



BROWN
Department of Mathematics

DISTINGUISHED LECTURERS IN MATHEMATICS

Laura DeMarco

Harvard University



10/20/22 - 10/21/22

“Complex Dynamics and Arithmetic Geometry”

Abstract: In a series of three talks, I will present connections between the theory of dynamical systems and that of number theory and arithmetic geometry. On the dynamical side -- specifically in the study of iteration of rational functions (Julia sets, bifurcations, the Mandelbrot set) but originating in the mathematical study of planetary motion -- the first connections to number theory were observed about 100 years ago. On the arithmetic side, it was probably the 1960s when dynamical ideas were first used as tools to understand the arithmetic geometry of elliptic curves and higher-dimensional varieties. My goal is to provide examples of how these relationships developed and where they have brought us today.

The first lecture is designed for a general audience and is suitable for undergraduate students. The second and third lectures are intended for a general mathematical audience, at the level of a colloquium talk. The three lectures are independent.

Schedule

Thursday, 10/20/22

Lecture 1

3:00-4:00pm

Friedman Hall Room 108

Refreshments

4:00-4:45pm

Kassar House Common Room

Lecture 2

4:45-5:45pm

Foxboro Auditorium

Friday, 10/21/22

Lecture 3

4:30-5:30pm

Foxboro Auditorium