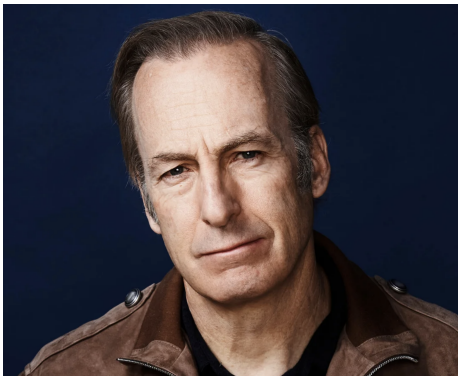
VCU Discrete Mathematics Seminar

A new Erdős-Ko-Rado problem on graphs

Prof Glenn Hurlbert
(VCU!)

Wednesday, Nov. 13
1:00-1:50 EDT

In person! in 4145 Harris Hall, and Zoom @
`https://vcu.zoom.us/j/92975799914`
`password=graphs2357`



We introduce the problem of finding the size and structure of the largest intersecting family of paths in a graph. A family of sets (in this case, vertices of paths) is called intersecting if every pair of its members share an element. An intersecting family is called a star if some element is in every member of the family. The classic Erdős-Ko-Rado Theorem (1938, 1961) states, in the simplest case, that any intersecting family of r-subsets of $\{1, 2, ..., n\}$, when $r \leqslant \frac{n}{2}$, has size at most $\binom{n-1}{r-1}$ and, when $r < n/2$, satisfies equality if and only if it is a star. In work with Neal Bushaw and former student James Danielsson, we prove analogous structural results for families of r-paths of a graph for several infinite classes of graphs.

For the DM seminar schedule, see:

`https://go.vcu.edu/discrete`