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**Eric A. Swartz\*** ([eswartz@math.ohio-state.edu](mailto:eswartz@math.ohio-state.edu)), Department of Mathematics, The Ohio State University, 231 West 18th Avenue, Columbus, OH 43202. *A Construction of an Infinite Family of 2-Arc Transitive Polygonal Graphs of Arbitrary Odd Girth.*

A near-polygonal graph is a graph  $\Gamma$  which has a set  $\mathcal{C}$  of  $m$ -cycles for some positive integer  $m$  such that each 2-path of  $\Gamma$  is contained in exactly one cycle in  $\mathcal{C}$ . If  $m$  is the girth of  $\Gamma$  then the graph is called polygonal. Up until now, the only examples of 2-arc transitive polygonal graphs with arbitrarily large valency had girth no larger than seven, and the 2-arc transitive polygonal graph with largest girth had valency five and girth twenty-three (in fact, even with no restrictions on the automorphism group, there were no examples of polygonal graphs with odd girth greater than twenty-three). We provide a construction of an infinite family of polygonal graphs of arbitrary odd girth with 2-arc transitive automorphism groups. (Received January 29, 2009)