David B. Hitchcock, Ph.D.
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University of South Carolina
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EMPLOYMENT

- **University of South Carolina**, Associate Professor of Statistics, 2011-
- **University of South Carolina**, Assistant Professor of Statistics, 2004-2011

EDUCATION

- **University of Florida**, Doctor of Philosophy (Ph.D.) degree in Statistics, 2004
- **Clemson University**, Master of Science degree in Mathematical Sciences, with concentration in Statistics, 1999
- **University of Georgia**, Bachelor of Arts degree in Journalism, magna cum laude with high honors, 1996

RESEARCH INTERESTS

- Functional Data Analysis and Smoothing Methods
- Cluster Analysis and Multivariate Data Analysis
- Environmental and Ecological Applications
- History of Statistics

RESEARCH PAPERS

Statistical Methodology, Theory, and Applications

1. **Hitchcock, D. B.** (2003), "A History of the Metropolis-Hastings Algorithm," *The American Statistician*, 57, 254-257.
2. Agresti, A. and **Hitchcock, D. B.** (2005), "Bayesian Inference for Categorical Data Analysis," *Statistical Methods and Applications*, 14, 297-330.
3. **Hitchcock, D. B.**, Casella, G., and Booth, J. G. (2006), "Improved Estimation of Dissimilarities by Presmoothing Functional Data," *Journal of the American Statistical Association*, 101, 211-222.
4. **Hitchcock, D. B.** (2007), "Bandwidth-based Nonparametric Inference," *Statistical Methodology*, 4, 204-216.
5. **Hitchcock, D. B.**, Booth, J. G., and Casella, G. (2007), "The Effect of Presmoothing Functional Data on Cluster Analysis," *Journal of Statistical Computation and Simulation*, 77, 1043-1055.
6. **Hitchcock, D. B.** and Chen, Z. (2008), "Smoothing Dissimilarities to Cluster Binary Data," *Computational Statistics and Data Analysis*, 52, 4699-4711.
7. **Hitchcock, D. B.** (2009), "Yates and Contingency Tables: 75 Years Later," *Electronic Journal for History of Probability and Statistics*, 5, No. 2.
8. Ferreira, L. and **Hitchcock, D. B.** (2009), "A Comparison of Hierarchical Methods for Clustering Functional Data," *Communications in Statistics: Simulation and Computation*, 38, 1925-1949.

9. Gao, J. and **Hitchcock, D. B.** (2010), "James-Stein Shrinkage to Improve K-means Cluster Analysis," *Computational Statistics and Data Analysis*, 54, 2113-2127.
10. Jang, J. and **Hitchcock, D. B.** (2012), "Model-based Cluster Analysis of Democracies," *Journal of Data Science*, 10, 297-319.
11. Grego, J. M. and **Hitchcock, D. B.** (2014), "Limited-Information Modeling of Loggerhead Turtle Population Size," *Journal of Agricultural, Biological and Environmental Statistics*, 19, 18-38.
12. Cheng, W., Dryden, I. L., **Hitchcock, D. B.**, Le, H. (2014), "Analysis of Spike Train Data: Classification and Bayesian Alignment," *Electronic Journal of Statistics*, 8, No. 2, 1786-1792.
13. Cheng, W., Dryden, I. L., **Hitchcock, D. B.**, Le, H. (2014), "Analysis of Proteomics Data: Bayesian Alignment of Functions," *Electronic Journal of Statistics*, 8, No. 2, 1734-1741.
14. Cheng, W., Dryden, I. L., **Hitchcock, D. B.**, Le, H. (2014), "Analysis of AneuRisk65 Data: Internal Carotid Artery Shape Analysis," *Electronic Journal of Statistics*, 8, No. 2, 1905-1913.
15. Wu, Z. and **Hitchcock, D. B.** (2016), "A Bayesian Method for Simultaneous Registration and Clustering of Functional Data," *Computational Statistics and Data Analysis*, 101, 121-136.
16. Lewis, N. H., **Hitchcock, D. B.**, Dryden, I. L., Rose, J. R. (2018), "Peptide Refinement by Using a Stochastic Search," *Journal of the Royal Statistical Society, Series C (Applied Statistics)*, 67, 1207-1236.
17. Liu, H., **Hitchcock, D. B.**, Samadi, S. Z. (2020). "Spatio-temporal Analysis of Flood Data from South Carolina." *Journal of Statistical Distributions and Applications*, 7, 11. `https://doi.org/10.1186/s40488-020-00112-x`
18. Pittman, R. D., **Hitchcock, D. B.**, and Grego, J. M. (2021). "Concurrent Functional Regression to Reconstruct River Stage Data during Flood Events," *Environmental and Ecological Statistics*, 28, 219–237.
19. Zhong, S. and **Hitchcock, D. B.** (2021). "S&P 500 Stock Price Prediction Using Technical, Fundamental and Text Data," *Statistics, Optimization & Information Computing*, 9, 769-788.
20. Petitbon, A. M. and **Hitchcock, D. B.** (2022). "What Kind of Music Do You Like? A Statistical Analysis of Music Genre Popularity Over Time," *Journal of Data Science*, 20, 168-187.
21. Zhong, S. and **Hitchcock, D. B.** (2023). "Functional Clustering of Fictional Narratives Using Vonnegut Curves," in press, *Advances in Data Analysis and Classification*.
22. Pittman, R. D. and **Hitchcock, D. B.** (2023+). "Identifying Influential Observations in Concurrent Functional Regression with a Weighted Bootstrap," revised for publication.
23. Pittman, R. D. and **Hitchcock, D. B.** (2023+). "Functional Regression Influence Measures for Out-of-sample Prediction," submitted for publication.
24. Manning, B. and **Hitchcock, D. B.** (2023+). "Clustering Smoothed Dissimilarities in Tertiary Data," submitted for publication.

