PI: Kyle Imhoff	**PI's E-mail:** kai5024@psu.edu
Project ID: FY18-DE-018	**ARS Agreement #:** *59-0206-6-016*
Research Category: MGMT	**Duration of Award:** 1 Year
Project Title: Continued Deployment of Prediction Models for Fusarium Head Blight	

PROJECT 1 ABSTRACT
(1 Page Limit)

The disease forecasting models deployed via the Fusarium Head Blight Prediction Center help farm managers evaluate the risk of disease and the need for fungicide applications as part of the integrated management of Fusarium head blight (FHB) and deoxynivalenol (DON). While we have already made considerable progress in model deployment, additional projects are needed to ensure the continued delivery of these decision tools, further improve the utility, and adoption of these tools for FHB management. Our specific objectives for FY18-FY19 include: 1. Continued deployment of the disease prediction models in 30 states including the support of the state commentary tools, FHB Alerts and the web-page information explaining the models. 2. Refine and maintain a version of the FHB Prediction Center for use with mobile devices (cellular-based mobile/"smart" phones and tablets). 3. Redesign the expert tools used to test experimental models before public deployment. 4. Modification of the web-based tools to improve functionality and compatibility of the Prediction Center. 5. Implement a user survey to document value of the prediction system and its impact for stakeholders. To accomplish these objectives, we propose to use the Real Time Mesoscale Analysis, supplemented with the improved observational dataset known as the Un-Restricted Mesoscale Analysis provided by NOAA's National Weather Service, to produce the daily maps of disease risk at a 2.5 km spatial resolution in the 30 states. The system will also use hourly reporting weather stations maintained by the NWS, and independent networks of weather stations from Agricultural Weather Networks. A state commentary feature will be available for all states covered by the disease prediction effort. The commentaries will be displayed along with maps of the disease risk and distributed through the FHB Alert System. We propose to add new features to the expert tools that can be used to verify current models and test the next generation of prediction models. We propose to organize training sessions that will help specialists gain experience with the prediction models. At the close of each season, a user survey will be implemented to assess the value of the prediction system and its impact on stakeholders of the USWBSI.