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**Jorin S Schug\*** (jschug1@swarthmore.edu). *Minimum Rank of Graphs with Zero Diagonal*. Preliminary report.

Given a graph, we can associate a family of zero-diagonal real symmetric matrices with it using the same nonzero pattern as the graph's adjacency matrix. The zero-diagonal minimum rank of the graph is the minimum of the ranks of all the associated matrices. In this talk, we will find the zero-diagonal minimum rank of several families of graphs, and discuss a theorem that calculates the zero-diagonal minimum rank of a cone on a graph. We will also give some applications of that theorem. (Received August 08, 2014)