



DEPARTMENT OF MATHEMATICS AND STATISTICS

COLLOQUIUM

Speaker: Dr. Christopher C. Barton, Department of Earth & Environmental Sciences, Wright State University

Title: Fractals and Scale Invariance in Natural Systems

Date: January 13, 2012

Room/Time: Refreshments: 2:30 p.m. Room: 222 MM
Talk: 3:00 p.m. Room: 224 MM

Host: Dr. Daniel Slilaty

ABSTRACT:

This lecture is an introduction to fractals with examples in natural systems including shorelines, music, earthquakes, avalanches, and oils fields.

ABOUT THE SPEAKER:

Christopher C. Barton is Professor of Earth and Environmental Sciences and founder of the Complexity Research Group at Wright State University. He is a pioneer in the identification and quantification of nonlinear dynamics and complexity in earth, environmental, human, and economic systems. He uses the mathematical tools of fractals, chaos, and complexity to analyze, model, and forecast future behavior of complex systems. Current research topics include the temporal dynamics of stream and river discharge, spatial patterns of hurricane landfall, and shoreline dynamics. Dr. Barton received two master's degrees (1976, 1977), and a Ph.D. (1983) from Yale University. He was a post-doctoral fellow at U.C. Berkeley. He was a senior research scientist and project chief the U.S. Geological Survey (USGS) from 1984 until his retirement in 2004. He has twice been a USGS G.K. Gilbert Fellow at IBM with Benoit Mandelbrot, the "father of Fractals." He is the author of more than 60 published research papers and is the senior editor of two books. He is a contributing editor to the international journal, *Fractals* since 1994.