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**D. Hoffman** and **P. Johnson\*** (johnspd@auburn.edu), Department of Mathematics and Statistics, Auburn University, AL 36849, and **M. Noble**, **A. Owens**, **G. Puleo** and **N. Terry**. *A Mixed Hypergraph Coloring Problem.*

A PRCF coloring of a simple graph  $G$  is a proper edge coloring of  $G$  such that there are no rainbow cycles. (I.e., Rainbow Cycles are Forbidden.) Such a coloring is a mixed hypergraph coloring in the sense of V. Voloshin; the hypergraph has for vertices the edges of  $G$  and two classes of hyperedges: the edge sets of the  $K(1,2)$  subgraphs of  $G$ , none of which are monochromatic in the coloring, and the edge sets of the cycles in  $G$ , none of which are rainbow in the coloring. We make progress toward characterizing the graphs that have a PRCF coloring, and, for some of those that do, we determine the Voloshin spectrum of the graph  $G$ , which is the set of all  $k$  such that there is a PRCF coloring of  $G$  in which exactly  $k$  colors appear. (Received January 16, 2019)