



Center for Mathematical Sciences Lectures

Mallat Family Fund for Research in Mathematics

invites you to a

SPECIAL LECTURE SERIES

to be presented by



Professor Andrew Granville

University of Montreal

All lectures will take place at
Auditorium 232, Amado Mathematics Building

Lecture I: Monday, 28 February, 2011 at 15:30

A pretentious introduction to analytic number theory

Since Riemann's 1859 monograph, the study of the distribution of prime numbers has been dominated by the study of the zeros of the Riemann zeta function and Dirichlet L-functions. Although there have been ad hoc elementary proofs of some of the key results, there has been no coherent alternative approach to that of Riemann. In this talk we will introduce a new and different way to develop analytic number theory, without zeros, stemming from the concept of "pretentiousness". This is joint work with K Soundararajan.

Lecture II: Wednesday, 2 March, 2011 at 16:30

Undergrad colloquium talk (Math Club)

Patterns in the primes

Is there a formula for the primes? Can you identify a prime quickly if you see one? How many primes are there? (A precise enough answer to this question is worth a million dollars!) Are there magic squares of primes? What patterns can you make with primes? In this talk we will discuss these questions and many more.

The speaker will be happy to try to answer any questions that members of the audience might have about primes.

Lecture III: Thursday, 3 March, 2011 at 15:30

The pretentious large sieve

We discuss the large sieve (of Bombieri and others), one of the most important tools in modern prime number theory. Building on work of Elliott, the speaker and Soundararajan have recently found a new version, the pretentious large sieve, which gives much more controlled statistical information. This has several consequences including a new (and much much easier) proof of Linnik's theorem (a bound for the least prime in an arithmetic progression), and much improved bounds on exponential sums twisted by multiplicative functions.