

# Discrete Mathematics Seminar

## Illinois State University

2:00–2:50 pm, November 12

Speaker: Michael Plantholt, Illinois State University

### Decompositions of graphs avoiding dense subgraphs

We begin with a discussion of the problem of decomposing a graph into subgraphs which do not contain certain “dense” graphs. For example, can we always decompose a connected 8-regular graph  $G$  into two 4-regular subgraphs  $A, B$  so that neither  $A$  nor  $B$  contains  $K_5$  as a subgraph? (The answer is yes.) From that starting point, we consider possible variations, focusing on types of problems that may be suitable for student projects.

This is joint work with Rachel Johnson, David Mendell, Samantha Norris, and Shailesh Tipnis.

