Lehmann, M., and Atamturktur, S. (2019), “Uncertainty quantification in fault tree analysis: Estimating business interruption due to seismic hazard,” *Natural Hazards Review*, accepted.
2. **Brown, D. A.**, McMahan, C. S., and Self, S. W.\* (2019), “Sampling strategies for fast updating of Gaussian Markov random fields,” *The American Statistician*, in press, doi:10.1080/00031305.2019.1595144, arXiv:1702.05518.
3. Flynn, G. S.\*, Chodora, E.\*, Atamturktur, S., and **Brown, D. A.** (2019), “A Bayesian inference-based approach to empirical training of strongly coupled constituent models,” *ASME Journal on Verification, Validation, and Uncertainty Quantification*, 4:021005.
4. Saibaba, A. K., Bardsley, J., **Brown, D. A.**, and Alexanderian, A. (2019), “Efficient marginalization-based MCMC methods for hierarchical Bayesian inverse problems,” *SIAM/ASA Journal on Uncertainty Quantification*, 7, 1105-1131.
5. Self, S. W.\*, Pulaski, C. N., McMahan, C. S., **Brown, D. A.**, Yabsley, M. J., and Gettings, J. R. (2019), “Regional and local trends in the prevalence of canine heartworm infection: 2012-2018,” *Parasites and Vectors*, 12:380.
6. Self, S. W.\*, McMahan, C. S., **Brown, D. A.**, Lund, R., Gettings, J., and Yabsley, M. (2018), “A large scale spatio-temporal binomial regression model for estimating seroprevalence trends,” *Environmetrics*, 29:e2538.
7. **Brown, D. A.**, Saibaba, A., and Vallélian, S. (2018), “Low rank independence samplers in hierarchical Bayesian inverse problems,” *SIAM/ASA Journal on Uncertainty Quantification*, 6, 1076-1100.

---

<sup>1</sup>\* indicates student author (advisory committee or advisor)

8. Stevens, G. N.\*, Atamturktur, S., **Brown, D. A.**, Williams, B. J., and Unal, C. (2018), “Statistical inference of empirical constituents in partitioned analysis from integral-effect experiments: An application in thermo-mechanical coupling,” *Engineering Computations*, 35, 672-691.
9. **Brown, D. A.** and Atamturktur, S. (2018), “Nonparametric functional calibration of computer models,” *Statistica Sinica*, 28, 721-742.
10. **Brown, D. A.**, Datta, G. S., and Lazar, N. A. (2017), “A Bayesian generalized CAR model for correlated signal detection,” *Statistica Sinica*, 27, 1125-1153.
11. **Brown, D. A.**, Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E. (2014), “Incorporating spatial dependence into Bayesian multiple testing of statistical parametric maps in functional neuroimaging,” *NeuroImage*, 84, 97-112.

SUBMITTED

12. Brown, C. J., **Brown, D. A.**, Gallagher, E., and Gramopadhye, A., “The association between school poverty index on first college math course placement for students in engineering and engineering-related fields,” under second-round review for *Journal of Engineering Education*.
13. Ehrett, C.\*, **Brown, D. A.**, Chodora, E.\*, Kitchens, C., and Atamturktur, S., “Coupling material and mechanical design processes via computer model calibration,” submitted, [arXiv:1907.09553](https://arxiv.org/abs/1907.09553).
14. Gettings, J., Self, S. C. w., McMahan, C. S., **Brown, D. A.**, Nordone, S. K., and Yabsley, M. J., “Regional and local temporal trends canine Ehrlichia species seroprevalence in the United States: 2012-2018,” under invited revision for *Parasites and Vectors*.
15. **Brown, D. A.**, McMahan, C. S., Shinohara, R. T., and Linn, K. L., “Bayesian spatial binary regression for label fusion in structural neuroimaging,” under invited revision for *Journal of the American Statistical Association*, [arXiv:1710.10351](https://arxiv.org/abs/1710.10351).
16. Gettings, J. R., Self, S. W., McMahan, C. S., **Brown, D. A.**, Nordone, S. K., and Yabsley, M. J., “Regional and local temporal trends of *Borrelia burgdorferi* and *Anaplasma spp.* seroprevalence in domestic dogs: contiguous United States 2012-2018,” submitted.
17. Yan, Z., **Brown, D. A.**, Nagatomi, J., and Mefford, O. T., “Construction of a corresponding empirical model to bridge thermal properties and synthesis of poloxamines,” submitted.

