STEPHEN FINBOW, St Francis Xavier
Eternal Domination of Grid Graphs

The eternal domination number, denoted $\gamma_{all}^{\infty}(G)$, of a graph G is the number of guards required to respond the graph against an infinite sequence of attacks from an unconstrained intruder. On each turn the intruder picks a vertex to "attack" and each guard is allowed to move to an adjacent vertex after the attack. To successfully defend the attack, a guard must finish the turn on the attacked vertex. We will look at the work that has been done to understand eternal domination on grid graphs and discuss some recent work and observations on $6 \times n$ grid graphs.