

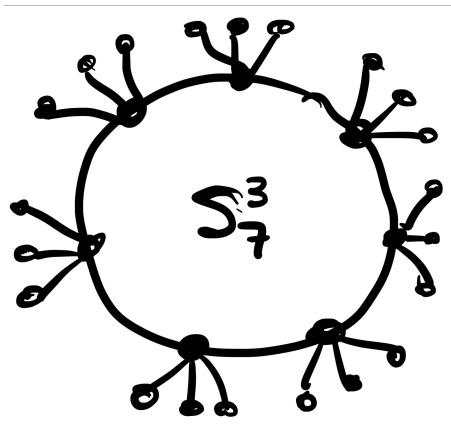
VCU Discrete Mathematics Seminar

Intersecting Families of Paths

Prof Neal Bushaw
(VCU!)

Wednesday, Feb. 12
1:00-1:50 EDT

On Zoom! with a watch party in 4145 Harris Hall. Zoom
info: <https://vcu.zoom.us/j/92975799914>
password=graphs2357



A family of sets, each of size r , is called **INTERSECTING** when every pair of sets in the family contain a common element. Such a family is called a **STAR** when there is an element common to every set in the family. Erdos-Ko-Rado famously proved that when the universe of elements for our family contains at least $2r$ elements, then the largest intersecting families are always stars.

With Glenn Hurlbert and James Danielsson, we extend this result to a new setting. Here, we fix a graph G , and let our universe of sets be all those sets which are the vertex set of a length r path in G . For which graphs can we show that the largest intersecting families are stars? Are there graphs for which there are maximum size intersecting families which are stars as well as maximum size intersecting families which are non-stars? Are there any graphs where the **ONLY** maximum size intersecting families are non-stars?

For the DM seminar schedule, see:

<https://go.vcu.edu/discrete>