MANUSCRIPTS IN PREPARATION

18. Ehrett, C.\*, **Brown, D. A.**, Chodora, E., Kitchens, C., and Atamturktur, S., “Combining computer model calibration and design.”
19. Self, S. W.\*, McMahan, C. S., **Brown, D. A.**, and Russell, B., “Bayesian penalized first order spline regression for multidimensional nonparametric estimation.”

20. Mokalled, S.\*, McMahan, C. S., **Brown, D. A.**, Tebbs, J. M., and Bilder, C. R., “Incorporating the dilution effect in group testing regression.”

### Conference Proceedings (Reviewed)

21. Marcanikova, M., Gallagher, E., Brown, C., Brisbane, J., **Brown, A.**, Dunwoody, L. A., Frady, K., Hines, A., Murphy, J., Patel, K., Pfirman, A., Roberson, S., and Gramopadhye, A. (2019), “High school technology as a NON-predictor of first college math course,” *Proceedings of the 2019 American Society of Engineering Education Southeast Section Conference*, March 10-12, Raleigh, NC.
22. Gallagher, E., Brown, C. J., **Brown, D. A.**, Frady, K., Marcanikova, M., Atamturktur, S., Ihekweazu, S., Matthews, M., Rabb, R., Solan, I., Welch, R., and Gramopadhye, A. (2018), “Statewide coalition: Supporting underrepresented populations in precalculus through organizational redesign toward engineering diversity (SC:SUPPORTED) year 1,” *Proceedings of the 2018 American Society of Engineering Education Annual Conference and Exhibition*, June 24-27, Salt Lake City, UT.
23. Gallagher, E., **Brown, D. A.**, Brown, C. J., Frady, K., Bass, P., Matthews, M., Peters, T., Rabb, R., Solan, I., Welch, R., and Gramopadhye, A. K. (2018), “Identifying mathematical pathways to engineering in South Carolina,” *Proceedings of the 2018 American Society of Engineering Education Annual Conference and Exhibition*, June 24-27, Salt Lake City, UT.
24. Atamturktur, S. and **Brown, D. A.** (2015), “State-aware calibration for inferring systematic bias in computer models of complex systems,” *NAFEMS World Congress 2015*, June 21-24, San Diego, CA, ISBN 978-1-910643-24-2.

### Letters and Discussions

25. **Brown, D. A.** and Lazar, N. A. (2018), Discussion of “Bayesian spatiotemporal modeling using hierarchical spatial priors, with applications to functional magnetic resonance imaging data,” by M. Bezener, J. Hughes, and G. Jones, *Bayesian Analysis*, 13, 1307-1308.

### Book Chapters

26. Atamturktur, S., Stevens, G. N.\*, and **Brown, D. A.** (2017), “Empirically improving model adequacy in scientific computing,” in *Model Validation and Uncertainty Quantification, Volume 3: Proceedings of the 35th IMAC, A Conference and Exposition of Structural Dynamics 2017*, eds. Barthorpe, R., Platz, R., Lopez, I., Moaveni, B., and Papadimitriou, C., pp. 363-370.

## Book Reviews

27. **Brown, D. A.** (2017), Review of *Analysis of Neural Data*, by R. E. Kass, U. T. Eden, and E. N. Brown, *Biometrics*, 73, 710-713.

## Conference Proceedings (Unreviewed)

28. Stevens, G. N.\*, Atamturktur, S., and **Brown, D. A.** (2017), "Empirical training of constituent models: Defining meso-scale behavior in a multi-scale plasticity model," *IMAC XXXV*, Society for Experimental Mechanics, Jan. 30 - Feb. 2, Garden Grove, CA.
29. **Brown, D. A.**, Lazar, N. A., and Datta, G. S. (2011), "Bayesian multiple testing under dependence with application to functional magnetic resonance imaging," in *Proceedings of the 2011 Joint Statistical Meetings*, Bayesian Statistical Science Section, Alexandria: American Statistical Association, pp. 4708 - 4722.
30. Jaeger, A., **Brown, D. A.**, Seymour, L., and Beuckert, R. (2010), "Response of Canadian crop yields to climate change," in *Proceedings of the 2010 Joint Statistical Meetings*, Statistics and the Environment Section, Alexandria: American Statistical Association, pp. 4395 - 4405.

