Matthew J. Heaton, Ph.D.

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EDUCATION

- Doctor of Philosophy: Statistical Science; Duke University; May 2011
  - Thesis: Kernel Averaged Predictors for Space and Space-time Processes
  - Committee: Alan E. Gelfand (chair), David L. Banks, Merlise A. Clyde, and David Holland

- Master of Science: Statistics; Brigham Young University; August 2007
  - Thesis: Temporally Correlated Dirichlet Processes in Pollution Receptor Modeling
  - Committee: C. Shane Reese, William F. Christensen, and Scott Grimshaw

- Bachelor of Science: Statistics; Brigham Young University;

PROFESSIONAL EXPERIENCE

- Associate Professor; Brigham Young University; July 2019-Present.

- Assistant Professor; Brigham Young University; July 2013-July 2019.

- Post-graduate Scientist; National Center for Atmospheric Research; August 2011-July 2013.

PUBLICATIONS IN PREPARATION

* = My Mentored MS Student

- Johnson, J. and **Heaton, M.J.** "Climate Data Melding using a Spatially-varying Autoencoder" in preparation for *Annals of Applied Statistics*.

- **Heaton, M.J.**, Dahl, B., Dayley, C., Warr, R. and White, P. "Integrating Machine Learning and Bayesian Nonparametrics for Flexible Modeling of Spatial Point Patterns" in preparation for *Computational Statistics and Data Analysis*.

- **Heaton, M.J.** and Morgan, M. "A Minibatch Markov Chain Monte Carlo Algorithm for Gaussian Processes" in preparation for *Bayesian Analysis*.

- Flint, E.A., Svedin, J.D., Yost, M., Kerry, R., **Heaton, M.J.**, Campbell C., Hansen, N.C. and Hopkins B.G. "Zone delineation and variable rate irrigation of winter wheat based on crop water productivity" submitted to *Soil Science Society of America Journal*.

- **Heaton, M.J.**, Teuscher, D. and Hansen, N.C. "Irrigation Zone Delineation using Bayesian, Spatial Neural Networks" under revision in *JRSSC*.

- Brown, B., Fullerton, A.H., Kopp D., Tromboni, F., Shogren A.J., Webb, J.A., Ruffing, C. **Heaton, M.J.**, Kuglerova, L., Allen D.C., McGill L., Zarnetske, J.P., Whiles, M.R., Jones, J.B. and Abbott B.W. "The Music of Rivers: How the Mathematics of Waves Reveals Global Drivers of Streamflow Regime," under review at *Water Resources Research*.

- Brown, B., Fullerton, A.H., Kopp, D., Tromboni, F., Shogren, A., Webb, J., Ruffing, C., **Heaton, M.J.**, Kuglerov, L., Allen, D., McGill, L., Zarnetske, J., Whiles, M., Jones, J. and Abbott, B.W. "Global river flows show dramatic shifts since 1990's, especially in dry, warm catchments" under review at *Science Advances*.

PEER-REVIEWED PUBLICATIONS

⋆ = My Mentored MS Student

- ⋆Warr, L., **Heaton, M.J.**, Reese, C.S., White, P., Christensen, W.C. and Rupper, S. "Distributional Validation of Climate Products for High Mountain Asia," in press at *JABES*.

- Heiner, M., **Heaton, M.J.**, White, P.W. and Abbott, B. "Model-based clustering of trends and cycles of nitrate concentrations in Rivers across France," in press at *JABES*.

- Egbert CE, Warr LR, Pennington KL, Thornton MM, Vaughan AJ, Ashworth SW, **Heaton MJ**, English N, Torres MP, Andersen JL. "The integration of proteome-wide PTM data with protein structural and sequence features identifies phosphorylations that mediate 14-3-3 interactions" *Journal of Molecular Biology* 435 (2), 167890.

- ⋆Gray, S.D., **Heaton, M.J.**, Bolintineanu, D.S. and Olson, A. (2022) "On the Use of Deep Neural Networks for Large-scale Spatial Prediction" *Journal of Data Science* 20(4) 493-511.

- **Heaton, M.J.** (2021) "Discussion of 'Bayesian Nonstationary and Nonparametric Covariance Estimation for Large Spatial Data' " *Bayesian Analysis* 17(1), 291-351.