Invited Articles

25. **Hitchcock, D. B.** (2007), "Smoothing," in the *Encyclopedia of Measurement and Statistics*, (ed: Neil J. Salkind), Sage Publications, Inc.
26. **Hitchcock, D. B.** and Greenwood, M. C. (2015), "Clustering Functional Data," an invited book chapter for the *Handbook of Cluster Analysis*, (ed: Roberto Rocci), CRC Press.
27. Liu, H., **Hitchcock, D. B.**, and Samadi, S. Z. (2019), "Spatial and Spatio-temporal Analysis of Precipitation Data from South Carolina," an invited book chapter for *Modern Statistical Methods for Spatial and Multivariate Data*, (ed: Norou Diawara), Springer.

Interdisciplinary Research

28. Arthington, J. D., Roka, F. M., Mullahey, J. J., Coleman, S. W., Muchovej, R. M., Lollis, L. O., and **Hitchcock, D.** (2007), "Integrating Ranch Forage Production, Cattle Performance, and Economics in Ranch Management Systems for Southern Florida," *Rangeland Ecology & Management*, 60, 12-18.
29. Singh, C. K., Kumar, A., **Hitchcock, D. B.**, Fan, D., Goodwin, R., LaVoie, H. A., Nagarkatii, P., DiPette, D. J., Singh, U. S. (2011), "Resveratrol Prevents Embryonic Oxidative Stress and Apoptosis Associated with Diabetic Embryopathy, and Improves Glucose and Lipid Profile of Diabetic Dam," *Molecular Nutrition and Food Research*, 55, 1186-1196.
30. Guinn, C. H., Baxter, S. D., Finney, C. J., **Hitchcock, D. B.** (2013), "Examining Variations in Fourth-Grade Children's Participation in School Breakfast and Lunch Programs by Student and Program Demographics," *Journal of Child Nutrition & Management*, 37, No. 1.
31. Guinn, C. H., Baxter, S. D., Royer, J. A., **Hitchcock, D. B.**, Devlin, C. M. (2013), "Explaining the Positive Relationship between Fourth-Grade Children's Body Mass Index and Energy Intake at School-Provided Meals (Breakfast and Lunch)," *Journal of School Health*, 85, 328-334.
32. Baxter, S. D., **Hitchcock, D. B.**, Guinn, C. H., Royer, J. A., Wilson, D. K., Pate, R. R., McIver, K. L., and Dowda, M. (2013), "A Pilot Study of the Effects of Interview Content, Retention Interval, and Grade on Accuracy of Dietary Information from Children," *Journal of Nutrition Education and Behavior*, 45, 368-373.
33. Suranyi, Zs., **Hitchcock, D. B.**, Hittner, J., Urban, R., and Vargha, A. (2013), "Different types of sensation seeking: A new person-oriented approach in sensation seeking research," *International Journal of Behavioral Development*, 37, 274-285.
34. Miller, P. H., Baxter, S. D., **Hitchcock, D. B.**, Royer, J. A., Smith, A. F., and Guinn, C. H. (2014), "Test-Retest Reliability of a Short Form of the Children's Social Desirability Scale for Nutrition and Health-Related Research," *Journal of Nutrition Education and Behavior*, 46, 423-428.
35. Baxter, S. D., **Hitchcock, D. B.**, Guinn, C. H., Vaadi, K. K., Puryear, M. P., Royer, J. A., McIver, K. L., Dowda, M., Pate, R. R., Wilson, D. K. (2014), "A

Validation Study Concerning the Effects of Interview Content, Retention Interval, and Grade on Children's Recall Accuracy for Dietary and Physical Activity Information," *Journal of the Academy of Nutrition and Dietetics*, 114, 1902-1914.

