9th ANNUAL PROBABILITY AND STATISTICS DAY AT UMBC

Funded by National Security Agency

Friday, April 17, 2015
Room 105, Public Policy Building

Workshop on
Simulation-Based Bayesian Computation with R®
presented by
Dr. James Albert
Bowling Green State University

Final Program

1:00 PM - 2:00 PM
Registration: Lobby, PUP Building

2:00 PM - 2:15 PM
Welcome
- Nagaraj Neerchal
  Chair, Department of Mathematics & Statistics, UMBC
- Bimal Sinha
  Conference Chair, UMBC

2:15 PM - 3:30 PM
Lecture 1: Basic of Bayes
Basic components of a Bayesian analysis (sampling model, prior, and predictive density). Inferential methods, prediction and comparison of models by means of Bayes factors. Illustrations of Bayesian thinking using discrete and continuous models.
3:30 PM - 4:00 PM  COFFEE BREAK

4:00 PM - 5:00 PM  LECTURE 2:
Simulation-Based Bayesian Inference


5:00 PM - 5:15 PM  COFFEE BREAK

5:15 PM - 6:30 PM  LECTURE 3:
Using MCMC in Bayesian Modeling

Using MCMC in Bayesian Modeling. General strategies for fitting high-dimensional Bayesian models by MCMC methods. A variety of diagnostic methods are described with implementation using the coda R package. The package LearnBayes is used to illustrate some basic MCMC methods and the STAN software is described for fitting hierarchical Bayesian models.