1056-11-802 **Jennifer Beineke**, **Ben Brubaker** and **Sharon Frechette***
(sfrechet@mathcs.holycross.edu). *Weyl Group Multiple Dirichlet Series.* Preliminary report.

We extend the theory of "Weyl group multiple Dirichlet series" to root systems of type C. These are Dirichlet series in several complex variables with analytic continuation and functional equations isomorphic to the associated Weyl group. They conjecturally come from the Fourier-Whittaker coefficients of minimal parabolic Eisenstein series on a metaplectic cover of $SO(2r+1)$. We give a construction for an infinite family of Dirichlet series in several variables with the above conjectured analytic properties, using bases for certain highest weight representations of $Sp(2r)$ parametrized by Gelfand-Tsetlin patterns. We then prove portions of this conjecture in two important special cases. One case uses the Casselman-Shalika formula for unramified principal series and a deformation of the Weyl character formula of Hamel and King. The other relates our definition to an alternate description of multiple Dirichlet series proposed by Brubaker, Bump, and Friedberg. (Received September 17, 2009)