

# BI-CO MATHEMATICS COLLOQUIUM

**Laura Seaberg**

Boston College

***“Constructing and fitting together fractals”***

***Monday, Nov 4, 2024***

*Talk at 4:15 – Hilles 109*

*Tea 4:00 – Foyer outside of H109*

**Abstract:**

Given a contraction from a metric space to itself, the contraction mapping theorem from real analysis guarantees the function has a unique fixed point. A beautiful consequence is the construction of fractals as the fixed point of a particular contracting operator. Fractals, in addition to being inherently beautiful and a jumping-off point for mathematical inquiry, have shaped public understanding of mathematics in the last 50 years. We will examine some tools in dynamical systems that make the study of self-similarity tractable, with a particular eye to fractal tilings of the plane. Tools such as finite graphs, special algebraic integers, and maps of the unit interval provide us with concrete ways in.

**HAVERFORD COLLEGE**