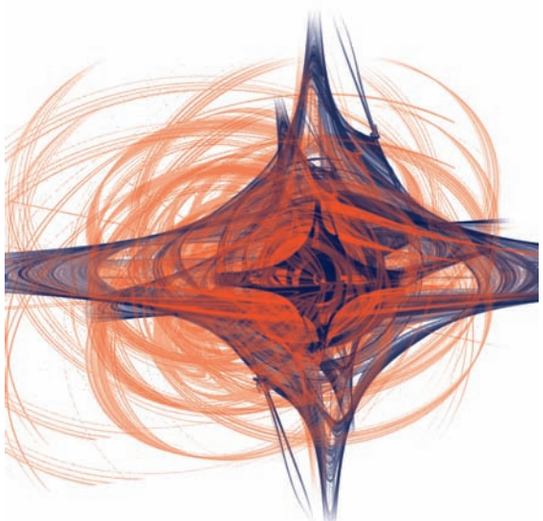
ABOUT THE LECTURE
"Chaos Games and Fractal Images"

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 the audience to "Beat the Professor" at the chaos game and maybe win his computer.



The inaugural Daniel Bartlett Memorial Lecture was given in 2008 by Barry Mazur, Gerhard Gade University Professor, Harvard University

2009: Dr. Jeff Weeks, MacArthur Fellow and 2007 winner of the AMS Conant Prize for an excellent expository publication.

2010: Dr. Thomas Banchoff Brown University and Past President of The Mathematical Association of America

2011: Dr. Arthur Benjamin, Harvey Mudd College and winner of the Haimo Award for Distinguished Teaching by the Mathematical Association of America

MATHEMATICS
UA SCIENCE

Members of the department create, communicate, and apply mathematics of the highest caliber through activities such as internationally recognized research and graduate education, award winning undergraduate programs, and extensive outreach to local schools.

The department's faculty includes two Regents' Professors, three University Distinguished Professors, and numerous recipients of national and international awards. Over the last five years, a large percentage of the faculty has been awarded grants and contracts from external funding agencies, with total awards averaging about $5 million per year.

The department offers PhD, MS, and MA programs in Mathematics and Mathematics Education, and it provides major contributions to the Graduate Interdisciplinary Degree Programs in Applied Mathematics and Statistics. It also offers several unique post-doctoral opportunities for recent PhDs planning careers in research and education.

At the undergraduate level, the department provides more than 46,000 credit hours of instruction per year and offers its more than 500 majors unparalleled opportunities for research, tutoring experiences, and internships. The undergraduate, graduate, and GIDP programs have recently been recognized with two 5-year, $3.5 million VIGRE training grants from the National Science Foundation, a distinction very few programs in the country can match.

The department has a long and excellent tradition of outreach to schools in Tucson, ranging from programs supporting high school teachers to a research center focusing on improving the mathematics education of low-income Latino students.

Through the breadth and quality of its programs, the Department of Mathematics makes major contributions to the mission of the University of Arizona and to the quality of life in Tucson and beyond.

William McCallum
Professor of Mathematics
Department Head

DANIEL BARTLETT MEMORIAL LECTURE 2012

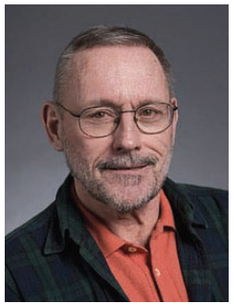
ROBERT L. DEVANEY

CHAOS GAMES & FRACTAL IMAGES

OCTOBER 8, 2012
6:30 PM
GALLAGHER THEATER
STUDENT UNION MEMORIAL CENTER
1303 E. UNIVERSITY DRIVE
THE UNIVERSITY OF ARIZONA

THE UNIVERSITY OF ARIZONA

ABOUT ROBERT L. DEVANEY



He is the author of over one hundred research papers in the field of dynamical systems as well as a dozen pedagogical papers in this field, and has delivered over 1500 invited lectures on dynamical systems and related topics in all fifty US states and over thirty countries on six continents worldwide.

He has also been the "Chaos Consultant" for several theaters' presentations of Tom Stoppard's play Arcadia and in 2007 he was the mathematical consultant for Kevin Spacey's Twenty One.

Bob has received many awards for teaching and research from institutions including Boston University, the MAA, and the NSF, and directs the NSF's Dynamical Systems and Technology Project, which aims to show students and teachers how ideas from modern mathematics such as chaos, fractals, and dynamics, together with modern technology, can be used effectively in the high school and college curriculum.

He is president-elect of the MAA in 2012, and will serve as president in 2013–2014. More information about Bob Devaney is available from the biographical sketch on his website: *http://math.bu.edu/people/bob/*

ABOUT DANIEL BARTLETT

Daniel Wezelman Bartlett was born November 8, 1980. He died of sudden cardiac arrest on August 8, 2006, just before commencing his fourth year of graduate school in mathematics at The University of Arizona. He was a wonderful and loving son to his parents, a close companion to his younger sister, and fierce friend for many.

Daniel was born with physical impairments, but that didn't stop him from enjoying life. He played piano, trumpet, and shofar; he was a chess player; and he was an academic athlete, winning scholarships and contests for Academic Decathlon, economics, and the annual Shakespere monologue competition (he loved portraying Iago). He was a proud leader in his B'rith Youth Organization.

Daniel's academic interests were not restricted to mathematics. As a junior in high school he was selected for the Telluride Association Summer Program at Cornell, an intense program in the humanities.

He graduated from University High School in Tucson both as a Presidential Scholar and a National Merit Scholarship winner.

Daniel Bartlett *continued*

Daniel loved mathematics and excelled at it all his life. He went to Harvard for his undergraduate work, concentration in mathematics, where his undergraduate advisor was Barry Mazur. While an undergraduate, he worked one summer at The University of Arizona Astronomy Department and another summer at the National Security Administration, where he co-authored a classified paper. He received his BA degree in 2003.

While studying for his PhD at The University of Arizona, Daniel had narrowed his research interest to the field of algebraic geometry, and at the time of his death he was beginning the work he hoped to use for his doctoral dissertation.

DANIEL BARTLETT MEMORIAL FUND

Generous contributions by Daniel's family and friends have made it possible to establish this fund, whose purposes are to memorialize Daniel Bartlett, to foster awareness and appreciation of mathematics of the highest level in the Tucson community, and to support graduate education in Mathematics at The University of Arizona.