

FALL 2017

MATH 7656 & MATH 8656: ADVANCED INFERENCE

Class Meeting TBA ;**Room:** Dunn TBA

Instructor E. O.George; Dunn 237

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Reference Texts: *Statistical Inference* (2nd Edition)

G. Casella and R. L. Berger , Pacific Grove, CA: Brooks/Cole, 2012

Mathematical Statistics: Basic Ideas and Selected Topics, I & II

Peter Bickel and Kjell Doksum, Prentiss Hall,2016

Office Hours: TBA, or by appointment

Objective

This course will cover some of the contemporary topics of statistical inference. These will include

- The EM Algorithm
- Hidden Markov Chains
- The theory of Gibbs Sampling and Markov Chain Monte Carlo
- Dirichlet Processes
- Application of Jump Processes to Bayesian Estimation
- The Asymptotics of both MLE and Bayesian Estimators
- Various False Discovery Rates for controlling for tests of multiple hypothesis testings

There will be several assigned readings and presentations of journal articles on topics listed above. The objective of this class is to prepare students for PhD thesis research. There will be problem solving, Home Work, Presentations.