

WESLEY BROOKS

Department of Statistics
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EDUCATION

Ph.D. Statistics University of Wisconsin - Madison, Madison, WI GPA: 3.58/4.0 Dissertation: Local variable selection in spatially varying coefficient models: Theory, Methods, and Computation Advisor: Dr. Jun Zhu	Expected in May 2015
M.S. Statistics University of Wisconsin - Madison, Madison, WI	May 2012
B.S. Electrical Engineering, Math University of Alaska, Fairbanks GPA: 3.66/4.0	May 2007

RESEARCH INTERESTS

Spatial statistics	Nonparametric regression
Variable selection	Multimodel inference
Statistical computing	Bootstrap methods

EXPERIENCE

Research Assistant

September 2010 – Present

Department of Statistics, University of Wisconsin - Madison

Advisor: Dr. Jun Zhu

- Research in the field of spatial statistics.
- Local variable selection and coefficient estimation for varying coefficient models.
- Spatial smoothing of tree biomass estimates for ecological models.

Student Trainee (Hydrology)

January 2010 – Present

United States Geological Survey, Wisconsin Water Science Center

Collaborators: Dr. Mike Fienen and Steve Corsi

- Regression models for predicting *E. coli* concentration in beach water.
- Developing software, GUI to make modern regression techniques accessible to beach managers.

Project Assistant

September 2009 – June 2010

Department of Statistics, University of Wisconsin - Madison

Advisor: Dr. Kyung-Mann Kim

- Assisted with statistics for analysis of clinical trials.

Electrical Engineer Trainee

June 2003 – August 2009

Boreal Controls

Supervisor: Greg Smith

- Programming and troubleshooting industrial control panels in remote locations while remaining on-line.
- Designing, building and installing industrial control systems.
- Applications in water, wastewater treatment; fish processing; mining.

PUBLICATIONS

Brooks, W. R., Fienen, M. N., and Corsi, S. R. (2013) “Partial least squares for efficient models of fecal indicator bacteria on Great Lakes beaches”. *Journal of Environmental Management* (114), 470–475.

Danz, M. E., Corsi, S.R., **Brooks, W. R.**, and Bannerman, R. T. (2013) “Characterizing response of total suspended solids and total phosphorus loading to weather and watershed characteristics for rainfall and snowmelt events in agricultural watersheds”. *Journal of Hydrology* (507), 249–261.

Submitted for publication

Brooks, W. R., Zhu, J., and Lu, Z. (2014) “Local adaptive grouped regularization and its oracle properties for varying coefficient regression”. Submitted.

Brooks, W. R., Carvin, R., Corsi, S. R., and Fienen, M. N. (2014) “Comparing the performance of several regression algorithms for predicting exceedances of beach water quality standards: a case study”. In preparation.

In Preparation

Brooks, W. R., Zhu, J., and Lu, Z. (2014) “Inference for local model selection and coefficient estimation via local adaptive grouped regularization in varying coefficient regression models”. In preparation.

PRESENTATIONS, POSTERS

Paleo-ecology observatory network workshop, Madison, May 2013

Title: “Modeling PalEON Biomass”.

National Water Quality Monitoring Conference, Portland, Oregon, 2012

Invited Talk: “Bayesian surprise as a tool for monitoring sensor networks”.

American Water Resources Association - Wisconsin Section, Appleton, Wisconsin, 2011

Collaborators: Dr. Mike Fienen and Steve Corsi

Invited Talk: “Modern statistical methods for predicting bacterial exceedances in beach water”.

Great Lakes Beaches Conference, Presque Isle, Pennsylvania, 2010

Collaborators: Dr. Mike Fienen, Steve Corsi, David Sibley, and Carolyn Emmanuelli

Poster: “Web based tools to expand access to beach water quality monitoring”.

AWARDS, PRODUCTS, AND OTHER

Data visualization working group (<http://wisc-vis.github.io>) (registered student organization). President, 2013–2014.

Virtual Beach (Exposure assessment software) - Led development of version 3.0 (2013)

Collaborators: Dr. Mike Cyterski (United States Environmental Protection Agency) and Steve Corsi (United States Geological Survey)

Best coverage of a single news topic or event: Milwaukee Press Club. “Analysis: Emails favored Walker 2-1”. (with Kate Golden, Lauren Hasler, Julie Strupp, Cailly Morris, and Andrew Averill). 2012.

Selected as the outstanding example of the final exam for the M.S. degree in statistics. University of Wisconsin-Madison, December 2011.

COMPUTING INTERESTS

Programming Languages: R, Python, and C++.

Interests: Interactive data visualization (e.g., d3.js and Shiny), reproducible research, parallel computing (e.g., HTCondor).

REFERENCES

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