William Kleiber

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University of Colorado
Boulder, CO 80309-0526

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Research Interests

Spatial statistics; Statistical climatology; Renewable energy science; Stochastic weather generators; Computer experiments; Calibration, emulation and validation

Positions

Associate Professor, Department of Applied Mathematics,
University of Colorado, Boulder, CO 2019 – Present

Visiting Data Scientist, Jupiter Intelligence, Boulder, CO 2019 – 2020

Assistant Professor, Department of Applied Mathematics,
University of Colorado, Boulder, CO 2012 – 2019

Professeur Invité (Chair Henri Lebesgue), Université de Rennes,
Rennes, France 2016

Post-graduate Scientist, National Center for Atmospheric Research,
Institute for Mathematics Applied to Geosciences, Boulder, CO 2010 – 2012

Education

University of Washington, Seattle, WA 2010
Ph.D. in Statistics
Department of Statistics
Advisors: Tilmann Gneiting and Adrian Raftery

University of Iowa, Iowa City, IA 2006
B.S. in Mathematics
Graduation with Honors and Distinction

Academic Honors, Awards & Scholarships

NPG Paper of the Month Award Oct 2020
"Beyond univariate calibration: Verifying spatial structure in ensembles of forecast fields" chosen by Editors of Nonlinear Processes in Geophysics for the paper of the month, October, 2020.

Faculty Leadership Institute Class of 2020 2020
Elected member of a group of 15 new leaders on campus for the Faculty Leadership Institute

Young Investigator Award, Section on Statistics and the Environment,
American Statistical Association 2016

Lebesgue Chair, Centre Henri Lebesgue, France 2016
Elected as a Junior Lebesgue Chair: an invited visiting international professorship

JASA Featured Article Dec 2011
"Geostatistical Model Averaging for Locally Calibrated Probabilistic Quantitative Precipitation Forecasting" chosen by Editors of the Journal of the American Statistical Association as a Featured Article for the December, 2011 issue of JASA

Z.W. Birnbaum Award, University of Washington 2009
Annual award for best General Examination in the Department of Statistics

NSF Vertical Integration of Research and Education
(VIGRE) Fellowship Sep 2006 – Sep 2008

Publications (* indicates student)

47. Ossandon*, A., Brunner, M. I., Rajagopalan, B. and Kleiber, W. (2022). "A space-time Bayesian hierarchical modeling framework for projection of seasonal maximum streamflow." *Hydrology and Earth System Sciences*, **26**, 149–166, 10.5194/hess-26-149-2022.

46. Zhang*, W., Kleiber, W., Hodge, B. M. and Mather, B. (2021+). "A nonstationary and non-Gaussian moving average model for solar irradiance." *Environmetrics*, accepted.

45. Rittger, K., Krock*, M., Kleiber, W., Bair, E., Brodzik, M.J., Stephenson, T., Rajagopalan, B., Bormann, K. J. and Painter, T.H. (2021). "Multi-sensor fusion using random forests for daily fractional snow cover at 30 m." *Remote Sensing of Environment*, **264**, 112608.

44. Ossandon*, A., Rajagopalan, B. and Kleiber, W. (2021). "Spatial-temporal multivariate semi-Bayesian hierarchical framework for extreme precipitation frequency analysis." *Journal of Hydrology*, **600**, 126499, doi:10.1016/j.jhydrol.2021.126499.

43. Shields, M., Beiter, P. and Kleiber, W. (2021). "Spatial impacts of technological innovations on the levelized cost of energy for offshore wind power plants in the United States." *Sustainable Energy Technologies and Assessments*, **45**, 101059, doi:10.1016/j.seta.2021.101059.

42. Wiens*, A., Kleiber, W., Nychka, D. and Barnhart, K.R. (2021). "Nonrigid registration using Gaussian processes and local likelihood estimation." *Mathematical Geosciences*, doi:10.1007/s11004-020-09917-7.

41. Krock*, M., Kleiber, W. and Becker, S. (2021). "Nonstationary modeling with sparsity for spatial data via the basis graphical lasso." *Journal of Computational and Graphical Statistics*, **30**, 375–389, doi:10.1080/10618600.2020.1811103.

40. Doubleday*, K., Jascourt, S., Kleiber, W. and Hodge, B. M. (2021). "Probabilistic solar power forecasting using Bayesian model averaging." *IEEE Transactions on Sustainable Energy*, **12**, 325–337.

39. Stanley*, Z., Grooms, I., Kleiber, W., Bachman, S. D., Castruccio, F. and Adcroft, A. (2020). "Parameterizing the impact of unresolved temperature variability on the large scale density field. Part I: Theory." *Journal of Advances in Modeling Earth Systems*, doi:10.1029/2020MS002185.