- **Heaton, M.J.**, ⋆Ingersoll, C., Berrett, C., Hartman, B. and Sloan, C. (2021) "A Bayesian Approach to Real-time Spatiotemporal Prediction Systems for Respiratory Syncytial Virus," *Spatial and Spatio-temporal Epidemiology* 38 (100434).

- Pew, T., Warr, R.L., Schultz, G.G., **Heaton, M.J.** (2020) "Justification for Considering Zero-Inflated Models in Intersection Safety Analysis," *Transportation Research Interdisciplinary Perspectives* 2, 100249.

- **Heaton, M.J.**, Berrett, C., Bekker, M.F. and DeRose, R.J. (2020) "Assessing Covariate-varying Relationships Among Dominant Tree Species in Utah Forests," *Environmental and Ecological Statistics* 27(3) 591-607.

- ⋆Collins, G.Q., **Heaton, M.J.**, and Hu, L (2020). "Physically Constrained Spatiotemporal Kriging of Remotely Sensed Land Surface Temperature" *Journal of Applied Statistics* 47(8) 1439-1459.

- **Heaton, M.J.**, Berrett, C., ⋆Pugh, S. and Sloan C. (2020), "Modeling Bronchiolitis Incidence Proportions in the Presence of Spatio-temporal Uncertainty," *Journal of the American Statistical Association - Applications and Case Studies* 115 (529) 66-78.

- ⋆Pugh, S., **Heaton, M.J.**, Svedin, J. and Hansen, N. (2019), "Spatio-temporal Lagged Models for Variable Rate Irrigation in Agriculture," *Journal of Agricultural, Biological and Environmental Statistics* 24(4), 634-650.

- **Heaton, M.J.**, Olenick, C.R., and Wilhelmi O. (2019), "Age-specific Distributed Lag Models for Heat-related Mortality," *Environmetrics* 30(7), e2561.

- **Heaton, M.J.**, Datta, A., Finley, A., Furrer, R., Guhaniyogi, R., Gerber, F., Gramacy, R.B., Guiness, J., Hammerling, D., Katzfuss, M., Lindgren, F., Nychka, D.F., Sun, F. and Zammit-Mangion, A. (2019), "A Case Study Competition among Methods for Analyzing Large Spatial Data," *Journal of Agricultural, Biological and Environmental Statistics*, 24(3), 398-425.

- *Christensen, M.F., **Heaton, M.J.**, Rupper, S., Reese, C.S., and Christensen, W.F. (2019) "Bayesian Multi-scale Spatio-temporal Modeling of Precipitation in the Indus Watershed," *Frontiers in Earth Science* 7, 210.

- *Pugh, S., **Heaton, M.J.**, Berrett, C., Hartman, B. and Sloan C. (2019), "Estimating Seasonal Onsets and Peaks of Bronchiolitis with Spatially and Temporally Uncertain Data" *Statistics in Medicine* 38(11) 1991-2001.

- Hair, B.B., Conley, M.E., Wienclaw, T.M., Conley, M.J., **Heaton, M.J.** and Berges, B.K. (2018), "Synergistic Activity of Silver Nanoparticles and Vancomycin Against a Spectrum of Staphylococcus aureus Biofilm Types," *Journal of Bacteriology and Mycology* 5(9) 1089.

- Haskell, K.J., Schriever, S.R., Fonoimoana, K.D., Haws, B., Hair, B.B., Wienclaw, T.M., Hirschi, B., Berges, E.T., **Heaton, M.J**, and Berges, B.K. (2018), "Antibiotic resistance is significantly lower in *Staphylococcus aureus* isolated from antibiotic-free raw meat as compared to conventional raw meat," *PLOS ONE* 13(12):e0206712.

- *Gibson, K, **Heaton, M.J.** and Neeley Tass, E.S. (2018), "Identifying Crash Risk Factors on an Interstate Network," *Statistical Modelling: An International Journal* 18(2) 95-112.

- *Mortensen, J., **Heaton, M.J.** and Wilhelmi, O.V. (2018) "Urban Heat Risk Mapping of Houston, Texas using Multiple Point Patterns" *Journal of the Royal Statistical Society Series C* 67(1) 83-102.

