1022-11-66 **Sharon Anne Garthwaite*** (garthwai@math.wisc.edu), UW Math Dept., 480 Lincoln Dr., Madison, WI 53706. *The coefficients of vector-valued Maass-Poincaré series.*

In his last letter to Hardy before his death, Ramanujan wrote about his discovery of the mock theta functions, q-series with interesting analytic properties. Recently, Zwegers proved a relationship between mock theta functions and vector-valued modular forms, and Bringmann and Ono extended this work to place mock theta functions in the realm of weight 1/2 weak Maass forms. In doing so, they proved the Andrews-Dragonette conjecture, giving the first exact formula for the coefficients of a mock theta function. By the work of Zwegers and of Bringmann and Ono, it becomes clear that to understand mock theta functions we must understand Maass-Poincaré series. In this talk we begin with a general weight k Maass-Poincaré series and construct a weight k vector-valued modular form that reflects its transformation properties. We also compare the Fourier expansions of both the original and resulting series. (Received September 08, 2006)