

Joshua P. French

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Research Interests

Spatial statistics, hotspot identification, extreme value theory, and environmental and ecological applications.

Education

2009	Ph.D.	Statistics	Colorado State University, Fort Collins
2005	M.S.	Statistics	Colorado State University, Fort Collins
2003	B.A.	Mathematics	Point Loma Nazarene University

Professional Experience

2010–present	Visiting Scientist, National Center for Atmospheric Research, Boulder, CO
2009–present	Assistant Professor, Department of Mathematical and Statistical Sciences, University of Colorado Denver
2003–2009	Teaching/Research Assistant, Department of Statistics, Colorado State University, Fort Collins

Publications

Refereed Publications

French, J.P. and Sain, S.R. (2013). Spatio-Temporal Exceedance Locations and Confidence Regions. *Annals of Applied Statistics*. 7(3), 1421–1449.

French, J.P. and Davis, R.A. (2013). The asymptotic distribution of the maxima of a Gaussian random field on a lattice. *Extremes*. 16(1), 1–26.

Pingry O’Neill, L.N., Markward, M.J., and **French, J.P.** (2012). Predictors of Graduation among College Students with Disabilities. *Journal of Postsecondary Education and Disability*. 25(1), 21–36.

Forthcoming Publications

French, J. P. Confidence Regions for the Level Curves of Spatial Data. Under Revision.

Harrington, J. and **French, J.P.** A Pattern of Sunspot-Sealevel Change at Long and Short Timescales Across the Indo-Pacific. Under Revision.

French, J.P. and Hoeting, J.A. Bayesian Credible Regions for Hotspots. In preparation.

French, J.P. Hotspot Identification for Massive Spatial Data Sets. In preparation.

Anthamatten, P., McKenzie, L., **French, J.P.**, and Adgate, J. An Examination of Exposure from Oil and Gas Development in Colorado. In preparation.

Yuen, R., **French, J.P.**, Stoev, S. Confidence regions for exceedance sets of Gauss-Pareto processes. In preparation.

French, J.P. Improved Prediction for Large Spatial Data Sets. In preparation.

Teaching

University of Colorado Denver

MATH 2830: Introductory Statistics

MATH 4820/5320: Statistics

MATH 4830/5830: Applied Statistics

MATH 4387/5387: Regression Analysis, Modeling, and Time Series

MATH 6393: Introduction to Bayesian Statistics

MATH 7826: Topics in Probability and Statistics (Theoretical Statistics)

Colorado State University

STAT 101: Activity Based Statistics

STAT 110: Statistical Thinking: Concepts and Applications

STAT 201: General Statistics (Recitation)

STAT 301: Introduction to Statistical Methods

STAT/ERHS 307: Introduction to Biostatistics

STAT 340: Multiple Regression Analysis

STAT 650: Design and Linear Modeling II (Distance Coordinator)

Presentations at Meetings and Seminars

Invited Presentations

December 4, 2013. Faculty Colloquium, University of Colorado Denver, Denver, CO. *Confidently Identifying Exceedance Regions for Spatial Data.*

March 12, 2013. Department of Statistics and Probability Colloquium, Michigan State University, East Lansing, MI. *Spatio-Temporal Exceedance Locations and Confidence Regions.*

June 19, 2012. WNAR-Graybill 2012 Conference, Fort Collins, CO. *Spatial Inference for Climate Change.*

April 17, 2012. Denver R Users Group, Denver, CO. *Bayesian Data Analysis in R.*

April 9, 2012. Data Assimilation Seminar, University of Colorado Denver, Denver, CO. *Spatio-Temporal Exceedance Locations and Confidence Regions.*

June 14, 2011. Research Colloquium, North American Regional Climate Assessment Program (NARCCAP), Boulder, CO. *Spatio-Temporal Exceedance Locations and Confidence Regions*.

November 13, 2009. Fall Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Aurora, CO. *Extremes of Gaussian Random Fields*.

February 17, 2009. University of Northern Colorado, Greeley, CO. *Constructing Confidence Regions for Level Curves*.

February 12, 2009. Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC. *Constructing Confidence Regions for Level Curves*.

February 9, 2009. University of Colorado Denver, Denver, CO. *Constructing Confidence Regions for Level Curves*.

February 3, 2009. Arizona State University, Tempe, AZ. *Constructing Confidence Regions for Level Curves*.

Contributed Presentations

June 10, 2013. The International Environmetrics Society, 2013, Anchorage, AK. *Confidently Identifying Exceedance Regions for Spatial Data*.

June 6, 2013. Spatial Statistics 2013, Columbus, OH. *Hotspot identification for massive spatial data sets*.

February 13, 2013. SAMSI/NCAR Workshop on Massive Datasets in Environment and Climate, Boulder, CO. *Identifying Hotspots for Massive Spatial Data Sets*. (poster)

November 2, 2012. Fall Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Aurora, CO. *Hotspot Identification for Massive Spatial Data Sets*.

August 1, 2012. Joint Statistical Meetings, San Diego, CA. *Hotspot Identification for Massive Spatial Data Sets*.

April 4, 2012. SIAM Conference on Uncertainty Quantification, Raleigh, NC. *Uncertainty and Differences in Global Climate Models*.