38. Horvath*, S., Stroeve, J., Rajagopalan, B. and Kleiber, W. (2020). "A Bayesian logistic regression for probabilistic forecasts of the minimum September Arctic sea ice cover." *Earth and Space Science*, **7**, doi:10.1029/2020EA001176.

37. Wiens*, A., Nychka, D. and Kleiber, W. (2020). "Modeling spatial data using local likelihood estimation and a Matérn to spatial autoregressive translation." *Environmetrics*, doi:10.1002/env.2652.

36. Jacobson*, J., Kleiber, W., Scheuerer, M. and Bellier, J. (2020). "Beyond univariate calibration: Verifying spatial structure in ensembles of forecast fields." *Nonlinear Processes in Geophysics*, **27**, 411–427.

35. North*, J., Stanley*, Z., Kleiber, W., Deierling, W., Gilleland, E. and Steiner, M. (2020). "A statistical approach to fast nowcasting of lightning potential fields." *Advances in Statistical Climatology, Meteorology and Oceanography*, **6**, 79–90.

34. Raseman*, W. J., Rajagopalan, B., Kasprzyk, J. R. and Kleiber, W. (2020). "Nearest neighbor time series bootstrap for generating influent water quality scenarios." *Stochastic Environmental Research and Risk Assessment*, **34**, 23–31.

33. Wiens*, A., Kleiber, W., Barnhart, K. R. and Sain*, D. (2020). "Surface estimation for multiple misaligned point sets." *Mathematical Geosciences*, **52**, 527–542.

32. Verdin, A., Rajagopalan, B., Kleiber, W., Podestá, G. and Bert, F. (2019). "BayGEN: A Bayesian space-time stochastic weather generator." *Water Resources Research*, **55**, 2900–2915.

31. Kleiber, W., Nychka, D. and Bandyopadhyay, S. (2019). "A model for large multivariate spatial data sets." *Statistica Sinica*, **29**, 1085–1104.

30. Grooms, I. and Kleiber, W. (2019). "Diagnosing, modeling, and testing a multiplicative stochastic Gent-McWilliams parameterization." *Ocean Modelling*, **133**, 1–10.

29. Zhang*, W., Kleiber, W., Florita, A.R., Hodge, B.M. and Mather, B. (2019). "Modeling and simulation of high frequency solar irradiance." *IEEE Journal of Photovoltaics*, **9**, 124–131.

28. Zhang*, W., Kleiber, W., Florita, A.R., Hodge, B.M. and Mather, B. (2018). "A stochastic downscaling approach for generating high-frequency solar irradiance scenarios." *Solar Energy*, **176**, 370–379.

27. Robinson*, G., Grooms, I. and Kleiber, W. (2018). "Improving particle filter performance by smoothing observations." *Monthly Weather Review*, **146**, 2433–2446.

26. Verdin, A., Rajagopalan, B., Kleiber, W., Podestá, G. and Bert, F. (2018). "A conditional stochastic weather generator for seasonal to multi-decadal simulations." *Journal of Hydrology*, **556**, 835–846.

25. Wong*, T., Kleiber, W. and Noone, D. (2017). "The impact of error accounting in a Bayesian approach to calibrating modeled turbulent fluxes in an open-canopy forest." *Journal of Hydrometeorology*, **18**, 2029–2042.

24. Kleiber, W. (2017). "Coherence for multivariate random fields." *Statistica Sinica*, **27**, 1675–1697.

23. Laga*, I. and Kleiber, W. (2017). "The modified Matérn process." *Stat*, **6**, 241–247.

22. Olson*, B. and Kleiber, W. (2017). "Approximate Bayesian computation methods for daily spatiotemporal precipitation occurrence simulation." *Water Resources Research*, **53**, 3352–3372.

21. Bracken*, C., Rajagopalan, B., Cheng, L, Kleiber, W. and Gangopadhyay, S. (2016). "Spatial Bayesian hierarchical modeling of precipitation extremes over a large domain." *Water Resources Research*, **52**, 6643–6655.

20. Kleiber, W. (2016). "High resolution simulation of nonstationary Gaussian random fields." *Computational Statistics and Data Analysis*, **101**, 277–288.

19. Kleiber, W., Hendershott*, B., Sain, S. and Wiltberger, M. (2016). "Feature-based validation of the Lyon-Fedder-Mobarry magnetohydrodynamical model." *Journal of Geophysical Research: Space Physics*, **121**, 1192–1200.

18. Verdin*, A., Funk, C., Rajagopalan, B. and Kleiber, W. (2016). "Kriging and local polynomial methods for blending satellite-derived and gauge precipitation estimates to support hydrologic early warning systems." *IEEE Transactions on Geoscience and Remote Sensing*, **54**, 2552–2562.

