

**Tuesday,
February 7, 2012
5:00-6:00 PM**

**General
Academic
Building,
Room 105**

A pre-lecture reception with cookies, coffee and tea will be held at 4:30 PM in the General Academic Building, Room 472 .

The *RTG in Logic & Dynamics* is a research training group supported by the National Science Foundation and the University of North Texas.

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DAVID BORTHWICK

EMORY UNIVERSITY



RIEMANN'S ZEROS AND THE RHYTHM OF THE PRIMES

Just 150 years ago, Riemann published a short paper (in German) called "On the Number of Primes Less Than a Given Magnitude." In it, he speculated that the zeros of the zeta function all lie on a certain line in the complex plane.

This conjecture, now called the Riemann Hypothesis, is universally regarded as the greatest unsolved problem in all of mathematics. In this talk we'll introduce the Hypothesis and try to explain why mathematicians find this arcane-sounding problem so compelling. We'll also explore some fascinating connections between Riemann zeros and quantum physics.

Professor David Borthwick, spectral theorist and author of *Spectral Theory of Infinite-Area Hyperbolic Surfaces* (Birkhäuser, 2007), currently specializes in resonance counting problems. Although working as a mathematician, his Ph.D. is in physics and, when not doing math, he can frequently be found playing the viola or woodworking.