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Emily Dinan* (edinan@fordham.edu), 3076 Sunny Ayre Drive, Lansdale, PA 19446, **Alice Nadeau** (nadeaua1@grinnell.edu), 240 Ivanhoe Road, Waterloo, IA 50701, and **Issac Odegard** (issac.odegard@gmail.com), 625 N 43rd St Apt 208, Grand Forks, ND 58203. *On the Folding of L-Shapes into Polyhedra.*

Recent work in computational geometry has begun to address the question: Can a given convex polyhedron be unfolded into a simple polygon and then refolded into any other convex polyhedron? One facet of this question investigates the space of polyhedra that can be realized from folding a given polygon. While the folding of convex polygons is fairly well understood, there are still many open questions regarding the foldings of non-convex polygons, and current methods for determining their polyhedral realizations are computationally inefficient. We analyze these realizations and their volumes derived for the polygonal family of ‘L-shapes,’ parallelograms with a parallel copy removed from a corner. This family includes the special case of the rectangle which has been previously studied. We study the family of polyhedra that unfold to a common L-shape and provide developments in the topics of maximal volume polyhedron, edge relocation, diagonal flipping, and topological space. (Received September 20, 2012)