17. Genton, M.G. and Kleiber, W. (2015). "Cross-covariance functions for multivariate geostatistics. (With discussion)." *Statistical Science*, **30**, 147–163.

16. Hering, H., Kazor, K. and Kleiber, W. (2015). "A Markov-switching vector autoregressive stochastic wind generator for multiple spatial and temporal scales." *Resources*, **4**, 70–92.

15. Kleiber, W. and Nychka, D. (2015). "Equivalent kriging." *Spatial Statistics*, **12**, 31–49.

14. Verdin*, A., Rajagopalan, B., Kleiber, W. and Funk, C. (2015). "A Bayesian kriging approach for blending satellite and ground precipitation observations." *Water Resources Research*, **51**, 908–921.

13. Kleiber, W. and Porcu, E. (2015). "Nonstationary matrix covariances: compact support, long range dependence and quasi-arithmetic constructions." *Stochastic Environmental Research and Risk Assessment*, **29**, 193–204.

12. Verdin*, A., Rajagopalan, B., Kleiber, W. and Katz, R. W. (2015). "Coupled stochastic weather generation using spatial and generalized linear models." *Stochastic Environmental Research and Risk Assessment*, **29**, 347–356.

11. Heaton, M.J., Kleiber, W., Sain, S.R. and Wiltberger, M. (2015). "Emulating and calibrating the multiple-fidelity Lyon-Fedder-Mobarry magnetosphere-ionosphere coupled computer model." *Journal of the Royal Statistical Society, Series C*, **64**, 93–113.

10. Kleiber, W., Sain, S. and Wiltberger, M. (2014). "Model calibration via deformation." *SIAM/ASA Journal on Uncertainty Quantification*, **2**, 545–563.

9. Kleiber, W., Sain, S.R., Heaton, M.J., Wiltberger, M., Reese, C.S. and Bingham, D. (2013). "Parameter tuning for a multi-fidelity dynamical model of the magnetosphere." *Annals of Applied Statistics*, **7**, 1286–1310.

8. Kleiber, W., Katz, R.W. and Rajagopalan, B. (2013). "Daily minimum and maximum temperature simulation over complex terrain." *Annals of Applied Statistics*, **7**, 588–612.

7. Kleiber, W. and Genton, M.G. (2013). "Spatially varying cross-correlation coefficients in the presence of nugget effects." *Biometrika*, **100**, 213–200.

6. Kleiber, W. and Nychka, D. (2012). "Nonstationary modeling for multivariate spatial processes." *Journal of Multivariate Analysis*, **112**, 76–91.

5. Kleiber, W., Katz, R.W. and Rajagopalan, B. (2012). "Daily spatio-temporal precipitation simulation using latent and transformed Gaussian processes." *Water Resources Research*, **48**, doi:10.1029/2011WR011105.

4. Kleiber, W., Raftery, A.E. and Gneiting, T. (2011). "Geostatistical model averaging for locally calibrated probabilistic quantitative precipitation forecasting." *Journal of the American Statistical Association*, **106**, 1291–1303 (Featured Article).

3. Kleiber, W., Raftery, A.E., Baars, J., Gneiting, T., Mass, C.F. and Grimit, E. (2011). "Locally calibrated probabilistic forecasting using geostatistical model averaging and local Bayesian model averaging." *Monthly Weather Review*, **139**, 2630–2649.

2. Gneiting, T., Kleiber, W. and Schlather, M. (2010). "Matérn cross-covariance functions for multivariate random fields." *Journal of the American Statistical Association*, **105**, 1167–1177.

1. Cederberg, J., Nichol, J., Frodermann, E., Tollerud, H., Hilk, G., Buysman, J., Kleiber, W., Bongard, M., Ward, J., Huber, K., Khanna, T., Randolph, J. and Nitz, D. (2005). "An anomaly in the isotopomer shift of the hyperfine spectrum of LiI." *Journal of Chemical Physics*, **123**, 134321.

