

Dirichlet Orderings, Differential Expression, and Gene Sets



Dr. Michael Newton

**University of Wisconsin-
Madison**

**Departments of Statistics and Biostatistics
and Medical Informatics**

In genomics, and possibly other domains of high-dimensional statistics, it can be useful to know the probabilities that a length- n Dirichlet distributed random vector attains each of its $n!$ possible orderings. Each ordering event is equivalent to an event regarding independent negative-binomial random variables, and this finding guides a computational approach via dynamic programming. Dirichlet ordering probabilities are central to a new clustering method for multi-group microarray data analysis, which I will discuss and demonstrate in several examples. Time permitting I will also discuss statistical elements in the related problem of gene set enrichment.

Wednesday, April 30, 2008

3:15 PM

Refreshments served at 3:00PM

Sobel Seminar Room

South Hall 5607F