

## COLLOQUIUM ANNOUNCEMENT

### “Bayesian graphical models for multivariate functional data”

Presented by

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Monday, January 23, 2012

300 Seitz

3:30 p.m.

**Abstract:** In a broad variety of application areas there is interest in inferring the dependence structure in multivariate functional data. For data in vector form, conditional independence relationships between variables can be inferred through allowing zeros in the precision matrix through a Gaussian graphical model. Bayesian methods can be used to allow unknown locations of zeros, with a hyper inverse-Wishart prior chosen for the covariance. We generalize these methods to define a new class of Gaussian process graphical models for multivariate functional data. We focus on models with decomposable graph structures with a single precision matrix encoding the conditional independence between the functions. We also discuss the more general class of non-decomposable graphs. Properties of the proposed process are considered, and two efficient Algorithms are developed for posterior computation relying on Markov chain Monte Carlo. The methods are evaluated through simulation studies and applied to Electroencephalography (EEG) data in neuroscience.



Hosted by the

Department of Statistics

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Please join us after the colloquium for refreshments at  
Top of the Stairs (217 College Ave.)