University of Florida • Mathematics Department
Tenth Ramanujan* Colloquium

held in conjunction with the 2016 Gainesville International Number Theory Conference† in honor of Professor Krishnaswami Alladi for his 60th birthday

by

Professor James Maynard**
University of Oxford

on

Linear Equations in Primes

Date and Time: 5:10 - 6:00pm, Thursday, March 17, 2016
Room: 170 Pugh Hall
Refreshments: After Colloquium in Pugh Hall Lobby

OPENING REMARKS
by
Dean David Richardson, CLAS

Abstract: Many of the most famous and most important questions on the distribution of primes can be cast as solving systems of linear equations with prime variables. The twin prime conjecture, Goldbach's conjecture, k-term arithmetic progressions of primes and most questions about small gaps between primes can all be seen in this manner, as well as several questions with applications to Diophantine geometry or cryptography. We will describe some of the progress on these questions, with a particular emphasis on establishing weak forms of some of these questions which has led to new results on bounded gaps between primes and large gaps between primes, amongst other things.

Professor Maynard will also give two additional seminar talks: (i) Friday, March 18, 8:30 – 9:10am in The Straughn Center: *Prime values of polynomials* and (ii) Saturday, March 19, 8:30 – 9:10am in Little Hall Room 101: *Primes with restricted digits*

* ABOUT RAMANUJAN: Srinivasa Ramanujan (1887-1920), a self-taught genius from South India, dazzled mathematicians at Cambridge University by communicating bewildering formulae in a series of letters. G. H. Hardy invited Ramanujan to work with him at Cambridge, convinced that Ramanujan was a "Newton of the East"! Ramanujan's work has had a profound and wide impact within and outside mathematics. He is considered one of the greatest mathematicians in history.

** ABOUT THE SPEAKER: Professor James Maynard of Oxford University, who is only 28 years old, is a world leader in number theory. He has revolutionized the field of prime numbers by making spectacular progress on both the small gap and large gap problem for primes. He dramatically improved the stunning theorem of Zhang by showing that there are infinitely many pairs of primes that differ by < 600, and soon after settled the $10,000 problem of Paul Erdös on large gaps between primes (this was also simultaneously solved by Ford, Green, Konyagin, and Tao.) For his fundamental contributions, he was awarded the SASTRA Ramanujan Prize in 2014, and the Whitehead Prize in 2015.

ABOUT THE SPONSOR: Evan Pugh Professor George Andrews of The Pennsylvania State University is the world's premier authority in the theory of partitions and work of the Indian mathematical genius Srinivasa Ramanujan combined. He is a Member of the National Academy of Sciences. He has close ties with the UF Mathematics Department which has one of the strongest programs on mathematics related to Ramanujan's work. He was a recipient of an Honorary Doctorate from UF in December 2002. Since 2005, he is a Distinguished Visiting Professor each year in the Spring term in the Mathematics Department. During 2008-2009 he was President of the American Mathematical Society.

† CONFERENCE URL: www.qseries.org/alladi60