

## Discrete Mathematics Seminar

Time: Friday, 11 September 2015, 2:00-3:00 PM  
Room: 237 Derrick Hall  
Title: Convergence of Correlation Matrix  
Speaker: Dr. Yong Yang, Department of Mathematics and Dr. Byron Gao, Department of Computer Science

### Abstract:

The correlation matrix  $M$  of  $n$  random variables  $X_1, \dots, X_n$  is an  $n \times n$  matrix whose  $i,j$  entry is  $\text{corr}(X_i, X_j)$ . We observe that iterative update of  $M$  by using  $R_1, \dots, R_n$  (the  $n$  rows of  $M$  from last iteration) as  $X_1, \dots, X_n$  generally leads to convergence of  $M$ , where  $M$  is filled with 1's and -1's. Last week we showed that this convergence has important practical applications in clustering.

In this talk, we will provide some theoretical analysis of the algorithm.