

# Discrete Mathematics Seminar

Illinois State University

2:00–2:50 pm, November 21@ STV 121

Speaker: Sean English, University of Illinois Urbana-Champaign

## Maximum Crossing Numbers of Trees and Weighted Turán Numbers

Turán's theorem, which classifies the graphs which have the most number of edges while avoiding a clique of a fixed size, was one of the first major results in extremal graph theory. In this talk, we will consider a generalization of Turán's theorem in which each edge is assigned a weight, and we try to maximize the total weight of the graph avoiding a large clique. We will also explore an application of weighted Turán to the problem of maximizing the total number of crossing edges in a straight-line drawing of trees.

This project was joint work with Patrick Bennett and Maria Talanda-Fisher.

