

Speaker: Greg Warrington
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Thursday, April 7, 2016
2:00 pm
Room: 125 Hayes-Healy Hall

Title: Combinatorics of the Rational Catalan

Abstract:

The Catalan numbers are ubiquitous in combinatorics due to their natural recursive structure. Two decades ago, Adriano Garsia and Mark Haiman introduced the q, t -Catalan polynomials that have been shown to both generate rich combinatorics as well as to have deep connections to the diagonal harmonics of the symmetric group and the Hilbert scheme of n points in the plane. Recently, there has been more emphasis on viewing the Catalan numbers and the q, t -Catalan polynomials as merely the "slope-1" instances of rational Catalan objects. In this talk we'll discuss some of the combinatorics of the rational q, t -Catalan polynomials and associated rational parking functions. We'll also mention (in passing!) connections to such disparate areas as knot homology, hyperplane arrangements, non-crossing partitions and rational Cherednik algebras.