Stat 3000 - Advanced Theory of Statistics
Instructors:
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When and where: Wednesday 10am-1pm, Ramsay Wright 141.
Computing: S-plus (R), Winbugs.
Grading: Will be based on 4-5 homeworks.
Contents: Bayesian inference and MCMC, Model selection and model checking, Resampling techniques, Nonparametric methods.

Week 1 Likelihood principle, decision theory.
Week 2 DeFinetti’s Representation Theorem
Week 3 Large sample asymptotics for the posterior distribution.
Week 4 Formulation of prior distributions.
Week 5 Bayesian estimation and testing.
Week 6 Model checking and model selection.
Week 7 Markov Chain Monte Carlo algorithms.
Week 8 How to use MCMC for Bayesian inference.
Week 9 Jacknife and Bootstrap (I).
Week 10 Jacknife and Bootstrap (II).
Week 11 Kernel smoothing.
Week 12 Cubic splines.
Week 13 Density estimation.
Week 14 General additive models.