- *Collins, G.Q., **Heaton, M.J.**, Hu, L., and Monaghan, A.J. (2017) "Spatio-temporal, Multi-resolution Modeling to Infill Missing Areal Data and Enhance the Temporal Frequency of Infrared Satellite Images," *Environmetrics* 28(7) e2466.

- Sloan, C., **Heaton, M.J.**, *Kang, S., Berrett, C., Wu, P., Gebretsadik, T., Sicignano, N., Evans, A., Rees, L., and Hartert, T. (2017) "The Impact of Temperature and Relative Humidity on Spatiotemporal Patterns and Spread of Annual Infant Bronchiolitis Epidemics in the Contiguous United States" *Health and Place* 45, 46-54.

- *Messick, R.M., **Heaton, M.J.** and Hansen, N. (2017), "Multivariate Spatial Mapping of Soil Water Holding Capacity with Spatially Varying Cross-Correlations" *Annals of Applied Statistics* 11(1), 69-92.

- Townsend, M.H., Peck, C.J., Meng, W., **Heaton, M.J.**, Robison, R.A., and O'Neill, K.L. (2017), "Evaluation of Various Glyphosate Concentrations on DNA Damage in Human Raji Cells and its Impact on Cytotoxicity," *Regulatory Toxicology and Pharmacology* 85, 79-85.

- **Heaton, M.J.**, Christensen, W.F., and Terres M. A. (2017), "Nonstationary Gaussian Process Models using Spatial Hierarchical Clustering from Finite Differences," *Technometrics* 59(1) 93-101.

- A. Marsha, Sain, S.R., **Heaton, M.J.**, Monaghan, A.J., and Wilhelmi, O.V. (2016), "Influences of climatic and population changes on extreme heat mortality in Houston, Texas" *Climatic Change* 146 (3-4), 471-485.

- **Heaton, M.J.**, Sain, S.R., Monaghan, A.J., Wilhelmi, O.V. and Hayden, M.H. (2015), "An Analysis of an Incomplete Marked Point Pattern of Heat-Related 911 Calls" *Journal of the American Statistical Association - Applications and Case Studies*, 110(509), 123-135.

- **Heaton, M.J.**, Kleiber, W., Sain, S.R. and Wiltberger, M. (2015), "Emulating and Calibrating the Lyon-Fedder-Mobarry Magnetosphere-Ionosphere Coupled Computer Model," *Journal of the Royal Statistical Society Series C,* 64(1), 93-113.

- Cheng, L., Gilleland, E., **Heaton, M.J.**, and AghaKouchak, A. (2014), "Empirical Bayes Estimation for the Conditional Extreme Value Model" *Stat*, 3(1), 391-406.

- Kaufeld, K., **Heaton, M.J.**, and Sain, S.R. (2014), "A Spatio-Temporal Model for Mountain Pine Beetle Damage," *Journal of Agricultural, Biological, and Environmental Statistics*, 19(4) 437-450.

- **Heaton, M.J.**, Sain, S.R., Greasby, T.A., Uejio, C.K., Hayden, M., Monaghan, A.J., Boehnert, J., Sampson, K. Banerjee, D., Nepal, V. and Wilhelmi, O.V. (2014), "Characterizing Urban Vulnerability to Heat Stress using a Spatially Varying Coefficient Model," *Spatial and Spatio-temporal Epidemiology*, 8, 23-33.

- Garrett, A. R., Weagel, E. G., Martinez, A. D., **Heaton, M.J.**, Robinson, R.A. and O'Neill, K. (2014), "A Novel Method for Predicting Antioxidant Activity Based on Amino Acid Structure," *Food Chemistry*, 158, 290-296.

- **Heaton, M.J.** (2014), "A Wombling Analysis of Childhood Tumor Rates in Florida," *Statistics and Public Policy*, 1, 60-67.

- **Heaton, M.J.**, Katzfuss, M., Berrett, C., and Nychka, D. W. (2014), "Constructing Valid Spatial Processes on the Sphere using Kernel Convolutions," *Environmetrics*, 25(1), 2-15,

- **Heaton, M.J.** and Peng, R.D. (2014), "Extending Distributed Lag Models to Higher Degrees," *Biostatistics* 15(2), 398-412.

