# The University of Chicago

# Department of Computer Science & Mathematics

# Combinatorics & Theoretical Seminar

PRESENTS:

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Columbia University

https://search.sites.columbia.edu/pages/eaw2197

[](https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=0ahUKEwjBl9zzv-DTAhWi2YMKHS3hAgoQjRwIBw&url=https%3A%2F%2Fwww.linkedin.com%2Fin%2Ferik-waingarten-925b6698%2Fde&psig=AFQjCNEHZjXHAiDzGGl1HKsmfagmaTxssg&ust=1494339855528556&cad=rjt)

Title: “On the query complexity of Boolean monotonicity testing”

In this talk, I will discuss recent adaptive lower bounds on the query complexity of testing monotonicity of Boolean functions. The problem asks to minimize the number of queries to an unknown Boolean function a randomized algorithm must make in order to distinguish between the case the function is monotone and then case the function is far from monotone. I will show an Omega(n^{1/3}) lower bound by introducing a new family of random Boolean functions extending Talagrand's random DNFs. This talk is based on joint work with Xi Chen and Jinyu Xie.

Host: Prof. Li-Yang Tan

Tuesday, May 9, 2017

3:00 pm

Ryerson 251

Refreshments will be served prior to the talk at 2:30 in Ry. 255