1106-A0-12 **Ken Ono***, Emory University, Atlanta, GA 30332. *Golden numbers and identities: The legacy of Rogers and Ramanujan.*

The "golden ratio" is one of the most intriguing constants in mathematics. It has a beautiful description in terms of a continued fraction. In his first letter to G. H. Hardy, Ramanujan hinted at a theory of continued fractions, which greatly expands on this classical observation. He offered striking evaluations which Hardy described as... "These formulas defeated me completely...they could only be written down by a mathematician of the highest class. They must be true because no one would have the imagination to invent them". G. H. Hardy Ramanujan had a secret device, two power series identities which were independently discovered previously by Rogers. The two Rogers-Ramanujan identities are now ubiquitous in mathematics. It turns out that these identities and Ramanujan's theory of evaluations are hints of a much larger theory. In joint work with Michael Griffin and Ole Warnaar, the speaker has discovered a rich framework of Rogers-Ramanujan identities, one that comes equipped with a beautiful theory of algebraic numbers. The story blends the theory of Hall-Littlewood polynomials, modular forms, and representation theory.

The "golden ratio" is one of the most intriguing constants in mathematics. It has a beautiful description in terms of a continued fraction. In his first letter to G. H. Hardy, Ramanujan hinted at a theory of continued fractions, which greatly expands on this classical observation. He offered striking evaluations which Hardy described as...

"These formulas defeated me completely...they could only be written down by a mathematician of the highest class. They must be true because no one would have the imagination to invent them". G. H. Hardy Ramanujan had a secret device, two power series identities which were independently discovered previously by Rogers. The two Rogers-Ramanujan identities are now ubiquitous in mathematics.

It turns out that these identities and Ramanujan's theory of evaluations are hints of a much larger theory. In joint work with Michael Griffin and Ole Warnaar, the speaker has discovered a rich framework of Rogers-Ramanujan identities,

one that comes equipped with a beautiful theory of algebraic numbers. The story blends the theory of Hall-Littlewood polynomials, modular forms, and representation theory. (Received April 27, 2014)