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**Project ID:** FY18-BA-012

**ARS Agreement #:** 59-0206-6-004

**Research Category:** BAR-CP

**Duration of Award:** 1 Year

**Project Title:** Control of Scab in Barley through Reduction of Infection and Toxin formation.

### PROJECT 1 ABSTRACT

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A recent report has documented the efficacy of spray application of dsRNA to induce gene silencing in *Fusarium graminearum* in the host plant. We propose to take advantage of this technique to target genes that will improve the quality of barley products.

**Overall project goal:** Develop new strategies for reducing the impact of FHB disease and mycotoxin contamination in barley. Use pathogen genes to reduce inoculum and mycotoxin contamination, and minimize the source of gushing in beer through gene silencing using dsRNA applied externally to the host plant.

**Expected outcomes:** We expect to be successful silencing our target genes by this approach. The target genes will target fungal pathogenicity genes.

**Plans to accomplish project goal within period of proposed work:** The techniques of the approach are routinely used in the Trail lab, so we anticipate accomplishing Objective 1 in Year 1 and Objective 2 in Year 2.

**Statement of Mutual Interest:** This is a new strategy to prevent infection and mycotoxin production. It can be designed so as not to affect beneficial fungi in the crop.