STAT 532 Paper Presentation

Students will select one of the papers below or with instructor approval propose an alternative publication. Students will read a paper focusing on Bayesian methods, implement ideas contained in them, and facilitate a class lecture/discussion. The format of the presentation is up to the presenter, but each presentation will span 20 - 25 minutes. In advance, the rest of the class will read the paper. Presentations will take place during the last few weeks of the semester. A grading rubric will be handed out later in the semester, but in addition to the presentation students are also required to produce a summary of the work. This will be done using R Markdown to enable reproducible results. As a reminder, the entire project is worth % 20 of the course grade.

Students auditing the course are encouraged to partake in the project, especially if there is interest in PhD research in Bayesian statistics; however, depending on how much material is covered, presentation time may be limited to one class.

Possible Papers:

Here is an incomplete list of possible papers that includes some applied, theoretical, and computational papers. Consider this list to be some of my favorites. For students completing a writing project this semester, I'd encourage you to do your project on a topic, method, or computational paper related to your writing project. Feel free to discuss potential papers with me.

Trevor Park and George Casella. "The Bayesian Lasso." *Journal of the American Statistical Association*, 2008.

Hugh Chipman, Edward George, and Robert McCulloch. "Bayesian CART Model Search." *Journal of the American Statistical Association*, 1998.

Robert Gramacy and Herbert Lee. "Bayesian Treed Gaussian Process Models with an Application to Computer Modeling." *Journal of the American Statistical Association*, 2008.

Edward George and Robert McCulloch. "Variable Selection via Gibbs Sampling." *Journal of the American Statistical Association*, 1993.

Jim Albert and Siddhartha Chib. "Bayesian Analysis of Binary and Polychotomous Response Data." *Journal of the American Statistical Association*, 1993.

Sudipto Banerjee, Alan Gelfand, Andrew Finley, and Huiyan Sang. "Gaussian Predictive Process Models for Large Spatial Data Sets." *Journal of the Royal Statistical Society: Series B,* 2008.

Jennifer Hoeting, David Madigan, Adrian Raftery, and Chris Volinsky. "Bayesian Model Averaging: a Tutorial." *Statistical Science,* 1999.
Yee Whye Teh. "Dirichlet Process." *Encyclopedia of Machine Learning*, 2010.

Carlos Carvalho, Michael Johannes, Hedibert Lopes, and Nick Polson. "Particle Learning and Smoothing." *Statistical Science,* 2010.

Christophe Andrieu, Arnaud Doucet, and Roman Holenstein. "Particle Markov Chain Monte Carlo Methods." *Journal of the Royal Statistical Society: Series B,* 2010.

Christopher Wikle and Mevin Hooten. "Hierarchical Bayesian Spatio-Temporal Models for Population Spread." *Applications of Computational Statistics in the Environmental Sciences: Hierarchical Bayes and MCMC Methods*, 2006.

Jungsoon Chio, Montse Fuentes, Brian Reich. "Spatial-temporal Association between Fine Particulate Matter and Daily Mortality." *Computational Statistics & Data Analysis,* 2009.

Matt Taddy. "Autoregressive Mixture Models for Dynamic Spatial Poisson Processes: Application to Tracking Intensity of Violent Crime." *Journal of the American Statistical Association,* 2010.

Zhengyi Zhou, David Matteson, Dawn Woodard, Shane Henderson, Athanasios Micheas. "A Spatio-Temporal Point Process for Ambulance Demand." Journal of the American Statistical Association, 2015.