

## Project Abstract

<b>Project Title:</b>	Genetics and Breeding of FHB Resistant Soft White & Red Winter Wheat for the NE U.S.	
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The overall goal of this project is to evaluate FHB resistance for all wheat varieties grown in New York and develop new varieties of soft white and red winter wheat that have FHB resistance and perform well in the northeastern U.S.

### *Project Objectives:*

1. Develop FHB resistant soft white and red winter wheat cultivars for the northeastern U.S. Evaluate our elite lines in the Cornell University FHB Advanced Line nursery.
2. Pyramid FHB resistance genes by hybridizing elite lines with native FHB resistance to exotic sources of FHB resistance both Asian and other sources.
3. Evaluate FHB resistant lines in New York regional and state trials for release, farmer recommendations, and seed increase.
4. Participate in the coordinated evaluation of cooperative nurseries for FHB resistance.
5. Implement recurrent mass selection in dominant male sterile populations in soft winter wheat backgrounds adapted to the eastern US.
6. Participate in the coordinated sharing of information to generate a comprehensive source of information that can be used in forward breeding strategies.

The following approaches will be utilized: 1) selection and hybridization of elite lines and varieties that have both native and exotic FHB resistance to be used in variety development, 2) marker assisted selection for major resistance QTL using elite lines and varieties as recurrent parents, 3) evaluation of elite FHB resistant wheat lines in New York state-wide, regional trials, 4) participation in the evaluation of cooperative uniform trials and development of a comprehensive source of information that can be used by breeders to design forward breeding and selection schemes, 5) development of elite lines with new combinations of FHB resistance alleles.