36. Baxter, S. D., Paxton-Aiken, A. E., Royer, J. A., **Hitchcock, D. B.**, Guinn, C. H., Finney, C.J. (2014), "Misclassification of Fourth-Grade Children's Participation in School-Provided Meals Based on Parental Responses Relative to Administrative Daily Records," *Journal of the Academy of Nutrition and Dietetics*, 114, 1404-1410.
37. Baxter, S. D., Smith, A. F., Guinn, C. H., **Hitchcock, D. B.**, Puryear, M. P., Vaadi, K. K., Finney, C. J. (2015), "Retention Interval and Prompts: Creation and Cross-Sectional Pilot-Testing of Eight Interview Protocols to Obtain 24-Hour Dietary Recalls from Fourth-Grade Children," *Journal of the Academy of Nutrition and Dietetics*, 115, 1291-1298.
38. Miller, P. H., Baxter, S. D., Royer, J. A., **Hitchcock, D. B.**, Smith, A. F., Collins, K. L., Guinn, C. H., Smith, A. L., Puryear, M. P., Vaadi, K. K., Finney, C. J. (2015), "Children's Social Desirability: Effects of Test Assessment Mode," *Personality and Individual Differences*, 83, 85-90.
39. Baxter, S. D., Smith, A. F., **Hitchcock, D. B.**, Collins, K. L., Guinn, C. H., Finney, C. J., Royer, J. A., Miller, P. H. (2015), "Test-Retest Reliability of the National Health and Nutrition Examination Survey's 5-Question Food Insecurity Survey Completed by Fourth-Grade Children," *Journal of Nutrition Education and Behavior*, 47, 459-464.
40. Baxter, S. D., Smith, A. F., **Hitchcock, D. B.**, Guinn, C. H., Royer, J. A., Collins, K. L., Smith, A. L., Puryear, M. P., Vaadi, K. K., Finney, C. J., Miller, P. H. (2015), "Effectiveness of Prompts on Fourth-Grade Children's Dietary Recall Accuracy Depends on Retention Interval and Varies by Gender," *Journal of Nutrition*, 145, 2185-2192.
41. Baxter, S. D., Guinn, C. H., Smith, A.F., **Hitchcock, D. B.**, Royer, J. A., Puryear, M.P., Collins, K. L., Smith, A. L. (2016), "Children's School-Breakfast Reports and School-Lunch Reports (in 24-hour Dietary Recalls): Conventional and Reporting-Error-Sensitive Measures Show Inconsistent Accuracy Results for Retention Interval and for Breakfast Location," *British Journal of Nutrition*, 115, 1301-1315.
42. Baxter, S. D., **Hitchcock, D. B.**, Royer, J. A., Smith, A. F., Guinn, C. H. (2016), "Fourth-grade children's reporting accuracy for amounts eaten at school-provided meals: Insight from a reporting-error-sensitive analytic approach applied to validation-study data," *Journal of the Academy of Nutrition and Dietetics*, 116, 1932-1941.
43. Smith, A. F., Baxter, S. D., **Hitchcock, D. B.**, Finney, C. J., Royer, J. A., Guinn, C. H. (2016), "Cognitive Ability, Social Desirability, Body Mass Index, and Socioeconomic Status as Correlates of Fourth-Grade Children's Dietary-Reporting Accuracy," *European Journal of Clinical Nutrition*, 70, 1028-1033.
44. Baxter, S. D., Smith, A. F., **Hitchcock, D. B.**, Collins, K. L., Guinn, C. H., Smith, A. L., Finney, C. J. (2017), "The National Health and Nutrition Examination Survey's Food Insecurity Questionnaire Completed by Children: Effects of Assessment Mode (Classroom versus Interview)," *Journal of Hunger and En-*

vironmental Nutrition, 1-23.

45. Baxter, S. D., **Hitchcock, D. B.**, Royer, J. A., Smith, A. F., Guinn, C. H. (2017), "Fourth-grade children's dietary reporting accuracy by meal component: Results from a validation study that manipulated retention interval and prompts," *Appetite*, 113, 106-115.
46. Baxter, S. D., Guinn, C. H., Smith, A. F., Royer, J. A., **Hitchcock, D. B.** (2017), "A Need for Empirical Evidence Concerning the Accuracy of Joint Parent-Child Reports of Children's Dietary Intake," *Journal of the Academy of Nutrition and Dietetics*, 117, 1731-1737.
47. Samadi, S., Pourreza-Bilondi, M., Wilson, C. A. M. E., **Hitchcock, D. B.** (2020), "Bayesian Model Averaging with Fixed and Flexible Priors: Theory, Concepts, and Calibration Experiments for Rainfall-Runoff Modeling," *Journal of Advances in Modeling Earth Systems*, 12, e2019MS001924.
48. Phillips, R. C., Samadi, S., **Hitchcock, D. B.**, Meadows, M. E., Wilson, C. A. M. E. (2022), "The Devil is in the Tail Dependence: An Assessment of Multivariate Copula-based Frameworks and Dependence Concepts for Coastal Compound Flood Dynamics," *Earth's Future*, 10, e2022EF002705.
49. Liu, Z., **Hitchcock, D. B.**, Singapogu, R. (2023), "Cannulation Skill Assessment Using Functional Data Analysis," *IEEE Journal of Biomedical and Health Informatics*, 27, 4512-4523.

