

September 28: Eric Rains (Caltech and MIT), “Vanishing integrals for Macdonald polynomials.”

Every compact symmetric space G/H has an associated identity describing how to integrate an irreducible character of G over the subgroup H . (For instance $(U(n)/O(n))$, the integral of a Schur function over the orthogonal group is 0 unless all parts of the corresponding partition are even.) I’ll discuss joint work with Monica Vazirani in which we generalize the $U(n)/O(n)$ and $U(2n)/Sp(2n)$ identities to the Macdonald polynomials, a well-studied two-parameter family of symmetric functions extending the Schur functions. The same approach also gives a number of other identities with a similar flavor, but which are of unknown representation-theoretic significance.