

VCU Discrete Mathematics Seminar

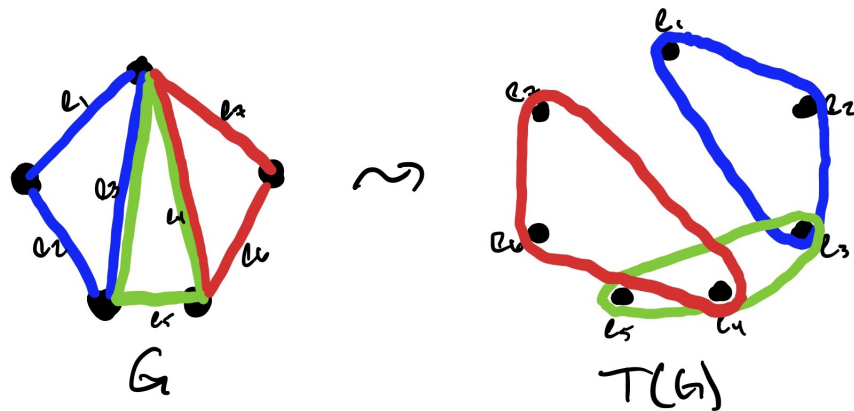
The Taming of the Hypergraph

Prof Neal Bushaw, VCU

Wednesday, Feb. 6

1:00-1:50

4145 Harris Hall



“Instruction is good for a child; but example is worth more.”
–Alexandre Dumas, *Twenty Years After*

Hypergraph Containers are a powerful and quite new method for counting the number of independent sets in a hypergraph. These were pioneered in the graph context by Kleitman/Winston ('82) and Sapozhenko (90s) – they were formalized and generalized considerably by several teams, including Saxton/Thomason, Balogh/Morris/Samotij, and Conlon/Gowers. They have been used in the years since to prove a truly prodigious body of theorems in extremal and probabilistic combinatorics. Their history, background, and wide applicability was the topic of my Fall 2018 talk at VCU.

In this talk, I'll do exactly one thing – give a concrete example of the hypergraph container method, in detail. No history, no background. We'll see the hypergraph container lemmas in their explicit form, and put them to use for the forces of good¹.

For the DM seminar schedule, see:

<http://www.people.vcu.edu/~dcranston/DM-seminar>

¹where 'good' means, of course, 'extremal combinatorics'