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

Project Title: Breeding Fusarium Head Blight Resistant Spring Wheat.

PROJECT 4 ABSTRACT
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Wheat varieties with greater resistance to *Fusarium* head blight (FHB) would make a substantial contribution to reducing the losses from this devastating disease. The specific objectives and long-term goals of this research are the same because of the long period of time required for these activities. These objectives are:

1) Screen new putative FHB resistance sources and develop improved spring wheat germplasm containing enhanced levels of FHB resistance.

2) Develop *Fusarium* head blight resistant spring wheat varieties adapted for commercial production in Minnesota and the surrounding region.

Crosses will be made between and among FHB resistance sources and regionally adapted germplasm. Field and greenhouse screening of materials will be used to characterize levels of FHB resistance. Approximately 1,200 lines that are candidates for entry into preliminary yield trials will be tested for FHB resistance under field conditions. Approximately 150 lines in advanced yield trials and 100 lines with high levels of FHB resistance will be evaluated in replicated field tests in inoculated, misted nurseries at Crookston, Morris, and St. Paul. Approximately 30-50 lines with high levels of FHB resistance identified in the field will be tested for FHB reaction in the greenhouse using point inoculation. In addition, we will evaluate the Uniform Regional Scab Nursery for Spring Wheat Parents for FHB reaction at the Crookston and St. Paul FHB nurseries.

Superior germplasm will be released as improved varieties, resistant germplasm, or made available upon request.

The objectives above relate directly to the U.S. Wheat and Barley Scab Initiative's overall goal of minimizing the threat of FHB. Specifically, this proposal addresses one goal of the Variety Development and Uniform Nurseries research area, which is to develop, adapted varieties and advanced generation lines with enhanced resistance to FHB.