- **Heaton, M.J.**, Greasby, T.A., and Sain, S.R. (2013), "Modeling Uncertainty in Climate using Ensembles of Regional and Global Climate Models and Multiple Data Sets," *SIAM/ASA Journal on Uncertainty Quantification* 1(1), 535-559.

- Kleiber, W. Sain, S. R., **Heaton, M.J.**, Wiltberger, M., Bingham D., and Reese, C.R. (2013), "Parameter Tuning for a Multi-Fidelity Dynamical Model of the Magnetosphere," *Annals of Applied Statistics*, 7(3), 1286-1310.

- **Heaton, M.J.** and Gelfand, A.E. (2012), "Kernel Averaged Predictors for Spatio-Temporal Regression Models," *Spatial Statistics*, 2, 15-32.

- **Heaton, M.J.** and Peng, R.D. (2012), "Flexible Distributed Lag Models using Random Functions with Application to Estimating Mortality Displacement from Heat-Related deaths," *Journal of Agricultural, Biological, and Environmental Statistics*, 17(3), 313-331.

- **Heaton, M.J.**, Banks, D.L., Zou, J., Karr, A.F., Datta, G., Lynch, J., and Vera, F., (2012) "A Spatio-temporal Absorbing State Model for Disease and Syndromic Surveillance," *Statistics in Medicine*, 31(19), 2123-2136.

- Zou, J., Karr, A., Banks, D.L., **Heaton, M.J.**, Lynch, J., Datta, G., and Vera, F., (2012) "Bayesian Methodology for the Analysis of Spatial-Temporal Surveillance Data," *Statistical Analysis and Data Mining*, 5(3), 194-204.

- **Heaton, M.J.**, Gray, S.G., and Gelfand, A.E. (2012), "Process Modeling for Contingency Tables with Ordered Categories," *Statistical Modelling*, 12(3), 211-228.

- Hartman, B., and **Heaton, M.J.** (2011), "Accounting for Regime and Parameter Uncertainty in Regime-Switching Models," *Insurance: Mathematics and Economics,* 49(3), 429-437.

- **Heaton, M.J.**, Gelfand, A.E. (2011) "Spatial Regression using Kernel Averaged Predictors," *Journal of Agricultural, Biological, and Environmental Statistics*, 16, 233-252.

- **Heaton, M.J.**, Katzfuss, M., Ramachandar, S., Pedings, K., Gilleland, E., Mannshardt-Shamseldin, E., Smith, R.L. (2011), "Spatio-Temporal Models for Large-scale Indicators of Extreme Weather," *Environmetrics*, 22, 294-303.

- **Heaton, M.J.**, Scott, J.G. (2010) "Bayesian Computation and the Linear Model," in *Frontiers of Statistical Decision Making and Bayesian Analysis*, eds. M. Chen, D. K. Dey, P. Muller, D. Sun, and K. Ye, pp. 527-545, Springer: New York.

- **Heaton, M.J.**, Reese, C.S., Christensen, W.F. (2010), "Incorporating Time-dependent Source Profiles using the Dirichlet Distribution in Pollution Receptor Models", *Technometrics*, 52, 67-79.

RESEARCH GRANTS (— Under Review or In Preparation, ■ Active)

- ■ "Point Process Models for Traffic Risk Analysis and Crash Prevention" (2021) funded by NSF CDS&E (Role: PI; Amount $199,940)

- ■ "Historical and Future Precipitation and Glacier Changes in High Mountain Asia" (2021) funded by NASA (Role: PI for BYU portion; Amount: $243,872).

- ■ "Spatiotemporal decision support systems for recognizing variability and managing precision irrigation" (2019) funded by the US-Israel Binational Agricultural Research and Development Fund (Role: Co-PI; Amount: $90,047)

- ■ "Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture" (2019) Western SARE Research Grant Series (Role: Co-PI; Amount: $350,000).

- • "An R Shiny App to Facilitate Authentic Data Analysis Experiences for Statistics 121 Students," (2018) BYU College of Physical and Mathematical Sciences HITS Grant Series (Role: PI; Amount: $8000).

