GENTIC DIVERSITY OF *GOSSYPIUM HIRSUTUM* AND *G. BARBADENSE* IN THE U.S. NATIONAL COTTON GERMPLASM COLLECTION

L. Hinze J. Yu J. Frelichowski R. Percy USDA-ARS College Station, TX D. Fang USDA-ARS-SRRC New Orleans, LA M. A. Gore Cornell University Ithaca, NY B. Scheffler USDA-ARS Stoneville, MS

<u>Abstract</u>

An understanding of the genetic diversity of Gossypium hirsutum and G. barbadense cotton in the US National Cotton Germplasm Collection is essential to develop strategies for collection, conservation, and utilization of these germplasm resources. The US Collection includes accessions with improved yield and fiber quality within cultivated types of these species, as well as accessions possessing sources of abiotic and biotic stress resistance often found in wild types. We have used molecular markers to characterize these two commercial tetraploid species. G. hirsutum and G. barbadense show a great amount of variation, particularly within the wild types. Previous studies have analyzed intra-specific differentiation within the most diverse representatives of G. hirsutum and G. barbadense. These wild types do not form distinct clusters based on geography but trends in patterns of diversity due to collection locations have been observed.