

## Contact Information

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## Education

2011 **Ph.D. in Statistics**, *The Ohio State University*, Columbus, OH.

Advisor: Noel Cressie

Thesis: "Hierarchical Spatial and Spatio-Temporal Modeling of Massive Datasets, with Application to Global Mapping of CO<sub>2</sub>"

2008 **M.S. in Statistics**, *The Ohio State University*, Columbus, OH.

2005 – 2007 **Undergraduate and Graduate Studies in Statistics**, *University of Munich*, Germany.

## Experience

Since 2013 **Tenure-Track Assistant Professor of Statistics**, *Texas A&M University*, College Station, TX.

2011 – 2013 **Akademischer Rat auf Zeit (Postdoc)**, *Universität Heidelberg*, Heidelberg, Germany.

2008 – 2011 **Graduate Research Associate**, *The Ohio State University*, Columbus, OH.

### Visiting Positions

9/2012 **New Researcher Fellow**, *SAMSI*, Research Triangle Park, NC.

2012-13 Program on Statistical and Computational Methodology for Massive Datasets

6/2012 **Research Visitor**, *CSIRO*, Perth, Australia.

– 8/2012

## Publications

### Submitted

Heaton, M.J., Katzfuss, M., Berrett, C., and Nychka, D.W. Constructing valid spatial processes on the sphere using kernel convolutions. *Environmetrics*, under revision

Katzfuss, M., Neudecker, A., Anders, S., and Gagneur, J. BADER: Bayesian analysis of differential expression in RNA sequencing data.

(Associated package submitted to Bioconductor.)

### Refereed

Gneiting, T., and Katzfuss, M. Probabilistic forecasting. *Annual Review of Statistics and its Application*, accepted.

Nguyen, H., Katzfuss, M., Cressie, N., and Braverman, A. 2013. Spatio-temporal data fusion for remote-sensing applications. *Technometrics*, available online.

Katzfuss, M. 2013. Bayesian nonstationary spatial modeling for very large datasets. *Environmetrics*, 24(3), 189–200.

Katzfuss, M., and Cressie, N. 2012. Bayesian hierarchical spatio-temporal smoothing for very large datasets. *Environmetrics*, 23(1), 94–107.

Katzfuss, M., and Cressie, N. 2011. Spatio-temporal smoothing and EM estimation for massive remote-sensing data sets. *Journal of Time Series Analysis*, 32(4), 430–446.

Heaton, M.J., Katzfuss, M., Ramachandar, S., Pedings, K., Gilleland, E., Mannshardt-Shamseldin, E., and Smith, R. 2011. Spatio-temporal models for large-scale indicators of extreme weather. *Environmetrics*, 22(3), 294–303.

### Unrefereed

Katzfuss, M., and Cressie, N. 2011. Tutorial on Fixed Rank Kriging (FRK) of CO<sub>2</sub> data. *Department of Statistics Technical Report No. 858*, The Ohio State University, Columbus, OH.

Katzfuss, M., and Cressie, N. 2009. Maximum likelihood estimation of covariance parameters in the spatial random effects model. *2009 Proceedings of the Joint Statistical Meetings*, American Statistical Association, Alexandria, VA.

### PhD Thesis

Katzfuss, M. 2011. Hierarchical Spatial and Spatio-Temporal Modeling of Massive Datasets, with Application to Global Mapping of CO<sub>2</sub>. *Doctoral Dissertation*, Department of Statistics, The Ohio State University, Columbus, OH.

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## Presentations

### Talks

- 9/2013 “Low-Rank Spatial Models for Large Datasets”; Third Workshop on Bayesian Inference for Latent Gaussian Models with Applications; Reykjavík, Iceland
- 8/2013 “Low-Rank Spatial Models for Big Global Datasets”; Joint Statistical Meetings; Montréal, QC
- 7/2013 “Nonstationary Spatial Modeling of Large Global Datasets”; 29th European Meeting of Statisticians; Budapest, Hungary
- 6/2013 “Nonstationary Spatial Modeling of Large Global Datasets”; Spatial Statistics 2013: Revealing intricacies in spatial and spatio-temporal data with statistics; Columbus, OH
- 5/2013 “Statistical Inference for Massive Distributed Spatial Data Using Low-Rank Models”; Transition Workshop; 2012-13 Program on Statistical and Computational Methodology for Massive Datasets; Statistical and Applied Mathematical Sciences Institute; Research Triangle Park, NC
- 4/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Annual Retreat, Research Training Group 1653 on Spatio/Temporal Graphical Models and Applications in Image Analysis; Annweiler, Germany
- 4/2013 “Low-Rank Spatial Models for Large Datasets”; 44th Symposium on the Interface of Computing Science and Statistics; Orange, CA
- 4/2013 “Statistical Analysis of Large Remote-Sensing Datasets Using Low-Rank Models”; Jet Propulsion Laboratory – NASA; Pasadena, CA
- 3/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; DAGStat 2013 – Third Joint Statistical Meeting Deutsche Arbeitsgemeinschaft Statistik; Freiburg, Germany
- 3/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Department of Statistics; The George Washington University; Washington, DC
- 3/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Department of Mathematical Sciences; University of Nevada, Las Vegas; Las Vegas, NV
- 2/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Department of Statistics; University of South Carolina; Columbia, SC

