# COLLOQUIUM

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## Pebbling Problems and Paradigms

Mathematics and Statistics

Date: **Thursday Oct. 5**
Time: 2:30
Room: RIC 209

**Abstract:**

There are many areas in graph theory and optimization that could all go under the umbrella of Moving Stuff Around in Graphs — graph pebbling is one of them; domination, network optimization, cops and robbers, max flow, zero-forcing, and graph burning are among other examples. In graph pebbling we encounter a configuration of pebbles on the vertices of a graph and are allowed to make moves by removing two pebbles from some vertex and placing one pebble on one of its neighbors. For a specific target vertex we ask if it is possible to place a pebble on it after a sequence of pebbling moves. From here, a range of invariants (pebbling numbers of various types) can be explored, each measuring what size of initial configuration is required to reach a target. We will introduce the audience to this intriguing topic, share a few nice results, and leave you with a few problems to ponder.

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