Professional Service

Associate Editor — 2018 – Present
Environmetrics

Invited Session Organizer — Aug 2022
Joint Statistical Meetings, Washington, DC

Grant Reviewer — 2020
National Science Foundation

Invited Session Organizer — Aug 2020
Joint Statistical Meetings, Philadelphia, PA

Invited Session Chair — Jul 2019
Joint Statistical Meetings, Denver, CO

Publications Officer Elect — 2020
Section on Statistics and the Environment, American Statistical Association

Associate Editor — 2014 – 2019
Annals of Applied Statistics

Grant Reviewer — 2019
Los Alamos National Laboratory, Laboratory Directed Research and Development

Board of Directors (Publications Officer) — 2017 – 2019
The International Environmetrics Society (TIES)

Associate Editor — 2015 – 2018
Advances in Statistical Climatology, Meteorology and Oceanography

Associate Editor — 2015 – 2018
Stat

Lead Organizer — Oct 2018
4th Conference on Stochastic Weather Generators

Grant Reviewer — 2018
Canadian Statistical Sciences Institute

Organization Committee Member — May 2016
Workshop on Stochastic Weather Generators

Organization Committee Member — Jun 2015
Big Data in Environmental Science (Pacific Institute for the Mathematical Sciences)

Workshop Organizer — Jun 2014
Pan-American Advanced Studies Institutes Program (PASI)

Session Chair — Aug 2013
World Statistics Congress, Hong Kong, China

Referee for Journals

Advances in Statistical Climatology, Meteorology and Oceanography; *Advances in Water Resources*; *Annals of Applied Statistics*; *Biometrika*; *Bulletin of the Mexican Mathematical Society*; *Environmetrics*; *Hydrology and Earth System Sciences*; *International Journal of Climatology*; *Journal of Agricultural, Biological and Environmental Statistics*; *Journal of Applied Meteorology and Climatology*; *Journal of the American Statistical*

Association; *Journal of Climate*; *Journal of Hydrometeorology*; *Journal of Multivariate Analysis*; *Journal of the Royal Statistical Society Series A*; *Journal of the Royal Statistical Society Series B*; *Linear and Multilinear Algebra*; *Monthly Weather Review*; *NCAR Technical Report Series*; *Nonlinear Processes in Geophysics*; *Nature*; *SIAM Online Undergraduate Journal*; *Stat*; *Statistica Sinica*; *Statistical Science*; *Statistics and Probability Letters*; *Stochastic Environmental Research and Risk Assessment*; *The American Statistician*; *Water Resources Research*

Grants and Funding (amounts are CU portion)

NSF DMS-1923062, PI, $336,924 — Sep 2019–Aug 2022
"AMPS: Deep Stochastic Models for Space-Time Weather-Driven Grid Simulations"

NASA 80NSSC18K1489, Institutional PI, $309,735 — Oct 2018–Sep 2021
"Fusion of MODIS, VIIRS, and LandSat Snow Cover Data to Create High Spatial and Temporal Resolution Estimates of Snow Water Equivalent in a Well-Instrumented and Austere Basin"

NSF DMS-1821074, Co-PI, $219,814 — Sep 2018–Aug 2021
"Improving Particle Filter Performance in Spatially-Extended Problems Using Generalized Random Field Likelihoods"

California Department of Fish and Wildlife, Co-PI, $279,182 — Jun 2018–Dec 2019
"Daily Snow Cover Maps for use in Understanding Habitat and Carrying Capacity of Bighorn Sheep in the Sierra Nevada"

NSF DMS-1822820, PI, $30,000 — Sep 2018–Sep 2019
"Conference on Stochastic Weather Generators"

NSF DMS-1811294, PI, $92,717 — Aug 2018–Jul 2021
"Collaborative Research: Theory and Methods for Highly Multivariate Spatial Processes with Applications to Climate Data Science"

NSF OCE-1736708, Co-PI, $577,715 — Aug 2017–Jul 2020
"A Stochastic Approach to Representing Unresolved Mesoscales in Ocean Circulation Models"

CU Innovative Seed Grant, PI, $49,971 — Jul 2017–Aug 2019
"Inferring Earth Dynamics from Drones"

NREL CU APUP UGA-0-41026-101, PI, $56,570 — Aug 2017–Jul 2018
"Temporal Solar Variability Modeling Using Multi-Distribution Modeling Approaches"

NSF BCS-1461576, Co-PI, $34,754 — May 2015–May 2019
"Quantifying Risk of Tree Species Regeneration Failure and Ecosystem Transitions in Lower Elevation Forests"

NSF DMS-1406536, PI, $307,938 — Aug 2014–Jul 2018
"Collaborative Research: Theory and Methods for Massive Nonstationary and Multivariate Spatial Processes"

NSF DMS-1417724 (CDS&E-MSS), PI, $73,116 — Aug 2014–Jul 2018
"Collaborative Research: Scalable Statistical Validation and Uncertainty Quantification for Large Spatio-Temporal Datasets"

