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**Kirk Boyer, Boris Brimkov, Sean English, Daniela Ferrero, Ariel Keller\***  
(ariel.keller@gmail.com), **Rachel Kirsch, Michael Phillips** and **Carolyn Reinhart**. *Zero Forcing Polynomial for Cycles and Singly-Chorded Cycles*.

Zero forcing in a graph is an iterative process where, at each step, any colored vertex with a single uncolored neighbor forces its neighbor to become colored. We define the zero forcing polynomial of a graph  $G$  of order  $n$  by  $Z(G, x) = \sum_{i=1}^n z(G, i)x^i$ , where  $z(G, i)$  is the number of zero forcing sets of  $G$  of size  $i$ . Many different graphs can have the same zero forcing polynomial; however, certain families of graphs can be recognized by their zero forcing polynomial. In this talk, we consider one such family. In particular, we show that cycles, singly-chorded cycles, and for  $n = 6$  a graph  $\mathcal{G}$  consisting of a doubly-chorded cycle with one pendant vertex share the same zero forcing polynomial and that no other graphs have this same polynomial.

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