Statistics Education Research

50. **Hitchcock, D. B.** (2023). "Lessons from a Discussion-based Course on the History of Statistics," *The American Statistician*, 78, 368-374.
DOI: 10.1080/00031305.2023.2281359

OTHER RESEARCH WORK

- Ph.D. Dissertation, University of Florida (2004): "Smoothing Functional Data for Cluster Analysis" (Advisors: George Casella and Jim Booth)
- Master's Research Project, Clemson University (1999): "Properties and Applications of a New Discrete Probability Distribution for Survival Data" (Advisor: K. B. Kulasekera)

GRANTS FUNDED

- University of South Carolina Floods Grant (10/23/2015-3/15/2016), "River Gage Estimation" (co-PI; PI is John M. Grego)
- Co-Investigator, USC ASPIRE-I, Track III grant (2016-2017), "Methodological Research Concerning Accuracy of Children's Dietary Recalls" (PI: Dr. Suzanne D. Baxter)
- Co-Investigator, National Heart, Lung, and Blood Institute (NHLBI)/NIH grant (2011-2014), "Children's Dietary Recalls: Prompts, Retention Interval, and Accuracy" (PI: Dr. Suzanne Domel Baxter on grant R01HL103737)
- Co-Investigator, National Heart, Lung, and Blood Institute (NHLBI)/NIH grant (2011-2012), "Integrated Recall of Diet and Physical Activity in Children" (PI: Dr. Suzanne Domel Baxter on grant R21HL093406)

- Co-Investigator, National Heart, Lung, and Blood Institute (NHLBI)/NIH grant (2011-2012), "Is Childhood Obesity Related to Participation in School Meals?" (PI: Dr. Suzanne Domel Baxter on grant R21HL088617)
- South Carolina Department of Education Grant (7/1/2007-8/30/2007), "2007 Advanced Placement Teacher Institute in Statistics"
- University of South Carolina Research and Productive Scholarship Grant (4/1/2006-6/30/2007), "Bandwidth-based Functional Data Analysis: Detecting Outlying Curves and Influential Points"

OTHER COLLABORATIVE WORK ON FUNDED RESEARCH

- Served (2010-2011) as statistical collaborator on research on resveratrol in diabetic embryopathy (research funded in part by NIH grant R21AA016121; PI: U. S. Singh)
- Served (2021-) as statistical collaborator on research on cannulation skill assessment using functional data analysis (research funded in part by NIH/NIDDK K01 Award (K01DK111767); PI: R. B. Singapogu)

PRESENTATIONS

- Invited Talk, 2024 SRCOS Summer Research Conference in Clemson, SC: "A Discussion-based Course on the History of Statistics (With a Little Help From My Friends)"
- Invited Talk, 2022 International Conference on Statistical Distributions and Applications (ICOSDA), Huntington, WV: "Functional Regression Measures of Influence on Out-of-sample Prediction"
- Invited Talk, American Mathematical Society 2020 Fall Southeastern Sectional Meeting, Online [previously scheduled for Chattanooga, TN]: "Concurrent Functional Regression to Reconstruct River Stage Data during Flood Events"
- Invited Talk, 2019 International Conference on Statistical Distributions and Applications (ICOSDA), Grand Rapids, MI: "Spatio-temporal Analysis of Flood Data from South Carolina"
- Invited Talk, 2016 SC-FLOODS Conference at University of South Carolina, Columbia, SC: "River Gage Estimation"
- Invited Talk, 2012 Mini-Conference on Biological Modeling at Georgia Health Sciences University, Augusta, GA: "Limited-Information Modeling of Loggerhead Turtle Population Size"
- Invited Talk, 2008 SRCOS Summer Research Conference in Charleston, SC: "Bandwidth-based Inference: A Review and Ideas for New Directions"
- Invited Talk, 2007 Current Trends in Nonparametrics Conference in Columbia, SC: "Smoothing Dissimilarities for Cluster Analysis: Binary Data and Functional Data"
- Presented invited seminar talks at:
  - University of South Carolina, Department of Statistics (Sept. 2022, joint with Aimée Petitbon)
  - University of South Carolina, Department of Statistics Research Forum (Oct. 2013)

- North Carolina State University, Department of Statistics (March 2013)
- Ohio State University, Mathematical Biosciences Institute (Nov. 2012)
- East Carolina University, Department of Statistics (Nov. 2012)
- Texas A & M University, Department of Statistics (Sept. 2011)
- University of South Carolina, Department of Statistics Research Forum (Oct. 2010)
- University of South Carolina, Department of Statistics Research Forum (Dec. 2009)
- University of South Carolina, Department of Statistics Research Forum (April 2009)
- Clemson University, Department of Mathematical Sciences (Nov. 2007)
- University of Georgia, Department of Statistics (Oct. 2007)
- University of South Carolina, Department of Biostatistics (Nov. 2006)
- Clemson University, Department of Mathematical Sciences (Nov. 2005)
- University of South Carolina, Department of Statistics (Sept. 2005)
- University of South Carolina, Department of Biostatistics (April 2005)
- University of Florida, Department of Statistics (July 2004)
- Auburn University, Department of Mathematics and Statistics (Feb. 2004)
- Villanova University, Department of Mathematical Sciences (Feb. 2004)
- James Madison University, Department of Mathematics and Statistics (Feb. 2004)
- University of South Carolina, Department of Statistics (Feb. 2004)
- The Ohio State University, Department of Statistics (Jan. 2004)

