1965 saw Jack Edmonds publish his beautiful characterization of the perfect matching polytope of a graph $G = (V, E)$, i.e., the convex hull $\mathcal{P}$ of the characteristic vectors of the perfect matchings of $G$. Edmonds described $\mathcal{P}$ polyhedrally as the set of nonnegative vectors in $\mathbb{R}^E$ satisfying two families of constraints: ‘saturation’ and ‘blossom’. We now call graphs for which the blossom constraints are essential *Edmonds* graphs and those for which the blossom constraints are implied by the others *Egerváry* graphs.

As it turns out, the second graph class interacts interestingly with more familiar classes. For example, bipartite graphs are Egerváry—an assertion equivalent to the Birkhoff-von Neumann Theorem on doubly-stochastic matrices. More generally, König-Egerváry (KE) graphs are Egerváry, too (just cancel the K). The speaker will introduce these ideas and share a few results on Egerváry graphs, one obtained all by himself and others jointly with Jack Edmonds and Craig Larson.

For the DM seminar schedule, see:

https://www.people.vcu.edu/~nobushaw/dms.html