

# Amanda S. Hering

Professor  
Baylor University  
Dept of Statistical Science  
Waco, TX 76798-7140

Phone: 254.400.5277 (cell)  
254.710.1699 (office)  
E-mail: mandy\_hering@baylor.edu  
Web: sites.baylor.edu/mandy\_hering/

## Research Interests

Spatial and space-time modeling; forecasting; model-validation; multivariate methods; and time series.  
Applications to wind, water, engineering, and the environment.

## Professional Experience

**Baylor University; Waco, TX**

**Department of Statistical Sciences**

*Professor* Jun 2021 to present  
*Associate Professor* Aug 2016 to Jun 2021

**Colorado School of Mines; Golden, CO**

**Department of Applied Mathematics and Statistics**

*Associate Research Professor* Oct 2018 to present  
*Associate Professor* Apr 2016 to Jul 2016  
*Assistant Professor* Aug 2009 to Apr 2016

## Education

**Texas A&M University; College Station, TX** Ph.D. Statistics (2009)

*Advisor:* Marc G. Genton

*Thesis Title:* Space-Time Forecasting and Evaluation of Wind Speed with  
Statistical Tests for Comparing Accuracy of Spatial Predictions

**Montana State University; Bozeman, MT** M.S. Statistics (2002)

**Baylor University; Waco, TX** B.S. Mathematics (1999)

National Merit Scholar Minor Environmental Studies  
Summa cum laude, GPA 4.0  
Inducted into Phi Beta Kappa

## Book Chapters

Newhart, K. B., **Hering, A. S.**, and Cath, T. Y. (2022) “Data science tools to enable decarbonized water and wastewater treatment systems,” Book chapter to be published in *Pathways to Water Sector Decarbonization, Carbon Capture and Utilization*, Publisher: IWA Publishing.

**Hering, A. S.** (2021) “Fault isolation,” Book chapter published in *Statistical Process Monitoring using Advanced Data-Driven and Deep Learning Approaches*, Authors: Harrou, F., Sun, Y., Hering, A. S., Madakyaru, M., and Dairi, A., Publisher: Elsevier, pp. 71–117. <https://doi.org/10.1016/B978-0-12-819365-5.00009-7>

**Peer-Reviewed Publications** (Student authors are underlined; \* denotes corresponding author.)

*Submitted/In Revision*

Durell, L., Scott, J. T., Nychka, D., and **Hering, A. S.\*** “Functional forecasting of dissolved oxygen in high-frequency vertical lake profiles,” *Submitted to Environmetrics*.

56. **Hering, A. S.\***, Durell, L., and Morgan, G. (2021) “Illustrating randomness in statistics courses with spatial experiments,” *The American Statistician*, 75: 343–353.  
<https://doi.org/10.1080/00031305.2020.1871070>
55. Burrow, A., **Hering, A. S.**, Morton, D. P., and Newman, A. M.\* (2021) “Optimal design and operation of river basin storage under hydroclimatic uncertainty,” *Journal of Water Resources Planning and Management*, 147: 04021055. [https://doi.org/10.1061/\(ASCE\)WR.1943-5452.0001337](https://doi.org/10.1061/(ASCE)WR.1943-5452.0001337)
54. Newhart, K. B.\*, Goldman-Torres, J. E., Freedman, D. E., Wisdom, K. B., Cath, T. Y., and **Hering, A. S.\*** (2021) “Prediction of peracetic acid disinfection performance for secondary municipal wastewater treatment using artificial neural networks,” *Environmental Science and Technology: Water*, 1: 328–338.  
<https://dx.doi.org/10.1021/acsestwater.0c00095>
53. Mansouri, F., Winfield, Z. C., Crain, D. D., Morris, B., Charapata, P., Sabin, R., Potter, C. W., **Hering, A. S.**, Fulton, J., Trumble, S. J., and Usenko, S.\* (2021) “Evidence of multi-decadal behavior and ecosystem-level changes revealed by reconstructed lifetime stable isotope profiles of baleen whale earplugs,” *Science of the Total Environment*, 757: 143985. <https://doi.org/10.1016/j.scitotenv.2020.143985>
52. Klanderma, M. C., Newhart, K. B., Cath, T. Y., and **Hering, A. S.\*** (2020) “Case studies in real-time fault isolation in a decentralized wastewater treatment facility,” *Journal of Water Process Engineering*, 38: 101556. <https://doi.org/10.1016/j.jwpe.2020.101556>
51. Quay, A. N., **Hering, A. S.**, and Mauter, M. S.\* (2020) “Mapping and quantifying uncertainty in groundwater depth from sparse well data in the California Central Valley,” *Environmental Research Letters*, 15: 084029. <https://doi.org/10.1088/1748-9326/ab88fb>
50. King, M. L., Galbreath, D. R., Newman, A. M.\*, and **Hering, A. S.** (2020) “Combining regression and mixed integer programming to model counterinsurgency,” *Annals of Operations Research*, 292: 287–320. <https://link.springer.com/article/10.1007/s10479-019-03420-x>
49. Klanderma, M. C., Newhart, K. B., Cath, T. Y., and **Hering, A. S.\*** (2020) “Fault isolation for a complex decentralized waste water treatment facility,” *Journal of the Royal Statistical Society, Series C*, 69: 931–951. <https://doi.org/10.1111/rssc.12429>
48. Taylor, R. B., Djomte, V. T., Bobbitt, J. M., **Hering, A. S.**, Chen, S., and Chambliss, K.\* (2020) “Effects of environmentally relevant concentration exposure profiles on Polar Organic Chemical Integrative Sampler (POCIS) sampling rates,” *Environmental Science and Technology*, 54: 8848–8856.  
<https://doi.org/10.1021/acs.est.0c02601>
47. Yu, Y., Gorman, B., and **Hering, A. S.\*** (2020) “Objective identification of local spatial structure for material characterization,” *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 13: 377–393. <https://doi.org/10.1002/sam.11462>
46. Krupskii, P., Harrou, F.\*, **Hering, A. S.**, and Sun, Y. (2020) “Copula-based monitoring schemes for non-Gaussian multivariate processes,” *Journal of Quality Technology*, 52: 219–234.  
<https://doi.org/10.1080/00224065.2019.1571339>
45. Newhart, K. B., Marks, C. A., Rauch-Williams, T., Cath, T. Y., and **Hering, A. S.\*** (2020) “Hybrid statistical-machine learning ammonia forecasting in continuous activated sludge treatment for improved process control,” *Journal of Water Process Engineering*, 37: 101389.  
<https://doi.org/10.1016/j.jwpe.2020.101389>
44. Taylor, R. B., Hill, B. N., Bobbit, J. M., **Hering, A. S.**, Brooks, B. W., and Chambliss, K.\* (2020) “Suspect and non-target screening of acutely toxic *Prymnesium parvum*,” *Science of the Total Environment*, 715: 136835. <https://doi.org/10.1016/j.scitotenv.2020.136835>
43. **Hering, A. S.\*** and Cooley, D. (2019) “Twenty years of statistics at the National Center for Atmospheric Research,” *CHANCE*, 32: 40–43. <https://chance.amstat.org/2019/11/ncar/>
42. Tang, Y., Wang, H. J.\*, Sun, Y., and **Hering, A. S.** (2019) “Copula-based semiparametric model for spatio-temporal data,” *Biometrics*, 75: 1156–1167. <https://doi.org/10.1111/biom.13066>

