

# Philadelphia Area Number Theory Seminar

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## Quadratic Identities and Modularity

Abstract: The work of Andrews, Dyson, and Hickerson (ADH), and of Cohen show that the Fourier coefficients of the function

$$f(q) = 1 + \sum_{n=1}^{\infty} \frac{q^{\frac{n(n+1)}{2}}}{(1+q)(1+q^2)\cdots(1+q^n)};$$

are defined by the arithmetic in  $\mathbb{Z}[\sqrt{-6}]$  and can be used to construct a Maass waveform on  $\mathfrak{so}(2)$ .  $f(q)$  is a function studied by Ramanujan.

In this talk, I will discuss the problem of generalizing the results of (ADH) and Cohen. This is joint work, in progress, with Larry Rolin.

Wednesday, August 15, 2018  
2:40 - 3:50 PM

Bryn Mawr College  
Department of Mathematics  
Park Science Center 338

Tea and refreshments at 2:20 PM in Park 339