Jonathan R. Woody
Curriculum Vitæ

Contact Information

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Education

Ph.D. in Mathematical Sciences, Clemson University, December 2009
    Thesis: "Some New Problems in Change Point Analysis"
    Committee: Robert Lund (chair), Peter Keissler, Colin Gallagher, and James Brannen

M.S. in Mathematics, Western Carolina University, December 2003

B.S. in Applied Mathematics, North Carolina State University, December 2000

Experience

Associate Professor, Mississippi State University   August 2017 - present

Assistant Professor, Mississippi State University   August '11 - July '17

Visiting Assistant Professor, Montana State University   January '11 - May '11

Visiting Assistant Professor, Clemson University   January '10 to December '10

Graduate Teaching Assistant, Clemson University   August '04 - December '09

Research

Peer Reviewed Articles

Woody, J., Wang, Y., and Dyer, J., (2016) "Application of Multivariate Storage Model to Quantify Trends in Seasonally Frozen Soil." *Open Geosciences*, Volume 8, Issue 1, Jan 2016, Pages 310-322, doi:10.1515/geo-2016-0036.

Liu G., Shao Q., Lund R., and Woody J., (2016) "Testing Seasonal Means in Time Series Data." *Environmetrics*, Volume 27, Issue 4, Pages 198-211, doi: 10.1002/env2383.

Woody, J., (2015) "Time Series Regression with Persistent Level Shifts." *Statistics and Probability Letters*, Volume 102, July 2015, Pages 22-29, doi:10.1016/j.spl.2015.03.011.

Woody, J., and Lund, R., (2014)"A Linear Regression Model with Persistent Level Shifts: An Alternative to Infill Asymptotics." *Statistics and Probability Letters*, Volume 95, December 2014, Pages 118-124, doi:10.1016/j.spl.2014.08.018.

Woody, J., Lund, R., and Mekonnen, G., (2014) "Tuning Extreme NEXRAD and CMORPH Precipitation Measurements." *Journal of Hydrometeorology*, Volume 15, June 2014, Pages 1070-1077, http://dx.doi.org/10.1175/JHM-D-13-01461.

Woody, J., Lund, R., Grundstein, G., and Mote, T., (2009) "A Stochastic Storage Model Approach to the Assessment of Snow Depth Trends": *Water Resources Research*, Volume 45, October 2009, W10426, doi:10.1029/2009/WR007996.

Other Articles

Woody, J., (2016) "Quantifying a Trend in the NDAWN Deep-soil Temperatures." *North Dakota Climate Bulletin*, Winter 2015-2016, Volume 10, No. 1, March 2016, Pages 20-22.

Submitted

Woody, J., Yang, X., Dyer, J., Lund, R., and Priyadarshani, H. , "North American Snow Depth Trends."

In Progress

Woody, J., Lu, Q., and Livsey, J., "A Stochastic Model for Forecasting Daily Snow Depths."

Woody, J., Wu, T., Zhou, Z., Ralston, M., Johnson, K., "Clustering Time Series Data by Seasonality."

Woody, J., Wu, T., Zhou, Z., "The Mystery of 65."

Woody, J., "Detecting Hidden Periodicities in PARMA processes."

Grants

$1,917,127, FY 2015 SNAP Recipient Integrity Information Technology Grant-Mississippi Department of Human Services. Co-author through NSPARC

$2500, Erasmus+ mobility support travel grant, University of Primorska in Koper, Slovenia May 8-May 22 2016

$2500, Erasmus+ mobility support travel grant, University of Primorska in Koper, Slovenia May 8-May 22 2017

Conferences

QPRC 2017: The 34th Quality and Productivity Research Conference *Quanlity and Statistics: A Path to a Better Life.* June 12-15, 2017
Invited Talk: "North American Snow Depth Trends."

SRCoS Summer Research Conference 2015, June 7-10, 2015
Poster Presentation:"Changepoints, Seasonality, and Inferences"

SAMSI IMAGe Summer Program: The International Surface Temperature Initiative July 8-16, 2014

Fourth International Workshop on Space-based Snowfall Measurement, May 6-8, 2013
Poster Presentation: "A Storage Model Approach to Modeling Snow Depth Trends"

Invited Talks

Boise State University: "North American Snow Depth Trends," September 8, 2017.

QPRC 2017: The 34th Quality and Productivity Research Conference *Quanlity and Statistics: A Path to a Better Life*: "North American Snow Depth Trends."

University of North Carolina at Greensboro: "North American Snow Depth Trends," February 5, 2016

Mississippi State University: "Changepoints and Snowpack Trends," September 11, 2015

SAMSI IMAGe Summer Program: "Changepoint and Trend Assessment in Daily Snow Depth Data," July 14, 2014

Masters Students

Major Advisor
Jia (Amy) Wang: "Modeling Patient Arrival Times as Doubly Stocasthic Process," April 2012

Yan Wang: "Application of Multivariate Storage Model to Quantify Trends in Seasonally Frozen Soil," April 2014, with accompanying paper accepted to *Open Geosciences*, 2016

Li He: "Testing Seasonal Means in Time Series Data," April 2015

Leigh Ellen Barefield: "Detecting Multiple Changepoints via Genetic Algorithm," December 2015

Carol Sui: "Quantile Regression and its Application," April 2016

Jei Zhu: "Forecasting Stationary Time Series," July 2016

Kate Phillips: "A Summary of Methods for the Study of High Dimensional Data," July 2017

Committee Member
Yang Lu April 2013
Christina Crow April 2014
Goephry Odero April 2014
Hogbin Du April 2015

(approxiamately 10-15 more)

PhD Students

Advisor
Yang Xu (jointly advised with Dr. Prakash Patil): (submitted) "Trends in Daily Snow Depths in the United States and Canada."
Graduation Date: December 2016

Zhicong Zhao : "On Some Statistical Considerations of the Supplemental Nutritional Assistance Program."
Graduation Date: May 2019

Zhou Fang: "Spatial Analysis of Criminal Deterrence Actions."
Graduation Date: TBA

Committee Member:
Wendy Wang   June 8, 2017

Ramakalavathi Marapareddy, "Levee Slide Detection Using Synthetic Aperture Radar Magnitude and Phase," Accepted October 19, 2015

Teaching

Teaching Evaluations

Course	F 11	S 12	F 12	S 13	F 13	S 14	F 14	S 15	F 15	S 16	F 16
Dat Anal	3.7										
Mult Stat	3.6										
App Prob		3.7		4.3		4.3		4.4			
Int Prob			4.2		4.4		4.4		4.5		
Stat Meth			4.2		3.5						
Time Series						4.6					
Lin Mod I							3.9		4.1		**
Adv Stoc										4.5	
Comp Stat											**
Stat Pack			4.3								

Service

Consulting
Research Fellow: National Strategic Planning and Analysis Research Center (NSPARC), August 2015- Present

NSPARC Big Data Consulting Projects:
"Detecting State of Mississippi Fraudulent UI Claims," spring 2015 to present
"Detecting State of Mississippi SNAP Fraud," spring 2016 to present
"Calculation of State of Mississippi GDP," summer 2015
Fall 2016 Voted Director of statistics NSPARC research group

Refereed for the Following Journals:
Journal of Applied Stochastic Models in Business and Industry
Journal of Applied Meteorology and Climatology
Journal of Environmental Statistics
Stochastic Environmental Research and Risk Assessment
Population Ecology
Geophysical Research Letters
Journal of Applied Meteorology and Climatology

Course Development:

Actuarial Exam P: Actuarial Exam P evaluates mastery of introductory probability theory. The table below summarizes mentored students successful on Exam P.

Student	Exam	Employment
Jordan Moore	Pass-November 2013	Towers Watson
Li He**	Pass-December 2014	Ph.D. student, Clemson
Rylie Byrd	Pass-November-2014	Blue Cross Blue Shield of Mississippi

Actuarial Exam FM: Actuarial Exam FM evaluates mastery of financial mathematics. The table below summarizes mentored students successful on Exam FM.

Rylie Byrd	Pass-December 2015	Blue Cross Blue Shield of Mississippi
Li He	Pass-May 2015	Ph.D. student, Clemson

** Student Not officially enrolled in DIS hours, but sat in review sessions and passed the exam.

Special Topics: Time Series. This course studies random processes that evolve over time. This may also thought of as Linear Models with second moments.

Special Topics: Computational Statistics. Computational methods essential to the statistical scientist are investigated.

Personal Interest

Mountain climbing, art, golf (baller).