1106-52-1506 **Ryan Gallagher*** (ryan.j.gallagher@uconn.edu), **Jessie De La Cruz Santos** and **Sarah Hadaidi**. *Polygon Curvature Flow.*

The process of deforming a curve by the curvature vector at each point is known as the curve-shortening flow (CSF). Grayson showed that CSF averages the shape of a curve, causing simple, closed curves to become asymptotically circular. Our research applies the idea of curvature flow to polygons. We give a novel definition for the 'curvature vector' at a vertex of a polygon. Deforming in the direction of this curvature vector yields a flow of polygons, the polygon curvature flow (PCF). We numerically investigate the behavior of this flow and show that it exhibits several of the qualitative properties of CSF. We conjecture that PCF makes polygons asymptotically regular. (Received September 13, 2014)