VCU Discrete Mathematics Seminar

Turán Numbers and their Variants

Prof Neal Bushaw
VCU!

Wednesday, Sept. 13
1:00-1:50
4145 Harris Hall

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.