

H. Barton Lecture Series in Computational Mathematics



Dan Margalit

Georgia Tech University

Friday, November 18, 2016
Refreshments: 3:30 pm in Petty 116

Talk: 4:00 p.m. in Petty 150

Title: Dynamical and Computational Aspects of Surfaces

Abstract: To each homeomorphism of a surface we can associate a real number, called the entropy, which encodes the amount of mixing being effected. This number can be studied from topological, geometrical, dynamical, analytical, and algebraic viewpoints. We will start by explaining Thurston's beautiful insight for how to compute the optimal entropy within a homotopy class and explain a new, fast algorithm based on his ideas, which is joint work with Balazs Strenner and Oyku Yurttas. We will also discuss some classical results and recent work with Ian Agol, Benson Farb, and Chris Leininger on the problem of understanding homeomorphisms with small entropy. One theme is that algebraic complexity and geometric complexity both imply dynamical complexity.