## PRESENTATIONS

### INVITED TALKS

1. TBD, The 8<sup>th</sup> Workshop on Biostatistics and Bioinformatics, Georgia State University, Atlanta, GA (May 2020).
2. Brown, D. A., McMahan, C. S., Shinohara, R. T., and Linn, K. L., "Bayesian Spatial Binary Regression for Label Fusion in Structural Neuroimaging," International Chinese Statistical Association Applied Statistics Symposium, Raleigh, NC (June 2019).
3. Brown, D. A., Saibaba, A. K., and Vallélian, S., "Low-Rank Independence Samplers in Hierarchical Bayesian Inverse Problems," 2019 IMS/ASA Spring Research Conference, Virginia Polytechnic Institute and State University, Blacksburg, VA (May 2019).
4. Brown, D. A., Saibaba, A. K., Vallélian, S., Bardsley, J., and Alexanderian, A., "Low Rank Independence Samplers in Hierarchical Bayesian Inverse Problems," H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology, Atlanta, GA (April 2019).
5. Brown, D. A., McMahan, C. S., Shinohara, R. T., and Linn, K. L., "Bayesian Spatial Binary Regression for Label Fusion in Structural Neuroimaging," Department of Mathematics, Statistics, and Computer Science, Marquette University, Milwaukee, WI (December 2018).

6. Brown, D. A., “Some Statistical Problems in Uncertainty Quantification,” Department of Statistics, Indiana University, Bloomington, IN (October 2018).
7. Brown, D. A., Clemson University Genetics Symposium, Clemson University, Clemson, SC (September 2018).
8. Brown, D. A., McMahan, C. S., Shinohara, R. T., and Linn, K. L., “Bayesian Spatial Binary Regression for Label Fusion in Structural Neuroimaging,” Statistical Methods in Imaging Workshop, Philadelphia, PA (June 2018).
9. Brown, D. A. and Atamturktur, S., “Nonparametric Functional Calibration of Computer Models,” Joint Statistical Meetings, Baltimore, MD (August 2017).
10. Brown, D. A., McMahan, C. S., Linn, K. L., and Shinohara, R., “Bayesian Spatial Binary Regression for Label Fusion in Structural Neuroimaging,” Eastern North American Region of the International Biometric Society (ENAR) Spring Meeting, Washington, D. C. (March 2017).
11. Brown, D. A., Saibaba, A. K., and Vallélian, S., “Computationally Efficient Markov Chain Monte Carlo Methods for Hierarchical Bayesian Inverse Problems,” Statistical Inverse Problems Workshop, Statistical and Applied Mathematical Sciences Institute (January 2017).
12. Brown, D. A., Datta, G. S., and Lazar, N. A., “A Bayesian Generalized CAR Model for Correlated Signal Detection,” Georgia Statistics Day, Georgia Institute of Technology, Atlanta, GA (October 2016).
13. Brown, D. A., Datta, G. S., and Lazar, N. A., “A Bayesian Generalized CAR Model for Correlated Signal Detection,” Joint Statistical Meetings, Chicago, IL (August 2016).
14. Brown, D. A., Saibaba, A., and Vallélian, S., “Efficient Markov Chain Monte Carlo Methods for Hierarchical Bayesian Inverse Problems,” Challenges in Computational Neuroscience Transition Workshop, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC (May 2016).
15. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., “Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging,” Joint Statistical Meetings, Seattle, WA (August 2015).
16. Brown, D. A., Datta, G. S., and Lazar, N. A., “A Bayesian Multiple Testing Model for Correlated Signal Detection,” South Carolina Statistics Consortium Meeting, Clemson University, Clemson, SC (November 2014).
17. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., “Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging,” Network of Greater Georgia Institutes of Neuroimaging and Statistics (NOGGINS) Workshop, University of Georgia, Athens, GA (April 2014).

18. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., "Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging," Department of Statistics, University of South Carolina, Columbia, SC (November 2013).
19. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., "Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging," Department of Biostatistics, The University of Texas M. D. Anderson Cancer Center, Houston, TX (February 2013).
20. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., "Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging," Department of Mathematical Sciences, Clemson University, Clemson, SC (January 2013).
21. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., "Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging," Department of Statistics, University of Missouri, Columbia, MO (December 2012). (Webinar)
22. Brown, D. A., Lazar, N. A., and Datta, G. S., "Bayesian Multiple Testing under Dependence with Application to Functional Magnetic Resonance Imaging," Student seminar in Research, Evaluation, Measurement, and Statistics, Department of Educational Psychology, University of Georgia, Athens, GA (February 2012).

#### CONTRIBUTED TALKS

23. Brown, D. A., McMahan, C. S., Shinohara, R. T., and Linn, K. L., "Bayesian Spatial Binary Regression for Label Fusion in Structural Neuroimaging," Joint Statistical Meeting, Denver, CO (August 2019).
24. Brown, D. A., "Functional Calibration of Computer Models," Clemson University Research Symposium, Clemson, SC (May 2019).
25. Brown, D. A. and Atamturktur, S., "Nonparametric Functional Calibration of Computer Models," SIAM Conference on Uncertainty Quantification, Garden Grove, CA (April 2018).
26. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., "Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging," Eastern North American Region of the International Biometric Society (ENAR) Spring Meeting, Baltimore, MD (March 2014).
27. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., "Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging," International Conference on Advances in Interdisciplinary Statistics and Combinatorics, University of North Carolina at Greensboro, Greensboro, NC (October 2012).



28. Brown, D. A., Lazar, N. A., and Datta, G. S., “Bayesian Multiple Testing under Dependence with Application to Functional Magnetic Resonance Imaging,” Network of Greater Georgia Institutes of Neuroimaging and Statistics (NOGGINS) Workshop, University of Georgia, Athens, GA (April 2012).
29. Brown, D. A., Lazar, N. A., and Datta, G. S., “Bayesian Multiple Testing under Dependence with Application to Functional Magnetic Resonance Imaging”, Joint Statistical Meeting, Miami, FL (August 2011).

#### CONTRIBUTED POSTERS

30. Brown, D. A. and Atamturktur, S., “Nonparametric functional calibration of computer models,” Statistical Perspectives of Uncertainty Quantification Conference, Atlanta, GA (May 2017).
31. Brown, D. A. and Atamturktur, S., “Nonparametric functional calibration of computer models,” Institute of Mathematical Statistics New Researchers Conference, Madison, WI (July 2016).
32. Brown, D. A., Datta, G. S., and Lazar, N. A., “A Bayesian Multiple Testing Model for Correlated Signal Detection”, Southern Regional Council on Statistics (SRCOS) Summer Research Conference, Wilmington, NC (June 2015).
33. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., “Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging,” International Society for Bayesian Analysis (ISBA) Objective Bayes Meeting, Duke University, Durham, NC (December 2013).
34. Brown, D. A., Lazar, N. A., and Datta, G. S., “Bayesian Multiple Testing under Spatial Dependence with Application to fMRI,” Southern Regional Council on Statistics (SRCOS) Summer Research Conference, Jekyll Island, GA (June 2012).
35. Brown, D. A., Lazar, N. A., and Datta, G. S., “Bayesian Multiple Testing under Dependence with Application to fMRI,” High Dimensional Approximation for Uncertainty Quantification Workshop, Statistical and Applied Mathematical Sciences Institute (SAMSI), Raleigh, NC (November 2011).

#### OTHER PRESENTATIONS

36. Brown, D. A., “Some Statistical Problems in Uncertainty Quantification,” Mathematical and Statistical Sciences Special Topics Course, Clemson University, Clemson, SC (December 2018).
37. Brown, D. A., McMahan, C. S., Shinohara, R. T., and Linn, K. L., “Label fusion: Automated structure detection in neuroimaging,” Clemson University College of Science Donor Appreciation Reception, Clemson SC (April 2018).

38. Brown, D. A., Saibaba, A. K., and Vallélian, S., “Computationally Efficient Markov chain Monte Carlo Methods for Hierarchical Bayesian Inverse Problems,” Clemson University PDE Seminar, Clemson, SC (September 2016).
39. Brown, D. A., McMahan, C. S., and Linn, K. L., “Bayesian Spatial Binary Regression for Tumor Segmentation,” Johns Hopkins University/University of Pennsylvania Biostatistics Clinical Imaging Research Group (webinar) (May 2016).
40. Brown, D. A., “Basic Markov Chain Monte Carlo,” Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC (February 2016).
41. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., “Bayesian Correlated Signal Detection,” Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC (January 2016).
42. Brown, D. A., Lazar, N. A., Datta, G. S., Jang, W., and McDowell, J. E., “Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging,” fMRI Research Group, Department of Psychology, University of Georgia, Athens, GA (April 2013).
43. Brown, D. A., Lazar, N. A., and Datta, G. S., “Bayesian Multiple Testing in the Presence of Dependence,” fMRI Research Group, University of Georgia, Athens, GA (January 2012).
44. Brown, D. A., Chow, S.-N., and Hui, Q., “Time-Optimal Control of Bioterror Response Logistics: The Case of Anthrax,” Research Experience for Undergraduates (REU) Mini-Conference, School of Mathematics, Georgia Institute of Technology, Atlanta, GA (August 2006).

## HONORS AND AWARDS

- IMS New Researchers Travel Award, Institute of Mathematical Statistics (2016)
- SAMSI Visiting Research Fellow, Statistical and Applied Mathematical Sciences Institute (2016)
- Jeffreys Excellence Prize for Best Applied Poster, International Society for Bayesian Analysis (2013)
- Best Senior Student, Department of Statistics, University of Georgia (2013)
- Boyd Harshbarger Student Travel Award, Southern Regional Council on Statistics (2012)
- Paul D. Coverdell Franklin Foundation for Neuroimaging Travel Award, University of Georgia Franklin Foundation Neuroimaging Program (2011)
- Outstanding Teaching Assistant, University of Georgia (2010)
- Mu Sigma Rho National Statistics Honor Society, Department of Statistics, University of Georgia (2010)
- Graduate with Highest Honor, Georgia Institute of Technology (2006)
- Golden Key International Honour Society, Georgia Institute of Technology (2006)

Research Experience for Undergraduates (REU) Research Fellowship, National Science Foundation (2006)

## **SPONSORED RESEARCH**

“A Multiscale, Multiphysics Modeling Framework for Genome-to Phenome Mapping via Intermediate Phenotypes,” National Science Foundation, Senior Personnel, \$2,100,630 (\$105,032) (2018-2022).

Transformative Initiative for Generating Extramural Research (TIGER):

“Accelerating the Data Collection and Analysis Timeline for a Funded NSF INCLUDES Launch Pilot to be Competitive for a Full NSF INCLUDES ALLIANCE Proposal Deadline,” Clemson University, Co-Principal Investigator, \$14,631 (2018).

“Statewide Consortium: Supporting Underrepresented Populations in Precalculus by Organizational Redesign toward Engineering Diversity (SC:SUPPORTED),” National Science Foundation, Co-Principal Investigator, \$299,994 (\$30,000), (2017 - 2020).

“Preparing Resilient and Operationally Adaptive Communities through an Interdisciplinary, Venture-based Education (PROACTIVE),” National Science Foundation, Senior Personnel, \$2,989,899 (\$239,192), (2016 - 2021).

“Simulation-Based Design of Polymer Nanocomposites for Structural Applications,” National Science Foundation, Co-Principal Investigator, \$427,724 (\$85,545), (2016 - 2020).

“Model Validation Analytics in Support of High-Consequence Decision Making,” Department of Education, Co-Principal Investigator, \$1,291,841 (\$77,510), (2015 - 2019).

