Meeting: 1002, Pittsburgh, Pennsylvania, SS 9A, Special Session on Multivariate Hypergeometric Functions: Combinatorial and Algebro-Geometric Aspects

1002-33-68 **Hasan Coskun*** (hasan_coskun@tamu-commerce.edu), Department of Mathematics, Texas A&M-Commerce, Binnion Hall Room 314, Commerce, TX 75429. *Elliptic Generalizations and Applications of Certain Important Summation and Transformation Identities for Multiple Hypergeometric Series.*

The definitions and the properties of the elliptic very well–poised multivariable Macdonald functions $W_{\lambda/\mu}$ and the elliptic Jackson coefficients $\omega_{\lambda/\mu}$ will be presented. A BC_n elliptic multivariable Jackson sum and a BC_n elliptic ${}_{10}\phi_9$ transformation in terms of $\omega_{\lambda/\mu}$ will be obtained. BC_n extensions of the one and two parameter Bailey Lemmas will be given and consequently generalizations of certain important q–series identities associated to root systems B_n, C_n and D_n will be proved. These identities include Euler's Pentagonal Number Theorem, the unspecialized Rogers–Selberg identity, the Rogers–Ramanujan identities and the extreme cases of the Andrews–Gordon identities. (Received August 24, 2004)