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Research Area: **BIO** **Duration of Award: 1 Year**

Project Title: Saturation Mapping of the Chromosome 2(2H) Fusarium Head Blight Resistance QTL.

PROJECT 1 ABSTRACT
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Our ultimate goal is to clone the gene (or genes) responsible for the major Fusarium Head Blight (FHB) resistance quantitative trait locus (QTL) found on barley chromosome 2(2H). The specific objectives are: **1) saturate the target region with molecular markers; 2) develop isolines with minimal chromosome 2(2H) FHB QTL regions; and 3) develop a physical map of the chromosome 2(2H) FHB QTL region.** Progress towards these objectives will provide valuable molecular markers and germplasm for breeders to develop cultivars with acceptable levels of FHB resistance for commercial use. The saturated genetic map will be developed by mapping barley Expressed Sequence Tag (EST) molecular markers identified by homology with genes from the syntenous rice region. Isolines will be developed by crossing the Fusarium Head Blight resistant barley line CI4196 with Morex, a susceptible cultivar. Isolines containing small introgressed CI4196 chromosome 2(2H) FHB QTL fragments will be selected. To develop the physical map, barley Bacterial Artificial Chromosome (BAC) clones will be selected for all genetically mapped probes and fingerprinted. These data will be merged with the larger barley genome physical mapping effort under way in Dr. Tim Close laboratory.