41. Kazor, K. and **Hering, A. S.\*** (2019) “Mixture of regression models for large spatial data sets,” *Technometrics*, 61: 507–523. <https://doi.org/10.1080/00401706.2019.1569558>
40. Newhart, K. B., Holloway, R. W., **Hering, A. S.\***, and Cath, T. Y.\* (2019) “Data-driven performance analyses of wastewater treatment plants: A review,” *Water Research*, 157: 498–513. <https://doi.org/10.1016/j.watres.2019.03.030>
39. Lujan, H., Criscitello, M., **Hering, A. S.**, Sayes, C. M.\* (2019) “Refining in vitro toxicity models: Comparing baseline characteristics of lung cell-types,” *Toxicological Sciences*, 168: 302–314. <https://doi.org/10.1093/toxsci/kfz001>
38. Kostadinova, E. G.\*, Liaw, C. D., **Hering, A. S.**, Cameron, A., Guyton, F., Matthews, L. S., and Hyde, T. W. (2019) “Spectral approach to transport in a two-dimensional honeycomb lattice with substitutional disorder,” *Physical Review B*, 99: 024115-1 – 024115-13. <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.99.024115>
37. Manago, K., Hogue, T. S., Porter, A., and **Hering, A. S.\*** (2019) “A Bayesian hierarchical model for multiple imputation of urban spatio-temporal groundwater levels,” *Statistics and Probability Letters*, 144: 44–51. <https://doi.org/10.1016/j.spl.2018.07.023>
36. Odom, G. J., Newhart, K. B., Cath, T. Y., and **Hering, A. S.\*** (2018) “Multistate multivariate statistical process control,” *Applied Stochastic Models in Business and Industry*, 34: 880–892. <https://onlinelibrary.wiley.com/doi/epdf/10.1002/asmb.2333>
35. Porcu, E.\*, Bevilacqua, M., and **Hering, A. S.** (2018) “The Shkarofsky-Gneiting class of covariance models for bivariate Gaussian random fields,” *Stat*, 7: 1–10. <http://dx.doi.org/10.1002/sta4.207>
34. Yu, Y., Workman, A., Grasmick, J. G., Mooney, M. A., and **Hering, A. S.\*** (2018) “Space-time outlier identification in a large ground deformation dataset,” *Journal of Quality Technology*, 50: 431–445. <https://doi.org/10.1080/00224065.2018.1507598>
33. Pfluger, A. R.\*, Hahn, M. J., **Hering, A. S.**, Munakata-Marr, J., and Figuerola, L. (2018) “Statistical exposé of a multiple-compartment anaerobic reactor treating domestic wastewater,” *Water Environment Research*, 90: 530–542. <https://doi.org/10.2175/106143017X15131012153068>
32. Gilleland, E.\*, **Hering, A. S.**, Fowler, T., L., and Brown, B. G. (2018) “Testing the tests: What are the impacts of incorrect assumptions when applying confidence intervals or hypothesis tests to compare competing forecasts?” *Monthly Weather Review*, 146: 1685–1703. <https://doi.org/10.1175/MWR-D-17-0295.1>
31. Tarvin, A., Sipeki, L., Newman, A.\*, and **Hering, A. S.** (2018) “Lessons learned from a company dealing with big data,” *Interfaces*, 48: 147–155. <https://doi.org/10.1287/inte.2017.0890>
30. Rodríguez-Jeangros, N., **Hering, A. S.\***, and McCray, J. E. (2018) “Analysis of anthropogenic, climatological, and morphological contributions to dissolved organic matter in Rocky Mountain streams,” *Water*, 10: 1–46. <http://www.mdpi.com/2073-4441/10/4/534#>
29. Rodríguez-Jeangros, N., **Hering, A. S.\***, Kaiser, T., and McCray, J. E. (2017b) “SCaMF-RM: A fused high-resolution land cover product of the Rocky Mountains,” *Remote Sensing*, 9: 1–27. <http://www.mdpi.com/2072-4292/9/10/1015>
28. Genton, M. G.\* and **Hering, A. S.** (2017) ‘Comment on: Spatiotemporal models for skewed processes,’ *Environmetrics*, 28:e2430. <http://onlinelibrary.wiley.com/doi/10.1002/env.2430/full>
27. Goodall, G., **Hering, A. S.**, and Newman, A.\* (2017) “Characterizing solutions in optimal microgrid procurement and dispatch strategies,” *Applied Energy*, 201: 1–19. <https://doi.org/10.1016/j.apenergy.2017.04.035>
26. Sun, Y., **Hering, A. S.\***, and Browning, J. M. (2017) “Robust bivariate error detection in skewed data with application to historical radiosonde winds,” *Environmetrics*, 28:e2431. <http://onlinelibrary.wiley.com/doi/10.1002/env.2431/full>

25. Rodríguez-Jeangros, N.\*, **Hering, A. S.**, McCray, J. E., and Kaiser, T. (2017a) “Fusing multiple existing space-time land cover products,” *Environmetrics*, 28:e2429.  
<http://onlinelibrary.wiley.com/doi/10.1002/env.2429/full>.  
• Honorable Mention in ENVR 2017 Student Paper Competition
24. King, M., **Hering, A. S.\***, and Aguilar, O. M. (2016) “Building predictive models of counterinsurgent deaths using robust clustering and regression,” *The Journal of Defense Modeling and Simulation*, 13: 449–465. <http://dms.sagepub.com/content/early/2016/05/05/1548512916644074.full.pdf+html>
23. Lohmann, T., **Hering, A. S.**, and Rebennack, S.\* (2016) “Spatio-temporal hydro forecasting of multireservoir inflows for hydro-thermal scheduling,” *European Journal of Operational Research*, 16: 243–258. <http://www.sciencedirect.com/science/article/pii/S0377221716303319>
22. Kazor, K.\*, Holloway, R., Cath, T., and **Hering, A. S.** (2016) “Comparison of linear and nonlinear dimension reduction techniques for automated process monitoring of a decentralized wastewater treatment facility,” *Stochastic Environmental Research and Risk Assessment*, 30: 1527–1544.  
<http://link.springer.com/article/10.1007/s00477-016-1246-2>
21. Kenwell, A., Navarre-Sitchler, A.\*, Prugue, R., Spear, J. R., **Hering, A. S.**, Maxwell, R. M., Carroll, R. W. H., and Williams, K. H. (2016) “Using geochemical indicators to distinguish high biogeochemical activity in floodplain soils and sediments,” *Science of the Total Environment*, 563-564: 386–395.  
<http://www.sciencedirect.com/science/article/pii/S0048969716306957>
20. **Hering, A. S.**, Porcu, E.\*, and Bevilacqua, M. (2016) “Comment on ‘Statistical modelling of citation exchange between statistics journals’,” by Varin, Cattelan, and Firth in *Journal of the Royal Statistical Society, Series A*, 179: 51.  
<http://onlinelibrary.wiley.com/doi/10.1111/rssa.12124/abstract>
19. Anderson, A. N., Browning, J. M., Comeaux, J., **Hering, A. S.\***, and Nychka, D. (2016) “A comparison of automated statistical quality control methods for error detection in historical radiosonde temperatures,” *International Journal of Climatology*, 36: 28–42.  
<http://onlinelibrary.wiley.com/doi/10.1002/joc.4327/abstract>
18. Kazor, K. and **Hering, A. S.\*** (2015b) “The role of regimes in short-term wind speed forecasting at multiple wind farms,” *Stat*, 4: 271–290.  
<http://onlinelibrary.wiley.com/doi/10.1002/sta4.91/abstract>  
• Winner of ENVR 2016 Student Paper Competition
17. Condon, L.\*, **Hering, A. S.**, and Maxwell, R. (2015) “Quantitative assessment of groundwater controls across major US river basins using a multi-model regression algorithm,” *Advances in Water Resources*, 82: 106–123. <http://www.sciencedirect.com/science/article/pii/S0309170815000822>
16. Bevilacqua, M., **Hering, A. S.**, and Porcu, E.\* (2015) “On the flexibility of multivariate covariance models: Comment on the paper by Genton and Kleiber,” *Statistical Science*, 30: 167–169.  
<https://projecteuclid.org/euclid.ss/1433341473>
15. Kazor, K. and **Hering, A. S.\*** (2015a) “Assessing the performance of model-based clustering methods in multivariate time series with application to identifying regional wind regimes,” *Journal of Agricultural, Biological, and Environmental Statistics*, 20: 192–217.  
<http://link.springer.com/article/10.1007%2Fs13253-015-0203-8>
14. Goddard, S., Genton, M. G., **Hering, A. S.\***, and Sain, S. (2015) “Evaluating the impacts of climate change on diurnal wind power cycles using multiple regional climate models,” *Environmetrics*, 26: 192–201. <http://onlinelibrary.wiley.com/doi/10.1002/env.2329/abstract>
13. **Hering, A. S.\***, Kazor, K., and Kleiber, W. (2015) “A Markov-switching vector autoregressive stochastic wind generator for multiple spatial and temporal scales,” *Resources*, 4: 70–92.  
<http://www.mdpi.com/2079-9276/4/1/70>