- Contributed Talk, 2021 Joint Statistical Meetings, Online [previously scheduled for Seattle]: "Modeling Popular Music Genre Preferences Over Time"
- Poster, 2019 SRCOS Summer Research Conference in Carrollton, KY: "Spatial and Spatio-temporal Analysis of Precipitation Data from South Carolina"
- Contributed Talk, 2016 Joint Statistical Meetings in Chicago: "Modernizing an Undergraduate Multivariate Statistics Class"
- Contributed Talk, 2015 Joint Statistical Meetings in Seattle: "Analysis of proteomics data: Bayesian alignment of functions"
- Contributed Talk, 2014 Joint Statistical Meetings in Boston: "Analysis of Spike Train Data: Classification and Bayesian Alignment"
- Contributed Talk, 2012 Joint Statistical Meetings in San Diego: "Limited-Information Modeling of Loggerhead Turtle Population Size"
- Poster, 2010 SRCOS Summer Research Conference in Virginia Beach, VA: "James-Stein Shrinkage to Improve K-means Cluster Analysis"
- Contributed Talk, 2008 Joint Statistical Meetings in Denver: "A Comparison of Several Measures of the Center of a Functional Data Set"
- Contributed Talk, 2007 Joint Statistical Meetings in Salt Lake City: "Smoothing the Dissimilarities Among Binary Data for Cluster Analysis"
- Contributed Talk, 2006 Joint Statistical Meetings in Seattle: "Bootstrap Investigation of the Median Curve of a Functional Data Set"

- Poster, 2006 IMS New Researchers Conference at the University of Washington: "Bootstrap Investigation of the Median Curve of a Functional Data Set"
- Contributed Talk, 2005 Joint Statistical Meetings in Minneapolis: "Improved Estimation of Dissimilarities by Presmoothing Functional Data"
- Poster, 2005 SRCOS Summer Research Conference at Clemson University: "Presmoothing Functional Data to Improve Dissimilarity Estimation and Cluster Analysis"
- Poster, 2003 IMS Mini-Meeting on Functional Data Analysis at the University of Florida: "Clustering Smoothed Functional Data"
- Co-winner, Student Paper Competition (1999) at South Carolina ASA Chapter meeting: "Properties and Applications of a New Discrete Probability Distribution for Survival Data"
- Poster, 1999 University of Florida Symposium on Nonparametric Statistics: "Modeling Discrete Lifetime Data with a New Distribution"

GRADUATE STUDENTS SUPERVISED

Ph.D. Students:

- Shan Zhong, Ph.D., August 2022, University of South Carolina.
  Dissertation: "Deep Learning, Clustering, and Decision Process Approaches for Modeling Time Series Data"
- Ryan Pittman, Ph.D., May 2022, University of South Carolina.
  Dissertation: "Using Concurrent Functional Regression to Reconstruct River Stage Data During Flood Events and Identify Influential Functional Measurements"
- Bridget Manning, Ph.D., December 2020, University of South Carolina.
  Dissertation: "Categorical and Fuzzy-Ensemble Based Algorithms for Cluster Analysis"
- Haigang Liu, Ph.D., May 2019, University of South Carolina.
  Dissertation: "Spatio-temporal Analysis of Precipitation and Flood Data from South Carolina"
- Yawei Liang, Ph.D., May 2019, University of South Carolina.
  Dissertation: "Cluster Analysis of Mixed-Mode Data"
- Chong Ma, Ph.D. (co-advisor with Paramita Chakraborty and Yen-Yi Ho), May 2018, University of South Carolina.
  Dissertation: "Classification of High-Dimensional Data Based on Multiple Testing Methods"
- Songqiao Huang, Ph.D., August 2017, University of South Carolina.
  Dissertation: "Sparse and Regular Functional Data Smoothing and its Applications"
- Zizhen Wu, Ph.D., August 2016, University of South Carolina.
  Dissertation: "Registration and Clustering of Functional Observations"
- JeanMarie Hendrickson, Ph.D., May 2014, University of South Carolina.
  Dissertation: "Methods for Clustering Mixed Data"
- Nicole Lewis, Ph.D. (co-advisor with Ian Dryden), May 2013, University of South Carolina.

Dissertation: "Protein Identification Using Bayesian Stochastic Search"

- Lalita Das, Ph.D., December 2009, University of South Carolina.
  Dissertation: "Functional ANOVA Models with Application to Corporate Bonds"
- Jinxin Gao, Ph.D., August 2009, University of South Carolina.
  Dissertation: "Cluster Analysis Using Shrinkage and Stochastic Methods"

Master's Students:

