

The Department of Statistics at Texas A&M University  
Proudly Presents the

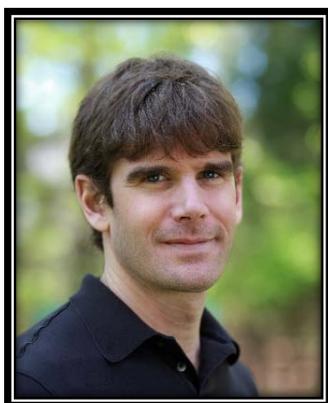
## *H. O. Hartley Memorial Lecture Series*



*Presented by*

### **DAVID B. DUNSON**

Arts & Sciences Distinguished Professor  
Department of Statistical Science  
Duke University



David B. Dunson received his Ph.D in Biostatistics from Emory University in 1997 under the direction of Elizabeth Halloran. He was named full professor in the Department of Statistical Science at Duke University in August 2008 and was then named Arts and Sciences Distinguished Professor of Statistics in May 2013.

Dunson is currently the Action Editor for the *Journal of Machine Learning Research* and was Co-Editor of *Bayesian Analysis* from 2006-2013. He has been an active Associate Editor for journals such as *Biometrika*, the *Journal of Royal Statistical Society, B* and the *Journal of the American Statistical Association, Applications and Case Studies*. He has written two books, one of which has received more than 13,000 citations, and has published over 260 articles and has given nearly 100 invited talks throughout his distinguished career.

Among the awards and honors that Dr. David Dunson has received are Elected Fellow of the American Statistical Association, Elected Fellow of the Institute of Mathematical Statistics, and the President's Award from the Committee of the Presidents of Statistical Societies (COPSS) in 2010.

Dr. Dunson's research interests include Bayesian statistical methodology motivated by complex biomedical data and machine learning applications; ongoing methodologic research focuses on nonparametric Bayes, latent variable methods, big data, scalable Bayesian inferences, functional and object data, and dimensionality reduction; also an emphasis on developing adaptive Bayes approaches for "learning" low-dimensional structure underlying high-dimensional "objects" (*images, surfaces, shapes, text, array data, networks*). This work involves inter-disciplinary thinking at the intersection of statistics, geometry and computer science.

## **BAYES FOR BIG DATA**

*Monday, October 13, 2014, 4:00-5:00 p.m.  
Room 1400, Memorial Student Center (MSC)*

This talk provides motivation for the use of Bayesian methods in big data applications, while providing highlights of some promising recent approaches for scaling up Bayes. The talk is designed for a general “data science” savvy audience, and should be accessible to starting graduate students in statistics, computer science, electrical engineering and related fields.

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## **WASSERSTEIN POSTERiors: ROBUST AND SCALABLE BAYES**

*Tuesday, October 14, 2014, 4:00-5:00 p.m.  
Room 457, John R. Blocker Building*

A general approach is proposed based on dividing data into subsets, drawing samples from each subset posterior via MCMC or another algorithm, and combining the resulting subset posterior measures. Combining relies on the geometric median or Barycenter of the subset posteriors, leading to massive improvements in computational times relative to running sampling on one machine. Theory support is provided and the approach is applied in a variety of settings.

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## **BAYES FOR BIG TABLES AND NETWORKS**

*Wednesday, October 15, 2014, 4:00-5:00 p.m.  
Room 1400, Memorial Student Center (MSC)*

This talk focuses on the challenging problems of analyzing high-dimensional categorical or network-structure data without restrictive parametric assumptions. There is abundant applied motivation drawn from genomics and neurosciences. A general approach is proposed based on probabilistic low rank factorizations, some theory support is provided (without details) and we illustrate the methods.

