



Department of Mathematics and Statistics

COLLOQUIUM

Tuesday, February 10th, 2015

4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments served at 3:45)

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Sampling strategies for low carriage-rate pathogen detection

Abstract: It is estimated that as little as 1% of all bacteria and fungi can be cultured (grown) under laboratory settings. As a result, a large fraction of the “interesting” (e.g. human-affecting) pathogens must be isolated from clinical and environmental samples before they can be studied. However, for organisms with low carriage rates (rare incidence in population) the mere act of testing to identify samples positive for the pathogen, quickly becomes very expensive - thousands of samples may need to be tested to obtain mere handfuls of positive isolates. One strategy to mitigate such costs is to employ sample pooling techniques, where multiple samples are tested simultaneously. This talk will focus on my recent efforts (both theoretical and practical) to develop and benchmark an efficient sample pooling approach.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets Tuesdays, 12:45 – 1:45 pm, AMB 164.

Applied Math Seminar (AMS) meets Thursdays, 12:45 – 1:45 pm, AMB 164.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm.