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(ting@bigred.unl.edu), **Brian Keinath** (keina1bw@cmich.edu) and **David Lin**
(dylin@princeton.edu). *The Pebbling Number for Graphs*. Preliminary report.

Suppose pebbles are placed on the vertices of a graph. If a vertex has two or more pebbles, then we can make a pebbling move, which consists of the removal of two pebbles from any vertex and placing one of these pebbles on any adjacent vertex. An (r,m) -pebbling move consists of the removal of r pebbles from any vertex, and placing m pebbles on any adjacent vertex. The pebbling number of a graph is the minimum number of pebbles such that for any arrangement of these pebbles, at least one pebble can be moved to any specified vertex. We prove upper bounds on the pebbling number in terms of the radius, and prove a tight upper bound in terms of the diameter for a large class of graphs. We also prove upper bounds for the (r,m) -pebbling number of paths, trees, cycles. Lastly, we take a look at the 2-Pebbling Property and show that it holds for certain classes of graphs. (This research was carried out in the Central Michigan University REU program.) (Received August 30, 2005)