

# Equidistribution and Primes

Presented by

## Peter Sarnak

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**W**e review briefly various classical problems concerning the existence of primes or numbers with few prime factors as well as some of the developments towards resolving these long standing questions. We then put these problems in a natural and geometric context of actions by morphisms on affine  $n$ -space and outline a theory that has been developed in this context and some applications to classical problems connected with Pythagorean triangles and Apollonian packings. The methods used to develop a combinatorial sieve in this setting involve automorphic forms, expander graphs and unexpectedly, arithmetic combinatorics.

**Friday, May 2, 2008**

**4:00–5:00 p.m.**

**115 Avery Hall**

University of Nebraska-Lincoln

**Reception:** 348 Avery Hall  
3:15–3:50 p.m.

Sponsored by the Howard E. Rowlee Jr. Fund and  
the Department of Mathematics



**Peter Sarnak**

*Peter Sarnak has made major contributions to number theory, and to questions in analysis motivated by number theory. His interest in mathematics is wide-ranging, and his research focuses on the theory of zeta functions and automorphic forms with applications to number theory, combinatorics, and mathematical physics.*

*In the course of his career, he has served on the faculty of the Courant Institute of Mathematical Sciences of New York University, Stanford University and Princeton University, where he has been the Eugene Higgins Professor of Mathematics since 2002.*

*Among other honors, the American Mathematical Society awarded Professor Sarnak the Levi L. Conant Prize in 2003 and the Frank Nelson Cole Prize in 2005. In 2002, he was named a Member of the National Academy of Sciences and a Fellow of The Royal Society of London.*