Teaching Experience

Professor, Spatial Statistics, University of Colorado — Fall 2021

Professor, Statistical Learning, University of Colorado — Fall 2021

Instructor, Short Course on Spatial Statistical Learning, World Statistics Congress	Jun 2021
Professor, Spatial Statistics, University of Colorado	Fall 2020
Professor, Statistical Learning, University of Colorado	Fall 2020
Guest Lecturer, Spatial Statistics, King Abdullah University of Science and Technology	Nov 2019
Instructor, STATMOS Short Course, University of Iowa	Sep 2019
Professor, Spatial Statistics, University of Colorado	Spring 2019
Professor, Statistical Learning, University of Colorado	Spring 2019
Professor, Statistical Learning, University of Colorado	Spring 2018
Professor, Introduction to Time Series, University of Colorado	Spring 2018
Professor, Calculus 2 for Engineers, University of Colorado	Fall 2017
Professor, Spatial Statistics, University of Colorado	Spring 2017
Professor, Statistical Applications, University of Colorado	Spring 2017
Professor, Applied Probability, University of Colorado	Fall 2016
Lecturer, Rossbypalooza, University of Chicago	Jul 2016
Lecturer, Spatial Statistics, Data Analytics Bootcamp, National Center for Atmospheric Research	Jun 2016
Professor, Statistical Applications, University of Colorado	Spring 2016
Professor, Introduction to Time Series, University of Colorado	Spring 2016
Professor, Applied Probability, University of Colorado	Fall 2015
Lecturer, Spatial Statistics, Data Analytics Bootcamp, National Center for Atmospheric Research	Jun 2015
Professor, Spatial Statistics, University of Colorado	Spring 2015
Professor, Applied Probability, University of Colorado	Spring 2015
Professor, Introduction to Time Series, University of Colorado	Spring 2014
Professor, Applied Probability, University of Colorado	Spring 2014
Professor, Applied Probability, University of Colorado	Spring 2013
Professor, Matrix Methods, University of Colorado	Fall 2012
Lecturer, Mathematical Science of Understanding and Predicting Regional Climate: A School and Workshop, National University of Singapore	Feb-Mar 2011
Teaching Assistant, Introduction to Mathematical Statistics, University of Washington	Sep 2007
Teaching Assistant, Elements of Statistical Methods, University of Washington	Jan 2007

Advising and Students

Ph.D. Advisor for Graduate Students in Applied Mathematics and Current Position

Caitlin Berry	Present
Zofia Stanley (NSF GRFP recipient; Research Scientist at NOAA)	2021
Mitchell Krock (Postdoctoral Fellow at Rutgers University)	2020
Ashton Wiens (Research Statistician at USGS)	2020
Wenqi Zhang (Director's Postdoctoral Fellow at NREL)	2020
Zachary Mullen (Instructor in Computer Science at CU Boulder)	2018
Anthony Wong (Assistant Professor at Rochester Institute of Technology)	2016

Masters Advisor for Graduate Students in Applied Mathematics

Amanda Lococo	2021
Shalini Mahanthege	2021
Josh Jacobson	2020
Kwan Ho Lee	2018
Gregory Benton (Maurice Davies Award recipient)	2018
Victoria Slattum	2017
Branden Olson	2016

Research Advisor for Undergraduate Students in Applied Mathematics

Kelsey McKenna	2018
Ji Hoon Kim	2016 – 2017
Joshua North	2015 – 2017
Ian Laga	2015 – 2017
Brad Hendershott	2013 – 2014

Ph.D. Committee Member for Graduate Students in Applied Mathematics

Joy Mueller	2021
Zhishen Huang	2020
Antony Pearson	2020
Peter Shaffery	2020
Sama Shrestha	2019
Dale Jennings	2016
Ashar Ali	2016
Yuanting Chen	2014

Masters Committee Member for Graduate Students in Applied Mathematics

Matthew Maierhofer	2019
Marc Thomson	2019
Jonathan Lavington	2018
Evan Sidrow	2018
Amy Chen	2018
Davis Yoshida	2017
Amy DeCastro	2017

Professional Masters Advisor for Graduate Students in Applied Mathematics

Laurette Hamlin 2021

Brian Magee 2019

Committee Member for Students in Other Departments

Ph.D. Committee Member, Alvaro Ossandon,
Department of Civil, Environmental and Architectural Engineering 2021

Ph.D. External Committee Member, Ghulam Qadir,
Computer, Electrical and Mathematical Sciences and Engineering,
King Abdullah University of Science and Technology 2021

Ph.D. Committee Member, Alexander Honeyman,
Department of Civil and Environmental Engineering,
Colorado School of Mines 2021

Ph.D. Committee Member, Sean Horvath,
Department of Civil, Environmental and Architectural Engineering 2020

Masters Thesis Committee Member, Brian Groenke,
Department of Computer Science 2020

Ph.D. Committee Member, Kate Doubleday,
Department of Electrical, Computer and Energy Engineering 2020

