Among the oldest questions in extremal graph theory lies a simple one: For an n-vertex graph, how many edges are required to guarantee the existence of a particular subgraph?

This problem dates back to the 1930s, and when it was answered (for complete graphs) by Pál Turán in the 1940s, the ‘Turán Number’ was born; given a graph $G$ and a natural number $n$, we define the Turán Number as the maximum number of edges among all $n$ vertex graphs with no subgraph isomorphic to $G$.

In this general audience talk we’ll talk about the history of this question and a simple variation which leads to my own research (‘What if instead of forbidding any copies of $G$, we allow one or two?’). No particular background will be assumed; everything will be built and defined from the ground up.

For the DM seminar schedule, see:
http://www.people.vcu.edu/~dcranston/DM-seminar