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**Eunjeong Yi\*** (yie@tamug.edu), Texas A&M University at Galveston, Galveston, TX 77553. *On Zero Forcing Number of Functigraphs*. Preliminary report.

*Zero forcing number*,  $Z(G)$ , of a graph  $G$  is the minimum cardinality of a set  $S$  of black vertices (whereas vertices in  $V(G) \setminus S$  are colored white) such that  $V(G)$  is turned black after finitely many applications of “the color-change rule”: a white vertex is converted black if it is the only white neighbor of a black vertex. Zero forcing number was introduced and used to bound the minimum rank of graphs by the “AIM Minimum Rank – Special Graphs Work Group”. Let  $G_1$  and  $G_2$  be disjoint copies of a graph  $G$  and let  $f : V(G_1) \rightarrow V(G_2)$  be a function. Then a *functigraph*  $C(G, f) = (V, E)$  has the vertex set  $V = V(G_1) \cup V(G_2)$  and the edge set  $E = E(G_1) \cup E(G_2) \cup \{uv \mid v = f(u)\}$ . We study how zero forcing number behaves in passing from  $G$  to  $C(G, f)$  by first showing that  $1 + \delta(G) \leq Z(C(G, f)) \leq 2n - 2$ , if  $G$  is a connected graph of order  $n \geq 3$  and  $f$  is any function; here  $\delta(G)$  is the minimum degree of  $G$ . We further investigate the zero forcing number of functigraphs on complete graphs, on cycles, and on paths. (Received January 13, 2012)