Ph.D. Committee Member, Olga Doronina,
Department of Mechanical Engineering 2020

Ph.D. Committee Member, Eric Smyth,
Department of Geological Sciences 2019

Ph.D. Committee Member, William Raseman,
Department of Civil, Environmental and Architectural Engineering 2019

Honors Thesis Committee Member, Monica Gronseth,
Department of Economics 2019

Ph.D. Committee Member, Vineel Yettella,
Department of Atmospheric and Oceanic Sciences 2018

Honors Thesis Committee Member, Rebecca Landau,
Department of Economics 2018

Honors Thesis Committee Member, Royce Brosseau,
Department of Economics 2018

Masters Thesis Committee Member, Joel Singley,
Environmental Studies Program 2017

Ph.D. Committee Member, Cameron Bracken,
Department of Civil, Environmental and Architectural Engineering 2016

Ph.D. Committee Member, Andrew Verdin,
Department of Civil, Environmental and Architectural Engineering 2016

Honors Thesis Committee Member, Pawel Janas,
Department of Economics 2016

Campus and Departmental Service

Graduate Program Chair	2020 – 2023
Statistics and Data Science Committee	2017 – present
Applied Mathematics Chair's Advisory Committee	2020 – 2022
Professional Masters Degree Committee	2020 – 2022
Affiliated Faculty Committee	2020 – 2022
Primary Unit Evaluation Committee (for Ian Grooms)	2021
Primary Unit Evaluation Committee (for David Bortz)	2020
Probability and Statistics Prelim Committee	Fall 2020
Applied Mathematics Graduate Committee	2016 – 2019
Statistics and Data Science Program Chair	2018 – 2019
Applied Mathematics Graduate Program Associate Chair	2018 – 2019
Probability and Statistics Prelim Committee	Spring 2019
Primary Unit Evaluation Committee (for Brian Zaharatos)	2018
Applied Mathematics Faculty Search Committee	2018
Arts and Sciences Council Applied Mathematics Representative	2017 – 2018
Probability and Statistics Prelim Committee Chair	Spring 2018
Applied Mathematics Faculty Search Committee	2017
Applied Mathematics Academic Review and Planning Advisory Committee (ARPAC) Self Study Committee	2016 – 2017
Primary Unit Evaluation Committee (for Anne Dougherty promotion to Teaching Professor)	2017
Probability and Statistics Prelim Committee Chair	Fall 2016
Probability and Statistics Prelim Committee Chair	Spring 2016
Department Awards Committee	2015 – 2016
Department Colloquium Chair	2014 – 2015
Probability and Statistics Prelim Committee	Fall 2014
Applied Mathematics Undergraduate Committee	2012 – 2014
Probability and Statistics Prelim Committee	2013

Talks and Seminars

The basis graphical lasso for highly multivariate nonstationary spatial data (Invited) CMStatistics, Virtual	Dec 2021
The basis graphical lasso for highly multivariate nonstationary spatial data (Topic Contributed) Joint Statistical Meetings, Virtual	Aug 2021

Modeling massive multivariate data with the basis graphical lasso — Nov 2020
NSF AMPS Workshop, Virtual

A Stochastic Tropical Cyclone Precipitation Field Generator (Invited) — Aug 2020
Joint Statistical Meetings, Virtual

The Basis Graphical Lasso for Large Nonstationary Spatial Data (Invited) — Dec 2019
Workshop on High Dimensional Statistical Analysis, Taipei, Taiwan

The Basis Graphical Lasso for Large Nonstationary Spatial Data (Invited Colloquium) — Nov 2019
King Abdullah University of Science and Technology, Saudi Arabia

Stochastic Downscaling of Solar Irradiance for Distribution Network Studies — Oct 2019
NSF ATD/AMPS Workshop, Washington, DC

Penalized Basis Models for Very Large Spatial Datasets (Invited) — Sep 2019
Applied Mathematics and Statistics Colloquium, Colorado School of Mines, Golden, CO

Multivariate spatial modeling: Past, present and future — Sep 2019
STATMOS Workshop, Iowa City, IA

Pushing the Limits of Multivariate Random Fields: How Many is Too Many? (Invited) — Aug 2019
Joint Statistical Meetings, Denver, CO

Penalized Basis Models for Very Large Spatial Datasets — Jun 2019
International Meeting on Statistical Climatology, Toulouse, France

High Resolution Simulation of Nonstationary Gaussian Random Fields — Nov 2018
Front Range Spatial Statistics, Boulder, CO

Was it Raining the Day You Were Born? (Invited) — Jul 2018
Joint Statistical Meetings, Vancouver, Canada

Methods and Theory for Large Multivariate Spatial Processes (Invited) — Jul 2018
2018 IMS Annual Meeting on Probability and Statistics, Vilnius, Lithuania

