1116-05-1605 **Brendan W Sullivan*** (sullivanb@emmanuel.edu), Emmanuel College, 400 The Fenway, Boston, MA 02115, and **Nikolas Townsend** and **Mikayla Werzanski**. *Lazy Cops and Robbers on Product Graphs.*

Our research concerns the pursuit-evasion game of Cops and Robbers on graphs. Generally, one seeks the "Cop number" of a graph, denoted $c(G)$, which is the minimum number of Cops required to guarantee catching the Robber. A recently-proposed variant (Offner & Ojakian, 2012), "Lazy Cops and Robbers," modifies the rules to allow *only one cop* to move per turn. In our analysis of the differences between the Ordinary and Lazy versions, we investigated several classes of graphs and their products.

We found exact values for the Lazy Cop numbers of several product graphs, e.g. $c_L(K_n \square C_m) = c_L(K_n \boxtimes C_m) = 3$. We have also proven (sharp) bounds for generic products, e.g. $c_L(G \square T) \leq \gamma(G) + 1$ for any graph G and any tree T. Perhaps most significantly, we improved upon a result by Neufeld & Nowakowski (1998) to prove that $c(G \boxtimes H) = c(G) + c(H) - 1$ for *any* graphs G, H. We believe that subsequent study of factorizations of graphs under the Strong product may yield new results in the field of Cops & Robbers and its variants. Finally, we conclude by sharing partial progress on a conjecture of ours, namely that $c(G \square H) \geq c(G \boxtimes H)$ for any G, H (and similarly for c_L). (Received September 20, 2015)