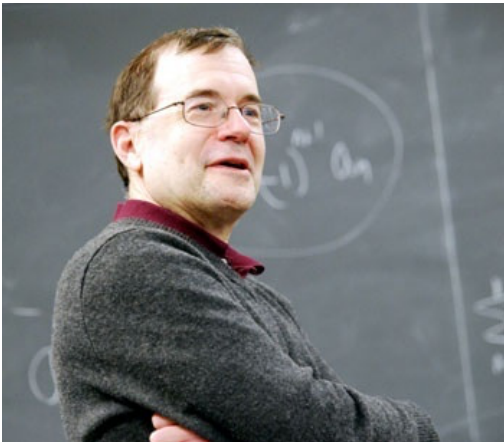


2024-2025 Ramanujan Colloquium



Speaker: Jeffrey C. Lagarias
University of Michigan

Opening remarks by Mary Watt
Interim Dean, CLAS, UF

Wednesday, March 5, 2025
4:05-4:55 PM, Little Hall 113
Refreshments at 3:30 PM in Little Hall 339

Euler's constant: Euler's work and modern developments

Abstract: The first part of the talk surveys Euler's work on his constant $\gamma = 0.57721\dots$ and related constants, starting from 1731. It has a cousin, the Euler-Gompertz constant, $\delta = 0.59634\dots$ which will put in a guest appearance. The second part reviews a selection of subsequent developments from the following 300 years, which exhibit its appearance in many fields of mathematics. This mysterious constant is conjectured to be transcendental, but it is not even known to be irrational. It appears in many striking analytic formulae; some were contributed by Ramanujan. The problem of computing it was raised in Turing's 1937 paper defining Turing machines. This constant has a particularly strong and elusive relation to prime number theory and the Riemann hypothesis. In a certain sense it knows (something) about every individual prime.

Two additional seminar talks:

- (1) Number Theory Seminar: The Collatz Problem, Tue, Mar 4, at 1:55 PM in LIT 339
- (2) Combinatorics Seminar: Generalized Factorials, Tue, Mar 4, at 3 PM in LIT 225

About the speaker: Jeffrey Lagarias is the Harold Mead Stark Distinguished Professor at the University of Michigan, Ann Arbor. He received his PhD in 1974 from MIT in algebraic number theory, and joined AT&T Bell Labs, where he worked on a variety of problems in pure and applied math. He joined the University of Michigan in 2003. Professor Lagarias has made fundamental contributions to several fields, including number theory, harmonic analysis, ergodic theory, low-dimensional topology, and theoretical computer science. In recognition of his distinguished contributions, he was elected a Member of the National Academy of Sciences in 2024.

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 sponsor: George Andrews, Atherton Professor 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.