## **OTHER SPONSORED ACTIVITY**

Travel Grant, Statistical and Applied Mathematical Sciences Institute, \$450 (2017)

Travel Grant, Institute of Mathematical Statistics, \$1000 (2016)

Visiting Research Fellowship, Statistical and Applied Mathematical Sciences Institute, \$12,000 (2016)

Travel Grant, Statistical and Applied Mathematical Sciences Institute, \$1700 (2015)

Travel Grant, Southern Regional Council on Statistics, \$350 (2015)

Travel Grant, International Society for Bayesian Analysis, \$680 (2013)

Travel Grant, The Graduate School, University of Georgia, \$400 (2012)

Travel Grant, Department of Statistics, University of Georgia, \$200 (2012)

Travel Award, Statistical and Applied Mathematical Sciences Institute, \$300 (2011)

Research Experience for Undergraduates (REU) Fellowship, National Science Foundation, \$2500 (2006)

## GRADUATE STUDENT ADVISING

### Doctoral Graduates

- Joyner, C., “High dimensional regression techniques for complex data,” December 2019 (Committee member).
- Ahmad, S. U., “Analytical and iterative regularization methods for nonlinear ill-posed inverse problems: Applications to diffuse optical and electrical impedance tomography,” August 2019 (Committee member).
- Self, S. C. W., “Bayesian spatio-temporal modeling for forecasting, trend assessment, and spatial trend filtering,” August 2019 (Committee member).
- Stevens, G. N., “Experiment-based validation and uncertainty quantification of partitioned models: Improving predictive capability of multi-scale plasticity models,” August 2016 (Committee member).
- Tu, S., “Objective Bayesian analysis on the quantile regression,” December 2015 (Committee member).

### Master’s Graduates

- Lumsden, B., “Ensemble-based Genomics,” December 2019 (Committee member).
- Driscoll, M., “Comparing models for predicting the at-large bids for the 2019 NCAA Basketball Tournament,” May 2019 (Committee Member).
- Rollins, H., “High-dimensional methods for statistical genomics,” May 2019 (Committee Member).
- Moose, A., “Modeling match results in the English Premier League using a hierarchical Bayesian Poisson model,” December 2018 (Advisor).
- Tan, X., “Autocorrelation function estimation via penalized least squares method,” December 2018 (Committee member).
- Yuan, J., “Bayesian calibration of computer models using the Gaussian process prior,” December 2018 (Advisor).
- Niu, J., “Identification of differences in cortical thickness in multiple sclerosis patients based on race,” August 2018 (Advisor).
- Sun, L., “Maximizing Airbnb hosts’ revenue in New York City: A case study of model selection methodologies using an Airbnb data set,” August 2018 (Committee member).
- Ehrett, C., “Subset simulation with multivariate draw,” May 2017 (Advisor).
- Li, J., “Data analysis of diverse learning environment survey data,” May 2017 (Committee member).
- Watson, S., “A comparison of the point process and predictive process Gaussian spatial models with an application to land parcel data,” August 2016 (Committee member).
- Lamoreux, M., “Empirical null estimation via central matching with application to functional magnetic resonance imaging,” May 2016 (Advisor).

- Mokalled, S., “Estimating biomarker distributions via pooled assessments,” May 2016 (Committee member).
- Bao, Y., “Analysis of peach gene expression data,” August 2015 (Committee member).
- Kwiasowski, J., “Thresholding of statistical maps in functional neuroimaging via independent filtering,” August 2015 (Advisor).
- Justus, I., “Quantifying information loss and time series predictions of housing utility data,” May 2015 (Committee member).
- McDonald, J., “An exact test for binary data using weights and empirical Bayes estimates for cluster level success probabilities,” May 2015 (Committee member).
- Norton, P., “Adjustments for treatment by block interaction in a genetics study,” May 2015 (Committee member).
- Stevens, G., “Stochastic wavenumber estimation: Damage detection through simulated guided lamb waves,” December 2014 (Committee member).
- Nystrom, E., “Comparing error structures for statistical analysis of functional magnetic resonance imaging time series data,” May 2014 (Co-advisor).

