Institute for Mathematics and its Applications
2012 Seminar Series
University of Wollongong

Title: The Entropy of an Overlapping Dynamical System

Speaker: Michael Barnsley (Australian National University)

Time and Date: 3:30pm, Thursday 29 March 2012

Location: Room 8.G25

Abstract: The term overlapping refers to a certain fairly simple type of piecewise continuous function from the unit interval to itself and also to a fairly simple type of iterated function system (IFS) on the unit interval. A correspondence between these two classes of objects is used (1) to find a necessary and sufficient condition for a fractal transformation from the attractor of one overlapping IFS to the attractor of another overlapping IFS to be a homeomorphism and (2) to find a formula for the topological entropy of the dynamical system associated with an overlapping function.

I will illustrate these ideas with applications to a global warming question and to fine art. The talk will be accessible to a general mathematically literate audience.