CLAREMONT CENTER for MATHEMATICAL SCIENCES

C C M S   C O L L O Q U I U M

THE LEGACY OF RAMANUJAN'S MOCK THETA FUNCTIONS: HARMONIC MAASS FORMS IN NUMBER THEORY

by

Ken Ono

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Abstract: In his last letter to G. H. Hardy (written from his death bed in 1920), Ramanujan wrote about a new beautiful theory of power series that he refers to as "mock theta functions". This small collection of enigmatic power series puzzled mathematicians for many decades. Then in 2002 Zwegers realized the meaning behind these series; he established that these series are pieces of Maass forms. This understanding has inspired much work. The development of general theorems based on Ramanujan's examples has produced many wonderful theorems on a wide array of subjects such as: L-functions and elliptic curves, Additive number theory (partitions), Donaldson invariants, Representation theory, Explicit class field theory. This talk will be a brief account of this story.

About the speaker: Ken Ono, the Asa Griggs Candler Professor of Mathematics at Emory University, received his Ph.D from UCLA in 1993. Upon graduation, he held positions at the University of Georgia, the University of Illinois (Urbana-Champaign), the Institute for Advanced Study, and Penn State University, where he was named the Louis P. Martarano Professor in 1999. From 2000-2011 he was the Manasse Professor of Letters and Science and the Hilldale Professor of Mathematics at the University of Wisconsin at Madison. He has authored over 130 research papers in number theory. He has advised 17 doctoral students to date and sits on the editorial boards of eleven journals including the Proceedings of the American Mathematical Society, as the managing editor, and the Bulletin of the American Mathematical Society. He has received numerous awards and honors, including a Sloan Fellowship, a Presidential Early Career Award, a Packard Fellowship, and a Guggenheim Fellowship. He is also well known as a distinguished mentor and teacher. He twice won the University of Wisconsin Residence Halls "Favorite Instructor Award", and in 2005 he won the NSF Director's Distinguished Teaching Scholar Award.

Wednesday, February 22, 2012, at 4:15pm

Freeburg Forum (Kravis Center, LC 62), Claremont McKenna College

Refreshments at 3:45 p.m. in Freeburg Forum Courtyard & wine and cheese after the talk in CMC Math Commons Room (Adams 208)

The dinner will be hosted by Prof. Lenny Fukshansky.
Please contact Prof. Fukshansky if you are interested in attending the dinner