Kathleen M Ryan* (kmr207@lehigh.edu), Lehigh University Mathematics Department, 14 East Packer Avenue, Bethlehem, PA 18015, and Garth Isaak. Degree Vector Sequences of Edge-Colored Graphs in Specified Families.

The degree vector of a vertex $v$ in an edge-colored graph is the column vector in which entry $i$ indicates the number of edges of color $i$ incident to $v$. Given a set of column vectors $C$ and a graph family $F$, when does there exist some edge-colored graph in $F$ whose set of degree vectors is $C$? This question is NP-Complete in general but certain graph families yield tractable results. We present results on the families we have considered, such as $n \times m$ grids, 2-trees, and a disjoint union of paths and cycles. (Received September 25, 2012)