December 6, 2011. American Geophysical Union Fall 2011 Meeting, San Francisco, CA. *Assessing Climate Change and Comparing Climate Models Through Exceedance Regions* (poster).

August 3, 2011. Joint Statistical Meetings, Miami Beach, FL. *Spatio-Temporal Exceedance Locations and Confidence Regions* (topic-contributed).

October 15, 2010. Workshop on Environmetrics, National Center for Atmospheric Research, Boulder, CO. *Constructing Confidence Regions for Exceedance Locations of Spatio-Temporal Data* (poster).

June 25, 2009. Graybill VIII: 6th International Conference on Extreme Value Analysis, Fort Collins, CO. *Confidence Regions for Level Curves*.

June 12-16, 2007. Graybill Conference VI: Symposium on Applied Probability and Time Series in honour of Peter J. Brockwell, Fort Collins, CO. *Spatial Uncertainty in the Contour Lines of a Spatial Process* (poster).

September 7-9, 2005. Conference on Statistics for Aquatic Resources Monitoring, Modeling, and Management, Joint Program for DAMARS and STARMAP, Oregon State University, Corvallis, OR. *Review of Geostatistics in Aquatic Systems* (poster).

April 22, 2005. Spring Meeting, Colorado-Wyoming Chapter of the American Statistical Association, Boulder, CO. *Exploring Spatial Correlation in Rivers*.

March 8, 2003. Southern California MAA Meeting, Harvey Mudd College, Claremont, CA. *The Study of Freshman Attrition Rates of Point Loma Nazarene University* (poster).

Honors

Boes Award for Excellence in Teaching, Department of Statistics, Colorado State University, May 2009

Best Student Presentation, Colorado-Wyoming ASA meeting, April 2005

Outstanding Senior Award for the Mathematics/Computer Science Department, Point Loma Nazarene University, 2003

Software

SpatialTools. An R package available through the Comprehensive R Archive Network (CRAN). Tools for spatial data analysis. Emphasis on kriging. Provides functions for prediction and simulation. Intended to be relatively straightforward, fast, and flexible. Uses C++ to increase speed of analysis.

ExceedanceTools. An R package available through the Comprehensive R Archive Network (CRAN). Various tools for constructing confidence regions for exceedance regions (hotspots) of large or unusual response.

Professional Organizations

American Statistical Association, Colorado-Wyoming Chapter, Statistics and the Environment Section

Institute of Mathematical Statistics

Grants

Grant Support/Funded Grants

6/1/05-7/31/05, STARMAP: Applying Spatial and Temporal Modeling of Statistical Surveys to Aquatic Resources, Environmental Protection Agency (STAR-Program), R829095. Two-months summer support. (N.S. Urquhart and R.A. Davis, Co-PIs)

6/1/10-6/30/10, Collaborative Research: The North American Regional Climate Change Assessment Program (NARCCAP)–Using Multiple GCMs and RCMs to Simulate Future Climates and Their Uncertainty, National Science Foundation, ATM-0534173. One-month summer support. (S. Sain, PI)

6/1/11-6/30/11, Collaborative Research: The North American Regional Climate Change Assessment Program (NARCCAP)–Using Multiple GCMs and RCMs to Simulate Future Climates and Their Uncertainty, National Science Foundation, ATM-0534173. One-month summer support. (S. Sain, PI)

5/4/12-5/3/13, Recorded Online Lectures to Improve Student Experiences in Math Classes, CLAS ACT Grant 2012-2013. \$5000. (Joshua French and Diana White, Co-PIs)

4/13, CLAS Dissemination Grant, Spring 2013. \$475.

11/13, CLAS Dissemination Grant, Fall 2013. \$1,000.

Pending Grants

4/1/14-3/31/17, FRG: Collaborative Research: Extreme value theory for spatially indexed functional data, National Science Foundation, DMS - STATISTICS. Co-PIs: Piotr Kokoszka, Joshua French, Stilian Stoev, and Oleksandr Gromenko, \$678,928

7/1/14-6/30/17, Collaborative Research: Extreme value theory for spatially indexed functional data, National Science Foundation, DMS - STATISTICS. Co-PIs: Piotr Kokoszka, Joshua French, Stilian Stoev, and Oleksandr Gromenko, \$370,880

Service

Departmental

Undergraduate Studies Committee, 2010–2012

Graduate Studies Committee, 2012–2013

Merit Evaluation Committee, Spring 2012, Spring 2013

Center for Computational Mathematics Executive Committee, 2013–current

Statistics Tenure-Track Position Search Committee, Fall 2012–Spring 2013, Fall 2013–Spring 2014

Budget Advisory Committee, Spring 2013

Professional

Journal Refereeing

Journal of the Royal Statistical Society, Series C

Journal of the Korean Statistical Society

Bernoulli

Journal of the Royal Statistical Society, Series B

Book Refereeing

Oxford University Press

John Wiley & Sons

Advising

M.S. Thesis/Project Advisor

Tiffany DeOrsey (M.S., 2012)

Catherine Durso (M.S., 2012)

Sesha Dassanayaka (M.S., 2012)

M.S. Committee Member

Mark Shin (M.S., 2010)

Rebecca Crepin (M.S., 2012)

Brittany Schaffer (M.S., 2012)

Ph.D. Dissertation Advisor

Sesha Dassanayaka (current)

Ph.D. Committee Member

Daniel Yorgov (current)