

# Amanda S. Hering

Assistant Professor  
Colorado School of Mines  
Applied Mathematics and Statistics  
Golden, CO 80401-1887

Phone: 720.878.2699 (cell)  
303.384.2462 (office)  
E-mail: ahering@mines.edu  
Website: <http://inside.mines.edu/~ahering>

## Research Interests

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

## 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  
Full Academic Scholarship  
Inducted into Phi Beta Kappa

## Professional Experience

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

**Department of Applied Mathematics and Statistics**

*Assistant Professor*    Aug 2009 to present

**Texas A&M University**; College Station, TX

**Department of Statistics**

*Graduate Teaching and Research Assistant*    Aug 2004 to Aug 2009

**Somerville High School**; Somerville, TX

*High School Mathematics Teacher*    Aug 2002 to Aug 2004

**Montana State University**; Bozeman, MT

**Department of Mathematical Sciences**

*Graduate Teaching Assistant*    Aug 2000 to Aug 2002

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

*Submitted/In Revision*

25. Sun, Y., **Hering, A. S.\***, and Browning, J. M. "Robust bivariate error detection in skewed data with application to historical radiosonde winds," *Submitted*.
24. Kenwell, A., Navarre-Sitchler, A.\*, Prugue, R., Spear, J. R., Maxwell, R. M., **Hering, A. S.**, Carroll, R. W. H., and Williams, K. H. "Using geochemical indicators to distinguish high biogeochemical activity in floodplain soils and sediments," *Submitted*.
23. Kazor, K.\*, Holloway, R., Cath, T., and **Hering, A. S.** "Comparison of linear and nonlinear dimension reduction techniques for automated process monitoring of a decentralized wastewater treatment facility," *Revision Submitted*.

22. King, M., **Hering, A. S.\***, and Aguilar, O. M. “Building predictive models of counterinsurgent deaths using robust clustering and regression,” *Revision Submitted*.
21. Lohmann, T., **Hering, A. S.**, and Rebennack, S.\* “Spatio-temporal hydro forecasting of multireservoir inflows for hydro-thermal scheduling,” *2nd Revision Submitted*.

*Accepted/Published*

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 to appear in *JRSSA*, *Accepted*.
19. Anderson, A. N., Browning, J. M., Comeaux, J., **Hering, A. S.\***, and Nychka, D. (2016) “A simulation study to compare 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.\*** (2015) “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>
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.\*** (2015) “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>
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\\_FIAConf\\_2011.pdf](https://www.forging.org/system/files/field_document/Rothleitner_FIAConf_2011.pdf)

#### *Papers in Preparation*

1. Browning, J. M. and **Hering, A. S.\*** “Simultaneous treatment of random and systematic errors in the historical radiosonde temperature archive,” *In Preparation*.
2. Manago, K., Hogue, T. S., Porter, A., and **Hering, A. S.** “A Bayesian hierarchical model for multiple imputation of urban spatio-temporal groundwater levels,” *In Preparation*.
3. **Hering, A. S.** and Gorman, B. “Testing multivariate hotspot identification with conditional spatial simulation for an atom probe tomography specimen,” *In Preparation*.
4. Rodríguez-Jeangros, N., **Hering, A. S.**, and McCray, J. E. “Fusing multiple existing land cover products to produce a single long spatio-temporal record,” *In Preparation*.
5. **Hering, A. S.**, Putnam, N., and Scioletti, M. “Statistical uncertainty quantification of simulated electric loads at forward operating bases,” *In Preparation*.
6. Goodall, G., **Hering, A. S.**, and Newman, A. “Assessing the role of load data in optimal microgrid procurement strategies,” *In Preparation*.
7. Gilleland, E., **Hering, A. S.**, Fowler, T., and Brown, B. G. “Testing the tests: How bad is it when incorrect assumptions are made when comparing competing forecasts with confidence intervals or hypothesis tests?,” *In Preparation*.

**Grants** (My Total Funding: ~\$746,000)

Sponsor	Role	Title	Funding	Dates
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
NSF	PI	Smart Water Control Systems for Tailored Water Reuse and Low Carbon Footprint	\$329,692	<i>Pending,</i> 10/20/2015
NSF	Co-PI	Smart Water Reclamation Systems for Tailored Water Reuse at Decentralized Facilities	\$999,981	<i>Pending,</i> 01/29/2016

NSF	Co-PI	Characterizing Uncertainty and Risk through Subsurface Data Science	\$2,999,053	<i>Pending,</i> 02/09/2016
-----	-------	--	-------------	-------------------------------

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; RTT = Research and  
 Technology Transfer; REMRSEC = Renewable Energy Materials Research Science and Engineering Center  
 \*GRFP awarded to graduate student under my supervision

## Advising

*Former Students:* (7 Masters, 1 Ph.D.)