- Nubaira Rizvi, M.S., December 2020, University of South Carolina.
  Thesis: "An empirical comparison of machine learning models for classification"
- Geophrey Odero, M.S., May 2019, University of South Carolina.
  Thesis: "Time series analysis of South Carolina weather data"
- Xu Gao, M.A.S., August 2013, University of South Carolina.
  Project: "Using Regression Analysis to Identify Leading Predictor Variables of Gold Prices"
- Mohammed Quasem, M.A.S., May 2013, University of South Carolina.
  Project: "Student Learning Outcome for MAT 101 from 2009 to 2012"
- Allan DeToma, M.A.S., May 2013, University of South Carolina.
  Project: "Predicting Winners in the NFL"
- Andrew Fath, M.A.S., August 2012, University of South Carolina.
  Project: "Predicting the Social Security Determination Process"
- Younsook Yeo, M.A.S., May 2012, University of South Carolina.
  Project: "Mapping of Elderly Immigrants' Utilization of Inpatient and Outpatient Services in the United States: K-medoids Cluster Analysis"
- Jaewon Jang, M.S., May 2011, University of South Carolina.
  Thesis: "Model-based Cluster Analysis Using Variables Characterizing Types of Democracy"
- Craig Whitlow, M.I.S., December 2010, University of South Carolina.
  Project: "Multivariate Analyses of Economic Indicators"
- Bonnie Coggins, M.S., May 2009, University of South Carolina.
  Thesis: "Comparing Models for Fitting Count Data"
- Laura Ferreira, M.S., May 2009, University of South Carolina.
  Thesis: "Clustering Functional Data: A Comparison of Hierarchical Clustering Methods"
- Zhengjia Sun, M.S., August 2008, University of South Carolina.
  Thesis: "A Comparison of Smoothed Bootstrap Confidence Interval Methods"
- Jinxin Gao, M.S., May 2008, University of South Carolina.
  Thesis: "Comparing Two Measures of Clustering Accuracy with a Misspecified Number of Groups"
- Qi Wu, M.S., August 2007, University of South Carolina.
  Thesis: "Diagnostic Methods for Influential Points in Nonparametric Regression"
- Zhimin Chen, M.S., December 2006, University of South Carolina.
  Thesis: "Smoothing the Dissimilarities among Binary Data for Cluster Analysis"
- Sumithran Rasathurai, M.S., December 2006, University of South Carolina.
  Thesis: "Model Fitting and Comparison of Gamma and Log-normal Models for

Cancer Data"

- Jennifer Haynsworth, M.S., May 2006, University of South Carolina. Thesis: "Coverage Probabilities for Bootstrap Confidence Intervals"

CURRENT GRADUATE STUDENTS

- Tong Shan, Ph.D. student. Studying stochastic search algorithms for clustering functional data, research begun summer 2021.
- Jedidiah Lindborg, Ph.D. student. Studying spatio-temporal modeling of fire temperatures from controlled burn experiements, research begun fall 2023.

UNDERGRADUATE HONORS THESIS STUDENTS SUPERVISED

- Camryn Lubner, 2024. Thesis: "An Analysis of Aesthetics and Efficacy of Equestrian Safety Equipment"
- Mary Shavo, 2024. Thesis: "Determinants of Happiness in Undergraduate Students at the University of South Carolina: An Exploratory Study"
- Benjamin Hodges, 2023. Thesis: "Mass Media: College Students and the Catholic Church"
- Johnny Besser, 2023. Thesis: "A Theoretical Approach to RISK Battle Strategy Using Monte Carlo Simulations"
- Lauren Young, 2023. Thesis: "The Risks Associated with Technological Advancements in Large Language Models, Algorithms, and Artificial Intelligence"
- Andrew Crawford, 2022. Thesis: "The Big 3-0: A Take on Baseball's Most Interesting Pitch Count"
- Thomas Best, 2021. Thesis: "What Matters in NFL Games: Using Linear Regression Techniques to Predict the Winner of NFL Games"
- Anson Bidwell, 2021. Thesis: "Predicting the Margin of Victory of In-Division NFL Games Through Statistical Modeling"
- Thomas Burkett, 2021. Thesis: "Does Defense Actually Win Championships? Using Statistics to Examine One of the Greatest Stereotypes in Sports"
- Aimée Petitbon, 2021. Thesis: "What Kind of Music Do You Like? A Statistical Analysis of Music Popularity from 1974 through 2016"
- Emma McCaffrey, 2020. Thesis: "Predicting College Success: Factors That Affect Academic Performance"
- Jackson Maris, 2020. Thesis: "Predicting Character Rankings in Super Smash Bros. Ultimate"
- Austin Koch, 2018. Thesis: "Sabermetrics: Using Regression Analysis and Monte Carlo Simulations to Evaluate MLB Pitchers"
- Trisha Ludeke, 2018. Thesis: "An Analysis of Traffic Fatalities in South Carolina"
- John Clark, 2016. Thesis: "Regression Analysis of Success in Major League Baseball"
- George Helman, 2013. Thesis: "Investigation of Statistical Rules of Thumb"

TEACHING EXPERIENCE

Courses Taught:

