

# Probability Seminar

Organizer: Tai Melcher & George Kordzakhia

Wednesday, 3:10–4:00pm, 330 Evans

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Apr 26     **Robin Pemantle**, U Penn

*Tilings, groves, multi-set permutations and quantum random walks:  
multivariate generating functions with cone singularities*

A number of problems in combinatorics and probability may be encoded into a generating function,  $F$ , and limit theorems extracted analytically. The extraction depends on details of the function  $F$ . I will discuss the case where  $F = G/H$  is a rational 3-variable function and  $H(1 + x, 1 + y, 1 + z)$  is a conic.

Why should you care about this case? It turns out that this encompasses many cases of the "Arctic Circle" phenomena. That is, the limits of the quantities such as domino placement probabilities, edge probabilities, and locations of a quantum random walker will obey a law that spreads out over a linearly growing disk with a prescribed renormalized limit on the disk. This work is in progress and is joint with Yuliy Baryshnikov.