- 2/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Department of Statistics; Texas A&M University; College Station, TX
- 2/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Department of Mathematical & Statistical Sciences; University of Colorado Denver; Denver, CO
- 1/2013 “Low-Rank Spatial and Spatio-Temporal Models for Large Datasets”; Department of Statistics and Actuarial Science; University of Waterloo; Waterloo, ON
- 12/2012 “Low-Rank Spatial Models for Large Datasets”; HGS Colloquium; Interdisciplinary Center for Scientific Computing; Heidelberg, Germany
- 9/2012 “Spatial and Spatio-Temporal Statistics for Large Datasets” (two-part lecture); ST810 – Spatial Statistics; North Carolina State University; Raleigh, NC
- 7/2012 “Bayesian Nonstationary Spatial Modeling for Very Large Datasets”; Joint Statistical Meetings; San Diego, CA
- 7/2012 “Bayesian Nonstationary Spatial Modeling for Very Large Datasets”; 14th Meeting of New Researchers in Statistics and Probability; San Diego, CA
- 3/2012 “Bayesian Nonstationary Spatial Modeling for Very Large Datasets”; 10th German Probability and Statistics Days; Mainz, Germany
- 9/2011 “Bayesian Nonstationary Spatial Modeling for Very Large Datasets”; Statistische Woche; Leipzig, Germany
- 8/2011 “Bayesian Hierarchical Spatio-Temporal Smoothing for Massive Datasets”; Joint Statistical Meetings; Miami Beach, FL
- 6/2011 “Bayesian Hierarchical Spatio-Temporal Smoothing for Massive Datasets”; Whitney Research Award Seminar; Department of Statistics; The Ohio State University; Columbus, OH
- 11/2010 “Spatio-Temporal Smoothing of Massive Remote-Sensing Datasets: Frequentist and Bayesian Estimation”; Institut für Angewandte Mathematik, Universität Heidelberg; Heidelberg, Germany
- 9/2010 “Parameter Estimation in the Spatio-Temporal Mixed Effects Model”; IBM Research Graduate Student Workshop: Statistics for a Smarter Planet; IBM Thomas J. Watson Research Center, New York
- 8/2010 “Bayesian Variable Selection of Spatially Correlated Predictors in Generalized Linear Models, with Application to Predicting Rainfall Amounts”; CSIRO Mathematics, Informatics and Statistics Seminar; Perth, Australia
- 5/2010 “Parameter Estimation in the Spatio-Temporal Mixed Effects Model”; Edward F. Hayes Graduate Research Forum; The Ohio State University
- 3/2010 “Maximum Likelihood Estimation of Parameters in the Spatio-Temporal Mixed Effects Model”; DAGStat 2010 – Second Joint Statistical Meeting Deutsche Arbeitsgemeinschaft Statistik; Dortmund, Germany
- 8/2009 “Maximum Likelihood Estimation of Variance Parameters in the Spatial Random Effects Model”; Joint Statistical Meetings; Washington, D.C.
- 5/2009 ‘Analysis of Space-Time Point Processes’; Discussion Group on Space-Time Data and Modeling; Program in Spatial Statistics and Environmental Statistics; The Ohio State University
- Posters**
- 9/2012 “Bayesian Nonstationary Spatial Modeling for Very Large Datasets”; Opening Workshop; 2012-13 Program on Statistical and Computational Methodology for Massive Datasets; Statistical and Applied Mathematical Sciences Institute; Research Triangle Park, NC