12. Valovcin, S., **Hering, A. S.\***, Polly, B., and Heaney, M. (2014) "A statistical approach for post-processing residential building energy simulation output," *Energy and Buildings*, 85: 165–179. <http://www.sciencedirect.com/science/article/pii/S0378778814006094>
11. King, M.\*, **Hering, A. S.**, and Newman, A. (2014) "Evaluating counterinsurgency classification schemes," *Military Operations Research*, 19(3): 5–25. <http://www.mors.org/Publications/MOR-Journal/Online-Issues>
10. Yoder, M., **Hering, A. S.\***, Navidi, W., and Larson, K. (2014) "Short term forecasting of categorical changes in wind power with Markov chain models," *Wind Energy*, 17: 1425–1439. <http://onlinelibrary.wiley.com/doi/10.1002/we.1641/abstract>
9. Mitrano, D. M.\*, Ranville, J. F., Bednar, A., Kazor, K., **Hering, A. S.**, and Higgins, C. P. (2014) "Tracking dissolution of silver nanoparticles at environmentally relevant concentrations in laboratory, natural, and processed waters using single particle ICP-MS (spICP-MS)," *Environmental Science: Nano*, 1: 248–259. <http://pubs.rsc.org/en/Content/ArticleLanding/2014/EN/C3EN00108C#!divAbstract>
8. **Hering, A. S.\*** (2014) "Comments on: Space-time wind speed forecasting for improved power system dispatch," *TEST*, 23: 34–44. <http://link.springer.com/article/10.1007/s11749-014-0355-9>
7. **Hering, A. S.\*** and Bair, S. (2014) "Characterizing spatial and chronological target selection of serial offenders," *Journal of the Royal Statistical Society, Series C*, 63: 123–140. <http://onlinelibrary.wiley.com/doi/10.1111/rssc.12029/abstract>
6. **Hering, A. S.\*** and Kazor, K. (2013) "A permutation test to identify important attributes for linking crimes of serial offenders," *Stat*, 2: 211–226. <http://onlinelibrary.wiley.com/doi/10.1002/sta4.30/abstract>
5. Teerlink, J., **Hering, A. S.**, Higgins, C. P., and Drewes, J. E.\* (2012) "Site-specific fluctuations and variability of trace organic chemical concentrations in raw wastewater at three distinct sewershed scales," *Water Research*, 46: 3261–3271. <http://www.sciencedirect.com/science/article/pii/S0043135412001819>
4. **Hering, A. S.\*** and Genton, M. G. (2011) "Comparing spatial predictions," *Technometrics*, 53: 414–425. <http://www.tandfonline.com/doi/abs/10.1198/TECH.2011.10136#.VPSEEEKsv28>
3. **Hering, A. S.** and Genton, M. G.\* (2010) "Powering up with space-time wind forecasting," *Journal of the American Statistical Association*, 105: 92–104. <http://amstat.tandfonline.com/doi/abs/10.1198/jasa.2009.ap08117#.VPSCekKsv28>
  - Winner of ENVR 2008 Student Paper Competition
2. **Hering, A. S.**, Bell, C. L., and Genton, M. G.\* (2009) "Modeling spatio-temporal wildfire ignition point patterns," *Environmental and Ecological Statistics*, Special Issue on Statistics for Wildfire Processes, 16: 225–250. <http://link.springer.com/article/10.1007%2Fs10651-007-0080-6>
1. Genton, M. G.\* and **Hering, A. S.** (2007) "Blowing in the wind," *Significance*, 4: 11–14. <http://onlinelibrary.wiley.com/doi/10.1111/j.1740-9713.2007.00212.x/abstract>

#### Conference Proceedings

3. Nissan, A. B., Findley, K. O., and **Hering, A. S.** (2011) "Extreme value statistical analysis to determine the endurance limit of a 1045 induction hardened steel alloy," *Procedia Engineering*, 10: 607–612. <http://www.sciencedirect.com/science/article/pii/S187770581100289X>
2. Wald, D. J., McWhirter, L., Thompson, E., and **Hering, A. S.** (2011) "A new strategy for developing Vs30 maps," *Proceedings of the 4th International Symposium on Effects of Surface Geology on Seismic Motion Symposium*, University of California at Santa Barbara. <http://esg4.eri.ucsb.edu/sites/default/files/6.5%20Wald%20et%20al.pdf>
1. Rothleitner, L. M., **Hering, A.**, Van Tyne, C. J. (2011) "Property and microstructure variation in forging bar steels," *Proceedings of Forging Industry Technical Conference*, Schaumburg, IL. [https://www.forging.org/system/files/field\\_document/Rothleitner\\_FIACConf\\_2011.pdf](https://www.forging.org/system/files/field_document/Rothleitner_FIACConf_2011.pdf)

*Statistical Software*

1. Durell, L. and **Hering, A. S.** (2021) “mowateR: Data Sets from the Modernizing Water and Wastewater Treatment through Data Science Education and Research Team,” R package version 1.0.0.
2. Odom, G., Barnard, B., Kazor, K., and **Hering, A. S.** (2017) “mvMonitoring: Multi-State Adaptive Dynamic Principal Component Analysis for Multivariate Process Monitoring,” R package version 0.1.0.  
<https://CRAN.R-project.org/package=mvMonitoring>

*Papers in Preparation*

1. Klanderma, M. C., Mansi, G., Newhart, K. B., Cath, T. Y., and **Hering, A. S.** “Fault detection and isolation metrics,” *In Preparation*.
2. Newhart, K. B., Klanderma, M. C., Cath, T. Y., and **Hering, A. S.** “A holistic evaluation of multivariate statistical process monitoring in a biological and membrane treatment system,” *In Preparation*.
3. Klanderma, M. C., Lee, J., Villez, K., Cath, T. Y., and **Hering, A. S.** “Adaptive online multivariate signal extraction by locally weighted robust polynomial regression,” *In Preparation*.
4. Waclawski, A., Klanderma, M. C., Maltose, R., Cath, T. Y., and **Hering, A. S.** “Functional data fault detection for cyclic variables in wastewater treatment,” *In Preparation*.
5. Durell, L. and **Hering, A. S.** “Hybrid machine learning and statistical functional time series forecasting,” *In Preparation*.
6. Durell, L., Brooks, B., and **Hering, A. S.** “Functional two-way ANOVA for toxicological photomotor response studies,” *In Preparation*.
7. Chowdhury, D., Waclawski, A., Weix, D., Cath, T., Melin, A., Polsky, Y., **Hering, A. S.**, Cath, T. Y., and Villez, K. “Model predictive control with automated parameter updates for optimization of closed-circuit desalination reverse osmosis system,” *In Preparation*.

