JONATHAN NOVAK, 219 Jeffery Hall, Department of Math., Queen's University
A new formula for the Mobius function of the lattice of noncrossing partitions

The lattice of noncrossing partitions is of fundamental importance in R. Speicher's combinatorial approach to Free Probability Theory. The Moebius function of this lattice is well-known to be a signed product of Catalan numbers.

Since each noncrossing partition can be viewed as a permutation in a canonical way, it is perhaps not surprising that the Moebius function can be described in terms of combinatorial objects and structures that occur in the representation theory of symmetric groups, such as Young diagrams and symmetric functions evaluated at the contents of Young diagrams. In this talk we will explain how the investigation of a different problem, namely the problem of determining the coefficients in the Laurent series expansion of the unitary Weingarten function of Collins and Sniady, leads to an alternative expression for the Moebius function on noncrossing partitions. If time permits we will explain how this relates to Kerov's character polynomials.