MARGARET-ELLEN MESSINGER, Ryerson University, Toronto, Ontario
Greedily cleaning edges: the robot vacuum

Imagine a large building with many corridors. A robot cleans these corridors in a greedy fashion: the next corridor cleaned is always the dirtiest to which it is incident. We let $s(G)$ and $S(G)$ denote the minimum and maximum number of time steps (over all edge weightings) before every edge of a graph G has been cleaned and determine bounds on both $s(G)$ and $S(G)$. We also show that Eulerian graphs have a self-stabilizing property that holds for any initial edge weighting: after the initial cleaning of all edges, all subsequent cleanings require $s(G)$ time steps.