In 2004, Knopp and Mason computed the coefficients of vector-valued Poincaré series associated to a normal representation. Their expression for these coefficients strongly parallels the classical case and involves Bessel functions and ‘generalized’ Kloosterman sums. For logarithmic representations, Knopp and Mason wrote down a matrix-valued Poincaré series whose columns are logarithmic vector-valued modular forms, but the coefficients of these forms are not derived. However, for logarithmic representations where \( \rho(T) \) is a single Jordan block, we can instead construct a Poincaré series that is a natural analogue of Poincaré series associated to a normal representation. In this talk, I’ll discuss this construction and give an exact expression for the Fourier coefficients of these Poincaré series. (Received September 17, 2016)