**Grants** (My Total Funding: ~\$3,050,000, calculated as a sum of personal expenditures)

Sponsor	Role	Title	Funding	Dates
16. DOE	co-PI (18%)	Reinventing Wastewater Treatment Plants: Energy Neutral Treatment and Enhanced Fertilizer Production through a Novel Resource Recovery Center	\$2 million	Jan 2022 to Dec 2024
15. DOE	BU Site Director	Energy-Water Desalination Hub: National Alliance for Water Innovation	\$100 million	Jun 2020 to May 2024
	co-PI (100%)	Foundational Control Methods for Water Treatment Systems	\$81,319	Sep 2020 to Aug 2021
	co-PI (20%)	Advanced Process Controls – Autonomous Control and Optimization	\$1.9 million	Jan 2022 to Dec 2024
14. NSF	PI (50%)	HDR:DSC: Modernizing Water and Wastewater Treatment through Data Science Education & Research (MoWa <sup>2</sup> TER)	\$1.2 million	Sep 2019 to Aug 2022
13. NSF	Co-PI (20%)	PFI:BIC: Self-correcting Energy-Efficient Water Reclamation Systems for Tailored Water Reuse at Decentralized Facilities	\$959,945	Sep 2016 to Aug 2021

12. KAUST	Co-PI (30%)	Statistical Process Monitoring and Risk Assessment for Engineering and Spatial Environmental Applications	~\$1.2 million	Apr 2016 to Mar 2019
11. NSF	Senior Investigator (0.5%)	Engineering Research Center (ERC) for Re-inventing the Nation's Urban Water Infrastructure (ReNUWIt)	\$40 million	Aug 2011 to Jul 2021
10. ONR	Co-PI (13.5%)	Energy Resource Planning Tool based on Optimal Dispatch of Autonomous Microgrids	\$335,511	Aug 2013 to Jul 2016
9. CSM	Sole PI	Analysis and Management of Energy Usage Data from Forward Operating Military Bases	\$1,500	Fall 2014
8. MWD Trading	Sole PI	MWD High Frequency Trading Competition	\$4,000	Jan to May 2014 and 2015
7. CREW	Sole PI	CREW Short-term Wind Forecasting Competition	\$2,000	Jan 2013 to May 2013
6. CAA-AFIT	Co-PI (50%)	Minimizing Violence in Counterinsurgency	\$37,500	Sep 2013 to Sep 2014
5. CAA-AFIT	Co-PI (25%)	A System of Equations to Capture SSTRO Dynamics	\$50,000	Jun 2012 to May 2013
4. NREL	Sole PI	Application of Statistical Methods for Residential Building Energy Analysis	\$56,180	Aug 2012 to May 2013
3. Northrop Grumman	Sole PI	Bayesian Space-Time Point Process Models For Individually Identifiable Criminal Patterns	\$50,000	Jan 2011 to Dec 2011
2. NSF	Sole PI	Non-stationary Spherical Processes to Synthesize Multimodel Climate Change Simulations	\$70,000	Jul 2010 to Aug 2011
1. NSF*	Advisor	Automated Statistical Quality Control Methods for Historical Radiosonde Data for 3-Dimensional Validation of Vertical Wind Speed Profiles in Regional Climate Models	\$130,000	Jun 2013 to May 2016

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NSF = National Science Foundation; NREL = National Renewable Energy Lab; CAA = Center for Army Analysis

AFIT = Air Force Institute of Technology; CREW = Center for Research and Education in Wind;

ONR = Office of Naval Research; KAUST = King Abdullah University of Science and Technology;

DOE = Department of Energy; WRF = The Water Research Foundation

\*GRFP awarded to graduate student under my supervision

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## Advising

*CSM Students: (7 Masters, 5 Ph.D.)*

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Megan Yoder	M.S. Statistics	2012	Short Term Forecasting of Categorical Changes in Wind Power
Chris Bukowski	M.S. Statistics	2012	Investigating Spatial Correlation Estimation when Nonparametrically Smoothing the Mean Trend
Chris Lorenzini	M.S. Statistics	2012	Analysis of Space-Time Clustering and Prediction of Crime Series
Sarah Valovcin	M.S. Statistics	2013	Assessing Residential Building Energy Simulation Accuracy Through the Use of Clustering
Karen Kazor	M.S. Statistics	2013	Statistical Identification of Regional Wind Regimes
Ashley Bell	M.S. Statistics	—	Automated Statistical Quality Control for Historical Radiosonde Data
Joshua Browning	M.S. Statistics	2015	Simultaneous Treatment of Random and Systematic Errors in the Historical Radiosonde Temperature Archive
Marvin King*	Ph.D. Operations Research	2014	Optimizing Counterinsurgency Operations
Karen Kazor	Ph.D. Statistics	2016	Identifying Clusters in Multivariate Temporal and Spatial Data with Application to Environmental Processes
Gavin Goodall*	Ph.D. Operations Research	2017	Minimizing Fuel Use at Remote Sites—the Role of Load and Batteries
Nicolás Rodríguez-Jeangros**	Ph.D. Civil & Environmental Engineering	2018	Development of a High-Resolution Land Cover Product of the Rocky Mountains with Application to Carbon Concentrations in its Streams: Assessing Anthropogenic, Climatological, and Morphological Contributions
Kathryn Newhart***	Ph.D. Civil & Environmental Engineering	2020	Data-Driven Process Monitoring and Control in Municipal Wastewater Treatment

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\*Co-advised with Professor Alexandra Newman

\*\*Co-advised with Professor John McCray

\*\*\*Co-advised with Professor Tzahi Cath

*CSM Graduate Committee Member: (33 Total: 10 AMS, 23 Other Departments)*

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Anna Forssen (AMS)	Gerald Gonzalez (EB)	Leon Foks (GP)
Tonya Lauriski-Karriker (AMS)	Timo Lohmann (ORwE)	James Howard (EECS)
Claire Lelait (AMS)	David Tarvin (ORwE)	Samantha Dominguez (CG)
Christian Lucero (AMS)	John Williams (HSE)	Pirooz Javanbakht (EECS)
Joe Robertson (AMS)	Erica Siirila (HSE)	Patrick Lafond (CBE)
Loren John (AMS)	Amy Kenwell (HSE)	Ryan Holloway (CEE)
Brian Zaharatos (AMS)	Norman Facas (CEE)	Karen Moxcey (AMS)
Oscar Aguilar (AMS)	Lee Rothleutner (MME)	Laura Condon (HSE)
Jackie Henderson (AMS)	Mike Scioletti (ORwE)	Savannah Miller (CEE)
Mike Teter (ORwE)	Cynthia Kanno (CEE)	Ashley Arigoni (ORwE)
Kimberly Manago (HSE)	Bryant Reyes (HSE)	