- • "BYU Safety Modeling FY19" (2018) Utah Department of Transportation (Role: Co-PI; Amount: $120,000)

- • "Integrating Remote Sensing and Spatiotemporal Statistics to Develop Prescription Maps for Variable Rate Irrigation Systems," (2018) Brigham Young University Interdisciplinary Research Award (Role: Co-PI, Amount: $120,000).

- • "Modeling Environmental Impacts on Bronchiolitis in the Presence of Spatial Uncertainty," (2014) National Institutes of Health R03 Grant Series (Role: P.I.; Amount: $125,250).

- • "Focus Crash Types and Risk Factors" (2014), Federal Highway Administration (Role: PI; Amount: $149,222).

- • "Collaborative Research: Scalable Statistical Validation and Uncertainty Quantification for Large Spatio-Temporal Datasets" (2013), National Science Foundation, Computational and Data-Enabled Science and Engineering in Mathematical and Statistical Sciences (Role: P.I. for BYU portion; Amount: $201,000).

PRESENTATIONS

- • "Can Neural Networks Replace Gaussian Processes?" JSM, Washington, D.C. August 2022.

- • "Additive Multiresolution Neural Networks for Spatial Analysis," ISBA World Meeting, June 2021.

- • "Assessing Relationships Among Dominant Tree Species using Spatial Multivariate Bernoulli Models," Montana State University Seminar, April 2021.

- • "A Case Study Competition Among Methods for Analyzing Large Spatial Data," BLAST Working Group Seminar, Johns Hopkins University, November 2020.

- • "A Case Study Competition Among Methods for Analyzing Large Spatial Data," IBS Virtual Conference, July 2020.

- • "Statistical Efforts to Better Understand the Past and Future Climate of High Mountain Asia", Sandia National Labs, Albuquerque, NM, March 2020

- • "A Case Study Competition Among Methods for Analyzing Large Spatial Data," IBS Journal Club, October 2019.

- "Estimating and Predicting Seasonal Cycles of RSV," Joint Statistical Meetings, Denver CO August 2019.

- "Spatial Modeling to Understand and (Hopefully) Prevent Crashes," BYU Department of Geography Seminar, March 2019.

- "Age-Specific Distributed Lag Models for Assessing the Impact of Heat on Health," ENAR, Philadelphia, PA, March 2019.

- "Assessing Relationships Among Dominant Tree Species using Spatial Multivariate Bernoulli Models," Workshop on Point Process Models, Texas A&M University, College Station, TX, September 2018.

- "A Case Study Competition Among Methods for Analyzing Large Spatial Data," Los Alamos National Lab Seminar Series, September 2018.

- "Age-Specific Distributed Lag Models for Assessing the Impact of Heat on Health," Joint Statistical Meetings, Vancouver, BC, July 2018.

- "Assessing Relationships Among Dominant Tree Species using Spatial Multivariate Bernoulli Models," ISBA World Meeting, Edinburgh, Scotland, June 2018.

- "Using Point Patterns to Identify Principal Drivers of Heat-related Morbidity," ENAR, Atlanta, GA, March 2018.

- "Physically constrained spatiotemporal kriging of remotely sensed land surface temperature," CM-Statistics, London, Great Britain, December 2017.

- "Modeling the Dynamics of RSV-induced Bronchiolitis in the Presence of Spatio-temporal Uncertainty", Texas A&M Department of Statistics Seminar, October, 2017.

- "Multivariate Spatial Point Patterns via Correlated Bernoulli Indicators," Joint Statistical Meetings, Baltimore, MD August 2017.

- "Modeling Bronchiolitis Epidemics in the Presence of Spatio-temporal Uncertainty," ENAR, Washington DC, March 2017.

- "Modeling Bronchiolitis Incidence Proportions in the Presence of Spatio-Temporal Uncertainty," University of Miami, Department of Business Administration Seminar, Miami, FL February 2017.

- "Identifying Risk Factors and Trouble Spots to Improve Highway Safety," Joint Statistical Meetings, Chicago, IL August 2016.