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 System- atic Errors in the Historical Radiosonde Tempera- ture Archive
Marvin King*	Ph.D. Operations Research	2014	Optimizing Counterinsurgency Operations

\*Co-advised with Professor Alexandra Newman

*Current/Continuing Students: (3 Ph.D.)*

Karen Kazor	Ph.D. Statistics	2016
Gavin Goodall*	Ph.D. Operations Research	2017
Nicolás Rodríguez-Jeangros**	Ph.D. Civil & Environmental Engineering	2017
Joshua Browning	Ph.D. Statistics	2018

\*Co-advised with Professor Alexandra Newman

\*\*Co-advised with Professor John McCray

*CSM Graduate Committee Member: (37 Total: 11 AMS, 27 Other Departments, [graduated](#) students)*

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)	Ady van Dunem (ME)	Mike Wagner (ORwE)
Lindsay Parr (AMS)	Whitney Poling (MME)	Bryant Reyes (HSE)
Mike Scioletti (ORwE)	Kimberly Manago (HSE)	Cynthia Kanno (CEE)
Mike Teter (ORwE)	Ashley Arigoni (ORwE)	Savannah Miller (CEE)
Kara Marsac (CEE)		

**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)	(TBD)
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)	(TBD)
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."

**Presentations**

*Invited Presentations:*

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 Statistics 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:*

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*

- Associate Editor for *Technometrics* (Spring 2016-present)
- Associate Editor for *Environmetrics* (Spring 2016-present)
- Treasurer of the ASA's Section for Statistics in the Environment (2016)
- Associate Editor for *Journal of Environmental Statistics* (Spring 2015-present)
- Associate Editor for Wiley online journal *Stat* (Spring 2015-present)
- Center for Research and Education in Wind (CREW) CSM Site Director (Fall 2011-present)
- Short-course for NCAR's R bootcamp workshop for high school students: *Permutation Tests and Spatial Cluster Analysis*, Boulder, CO (Jun 2015)
- Project Advisory Committee for WateReuse project WRRF-13-03 (2014-present)
- 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)
- Referee for Journals: *Advances in Statistical Climatology, Meteorology and Oceanography*; *Annals of Applied Statistics*; *Chilean Journal of Statistics*; *Criminology*; *Energies*; *Environmetrics*; *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 Renewable and Sustainable Energy*; *Journal of the Royal Statistical Society*; *Monthly Weather Review*; *Statistical Methods and Applications*; *Stochastic Environmental Research and Risk Assessment*; *Resources*; *Technometrics*; and *Wind Energy*

## *University Service*

- CSM University Grievance Committee (Spring 2016)
- CSM AMS Department Head Search Committee (Spring 2016)
- CSM AMS Departmental Colloquium Organizer (Fall 2015-Spring 2016)
- CSM EECS Departmental Faculty Search Committee (Spring 2015)
- CSM Operations Research with Engineering Interdisciplinary Committee (Fall 2011-present)
- CSM AMS Departmental Graduate Committee (2012-present)
- CSM University Safety Committee (2013-present)
- 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 (Fall 2011-Spring 2012)
- CSM AMS Departmental Social Committee (Fall 2010-Spring 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**

- 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
  - Colorado-Wyoming Chapter
- International Institute of Forecasters (IIF)

## Current and Recent Collaborators

<i>Organization</i>	<i>Collaborator(s)</i>
NCAR	Eric Gilleland, Douglas Nychka, Steve Worley
NREL	Ben Polly, Mike Heaney, Mike Helwig
NOAA	Michael Scheuerer
CERL	Nate Putnam
CNRS	Alexis Hannart
UCLA	Rick Schoenberg
Univ. Técnica Federico Santa Maria	Emilio Porcu
Univ. of Valparaiso	Moreno Bevilacqua
Univ. of Colorado Boulder	William Kleiber
KAUST	Ying Sun, Marc Genton
LexisNexis	Sean Bair
The Climate Corporation	Stephan Sain
CSM –Division of Economics and Business	Steffen Rebennack
–Mechanical Engineering	Alexandra Newman
–Electrical Engineering and Computer Science	Salman Mohagheghi
–Civil and Environmental Engineering	Chris Higgins, Tzahi Cath, Terri Hogue, Mike Mooney
–Geology and Geological Engineering	Reed Maxwell
–Metallurgical and Materials Engineering	Brian Gorman, Geoff Brennecka