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**Project ID:** 0506-CH-106

**FY04 ARS Agreement #:** New

**Research Area:** BIO

**Duration of Award:** 1 Year

**Project Title:** Use of High Throughput Marker Technologies to Develop FHB Resistant Varieties in Wheat and Barley.

PROJECT 1 ABSTRACT

(1 Page Limit)

With the recent rapid advancement of high throughput genotyping technology, the USDA ARS genotyping centers are expected to play an increasingly important role to facilitate the use of DNA markers in small grains improvement. There is an urgent need of developing varieties resistant to *Fusarium* head blight (FHB) in both wheat and barley in order to efficiently reduce the extensive damage caused by the disease. Although DNA markers have been identified and tagged the major resistance genes, widespread application of marker assisted selection in breeding resistant varieties in wheat and barley is limited. The main objective of this proposal is to plan and initiate activities which will further the USWBSI's goal of accelerating the rate of gene deployment with high throughput marker technologies. The genotyping lab in Fargo, ND will collaborate with spring wheat and barley breeders in the Northern Great Plains region to develop and implement high throughput genotyping protocols to incorporate marker technology in their breeding programs. From this pilot study it is expected that a working protocol for marker assisted selection will be established to enhance the efforts in breeding varieties resistant to FHB.