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

Project Title: Prediction Models and Improved Pre-Harvest Estimates of Deoxynivalenol.

PROJECT 1 ABSTRACT

(1 Page Limit)

The overall goals of the cooperative epidemiology and disease forecasting effort is to develop disease and mycotoxin prediction models that help farmers and their advisors with the management of FHB. The overall goal of the cooperative epidemiology and disease forecasting effort is to develop disease and mycotoxin prediction models that help farmers and their advisors with the management of FHB. This effort has made iterative progress in reaching this goal and here we propose the following objectives. 1) develop a DON module for the current disease models that will help meet the immediate needs of the U.S. wheat and barley industries; 2) initiate the mechanistic modeling effort by investigating the influence of environment on the probability of infection and DON accumulation in a field environment; 3) improve the pre-harvest estimates of DON based on visual assessments of disease by examining the relationship between DON and wheat spikes with different levels of disease severity. To meet these objectives we will combine our existing data resources with new information collected in replicated field trails. This information will allow us to initiate a new mechanistic modeling effort that we believe will improve the accuracy of the disease/DON prediction models. This proposal directly addresses the research priorities of EEDF RAC including the development of disease prediction systems, quantification of factors contributing to epidemics, and factors associated with high levels of DON in grain without visual symptoms of disease.