### **Current Graduate Advising**

- Gao, F. (MS, PhD), May 2023 (Advisor).
- Hess, J. (PhD), May 2023 (Committee member).
- Hur, B. (PhD), May 2022 (Advisor).
- Nicholson, J. (PhD), May 2022 (Committee member).
- Chan, F. C. J. (MS, PhD), May 2021 (Committee member).
- Kamronnahr, K. (PhD), May 2021 (Advisor).
- Chodora, E. (MS, PhD), May 2021 (Committee member).
- Mokalled, S. (PhD), May 2021 (Committee member).
- Niu, J. (PhD), May 2020 (Advisor).
- Ehrett, C. (PhD), May 2020 (Advisor).
- Kupis, S. (PhD), May 2020 (Committee member).
- Joyner, C. (PhD), May 2020 (Committee member).
- Scruggs, S. (MS), May 2020 (Committee member).

## **TEACHING**

### **Courses Taught<sup>2</sup> (Beginning Fall 2013)**

- MATH 8050, Data Analysis, SU20, F16, F15, S15, F14, S14.
- MATH 8020, General Linear Hypothesis II, S17, S18.
- MATH 8010, General Linear Hypothesis I, F19, F18, F17, F16.
- MATH 4/6000, Theory of Probability, F18, F14.
- MATH 4/6020, Statistics for Science and Engineering II, F19.

---

<sup>2</sup>See last page for evaluation summary

MATH 4910, Independent Study, F16, F17.

MATH 3020, Statistics for Science and Engineering, F17, F15, S14, F13.

## UNIVERSITY AND PUBLIC SERVICE

### Committees

University: Member, Steering Committee for NSF National Research Traineeship Program on Resilient Infrastructure in Environmental Systems Engineering and Science (2017 - Current)

Chair, Distinguished Speaker Series Committee for NSF National Research Traineeship Program on Resilient Infrastructure in Environmental Systems Engineering and Science (2017 - Current)

Department: Chair, Probability/Statistics Hiring Committee (2019).

Member, Undergraduate Affairs Committee (2014 - 2015, 2018 - Current)

Member, Curriculum Committee (2019 - Current)

Member, Tenure, Promotion, and Reappointment Committee (Statistics & Operations Research Division) (2019 - Present)

Member, Probability/Statistics Seminar Committee (2013 - 2019)

Member, Probability/Statistics Hiring Committee (2018).

Member, Research Committee (2013 - 2019)

### Other Service

Reader/Question Leader for Clemson University Advanced Placement Statistics Practice Exam (2014, 2015, 2016, 2017, 2018, 2019)

Lead Organizer of the Joint Clemson/University of Georgia Statistics Colloquium (2015, 2017, 2019)

Clemson University Representative to the Annual Business Meeting of the Southern Regional Council on Statistics (2014)

Graduate Student Curriculum Advisor (2014 - Current)

Undergraduate Student Curriculum Advisor (2014 - Current)

## MISCELLANEOUS

### Professional Development

264 Professional Development Hours, Educational Testing Service

*Civil Treatment for Leaders*, Clemson University (November 2019)

*Civil Treatment for Employees*, Clemson University (October 2019)

*Data Visualization using R*, Training Session, Clemson University (February 2018)

*Version Control with Git/Github*, Training Session, Clemson University (October 2017)  
*Computational Challenges in Neuroimaging Data*, Roundtable, Joint Statistical Meetings (August 2016)  
*SAMSI Challenges in Functional Connectivity Workshop*, Statistical and Applied Mathematical Sciences Institute (April 2016)  
*SAMSI Computational Neuroscience Opening Workshop*, Statistical and Applied Mathematical Sciences Institute (August 2015)  
*SAMSI Computational Neuroscience Summer School*, Statistical and Applied Mathematical Sciences Institute (July 2015)  
*Emerging Trends with National Foundations*, Clemson University ADGRS Seminar (March 2015)  
*Introduction to Advanced Computing and the Palmetto Cluster*, Training Session, Clemson University (August 2014)  
*The Design and Analysis of Experiments that Use Computer Simulators*, Continuing Education Course, American Statistical Association (August 2014)  
*An Introduction to High-Performance Computing with R*, Tutorial, International Biometric Society (March 2014)  
*Nonparametric Bayesian Data Analysis*, Tutorial, International Biometric Society (March 2014)

