The University of Chicago
Department of Statistics

PHD DISSERTATION PROPOSAL PRESENTATION

HARRY CRANE

Department of Statistics
The University of Chicago

Markov Random Partition Sequences

WEDNESDAY, October 20, 2010, at 9:30 AM
110 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Random partition models can be used for modeling relationships among individuals in a population. Examples of their usefulness include estimation of the number of unseen species (Fisher 1943, Efron and Thisted 1976) and stochastic classification using the Gauss-Ewens cluster process (McCullagh and Yang 2008). In these examples, individuals are assumed to be partitioned according to the Ewens process, an infinitely exchangeable process on partitions of the positive integers.

In this talk, I will discuss infinitely exchangeable processes on collections (or sequences) of partitions of the positive integers. In the literature, such models are typically Markovian, as in Kingman's coalescent process (Kingman 1982) and exchangeable fragmentation-coagulation processes (Berestycki 2004). I will review some of the literature in this area and introduce a Markov random partition sequence which evolves differently from those of Kingman and Berestycki. Properties of the model, such as infinite exchangeability and reversibility, will be discussed, as well as issues regarding maximum likelihood estimation and the aim of future work.

If time permits, I will briefly discuss some recent and future work in the area of complex random networks and graphs.

Information about building access for persons with disabilities may be obtained in advance by calling Sandra Romero at 773.702-0541 or by email (sandra@galton.uchicago.edu).