

School of Mathematics and Applied Statistics
2013 Colloquium Series

Title: Toward a general theory for higher-order curvature flow

Speaker: Glen Wheeler (University of Wollongong)

Time and Date: 3:30pm Friday 15 November 2013

Location: 6-210

Abstract: Recent developments in the study of higher-order curvature flow (higher here meaning greater than two) point toward an underlying series of general ideas which apply across a vast range of higher-order curvature flows (HOCFs). Realising these ideas concretely as unifying principles, we report on partial progress toward their establishment in significant generality, and conjecture at precise statements. Andrews has enacted a systematic study of the most general conditions under which a second-order curvature flow converges to a round point. This idea convergence to a round point is the most prolific example of a unifying principle in the literature. Using this as a cornerstone, Andrews and a vast array of other researchers have built up a general theory for second-order curvature flow. Our eventual goal is to establish the unifying principles in sufficient generality to use them analogously as cornerstones of a new general theory for HOCF. This theory will not mirror Andrews second-order theory, but complement it, providing in some cases new results also for second-order curvature flows.