- "Constructing valid spatial processes on the sphere using kernel convolutions," TIES Annual Conference, Edinburgh, Scotland July 2016.

- "Multivariate Spatial Mapping of Soil Water Holding Capacity with Spatially Varying Cross-correlations," ENVR/EnviBayes Workshop on Bayesian Environmetrics, Columbus, OH April 2016.

- "Assessing Heat Risk in Houston using Spatial Point Patterns," Emory University, Department of Biostatistics Seminar, Atlanta, GA March 2016.

- "A Wombling Analysis of Childhood Tumor Rates in Florida," Joint Statistical Meetings, Seattle, WA August 2015.

- "Modeling Seasonal Bronchiolitis Epidemics in the Presence of Spatial Uncertainty," G70: A Celebration of Alan Gelfand's 70th Birthday Conference, Durham, NC April 2015.

- "On Differential Heat Vulnerability among Residents of Houston, TX," Pennsylvania State University, Department of Statistics Seminar Series, State College, PA March 2015.

- "Spatial Modeling and Clustering of Mountain Pine Beetle Damage," 2014 Graybill/ENVR Conference, Fort Collins, CO September 2014.

- "Spatial Clustering using Directional Derivatives," Joint Statistical Meetings, Boston, MA August 2014.

- "Examples in Exploiting Space-time Correlations to Enhance Statistical Inference," University of Connecticut Department of Civil and Environmental Engineering Seminar, Storrs, CT, November 2013.

- "Quantifying Uncertainty in Climate Using Ensembles of Global and Regional Climate Models and Multiple Observation-Based Data Sets," NOLTA, Santa Fe, NM, September 2013.

- "Identifying Risk Factors for Heat-Related Mortality," Joint Statistical Meetings, Montreal, CA, August 2013.

- "Analyzing a Marked Point Pattern of 911 Calls for Heat-Related Illnesses to Assess Heat Stress Vulnerability," Next Generation Climate Data Products Workshop, Boulder, CO, July 2013.

- "Identifying Risk Factors for Heat-Related Mortality in Houston, Texas using a Hierarchical Spatially Varying Coefficient Model," Brigham Young University Department of Statistics Seminar, Provo, UT, October 2012.

- "Emulating and Calibrating the Multi-fidelity, Spatio-temporal Lyon-Fedder-Mobarry Magnetosphere-Ionosphere Coupled Computer Model using Predictive Processes,"

    - Colorado School of Mines, Department of Applied Mathematics and Statistics Seminar, Golden, CO, April 2012.
    - Colorado State University, Department of Statistics Seminar, Fort Collins, CO, March 2012.
    - Brigham Young University, Department of Statistics Seminar, Provo, UT, January 2012.

- "Flexible Distributed Lag Models using Random Functions with Application to Estimating Mortality Displacement from Heat-Related Deaths," Johns Hopkins University, Department of Biostatistics Seminar, Baltimore, MD, January 2012.

- "Kernel Averaged Predictors for Spatio-temporal Processes"

    - Joint Statistical Meetings, Miami Beach, FL, August 2011.
    - IISA Conference on Probability, Statistics, and Data Analysis, Raleigh, NC, April 2011.
    - National Center for Atmospheric Research, Boulder, CO, January 2011.
    - Brigham Young University, Department of Statistics Seminar, Provo, UT, December 2010.

- "A Spatio-temporal Absorbing State Model for Disease and Syndromic Surveillance," International Society for Disease Surveillance Annual Meeting, Park City, UT, December 2010.

- "Spatio-temporal Models for Large-scale Indicators of Extreme Weather," Industrial, Mathematical, and Statistical Modeling Workshop, Raleigh, NC, July 2009.

- "Temporally Correlated Dirichlet Processes for Pollution Receptor Models,"

    - Joint Statistical Meetings, Denver, CO, August 2008.
    - Spring Research Conference, College of Physical and Mathematical Sciences, Brigham Young University, Provo, UT, March 2007.

RECOGNITIONS

- 2022 Early Career Teaching Award, College of Physical and Mathematical Sciences, Brigham Young University.

- 2020 Data Science Faculty Fellowship, Department of Statistics, Brigham Young University.