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*Baylor Students: (3 Ph.D.)*

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Gabriel Odom*	Ph.D. Statistics	2017	Three Applications of Linear Dimension Reduction
Youjiao Yu**	Ph.D. Statistics	2018	Weibull Mixture Model for Grouped Data and Pattern Identification in Spatial and Spatial-Temporal Data
Molly Klanderman	Ph.D. Statistics	2020	Multivariate Fault Detection and Isolation

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\*Co-advised with Professor Dean Young

\*\*Co-advised with Professor Jane Harvill

*Baylor & CSM Current/Continuing Students: (2 Ph.D. and 1 M.S.)*

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Luke Durell (BU)	Ph.D. Statistics	2022
Derek Weix (BU)	Ph.D. Statistics	2024
Aurora Waclawski (CSM)	M.S. Environmental Engineering	2022

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*Baylor Graduate Committee Member: (7 Total)*

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Chuchu Xian (Physics)	Raegyn Taylor (Chemistry)	Noah Padgett (Ed. Psych.)
Austin Workman (Statistics)	Mikhail Shmurygin (CS)	Mike Penrose (ENV)
Minho Kim (Statistics)		

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*Postdoctoral Scholar: (2 Total)*

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Molly Klanderman	Sep 2020 – Jan 2021
Junho Lee	Jan 2021 – Jun 2023 (expected)

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## Teaching

*At Colorado School of Mines:*

<i>Course</i>	<i>Title (Credit Hours)</i>	<i>Semesters Taught</i>	<i>Evaluation Scores*</i>			
			<i>Each Semester</i>			
MATH 201	Probability and Statistics for Engineers (3)	2	(4.4/5)	(4.2/5)		
MATH 432/532	Spatial Statistics (3)	4	(4.4/5)	(4.5/5)	(4.8/5)	(4.5/5)
MATH 437/537	Multivariate Analysis (3)	1	(4.4/5)			
MATH 482/582	Statistics Practicum (3)	4	(4.2/5)	(4.4/5)	(4.5/5)	(4.7/5)
MATH 530	Statistical Methods I (3)	4	(4.3/5)	(4.6/5)	(4.7/5)	(4.9/5)
MATH 531	Statistical Methods II (3)	3	(4.3/5)	(4.6/5)	(5.0/5)	
MATH 534	Mathematical Statistics I (3)	1	(4.9/5)			

\*Scores are for the question: "Overall, this instructor is effective."

*At Baylor University:*

<i>Course</i>	<i>Title (Credit Hours)</i>	<i>Semesters</i>
		<i>Taught</i>
STA 2300	Introduction to Data Science (3)	2
STA 3381	Probability and Statistics (3)	3
STA 5352	Mathematical Statistics II (3)	1
STA 5353	Mathematical Statistics III (3)	1
STA 5362	Time Series Analysis (3)	2
STA 5377	Spatial Statistics (3)	1
STA 5V95	Functional Data Analysis (3)	1

*Modernizing Water and Wastewater Treatment through Data Science Education and Research (MoWa<sup>2</sup>TER)  
Data Science Summer Fellows Program:*

<i>Dates</i>	<i>Participants</i>	<i>Projects</i>
June 1, 2020 – July 2, 2020	18	6
June 1, 2021 – July 2, 2021	28	8

*MoWa<sup>2</sup>TER PRO Data Science Industry Workshop: Visualization, Analysis, and Modeling in R for the Water Professional*

<i>Dates</i>	<i>Participants</i>
December 7, 2021 – December 16, 2021	10

## Presentations

### *Invited Presentations:*

74. South Big Data Hub Education & Workforce Working Group Meeting: *Navigating undergraduate research projects fully online*, Presented Remotely (Jan 2021)
73. TIES 2020 Virtual Conference: *Data science and environmental problems*, Presented Remotely with Jennifer Hoeting (Colorado State University), organized and hosted by Alexandra Schmidt (McGill University) (Dec 2020)
72. ENAR 2020 Spring Meeting: *Fusing multiple existing space-time categorical land cover products*, Presented Remotely (Mar 2020)
71. SETAC Young Environmental Scientists Meeting: *Statistics for environmental data workshop*, Waco, TX (Mar 2020)
70. University of South Carolina, Department of Statistical Science Colloquium Talk: *Fault detection and isolation for a complex decentralized wastewater treatment facility*, Columbia, SC (Dec 2019)
69. Southern Methodist University, Department of Statistical Science Colloquium Talk: *Fault detection and isolation for a complex decentralized wastewater treatment facility*, Dallas, TX (Nov 2019)
68. Pennsylvania State University, Department of Statistics Colloquium Talk: *Fault detection and isolation for a complex decentralized wastewater treatment facility*, State College, PA (Oct 2019)
67. Virginia Tech University, Department of Statistics Colloquium Talk: *Fault detection and isolation for a complex decentralized wastewater treatment facility*, Blacksburg, VA (Oct 2019)
66. World Statistics Congress: *Fusing multiple existing space-time categorical land cover products*, Kuala Lumpur, Malaysia (Aug 2019)
65. Colorado School of Mines, Department of Applied Mathematics and Statistics Colloquium Talk: *Fault detection and attribution for a complex decentralized wastewater treatment facility*, Golden, CO (Feb 2019)
64. Florida State University, Department of Statistics Colloquium Talk: *Mixture of regression models for large spatial data sets*, Tallahassee, FL (Sep 2018)
63. The International Environmetrics Society (TIES) Annual Conference: *Mixture of regression models for large spatial data sets*, Guanajuato, Mexico (Jul 2018)
62. University of Notre Dame, Department of Applied and Computational Mathematics and Statistics: *Mixture of regression models for large spatial data sets*, South Bend, IN (Apr 2018)
61. INFORMS Annual Meeting: *A Markov-switching vector autoregressive stochastic wind generator for multiple spatial and temporal scales*, Houston, TX (Oct 2017)
60. National Alliance for Water Innovation Workshop Talk: *Fault detection for a decentralized wastewater treatment facility*, Golden, CO (Aug 2017)
59. International Federation of Operational Research Societies: *A Markov-switching vector autoregressive stochastic wind generator for multiple spatial and temporal scales*, Québec City, Canada (Jul 2017)
58. Statistics Triple Crown Talk: *Mixture of regression models for large spatial data sets*, Boulder, CO (Jul 2017)
57. Quality and Productivity Research Conference Talk: *Linear and nonlinear dimension reduction techniques for automated process monitoring of a decentralized wastewater treatment facility*, Storrs, CT (Jun 2017)
56. Baylor University, Department of Environmental Science Colloquium Talk: *Detecting errors in engineering and environmental problems*, Waco, TX (Apr 2017)
55. University of Texas at Dallas, Department of Mathematical Sciences Colloquium Talk: *Mixture of regression models for large spatial data sets*, Dallas, TX (Apr 2017)
54. Texas A&M University, Department of Statistics Colloquium Talk: *Mixture of regression models for large spatial data sets*, College Station, TX (Mar 2017)
53. Texas A&M University, Department of Statistics Journal Club: *Fusing multiple existing space-time land cover products*, College Station, TX (Mar 2017)

