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.