

# Probabilistic Operator Algebra Seminar

Organizer: Dan-Virgil Voiculescu

September 19     **Mihai Putinar**, UCSB

Title: *Preservers of totally positive kernels and Polya frequency functions.*

In the classical context of functions which operate on Fourier transforms on groups, those preserving positive definite ones are distinguished by a very precise analytic form. After a review of relevant results due to Schoenberg, Bochner and Helson-Kahane-Katznelson-Rudin, I will present a report on recent advances on the classification of fractional powers and polynomial maps leaving invariant the following classes: structured totally positive matrices, one sided Polya frequency functions, totally positive kernels. Besides the stark rigidity of these polynomial maps, a common phenomenon of separation between a discrete part and a continuum of values of the respective fractional powers will be analyzed. Concepts of probability theory, multivariate statistics and group representations will enter into the picture. Based on recent collaboration with A. Benton, D. Guillet and A. Khare.