



UNIVERSITY OF ROCHESTER

# Department of Mathematics Colloquium Series

## ABSTRACT

Prime numbers are positive integers that are divisible only by one and the number itself, for example 2, 3, 5, 7, and so on. Twin primes are pairs of primes that differ by 2, such as 3 and 5 or 29 and 31. Are there infinitely many twin primes? And can we prove it? This talk will provide a convincing answer to the first question. As for the second question, up to now proofs have never been in sight, but recent work of the speaker with Pintz and Yıldırım has maybe changed this situation. At present our method, while not producing twin primes, is able to prove that there are pairs of primes very close together compared to the average distance between consecutive primes. This talk will explain our knowledge of twin primes and discuss the idea of the new method.

This work has had its share of media attention, and even generated a song on public television. For the speaker there has been four stages to this publicity: the enjoyment of public fame for proving the result four years ago, followed closely by the humbling publicity when the proof crashed and burned, followed two years later by redemption following the strange emergence of a new proof, and finally the welcome return to obscurity. Some time at the end of the talk will be spent showing how mathematics is covered in the media.

The talk is addressed to an audience with interest in mathematics.

Professor Dan Goldston  
Department of Mathematics  
San Jose State University

## *Are There Infinitely Many Twin Primes?*

Thursday, February 15, 3:30–4:30 p.m.  
Hoyt Auditorium

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