52. Conference on Computational and Methodological Statistics Talk: *Fusing multiple existing space-time land cover products*, Seville, Spain (Dec 2016)
51. Workshop on Statistics for High-Dimensional and Complex Data Talk: *Mixture of regression models for large spatial data sets*, KAUST, Saudi Arabia (Nov 2016)
50. SIAM Conference on Uncertainty Quantification Talk: *Fusing multiple existing space-time land cover products*, Lausanne, Switzerland (Apr 2016)
49. KAUST Collaborative Research Grant Workshop Talk: *Detecting errors in engineering and environmental problems*, Given Remotely (Mar 2016)
48. Northwestern University, Industrial Engineering and Management Sciences Colloquium Talk: *Robust bivariate error detection in skewed data with application to historical radiosonde winds*, Evanston, IL (Feb 2016)
47. Baylor University, Department of Statistical Science Colloquium Talk: *Robust bivariate error detection in skewed data with application to historical radiosonde winds*, Waco, TX (Feb 2016)
46. University of Colorado at Denver, Department of Mathematical and Statistical Sciences Colloquium Talk: *Robust bivariate error detection in skewed data with application to historical radiosonde winds*, Denver, CO (Feb 2016)
45. Big Data and Environment Workshop Invited Talk: *Robust bivariate error detection in skewed data with application to historical radiosonde winds*, Buenos Aires, Argentina (Nov 2015)
44. Universidad Técnica Federico Santa María, Department of Mathematics Colloquium Talk: *Multivariate spatial hotspot identification with conditional simulation for an atom probe tomography specimen*, Valparaiso, Chile (Nov 2015)
43. Colorado School of Mines, Nuclear Science and Engineering Colloquium Talk: *Wind energy overview and wind speed forecasting*, Golden, CO (Oct 2015)
42. Brigham Young University, Department of Statistics Colloquium Talk: *The role of regimes in short-term wind speed forecasting at multiple wind farms*, Provo, UT (Oct 2015)
41. Colorado School of Mines, Department of Civil and Environmental Engineering Colloquium Talk: *Multivariate and spatial statistics methods for environmental problems*, Golden, CO (Oct 2015)
40. WNAR/IBS Conference Invited Talk: *Characterizing spatial and chronological target selection of serial criminal offenders*, Boise, ID (Jun 2015)
39. UCLA, Department of Statistics Colloquium Talk: *Characterizing spatial and chronological target selection of serial criminal offenders*, Los Angeles, CA (Jun 2015)
38. Baylor University, Department of Statistical Science Colloquium Talk: *Assessing the performance of model-based clustering methods in multivariate time series with application to identifying regional wind regimes*, Waco, TX (Apr 2015)
37. Workshop on Modern Statistics for the Non-Specialist and Application to Materials and Chemistry Research, Invited Talk: *Finding significant clusters of elements in an atom probe tomography sample using local indicators of spatial association*, North Carolina State University, Raleigh, NC (Feb 2015)
36. Seismomatics Conference, Invited Talk: *Evaluating the impacts of climate change on diurnal wind power cycles using multiple regional climate models*, Valparaiso, Chile (Jan 2015)
35. University of Colorado at Boulder, Department of Applied Mathematics Colloquium Talk: *Robust multivariate error detection in skewed functional data with application to historical radiosonde winds*, Boulder, CO (Nov 2014)
34. University of Padova, Department of Statistics Colloquium Talk: *A semi-parametric method for robust multivariate error detection in skewed functional data with application to historical radiosonde winds*, Padova, Italy (Sep 2014)
33. Joint Statistical Meetings, Invited Session: *Statistical identification of local and regional wind regimes*, Boston, MA (Aug 2014)
32. American Wind Energy Association, WINDPOWER Talk: *Short-term forecasting of categorical changes in wind power with Markov Chain models*, Las Vegas, NV (May 2014)

31. Colorado State University, Department of Statistics Colloquium Talk: *A semi-parametric method for robust multivariate error detection in skewed functional data with application to historical radiosonde winds*, Fort Collins, CO (Apr 2014)
30. Naval Postgraduate School, Department of Operations Research Colloquium Talk: *Assessing the performance of model-based clustering methods in multivariate time series with application to identifying regional wind regimes*, Monterey, CA (Apr 2014)
29. Naval Postgraduate School, Department of Operations Research Colloquium Talk: *A permutation test to identify important attributes for linking crimes of serial offenders*, Monterey, CA (Apr 2014)
28. KAUST, Conference on Spatial Statistics for Environmental and Energy Challenges, Talk: *Assessing the performance of model-based clustering methods in multivariate time series with application to identifying regional wind regimes*, Saudi Arabia (Mar 2014)
27. Ohio State University, Department of Statistics Seminar Talk: *Statistical identification of local and regional wind regimes*, Columbus, OH (Sep 2013)
26. Center for Research and Education in Wind 4th Annual Symposium, Talk: *Short-term forecasting of categorical changes in wind power with Markov Chain models*, CSU, Fort Collins, CO (Aug 2012)
25. Center for Research and Education in Wind 3rd Annual Symposium, Talk: *The impacts of climate change on the wind resource*, NREL, Golden, CO (Aug 2011)
24. Northrop Grumman Research Technology Symposium, Talk: *Bayesian space-time point process models for individually identifiable criminal patterns*, Aurora, CO (Apr 2011)
23. National Center for Atmospheric Research, Wind Energy Prediction R&D Workshop, Talk: *Space-time wind speed modeling techniques*, Boulder, CO (May 2010)
22. Colorado School of Mines, Environmental Science and Engineering Department, Talk: *Statistical models for short-term space-time wind speed forecasts*, Golden, CO (Apr 2010)
21. National Center for Atmospheric Research, Research Applications Lab, Talk: *Statistical models for short-term space-time wind speed forecasts*, Boulder, CO (Nov 2009)
20. Colorado State University, Department of Statistics, Talk: *Comparing accuracy of spatial forecasts*, Fort Collins, CO (Oct 2009)
19. Texas A&M University, Department of Statistics, Talk: *Comparing accuracy of spatial forecasts*, College Station, TX (Jun 2009)
18. Colorado School of Mines, Mathematical and Computer Sciences Department, Talk: *Powering up with space-time wind forecasting*, Golden, CO (Feb 2009)
17. University of Colorado at Denver, Talk: *Powering up with space-time wind forecasting*, Denver, CO (Feb 2009)
16. Kansas State University, Talk: *Powering up with space-time wind forecasting*, Manhattan, KS (Feb 2009)
15. Arizona State University, Talk: *Powering up with space-time wind forecasting*, Tempe, AZ (Feb 2009)
14. Iowa State University, Talk: *Powering up with space-time wind forecasting*, Ames, IA (Feb 2009)
13. University of Arizona, Talk: *Powering up with space-time wind forecasting*, Tucson, AZ (Jan 2009)
12. University of California at Los Angeles, Talk: *Powering up with space-time wind forecasting*, Los Angeles, CA (Jan 2009)
11. University of California at Santa Barbara, Talk: *Powering up with space-time wind forecasting*, Santa Barbara, CA (Jan 2009)
10. University of Iowa, Talk: *Powering up with space-time wind forecasting*, Iowa City, IA (Jan 2009)
9. Virginia Commonwealth University, Talk: *Powering up with space-time wind forecasting*, Richmond, VA (Dec 2008)
8. Louisiana State University, Talk: *Powering up with space-time wind forecasting*, Baton Rouge, LA (Nov 2008)
7. Baylor University, Talk: *Powering up with space-time wind forecasting*, Waco, TX (Nov 2008)
6. College of Charleston, Talk: *Powering up with space-time wind forecasting*, Charleston, SC (Oct 2008)

