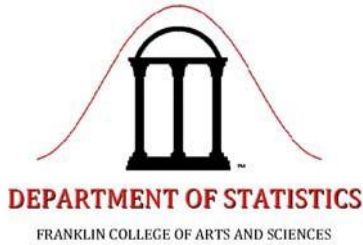


THE UNIVERSITY OF GEORGIA



The University of Georgia
Department of Statistics
Presents the

UGA/Clemson Joint Seminar

Dr. David Ruppert

Professor of Engineering

School of Operations Research and Information
Engineering & Professor of Statistical Science

Cornell University

“A Bayesian Multivariate Functional Dynamic Linear Model”

We present a Bayesian approach for modeling multivariate, dependent functional data. To account for the three dominant structural features in the data--functional, time dependent, and multivariate components--we extend hierarchical dynamic linear models for multivariate time series to the functional data setting. We also develop Bayesian spline theory in a more general constrained optimization framework. The proposed methods identify a time-invariant functional basis for the functional observations, which is smooth and interpretable, and can be made common across multivariate observations for additional information sharing. The Bayesian framework permits joint estimation of the model parameters, provides exact inference (up to MCMC error) on specific parameters, and allows generalized dependence structures. Sampling from the posterior distribution is accomplished with an efficient Gibbs sampling algorithm. We illustrate the proposed framework with two applications: (1) multi-economy yield curve data from the recent global recession, and (2) local field potential brain signals in rats, for which we develop a multivariate functional time series approach for multivariate time-frequency analysis.

This talk is based on a joint work with Daniel Kowal and David Matteson
<http://people.orie.cornell.edu/davidr>

For more information,
please contact:
amandal@stat.uga.edu

Parking is available at the UGA
Botanical Gardens. Please see the
Botanical Gardens website
([http://botgarden.uga.edu/
faccallaway.html](http://botgarden.uga.edu/faccallaway.html)) for details.

Department of Statistics
101 Cedar Street
Athens, GA 30602

Phone: 706-542-5232
Fax: 706-542-3391
www.stat.uga.edu

Thursday, April 7, 2016

State Botanical Garden
of Georgia

Callaway Building

4:00 pm — Joint seminar in the Callaway Building auditorium

6:00 pm — Catered buffet dinner in the Callaway Building reception area. Please RSVP for dinner to molliej@uga.edu. Deadline is April 4, 2016. \$10/person.