Mathematical Physics Seminar,

Joshua Wen, Northeastern University,

UNIV 217

Wednesday, Mar 8th 1:30 – 2:30pm

Title: Wreath Macdonald operators
Abstract: Defined by Haiman, wreath Macdonald polynomials are a certain generalization of Macdonald polynomials to wreath products of the symmetric groups with a fixed cyclic group. Through an analogue of the Frobenius characteristic, they can be viewed as partially-symmetric functions. Most of the standard aspects of Macdonald theory have yet to be developed: Pieri rules, norm formulas, etc. In this talk, I will introduce wreath analogues of Macdonald operators. They were discovered by computing the action of certain elements of a quantum toroidal algebra via integral formulas which may be of independent interest. The wreath Macdonald operators seem much more complicated than the original Macdonald operators, and I will give a sense in which this is reflective of the subtler combinatorics present in the wreath setting. This is joint work with Daniel Orr and Mark Shimozono.