1003-15-69 **Margaret Lay*** (`laymarga@grinnell.edu`), P.O. Box 08-33, Grinnell College, Grinnell, IA 50112, **Amanda M Pascoe** (`amanda.pascoe@furman.edu`), PMB 29529 Furman, 3300 Poinsett Hwy., Greenville, SC 29613, and **Ben Harris**. *Minimum Rank of Positive Semi-Definite Matrices with a Prescribed Graph.*

We may associate a graph G to a Hermitian matrix $A = (a_{ij})$ if $V(G) = \{v_1, \ldots, v_n\}$ and $(v_i, v_j) \in V(G)$ if and only if a_{ij} is nonzero. The problem is to determine the minimum rank of all positive semi-definite (PSD) matrices associated with a given graph. Let $msr(G)$ denote the minimum PSD rank of G. New results from this project relate to certain classes of graphs, including bipartite graphs and those with msr of 2 and 3, and certain operations on graphs such as joins. We present further results concerning the relationship between $msr(G)$ and $msr(G\backslash v)$ for a given $v \in V(G)$, and we give a catalog of the minimum ranks of all graphs with order at most 7.