1052-11-237 **Stephen C Milne*** (milne@math.ohio-state.edu), Department of Mathematics, The Ohio State University, 231 West 18-th Avenue, Columbus, OH 43210-1174, and **Sheldon L Degenhardt**. *A nonterminating q-Dougall summation theorem for hypergeometric series in $U(n)$, with applications.* Preliminary report.

In this talk we extend important classical one-variable summations and transformations of Bailey to multiple basic hypergeometric series very-well-poised on unitary groups $U(n+1)$. In particular, we derive multivariable generalizations of Bailey's 3-term transformation formula for ${}_8\phi_7$ series, and Bailey's nonterminating q-Dougall summation formula. As pointed out by Michael Schlosser, our nonterminating $U(n+1)$ q-Dougall summation formula yields a natural multivariable extension of Jacobi's classical identity for eighth powers of theta functions. All of this work is a consequence of the nonterminating $U(n+1)$ q-Whipple transformation formula of Milne and Newcomb. (Received August 28, 2009)