

1106-VN-2620 **Jill Bigley Dunham*** (jillbd@gmail.com), 20400 Spectrum, Irvine, CA 92618, and **Gwyneth R Whieldon**. *Enumeration of Solutions to a Paper Cutting and Folding Problem by Martin Gardner*.

A classic puzzle appearing in Martin Gardner's *New Mathematical Diversions* asks if (and how) it is possible to cut a 3×3 piece of paper divided into 1×1 squares along the grid, keeping the paper connected, so that the paper may be folded to wrap a unit cube. In this talk, we enumerate all solutions to the puzzle, classifying them using 8-edge subgraphs of the underlying lattice adjacency graph of the paper. We also break the solutions into two subclasses – solutions which can be folded so that only one side of the original paper is visible after the wrapping (*monocolored* solutions), and solutions such that both sides of the paper will be visible on the cube surface. (Received September 16, 2014)