

University of Florida • Mathematics Department  
Ninth Ramanujan\* Colloquium

by

Professor Robert Vaughan\*\* (FRS)

The Pennsylvania State University

on

*Goldbach – Descartes to Ramanujan, Hardy, Littlewood  
and Beyond*

**Date and Time:** 4:00 - 5:00pm, Monday, April 6, 2015

**Room:** TUR L011

**Refreshments:** Before Colloquium at 3:15pm in LIT 339 (Atrium)

**OPENING REMARKS**

by

Dean Dave Richardson (CLAS)



**Abstract:** In 1742, Goldbach and Euler in conversation and in an exchange of letters discussed the representation of numbers as sums of at most three primes. Although the question as to whether every even number is the sum of one or two primes (the binary Goldbach conjecture) is still unresolved, this and associated questions have attracted many mathematicians over the years, and have led to a range of powerful techniques with many applications. In this talk I will present a commentary on some of the historical developments and the underlying key ideas.

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Professor Vaughan will also give two seminar talks: (i) SPECIAL SEMINAR, Tue, Apr 7, 10:40 am in LIT 339 (Atrium): *Goldbach - a modern panorama*, and (ii) NUMBER THEORY SEMINAR, Tue, Apr 7, 1:55 pm in LIT 368: *Zeros of Dirichlet series*.

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\* 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 Robert Vaughan is the world's leading authority on the Circle Method, a powerful analytic tool used in a wide class of problems in additive Number Theory, the origins of this method going back to the work of Hardy-Ramanujan on partitions in 1917. For his fundamental contributions to number theory in general, and the circle method in particular, Professor Vaughan received the Berwick Prize of the London Mathematical Society in 1979 and was elected Fellow of the Royal Society in 1990. He was Professor at Imperial College, London, before joining Penn State University where he is currently.

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.