

# MSCS Mess

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Department of Mathematics, Statistics and Computer Science

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## This Week's Colloquium

**Title:** Fractal Geometry of the Mandelbrot Set

**Speaker:** Robert Devaney

**Date:** Thursday, November 3<sup>rd</sup>

**Time:** 2:30pm

**Location:** RNS 310 with a reception at 3:30 in the Math Lounge

Information about the talk:

Robert Devaney is a Professor of Mathematics at Boston University. He is a leader in the world of Chaos Theory, so I encourage you to attend one or both of the talks! Devaney is also a co-author of the Differential Equations textbooks used at St. Olaf. Here is some information on his two talks taking place here and at Carleton:

### Fractal Geometry of the Mandelbrot Set

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. Reception will take place at 3:30 pm in the Math Lounge.

### Chaos Games and Fractal Images

In this lecture we will describe some of the beautiful images that arise from the "Chaos Game." We will show how the simple steps of this game produce, when iterated millions of times, the intricate images known as fractals. We will describe some of the applications of this technique used in data compression as well as in Hollywood. We will also challenge students present to "Beat the Professor" at the chaos game and maybe win his computer. This talk will take place from 7 – 8 pm in Weitz Cinema at Carleton with a reception at 6:30 pm in the Weitz Center.

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*If you would like to submit an article or math event to be published in the Math Mess, e-mail [jacobsoj@stolaf.edu](mailto:jacobsoj@stolaf.edu).*