

UAH
Mathematical
Sciences

Dr. Karen A. Ames
Memorial Lectures on
Applied Mathematics

Dr. Robert Devaney

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The Fractal Geometry
of the Mandelbrot Set

DATE: September 27, 2013
TIME: 3:00 p.m.
LOCATION: Shelby Center 109

In this lecture we describe several folk theorems concerning the Mandelbrot set. While this set is extremely complicated from a geometric point of view, we will show that, as long as you know how to add and how to count, you can understand this geometry completely. We will encounter many famous mathematical objects in the Mandelbrot set, like the Farey tree and the Fibonacci sequence. And we will find many soon-to-be-famous objects as well, like the "Devaney" sequence. There might even be a joke or two in the talk.



Dr. Robert Devaney received his Ph.D. from the University of California at Berkeley in 1973 under the direction of Stephen Smale. His main area of research is dynamical systems, primarily complex analytic dynamics, but also including more general ideas about chaotic dynamical systems. Lately, he has become intrigued with the incredibly rich topological aspects of dynamics, including indecomposable continua, Sierpinski curves, and Cantor bouquets.

Dr. Devaney has over 100 research papers in the field of dynamical systems as well as a dozen pedagogical papers in this field. He is the (co-)author or editor for 14 books including *An Introduction to Chaotic Dynamical Systems*, *Chaos, Fractals, and Dynamics: Computer Experiments in Modern Mathematics*, and the series of 4 books called *A Tool Kit of Dynamics Activities*. Dr. Devaney has also delivered over 1500 invited lectures in all 50 states in the US and in over 30 countries worldwide.

Dr. Devaney has been accorded many honors and awards including the NSF Director's Award for Distinguished Teaching Scholars and the Carnegie/CASE Massachusetts Professor of the Year. He was inducted into the Massachusetts Mathematics Educators Hall of Fame in 2009, and was named a Fellow of the American Mathematical Society in 2012. He is the current President of the Mathematical Association of America.

Refreshments will be served
at 2:30 p.m.