***December 20, 2019***

	Count (Percentage of Total)						Response Rate	Mean Score
	1	2	3	4	5	NR		
Fall Semester 2019								
MATH 4020 - Statistics for Science and Engineering II	0 (0%)	0 (0%)	3 (33%)	4 (44%)	2 (22%)	0 (0%)	100%	3.89
MATH 6020 - Statistics for Science and Engineering II (Graduate)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (100%)	0 (0%)	100%	5.00
MATH 8010 - General Linear Hypothesis I	0 (0%)	0 (0%)	0 (0%)	5 (50%)	5 (50%)	0 (0%)	71%	4.50
Fall Semester 2018								
MATH 4000 - Theory of Probability	1 (3%)	8 (26%)	7 (23%)	10 (33%)	5 (16%)	0 (0%)	91%	3.32
MATH 8010 - General Linear Hypothesis I	0 (0%)	0 (0%)	0 (0%)	1 (9%)	9 (82%)	1 (9%)	69%	4.90
Spring Semester 2018								
MATH 8020 - General Linear Hypothesis II	0 (0%)	0 (0%)	1 (10%)	0 (0%)	9 (90%)	0 (0%)	100%	4.80
Fall Semester 2017								
MATH 3020 - Statistics for Scientists and Engineers	0 (0%)	1 (3%)	5 (16%)	12 (38%)	14 (44%)	0 (0%)	86%	4.22
MATH 8010 - General Linear Hypothesis I	0 (0%)	0 (0%)	1 (11%)	0 (0%)	8 (89%)	0 (0%)	75%	4.78
Spring Semester 2017								
MATH 8020 - General Linear Hypothesis I	0 (0%)	0 (0%)	0 (0%)	0 (0%)	8 (100%)	0 (0%)	100%	5.00
Fall Semester 2016								
MATH 8010 - General Linear Hypothesis I	0 (0%)	0 (0%)	1 (8%)	6 (46%)	6 (46%)	0 (0%)	93%	4.39
MATH 8050 - Data Analysis	0 (0%)	0 (0%)	0 (0%)	7 (50%)	6 (43%)	1 (7%)	78%	4.46
Fall Semester 2015								
MATH 3020 - Statistics for Scientists and Engineers	0 (0%)	1 (3%)	1 (3%)	17 (49%)	16 (46%)	0 (0%)	100%	4.37
MATH 3020 - Statistics for Scientists and Engineers	0 (0%)	1 (3%)	1 (3%)	16 (55%)	11 (38%)	0 (0%)	88%	4.28
MATH 8050 - Data Analysis	0 (0%)	0 (0%)	0 (0%)	5 (29%)	12 (71%)	0 (0%)	89%	4.71
Spring Semester 2015								
MATH 8050 - Data Analysis	1 (6%)	0 (0%)	1 (6%)	4 (24%)	11 (65%)	0 (0%)	77%	4.41
Fall Semester 2014								
MATH 4000 - Theory of Probability	1 (5%)	1 (5%)	4 (21%)	7 (37%)	6 (32%)	0 (0%)	76%	3.84
MATH 8050 - Data Analysis	0 (0%)	0 (0%)	0 (0%)	2 (11%)	16 (89%)	0 (0%)	82%	4.89
Spring Semester 2014								
MATH 3020 - Statistics for Scientists and Engineers	1 (7%)	2 (13%)	0 (0%)	6 (40%)	6 (40%)	0 (0%)	44%	3.93
MATH 8050 - Data Analysis	1 (11%)	1 (11%)	1 (11%)	2 (22%)	4 (44%)	0 (0%)	45%	3.78
Fall Semester 2013								
MTHS 3020 - Statistics for Scientists and Engineers	4 (29%)	3 (21%)	4 (29%)	1 (7%)	2 (14%)	0 (0%)	32%	2.57

The numerical scores are the responses to course evaluations in which students are asked for an evaluation of overall teaching effectiveness on a five-point scale, where 5 is the best, and 1 is the worst.