5. International Symposium on Forecasting, Talk: *Powering up with space-time wind forecasting*, Nice, France (Jun 2008)
4. University of Geneva Seminar, Talk: *Powering up with space-time wind forecasting*, Geneva, Switzerland (Mar 2008)
3. Joint Statistical Meetings, Invited Session: *Models for short-term wind speed prediction*, Salt Lake City, UT (Jul 2007)
2. Joint Statistical Meetings, Invited Poster: *Statistical approaches to El Niño forecasting*, Salt Lake City, UT (Jul 2007)
1. Geophysical Statistics Project Informal Seminar NCAR, Talk: *Powering up with space-time wind forecasting*, Boulder, CO (Jul 2007)

*Contributed Presentations:*

22. Baylor Undergraduate Research in Science and Technology, Invited Virtual Guest Speaker: *Mo(Wa)<sup>2</sup>TER Class and Summer Program*, Waco, TX (Sep 2020)
21. Joint Statistical Meetings, Topic Contributed Session Organizer and Impromptu Talk: *Advanced fault detection and attribution in large and complex data streams*, Denver, CO (July 2019)
20. Joint Statistical Meetings, Topic Contributed Session: *Incorporating photovoltaic and load uncertainty into remote microgrid design optimization*, Denver, CO (Jul 2019)
19. Gordon Research Conference Urbanization, Water and Food Security, Poster: *Fault attribution for a complex decentralized wastewater treatment facility*, Hong Kong (Jul 2019)
18. Workshop on Point Process Models, Poster: *Point pattern experiments for the classroom*, College Station, TX (Sep 2018)
17. Joint Statistical Meetings, Topic Contributed Session: *Fusing multiple existing space-time land cover products*, Vancouver, Canada (Jul 2018)
16. Rising Stars Research Talks, Baylor University: *Spatial and space-time methods for big datasets*, Waco, TX (Apr 2017)
15. Department of Statistical Science, Baylor University: *Mixture of regression models for large spatial data sets*, Waco, TX (Oct 2016)
14. Joint Statistical Meetings, Topic Contributed Session: *Mixture of regression models for large spatial data sets*, Chicago, IL (Aug 2016)
13. Joint Statistical Meetings, Topic Contributed Session: *Robust bivariate error detection in skewed data with application to historical radiosonde winds*, Seattle, WA (Aug 2015)
12. METMA/GRASPA Conference, Poster: *A semi-parametric method for robust multivariate error detection in skewed functional data with application to historical radiosonde winds*, Torino, Italy (Sep 2014)
11. EWEA Wind Power Forecasting Workshop, Poster: *Short-term forecasting of categorical changes in wind power with Markov chain models*, Rotterdam, Netherlands (Dec 2013)
10. Applied Mathematics and Statistics Department, Talk: *A permutation test to identify important attributes for linking crimes of serial offenders*, CSM, Golden, CO (Apr 2013)
9. TIES Workshop on the Visualization of Climate Data, Poster: *Approaches to investigating the impact of climate change on the wind resource*, Reykjavik, Iceland (Aug 2011)
8. International Symposium on Forecasting, Talk: *Comparing spatial predictions*, Prague, Czech Republic (Jun 2011)
7. Applied Mathematics and Statistics Department, Talk: *Comparing spatial predictions*, CSM, Golden, CO (Mar 2011)
6. Workshop on Environmetrics, Poster: *Verification of climatological wind speeds using a neighborhood approach*, Boulder, CO (Oct 2010)
5. American Meteorological Society, Talk: *Varying-coefficient space-time models for short-term wind forecasting*, Atlanta, GA (Jan 2010)

4. Workshop on Environmetrics, Poster: *Comparing accuracy of spatial forecasts*, Boulder, CO (Oct 2008)
3. Joint Statistical Meetings, Contributed Session: *Wind forecasting models and loss function*, Denver, CO (Aug 2008)
2. WINDPOWER 2008, Scientific Track: *Powering up with short-term statistical space-time wind forecasting*, Houston, TX (Jun 2008)
1. Multivariate Methods in Environmetrics, Poster: *Modeling spatio-temporal wildfire ignition point patterns*, Chicago, IL (Oct 2006)

## Service

### *Professional Service*

- The International Environmetrics Society Publications Officer (09/2021 - 08/2023)
- American Statistical Association Fiscal Oversight Committee member, reports to the ASA Council of Sections Governing Board (2020-2022)
- Organizing committee for ENVR Workshop - Statistics for the Environment in Provo, UT (2022)
- “International Year of Women in Statistics and Data Science; Happy 200th birthday Florence Nightingale!” committee member, organized by the International Statistical Institute (2020)
- Organizing committee for ENVR Data Challenge (2020, 2021)
- JABES Management Committee (2019-2021)
- Chair-elect/Chair/Past-Chair of the ASA’s Section for Statistics in the Environment (2019/2020/2021)
- North American Membrane Society (NAMS) session organizer (2019)
- The International Environmetrics Society 2018 Annual Conference Scientific Committee
- Southern Regional Council on Statistics Summer 2017 Research Conference co-organizer
- Secretary of the ASA’s Section for Statistics in the Environment (2017)
- Treasurer of the ASA’s Section for Statistics in the Environment (2016)
- Short-course for NCAR’s R bootcamp workshop for high school students: *Permutation Tests and Spatial Cluster Analysis*, Boulder, CO (Jun 2015, 2016)
- Center for Research and Education in Wind (CREW) CSM Site Director (Fall 2011-Spring 2016)
- Co-chair of Section on Statistics and the Environment Biennial Workshop, Boulder, CO (Oct 2010)
- Talk for Bechtel K-12 Teacher’s Workshop: *Wind Power Basics*, Golden, CO (July 2010, 2011, 2012, 2013, 2014)
- Supervision of three Summer Internships in Parallel Computational Science students at NCAR, Boulder, CO (Jun-Aug 2010)
- Joint Coordinator for Wind Energy at NCAR-CSM Symposium, Golden, CO (May 2010)
- Talk for Texas A&M University Statistics Graduate Students: *Interviewing for Academic Jobs*, Given remotely (Nov 2009)
- College Board Advanced Placement Statistics Reader, Louisville, KY (Jun 2008 and Jun 2009)

### *Editorial and Review Service*

- External letter writer in two promotion and tenure cases (2019, 2020)
- NSF Panel Reviewer (2 panels), Ad Hoc Reviewer, and Site Visit Team Reviewer
- Associate Editor for *Technometrics* (2016-2018, 2022-present)
- Associate Editor for *Environmetrics* (2016-present)
- Associate Editor for Wiley online journal *Stat* (2015-2021)
- Associate Editor for *Journal of Environmental Statistics* (Spring 2015-present)
- Project Advisory Committee for WateReuse project WRRF-13-03 (2014-2016)
- Review of Australian National University 2016 Statistics Ph.D. dissertation