- 4/2012 “Predicting Local Rainfall Amounts from Large-Scale Atmospheric Covariates”; Workshop on Probabilistic Forecasting of High-Impact Weather Events; Heidelberg, Germany
- 1/2011 “A Spatio-Temporal Model for Large-Scale Indicators of Extreme Weather”; Fourth International IMS/ISBA Joint Meeting; Park City, UT
- 10/2010 ‘Predicting Local Rainfall Amounts from Large-Scale Atmospheric Covariates’; Workshop on Environmetrics; National Center for Atmospheric Research; Boulder, CO
- 2/2010 “Spatio-Temporal Analysis of Global CO<sub>2</sub> Data”; Climate Change Workshop; 2009-10 Program on Space-time Analysis for Environmental Mapping, Epidemiology and Climate Change; Statistical and Applied Mathematical Sciences Institute; Research Triangle Park, NC
- 9/2009 “Comparison of Gap-Filling Methods For Massive Geostatistical Data Sets: Fixed Rank Kriging and Fast Thin Plate Splines”; Opening Workshop; 2009-10 Program on Space-time Analysis for Environmental Mapping, Epidemiology and Climate Change; Statistical and Applied Mathematical Sciences Institute; Research Triangle Park, NC

## Teaching Experience

### Texas A&M University

Fall 2013 STAT 211: Principles of Statistics I

### Universität Heidelberg

Su. 2013 Bayesian Statistics (Proseminar)

Wi. 2012/13 Einführung in die Wahrscheinlichkeitstheorie und Statistik

Su. 2012 Statistik II: Statistical Forecasting (Teaching assistant)

Su. 2012 Probabilistic Forecasts (Seminar, joint with Tilmann Gneiting)

Wi. 2011/12 Einführung in die Wahrscheinlichkeitstheorie und Statistik

### The Ohio State University

2008 – 2009 STAT 135: Elementary Statistics (Problem-solving-session instructor, two quarters)

2008 STAT 135: Elementary Statistics (Two quarters)

2007 STAT 135: Elementary Statistics (Recitation leader, one quarter)

## Supervision

### Master Theses

2013 (exp.) Patrick Schmidt, Universität Heidelberg (with Tilmann Gneiting):  
“Estimation of loss functions”

### Bachelor Theses

2013 (exp.) Maximilian Ruhland, Universität Heidelberg:  
“Bayesian similarity-based forecasting of wind speed”

2012 Andreas Knapp, Universität Heidelberg:  
“Global Bayesian nonstationary spatial modeling for very large datasets”

2012 Andreas Neudecker, Universität Heidelberg:  
“A Bayesian hierarchical model for the analysis of RNA sequencing data”

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## Service

### Refereeing

Reviews for Statistical Analysis and Data Mining (1), Annals of Applied Statistics (6), Biometrical Journal (1), Journal of Computational and Graphical Statistics (1), Journal of Statistical Planning and Inference (1), Remote Sensing of Environment (1), IEEE Transactions on Geoscience and Remote Sensing (1), Biometrics (1), and Journal of Time Series Analysis (1)

2009 – 2011 Member, Student Advisory Board, Wiley Series in Probability and Statistics

### Conferences

8/2013 Session Organizer, “Spatial Statistics for Big Environmental Datasets” (Invited Session), Joint Statistical Meetings, Montréal, Canada

7/2012 Session Organizer, “Spatial Statistics for Very Large Environmental Data Sets” (Topic-Contributed Session), Joint Statistical Meetings, San Diego, CA

5/2010 Session Chair, “Sparse Estimation,” Conference on Nonparametric Statistics and Statistical Learning, Columbus, OH

8/2009 Session Chair, “Clustering and Variable Selection in High-Dimensional Data,” Joint Statistical Meetings, Washington, DC

### Department of Statistics, The Ohio State University

2010 – 2011 Member, Department Communications Committee, Department of Statistics, OSU

2009 – 2011 Student-Body President, Department of Statistics, OSU

2009 – 2010 Member, Graduate Recruitment Committee, Department of Statistics, OSU

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## Awards

### Scholarships

2007 – 2008 Fulbright Scholarship

9/2007 DAAD Semester Scholarship Nomination

### Research Awards

8/2011 Student Paper Award, First Place (\$1,000)  
American Statistical Association, Section on Statistics and the Environment (ENVR)

6/2011 Ransom & Marian Whitney Award for Best Dissertation Research (\$400)  
Department of Statistics, The Ohio State University

6/2010 Ransom & Marian Whitney Award for Outstanding Research Associate (\$150)  
Department of Statistics, The Ohio State University

### Competitive Travel Awards

6/2010 Edward G. Mayers Travel Fellowship (\$1,000)  
Division of Natural and Mathematical Sciences, The Ohio State University

3/2010 Edward J. Ray Travel Award for Scholarship and Service (\$750)  
Council of Graduate Students, The Ohio State University

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## Organizations

American Statistical Association

Deutsche Statistische Gesellschaft

Institute of Mathematical Statistics