- JABES Best 2019 Paper Award (for *A Case Study Competition among Methods for Analyzing Large Spatial Data*), International Biometrics Society, 2020

- Faculty Heritage Fellowship, Brigham Young University, 2019-2022.

- University Young Scholar Award, Brigham Young University, 2018.

- Young Investigator Award, Section on Statistics and the Environment, American Statistical Association, 2018.

- Excellence in Teaching Award, Mu Sigma Rho Statistical Honor Society, Brigham Young University, 2016.

- Young Scholar Award, College of Physical and Mathematical Sciences, Brigham Young University, 2015.

- Wiley-TIES Best *Environmetrics* paper award, The International Environmetrics Society, 2014.

- Workshop on Environmetrics Student Poster Competition Winner, Boulder, CO, 2010.

- American Statistical Association Section on Bayesian Statistical Science Student Paper Competition Winner, Vancouver, BC, 2010.

- American Statistical Association Section on Statistics and the Environment Student Paper Competition Winner, Denver, CO, 2008.

- James B. Duke Fellowship Recipient, Duke University, 2007.

- Rothamstead Research Award, Brigham Young University, 2007.

STUDENT ADVISING EXPERIENCE

Year Graduated	Student	My Role	Student Position Upon Graduation
–	Kalle Farra[†]	Research Mentor	Not yet completed
–	Logan Clarke	MS Chair	Not yet completed
–	Christina Rhees	MS Chair	Not yet completed
–	Jacob Johnson[†]	Research Mentor	Not yet completed
–	Katelyn Nelson[†]	Research Mentor	Not yet completed
–	Benjamin Dahl[†]	MS Chair	Not yet completed
–	Caleb Dayley	Research Mentor	Not yet completed
–	Andrew Millane[†]	Research Mentor	Not yet completed
–	Matthew Morgan	MS Chair	Not yet completed
2022	Kevin Green[†]	Research Mentor	CIA
2022	Skyler Gray	MS Chair	Sandia National Labs
2022	David Teuscher[†]	MS Chair	Zions Bank
2021	Madeline Jackson	MS Chair	Imagine Learning
2021	Lynsie Warr	MS Chair	PhD-Statistics, UC Irvine
2020	Reagan Callaway	Research Mentor	Regions Bank
2020	Shelby Taylor[†]	MS Chair	Kennesaw State 2020
Celeste Ingersoll[†]	MS Chair	Mankind is My Business	
2020	Timo Pew	MS Committee	Exact Sciences
2019	Michael Christensen	MS Committee	Ph.D. Statistical Science, Duke
2019	Christian Davis[†]	MS Chair	Glaukos
2019	Gabriel Adams[†]	Research Mentor	MS-Financial Econometrics, Utah State
2018	Kayden Maughn[†]	Research Mentor	MS-Statistics, University of Utah
2018	Wyatt Clegg	Research Mentor	Los Alamos National Lab
2018	Ben Tingey[†]	Research Mentor	MS-Statistics, University of Utah

2018	Gavin Collins[†,‡,⋄,⋆]	MS Chair	Ph.D. Statistics, Ohio State
2018	Sierra Pugh[†,⋄]	MS Chair	Ph.D. Statistics, Colorado State
2017	Spencer Galbraith	MS Chair	Walmart
2017	Kaitlin Gibson[†,⋄]	MS Chair	TaxHawk
2016	Dalton Bagley[†]	Research Mentor	Health Catalyst
2016	Rachel Messick[⋆,§]	MS Chair	Visible Equity
2016	Jacob Mortensen[‡]	MS Chair	Simon Fraser University (Ph.D.)
2016	Cameron Faerber	MS Chair	GroupSolver
2015	Sorah Kang	MS Chair	Adj. Faculty, N. Oklahoma College
2015	Prakash Adhikari	MS Chair	Modellers LLC
2015	Keturah Bartlett	MS Chair	Merrick Bank
2015	Alexis Cottam	MS Co-Chair	Ph.D. Statistics, Colorado State
2014	Dan Halterman	MS Committee Member	Savvysherpa

[†] – Began research as an undergraduate
[‡] – NSF Graduate Fellow Honorable Mention
[⋆] – NASA Space Grant Consortium Fellowship Recipient
[⋄] – ORCA Grant Recipient
[§] – 3MT Competition Winner

TEACHING EXPERIENCE

- Teaching Experience at Brigham Young University:

  - Stat 121: Principles of Statistics.
  - Stat 330: Introduction to Regression.
  - Stat 469: Analysis of Correlated Data.
  - Stat 495R: Experiential Learning with Kaggle.
  - Stat 536: Statistical Learning and Data Mining.