- Referee for 37 Journals: Advances in Statistical Climatology, Meteorology and Oceanography; Annals of Applied Statistics; Chilean Journal of Statistics; Computational Statistics and Data Analysis; Criminology; Energies; Environmental and Ecological Statistics; Environmental Science and Technology; Environmetrics; European Journal of Operational Research; Geophysical Journal International; Geophysical Research Letters; IEEE Transactions on Power Delivery; IEEE Transactions on Power Systems; IEEE Transactions on Smart Grid; IET Generation, Transmission & Distribution; Journal of the American Statistical Association; Journal of Climate; Journal of Computational and Graphical Statistics; Journal of Emerging and Selected Topics in Power Electronics; Journal of Forecasting; Journal of Quality Technology; Journal of Renewable and Sustainable Energy; Journal of the Royal Statistical Society; Monthly Weather Review; PLOS ONE; Social Science; Statistical Analysis and Data Mining; Statistical Methods and Applications; Statistics and Probability Letters; Stochastic Environmental Research and Risk Assessment; Renewable Energy; Resources; Spatial Statistics; Technometrics; Water Research; and Wind Energy

#### *Baylor University Service*

- Epidemiology Faculty Search Committee (2021-2022)
- Jackson Endowed Chair Faculty Search Committee (2020-2021)
- Active Learning Lab Fellowship application reviewer (Spring 2020)
- College of Arts and Science Remote recruiting event participant (Spring 2020)
- Invitation to Excellence faculty member participant (Spring 2020)
- Statistical Science Faculty Search Committee (2019-2020)
- Glasscock Endowed Fund for Excellence in Environmental Sciences in the College of A&S, Reviewer (2019)
- Educational Psychology Faculty Search Committee (2018-2019)
- Environmental Sciences Faculty Search Committee (2018-2019)
- University Research Assessment Steering Committee (2018-2019)
- Faculty Showcase at Illuminate Fundraising Kick-off Event (2018)
- Baylor Statistical Science Department Colloquium Organizer (2016-2017, 2017-2018, 2018-2019)
- Council on Global Engagement Committee (2017-2019)
- Arts and Sciences Research Resources Committee (2018)
- Educational Psychology Faculty Search Committee (2017-2018)
- Undergraduate Research and Scholarly Achievement grant reviewer (Spring 2017)
- Global Health Grand Challenges Arts & Sciences Steering Committee member (Fall 2016-Spring 2017)
- Faculty Focus Group to advise the presidential search (Fall 2016)

#### *CSM University Service*

- CSM University Grievance Committee (Spring 2016)
- CSM AMS Department Head Search Committee (Spring 2016)
- CSM AMS Departmental Colloquium Organizer (2015-2016)
- CSM EECS Departmental Faculty Search Committee (Spring 2015)
- CSM Operations Research with Engineering Interdisciplinary Committee (2011-2016)
- CSM AMS Departmental Graduate Committee (2012-2016)
- CSM University Safety Committee (2013-2015)
- CSM Talk for AMS Society for Women in Mathematics (Mar 2014)
- CSM AMS Departmental Faculty Search Committee (Spring 2014)
- CSM Research Council AMS representative (2013-2014)
- CSM New Faculty Orientation Faculty Panel (Aug 2013)

- CSM AMS Departmental Faculty Search Committee (Spring 2013)
- CSM AMS Departmental Faculty Search Committee (Spring 2012)
- CSM AMS Departmental Colloquium Organizer (2011-2012)
- CSM AMS Departmental Social Committee (2010-2011)
- CSM Talk for KME/SIAM Undergraduate Students, Golden, CO (Nov 2009)
- CSM Statistics Representative of MACS for Preview CSM to recruit prospective students (Nov 2009)
- CSM AMS Departmental Undergraduate Committee (2009-2012)

## Awards

- Baylor University Postdoctoral Scholar position awarded, valued at approximately \$188,100 (Jun 2020 – Jun 2023)
- Active Learning Lab Fellowship (\$500), which aims to increase implementation, awareness, and quality of active learning at Baylor University (Jan 2020)
- Baylor University Research Leave, a sabbatical from teaching and university service commitments, awarded based on application submitted (Fall 2019)
- Water Environment Federation's Technical Exhibition and Conference Intelligent Water Systems Challenge first place team, winning \$10,000 at the Chicago WEFTEC meeting (Sep 2019)
- The International Environmetrics Society Abdel El-Shaarawi Early Investigator 2019 Award that recognizes and honors early investigators who have made outstanding contributions to the development of statistical and/or quantitative approaches for research in the environmental sciences (Aug 2019)
- American Statistical Association's Section on Statistics and the Environment 2017 Early Investigator Award that recognizes outstanding contributions to the development of methods, issues, concepts, applications, and the initiatives of environmental statistics (Aug 2017)
- Office of the Vice Provost for Research Rising Stars Program, selected to participate with new research-active faculty at Baylor to develop collaborations and training to pursue funding (Sep 2016)
- Colorado School of Mines Teaching Award (\$2,500), a university-wide award recognizing instructional and pedagogical excellence (Apr 2016)
- P.E.O. Scholar Award (\$15,000) from the Philanthropic Educational Organization (2008-2009)
- Student Paper Competition Winner (\$500) for ASA Section on Statistics in the Environment (Aug 2008)
- Travel Award, International Symposium on Forecasting; Nice, France (Jun 2008)
- Rudd Mayer Memorial Travel Award, WINDPOWER 2008; Houston, TX (Jun 2008)
- Travel Award, A Statistical Consensus on Global Warming; Boulder, CO (Oct 2007)

## Memberships

- The International Environmetrics Society (TIES)
- American Statistical Association (ASA)
  - Section on Statistics and the Environment
  - Section on Statistics in Defense and National Security
  - Section on Quality and Productivity
  - Section on Statistical Learning and Data Science
  - Southeast Texas, North Texas, and Austin Chapters
- International Statistical Institute (ISI)

## In The News

- Baylor Arts and Sciences magazine article (10/30/18): Data, Data Everywhere  
<https://blogs.baylor.edu/artsandsciences/2018/10/30/datascience/>
- NAWI DOE \$100 million award (10/22/19)  
<https://www.baylor.edu/mediacommunications/news.php?action=story&story=214087>
- 2019 LIFT Intelligent Water Systems Challenge (11/04/2019)  
<https://www.wef.org/resources/pressroom/press-releases2/wef-press-releases/colorado-team-wins-2019-lift-intelligent-water-systems-challenge/>
- Baylor Magazine (Winter 2020): Algorithmic Academics  
<https://www.baylor.edu/alumni/magazine/1802/index.php?id=965840>
- Baylor Proud Faculty Profile (02/07/2020) [https://www2.baylor.edu/baylorproud/2020/02/meet-baylors-internationally-recognized-expert-on-data-sciences-and-water-treatment/?\\_ga=2.110465411.787558092.1581349773-1062611312.1579648790](https://www2.baylor.edu/baylorproud/2020/02/meet-baylors-internationally-recognized-expert-on-data-sciences-and-water-treatment/?_ga=2.110465411.787558092.1581349773-1062611312.1579648790)
- Baylor Connections Podcast (03/06/2020)  
<https://www.baylor.edu/connections/index.php?id=967463>
- Newhart, K. B., Marks, C., Rauch-Williams, T., Cath, T. Y., Hering, A. S. (2020) “Boulder tests its waters with predictive aeration control,” *Advances in Water Research*, 30: 25–28. This is a quarterly magazine (not peer-reviewed) of the Water Research Foundation and can be viewed here.
- Baylor Research Administrator Campaign (09/24/21): Transformative Data  
<https://www.baylor.edu/research/news.php?action=story&story=224741> and  
<https://www.baylor.edu/research/index.php?id=981764>