

**RYERSON UNIVERSITY**  
**DEPARTMENT OF MATHEMATICS**  
**GRAPHS AT RYERSON (G@R) SEMINAR**

**Dr. Gokhan Yildirim**

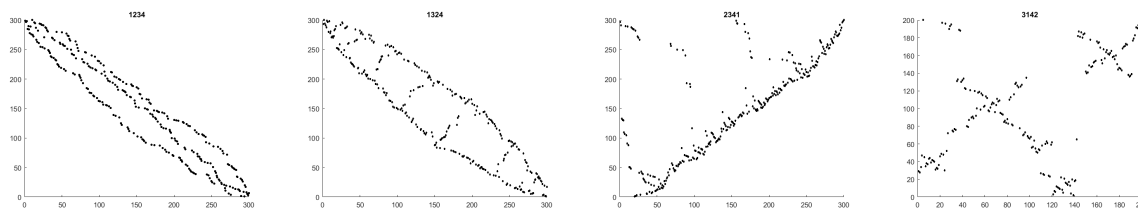
Department of Mathematics & Statistics, York University

Date: Thursday, November 17, 2016  
Time: 10am  
Location: ENG 210

**On the Longest monotone and alternating  
subsequences of pattern-avoiding permutations**

**Abstract:** We consider the distributions of the lengths of the longest monotone and alternating subsequences in classes of permutations of size  $n$  that avoid a specific pattern or set of patterns, with respect to the uniform distribution on each such class. We obtain exact results for any class that avoids two patterns of length 3, as well as results for classes that avoid one pattern of length 4 or more. Typically, the longest monotone subsequences have expected length proportional to  $n$  for pattern-avoiding classes, in contrast with the  $\sqrt{n}$  behaviour that holds for unrestricted permutations.

This is a joint work with Neal Madras.



ALL FACULTY, STAFF, STUDENTS AND GUESTS ARE WELCOME TO ATTEND