

# **Spring 2013 RADM/SSC Speaker Series**

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### **Advances in Bayesian nonparametrics**

### CBA 3.202 1-2:30 pm

#### Abstract

An important challenge in Bayesian machine learning is developing classes of models that are flexible enough to represent a wide range of possible data sets. It is often difficult to determine a priori the number of parameters needed to represent a data set - for example the number of clusters in a mixture model. Nonparametric Bayesian methods provide an elegant and flexible framework for modeling data that neatly sidesteps questions of parameter cardinality. In this talk, I will give an overview of the challenges faced in developing and implementing nonparametric hierarchical models, giving examples from my own research. I will focus on three main aspects: The development of flexible and widely applicable nonparametric priors; the incorporation of such priors into application-specific hierarchical models; and the design of efficient inference algorithms.