Multivariate Random Fields and Their Applications in Atmospheric Science (Invited Colloquium) — Jun 2018
Statistical Sciences Seminar, Los Alamos National Laboratory, Los Alamos, NM

Toward a Statistical Approach for Conditionally Simulating Historical Daily Precipitation — May 2018
Boulder Stochastics Meeting, Boulder, CO

A Model for Large Multivariate Spatial Datasets (Invited) — May 2018
IISA International Conference on Statistics, Gainesville, FL

Multivariate Random Fields and Their Applications in Climate/Atmospheric Science (Invited Colloquium) — Apr 2018
Applied Mathematics Seminar, Department of Mathematics, Fort Collins, CO

A Statistical Approach for Creating Historical Gridded Precipitation Products in the United States — Apr 2018
European Geophysical Union, Vienna, Austria

Statistical Challenges in Creating Historical Data Products for the United States (Invited) — Mar 2018
Chicago ASA Chapter Conference on Weather and Prediction, Chicago, IL

Statistical Challenges in Creating Historical Data Products for the United States (Colloquium) — Mar 2018
Applied Mathematics Colloquium, University of Colorado, Boulder

High Resolution Simulation of Gaussian Random Fields (Colloquium) — Feb 2017

Statistics, Optimization and Machine Learning Seminar, University of Colorado, Boulder

Models for Large Multivariate Data (Invited) — Dec 2016
International Chinese Statistical Association, Shanghai, China

Multivariate Random Fields (Colloquium) — Dec 2016
Applied Mathematics Colloquium, University of Colorado, Boulder

Some Problems in Spatial Modeling: Multivariate Random Fields and Simulation (Invited Colloquium) — Sep 2016
Michigan State University, East Lansing, MI

Simulation of Nonstationary Random Fields (Topic Contributed) — Aug 2016
Joint Statistical Meetings, Chicago, IL

The Challenge of Creating Historical Climate Products for the United States (Invited) — Jul 2016
The International Environmetrics Society, Edinburgh, Scotland

Some Problems in Spatial Modeling: Simulation and Multivariate Random Fields (Invited) — Jun 2016
Boulder Fluid and Thermal Sciences Seminar, Boulder, CO

Spatial Statistics for Climate and Weather (Invited) — Jun 2016
Uncertainty Modeling in the Analysis of Weather, Climate and Hydrological Extremes, Banff, Canada

Stochastic Weather Generators: From WGEN to BayGEN (Invited) — May 2016
Workshop on Stochastic Weather Generators, Vannes, France

Equivalent Kernels and Some Theory for Kriging Asymptotics (Invited) — May 2016
Université de Bretagne Occidentale, Brest, France

Kriging Asymptotics (Invited) — Nov 2015
King Abdullah University of Science and Technology, Saudi Arabia

Spatial Prediction for Large Datasets (Invited) — Nov 2015
Colorado State University, Fort Collins, CO

Spatial Prediction for Large Datasets (Invited) — Oct 2015
Ohio State University, Columbus, OH
Lehigh University, Bethlehem, PA
University of Colorado at Denver, Denver, CO

Kriging Asymptotics (Topic Contributed) — Aug 2015
Joint Statistical Meetings, Seattle, WA

Coherence for Random Fields (Invited) — Jun 2015
Mathematical and Statistical Analysis of Spatial Data, Aalborg, Denmark

Coherence for Random Fields (Invited) — May 2015
Big Data in the Environmental Sciences, Vancouver, Canada

Feature-Based Model Calibration and Validation (Invited) — Mar 2015
Eastern North American Region Meeting of the International Biometric Society, Miami, FL

Feature-Based Model Calibration and Verification (Invited) — Jan 2015
Seismomatics, Valparaíso, Chile

Equivalent Kriging (Invited) — Oct 2014
Workshop on High Dimensional, High Frequency and Spatial Data, Karlsruhe Institute of Technology, Germany

The Connection Between Smoothing Splines and Kriging (Invited) — Oct 2014
Spatial Statistics Symposium, Heidelberg Institute of Theoretical Studies, Germany

High Resolution Simulation of Nonstationary Random Fields (Invited) — Sep 2014
Workshop on Stochastic Weather Generators, Avignon, France

High Resolution Simulation of Nonstationary Random Fields
(Topic Contributed) Aug 2014
Joint Statistical Meetings, Boston, MA

Equivalent Kriging (Invited) Mar 2014
Workshop on Spatial Statistics for Environmental and Energy Challenges,
King Abdullah University of Science and Technology, Saudi Arabia

Equivalent Kriging (Invited) Nov 2013
University of Illinois, Urbana-Champaign, IL