- Teaching Experience At Duke University:

  - Instructor for STA 101 - Introduction to Data Analysis and Statistical Inference: Summer 2008
  - Jan. 2009 - April 2009: Head Teaching Assistant; Department of Statistical Science, Duke University
  - August 2007 - April 2009: Teaching Assistant; Department of Statistical Science, Duke University
    * STA 244 - Linear Models; Instructor: Merlise Clyde; Spring 2009
    * STA 215 - Statistical Inference; Instructor: Fan Li; Spring 2009
    * STA 214 - Probability and Statistical Models; Instructor: Scott Schmidler; Fall 2008
    * STA 290 - Modern Statistical Data Analysis; Instructor: Merlise Clyde; Fall 2008
    * STA 113 - Probability and Statistics for Engineers; Instructor: Jayanta Pal; Spring 2008
    * STA 101 - Data Analysis and Statistical Inference; Instructor: Jamie Bigelow; Fall 2007

STATISTICAL CONSULTING EXPERIENCE

- December 2013 - January 2017: Federal Highway Administration
  – Advanced statistical methodology for traffic and accident prevention.

- August 2010 - August 2011: Environmental Protection Agency; Research Triangle Park, NC
  – Developed software for the synthesizing of field observations with computer model output.

- September 2008 - September 2010: Denver Health and Hospital Authority; Denver, CO
  – Developed statistical methodology for prescription drug surveillance.

- June 2009 - September 2009: Cormetech Inc.; Durham, NC
  – Developed statistical methodology for steady state detection in time series data.

- August 2008 - December 2009: Team Member; Statistical Consulting Center, Duke University
  – Advise the statistical analysis of various university research projects.

PROFESSIONAL SERVICE

- Editorial Service

  – Associate Editor, *Environmetrics* (Jan. 2017 – Present)
  – Associate Editor, *JABES* (Mar. 2019 – Present)
  – Associate Editor, *New England Journal of Statistics in Data Science - Spatial and Environmental Statistics Section* (Jan. 2021 – Present)

- Departmental Service

  –
  – Faculty Recruiting Committee Chair (Aug. 2022 - Present)
  – Faculty Evaluation Committee (Jan. 2018 – Aug. 2020; Aug. 2022 - Present)
  – Data Science Committee (Aug. 2020 – Aug. 2021)
  – Graduate Curriculum Committee (Aug. 2020 – Aug. 2021)
  – Alumni Fellowship & Recruiting Committee Member (Aug. 2018 – Aug. 2020)
  – Department Representative to Spring Research Conference Committee (Aug. 2014 – August 2019)
  – Seminar Coordinator (July 2016 – Jan. 2018)
  – Alumni Fellowship & Recruiting Committee Member (Aug. 2013 – Aug. 2016)
  – Undergraduate Curriculum Committee Member (Apr. 2014 – August 2017)

- Service to the American Statistical Association

  – Section on Bayesian Statistical Science, Publications Officer (Jan 2016 – December 2017)
  – Section on Bayesian Statistical Science Student Paper Competition Reviewer (Jan. 2014)

- Service to the International Society for Bayesian Analysis

  – EnviBayes Chair (Jan. 2019 - Dec. 2021)
  – EnviBayes Treasurer (Jan. 2014 - Dec. 2018)
  – ISBA Editorial Search Committee (Mar. 2018 - present)

- Ad Hoc Peer Review Referee for National Science Foundation as well as various Statistics and Applied Journals

MEMBERSHIPS

- American Statistical Association; 2005-Present.
  – Section on Bayesian Statistical Science
  – Section on Statistics and the Environment

- Institute of Mathematical Statistics; 2008-Present.
  – International Society for Bayesian Analysis; 2008-Present.

- The International Environmetrics Society; 2010-Present.