Wendy Wang

Title of Talk: Minimum Rank of Positive Semi-Definite Matrices with a Prescribed Graph

Abstract:
A complex nxn matrix A = [aij] is said to be combinatorially symmetric if for i ≠ j, aij ≠ 0 implies aji ≠ 0. We associate a simple graph G to a combinatorially symmetric matrix A such that V(G) = {1, 2, ∑, n} and join vertices i and j if and only if aij ≠ 0. The graph is independent of the diagonal entries of A. Define P(G) to be the class of all positive semi-definite matrices associated with a given graph G. Denote #(G) = min {rank A | A Є P(G) } the minimum rank of G. Results about the minimum rank of certain classes of graphs and related topics will be presented in this talk.