Model Calibration via Deformation & Equivalent Kriging (Invited) Nov 2013
Water Resources Seminar, University of Colorado, Boulder, CO

A Framework for Daily Space-time Stochastic Weather
Simulation (Invited) Aug 2013
World Statistics Congress, Hong Kong, China

Equivalent Kriging for Large Datasets (Topic Contributed) Aug 2013
Joint Statistical Meetings, Montreal, Canada

Model Calibration via Space-time Feature Matching (Organized Contributed) Jul 2013
European Meeting of Statisticians, Budapest, Hungary

Model Calibration Under Space-time Misalignment (Invited) Jun 2013
The International Environmetrics Society, Anchorage, AK

Model Calibration Under Space-time Misalignment (Invited) Apr 2013
Economics Working Group, University of Colorado, Boulder, CO

A Framework for Spatio-Temporal Stochastic Weather
Simulation (Invited) Nov 2012
Applied Mathematics Colloquium, University of Colorado, Boulder, CO

A Framework for Spatio-Temporal Stochastic Weather
Simulation (Topic Contributed) Aug 2012
Joint Statistical Meetings, San Diego, CA

A Framework for Spatio-Temporal Stochastic Weather
Simulation (Invited) Aug 2012
Ten Lectures on Statistical Climatology, Seattle, WA

A Framework for Spatio-Temporal Stochastic Weather
Simulation (Invited) May 2012
Workshop on Stochastic Weather Generators, Roscoff, France

Multivariate Spatial Process Modeling: An Overview (Invited) May 2012
Interface, Houston, TX

A Framework for Spatio-Temporal Stochastic Weather
Simulation (Contributed) Apr 2012
Colorado/Wyoming American Statistical Association Chapter Meeting, Boulder, CO

Computer Model Calibration with High and Low Fidelity Model
Output for Spatio-Temporal Data (Invited) Mar 2012
Texas A&M University, College Station, TX

Computer Model Calibration with High and Low Fidelity Model
Output for Spatio-Temporal Data (Invited) Jan 2012
University of Iowa, Iowa City, IA
Colorado State University, Fort Collins, CO
North Carolina State University, Raleigh, NC
Iowa State University, Ames, IA

Computer Model Calibration with High and Low Resolution Model
Output for Spatio-Temporal Data (Invited) Dec 2011
University of Colorado, Boulder, CO

Computer Model Calibration with High and Low Resolution Model Output for Spatio-Temporal Data (Invited) — Nov 2011
Applied Mathematics and Statistics Colloquium, Colorado School of Mines, Golden, CO

Computer Model Calibration with High and Low Resolution Model Output for Spatio-Temporal Data (Topic Contributed) — Aug 2011
Joint Statistical Meetings, Miami, FL

Geostatistical Model Averaging for Probabilistic Quantitative Precipitation Forecasting (Invited) — Apr 2011
Colorado/Wyoming American Statistical Association Chapter Meeting, Boulder, CO

Multivariate Matérn Models (Topic Contributed) — Mar 2011
Eastern North American Region Meeting of the International Biometric Society, Miami, FL

Geostatistical Model Averaging for Probabilistic Quantitative Precipitation Forecasting (Invited) — Jan 2011
Colorado State University, Fort Collins, CO

Methods for Locally Calibrated Probabilistic Forecasting (Invited) — Feb 2010
National Center for Atmospheric Research, Boulder, CO

Geostatistical Model Averaging (Invited) — Jan 2010
Mathematical Research Institute of Oberwolfach, Germany

Matérn Cross-Covariance Functions for Multivariate Random Fields (Invited) — Jan 2010
University of Heidelberg, Germany
University of Lund, Sweden

Posters

Estimating High Mountain Snow Cover by Blending Satellite Data Products (Invited Poster) — Jul 2019
Joint Statistical Meetings, Denver, CO

Equivalent Kriging (Invited Poster) — Aug 2014
Joint Statistical Meetings, Boston, MA

Nonstationary Space-Time Stochastic Weather Simulation — Feb 2013
SAMSI Workshop on Massive Datasets in Environment and Climate, Boulder, CO

Uncertainty Quantification for a Multi-Fidelity Dynamical Model of the Magnetosphere — Apr 2012
SIAM Conference on Uncertainty Quantification, Raleigh, NC

Calibrating the LFM-MIX Model with Single and Double Resolution Model Output — Dec 2011
American Geophysical Union Meeting, San Francisco, CA

Geostatistical Model Averaging for Probabilistic Quantitative Precipitation Forecasting — Jan 2011
American Meteorological Society Meeting, Seattle, WA

Geostatistical Model Averaging for Probabilistic Quantitative Precipitation Forecasting — Oct 2010
ASA Section on Statistics and the Environment Workshop, Boulder, CO