- Data Analysis II (STAT 705), University of South Carolina [Spring 2008, Spring 2009, Spring 2010, Spring 2017, Spring 2021]
- Data Analysis I (STAT 704), University of South Carolina [Fall 2007, Fall 2008, Fall 2009, Fall 2016]
- Applied Statistics II (STAT 701), University of South Carolina [Spring 2007]
- AP Statistics Topics for Teachers (STAT 599C), University of South Carolina [Summer II 2007]
- Special Topics: History of Probability and Statistics (STAT 599), University of South Carolina [Spring 2023] (Also taught as honors course SCHC 489)
- Special Topics: Bayesian Statistics (STAT 599A), University of South Carolina [Spring 2011]
- Special Topics: Advanced Statistical Models (STAT 599), University of South Carolina [Spring 2013]
- Advanced SAS Programming (STAT 541), University of South Carolina [Spring 2016, Spring 2018, Spring 2019, Spring 2021, Spring 2023]
- Computing in Statistics (STAT 540, formerly STAT 517), University of South Carolina [Fall 2005, Fall 2006, Fall 2008, Fall 2012, Fall 2018, Fall 2019]
- Introduction to Bayesian Data Analysis (STAT 535), University of South Carolina [Spring 2012, Spring 2014, Spring 2022, Spring 2024]
- Applied Multivariate Statistics (STAT 530), University of South Carolina [Fall 2010, Fall 2012, Fall 2014, Fall 2016, Fall 2018, Fall 2022, Fall 2024]
- Applied Stochastic Processes (STAT 521), University of South Carolina [Spring 2015, Spring 2017, Spring 2019]
- Forecasting and Time Series Analysis (STAT 520), University of South Carolina [Fall 2017, Fall 2019, Fall 2021, Fall 2023]
- Nonparametric Statistical Methods (STAT 518), University of South Carolina [Fall 2013, Fall 2015, Fall 2017]
- Statistical Methods II (STAT 516), University of South Carolina [Spring 2006, Spring 2007, Spring 2008, Summer II 2009, Spring 2013, Spring 2016, Spring 2020]
- Statistical Methods I (STAT 515), University of South Carolina [Spring 2005, Fall 2005*, Fall 2006*, Summer I 2007, Fall 2010*, Spring 2011, Spring 2018, Spring 2020] (* = Honors section)
- Theory of Statistical Inference (STAT 513), University of South Carolina [Fall 2014, Fall 2023]
- Mathematical Statistics (STAT 512), University of South Carolina [Summer II 2010, Spring 2012, Spring 2014, Spring 2022, Summer 2022]
- Probability (STAT 511), University of South Carolina [Fall 2011, Fall 2013, Summer 2021, Fall 2021]
- Statistics for Engineers (STAT 509), University of South Carolina [Fall 2011]
- Honors Proseminar in Statistics (SCCC 312A), University of South Carolina [Fall

2004, Spring 2005, Spring 2006]

- Elementary Statistics for the Biological and Life Sciences (STAT 205), University of South Carolina [Fall 2024]
- Introduction to Statistical Reasoning (STAT 110), University of South Carolina [Fall 2009, Spring 2015, Fall 2015]
- Regression Analysis (STAT 4210), University of Florida [Fall 2002]
- Statistics for Social Sciences (STAT 2122), University of Florida [Fall 2000, Spring 2001]
- Introduction to Math Analysis (MTHSC 102), Clemson University [Spring 1998, Fall 1998, Spring 1999]
- College Algebra (MTHSC 104), Clemson University [Fall 1997]

New Courses Created or Revised:

- Created: History of Probability and Statistics (STAT 599), taught as Special Topics in 2023
- Created: Introduction to Bayesian Data Analysis (STAT 535), Approved in 2011
- Created: AP Statistics for Teachers (STAT 650), Approved in 2007
- Revised: Data Analysis I and Data Analysis II (STAT 704 and STAT 705), 2008
- Revised: Applied Multivariate Statistics and Data Mining (STAT 530), 2016

CONSULTING EXPERIENCE

- Consulted with members of the UofSC pathology/microbiology, nutrition/dietetics, civil and environmental engineering, physics, chemistry, geography, biology, political science, and accounting departments
- Consulted with members of the Clemson civil and environmental engineering and bioengineering departments
- Consulted with ARM Environmental Services (Columbia, SC) on analyses of soil sample contamination
- Consulted with Confidence Building Software, Inc., on placement and exit testing
- Student Consultant (2001-2002), Institute of Food and Agricultural Sciences Statistics Unit, University of Florida

PROFESSIONAL MEMBERSHIPS

- American Statistical Association
- SC Chapter of American Statistical Association

PROFESSIONAL SERVICE

- Associate Editor, *Journal of Applied Statistics*, 2021-present.
- Refereed papers for (* = multiple times): *Advances in Data Analysis and Classification**, *The American Statistician**, *Annals of Applied Statistics**, *AStA Advances in Statistical Analysis* , *Bayesian Analysis**, *Bernoulli*, *Biometrics**, *Biometrika*, *Biostatistics*, *Communications in Statistics: Theory and Methods*, *Communications in Statistics: Simulation and Computation*, *Computational Statistics and Data Analysis**, *Electronic Journal of Statistics*, *Environmetrics*, *Expert Systems*

with Applications, *Handbook for Philosophy of Statistics*, *Heliyon*, *INFORMS Journal on Data Science*, *Journal of the American Statistical Association**, *Journal of Applied Statistics**, *Journal of Business and Economic Statistics*, *Journal of Data Science*, *Journal of the Korean Statistical Society**, *Journal of the Royal Statistical Society**, *Journal of Multivariate Analysis**, *Journal of Official Statistics**, *Journal of Statistical Computation and Simulation*, *Journal of Statistical Planning and Inference**, *Journal of Statistical Software*, *Lifetime Data Analysis*, *Nonlinear Analysis*, *PLOS ONE*, *Psychological Methods*, *Scandinavian Journal of Statistics*, *Statistica Sinica*, *Statistical Methodology*, *Statistical Methods and Applications*, *Statistical Modelling**, *Statistical Science*, *Statistics in Medicine**, *Statistics and Probability Letters**, *Symmetry*, *Technometrics*, *Test*.

- Reviewer, *Mathematical Reviews*.
- Reviewed books or book proposals for: Elsevier Publishing, Springer Publishing, Sage Publishing, *Mathematical Reviews*, Chapman & Hall/CRC Press Publishing, Wiley Publishing, DeGruyter.
- Member of American Statistical Association "Committee on ASA Archives and Historical Materials," (2013-2019).
- American Statistical Association Stat Bowl Planning Group, 2023-.
- President, South Carolina SAS Users Group, 2012-2013.
- Secretary/President-elect, South Carolina SAS Users Group, 2011-2012.
- Member-at-large, South Carolina SAS Users Group, 2010-2011.
- Organizing Committee, 2011 SRCOS Summer Research Conference.

CONFERENCE SESSIONS CHAIRED OR ORGANIZED

- Chaired Session 5024, "Visualizing Change: New Methods in Statistical Graphics" at the Joint Statistical Meetings, Portland (August 2024)
- Organized and chaired session on "High Dimensional / Highly Structured Data" at the SRCOS Summer Resarch Conference, Clemson, SC (June 2024)
- Organized and chaired session on "Model-based Clustering" at the Latent Variables Conference, Columbia, SC (October 2016)
- Chaired Session 203363, "Graphical Displays, Maps and Active Learning" at the Joint Statistical Meetings, Denver (August 2008)
- Organized and chaired session on "Nonparametric Regression and Density Estimation" at the Current and Future Trends in Nonparametrics Conference, Columbia, SC (October 2007)
- Chaired Session 382, "Clustering and Classification" at the Joint Statistical Meetings, Seattle (August 2006)

SELECTED DEPARTMENTAL AND UNIVERSITY SERVICE

- Statistics Department Graduate Director (August 2024 - present)
- Statistics Department Chair (2023-2024)
- Faculty Senator, (2018 - 2022)
- SPARC Graduate Research Grant Review Committee (January 2016, January 2017)
- Top Scholars Review Committee (January 2021, January 2022, January 2023)

- College of Arts and Sciences Carolina Core Task Force (July-August 2021)
- College of Arts and Sciences Curriculum Committee, (2013-2017)
- Carolina Core Analytical Reasoning and Problem Solving specialty team, (2011-2023, chair from 2015-2023)
- Statistics Department Undergraduate Director (July 2016 - August 2020, January 2021 - July 2023)
- Undergraduate Advisor (August 2004 - July 2023)
- Chair, STAT 704-STAT 705 Planning Committee (2006-07)
- Chair, Instructor Search Committee (2009, 2023)
- Faculty Advisor, Mu Sigma Rho (2004 - 2012)
- Faculty Advisor, Statistics Club (2009 - 2012, 2021-present)
- Chair, Ph.D. Qualifying Exam Committee (December 2010)
- Ph.D. Qualifying Exam Committee (2005, 2008, May 2009, December 2009, May 2010, January 2011 (chair), May 2015, May 2017, May 2021)
- Student Grievance Committee (2006 - present)
- Nonparametrics Conference Planning Committee (2006-07)
- Organizing Committee for Latent Variables 2016 Conference (2015-2016)
- Chair, Faculty Search Committee (2013-2014, 2014-2015, 2015-2016)
- Chair, Departmental Computer Committee (2013-2017)

COMPUTER SKILLS

- Extensive experience with SAS, especially statistical procedures, DATA step, SQL procedure, and macro programming. Have taught courses using Base and Advanced SAS Certification curricula.
- Extensive experience with R. Have taught introductory courses in R programming.
- Extensive experience with LaTeX document preparation system
- Knowledge of Microsoft Word and Excel
- Familiarity with Windows and Unix platforms

HONORS AND AWARDS

- 2024 Mu Sigma Rho William D. Warde Statistics Education Award (2024), awarded at Joint Statistical Meetings
- Nominated for Mungo Undergraduate Teaching Award (2019), University of South Carolina
- William Mendenhall Award (2000), Outstanding First-Year Graduate Student, Department of Statistics, University of Florida
- Graduate Assistant Award for Excellence in Teaching (1999), Department of Mathematical Sciences, Clemson University
- Nominated for Graduate Teaching Award (2001), University of Florida
- ASA Stat Bowl (2003), Team Champion (University of Florida) and Individual Runner-Up
- Alumni Fellowship (1999-2003), University of Florida
- R.C. Edwards Fellowship (1997-98), Clemson University