

## **Title: Oregon Wheat Quality Program**

*Investigator:*

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### **Abstract:**

This request for funding the OSU Wheat Quality Program (WQP) continues our policy of continual refinement of quality testing for maximum impact for the wheat breeding, extension, and cereal genetics programs. Chief priorities for testing are hard and soft breeding lines from OSU elite variety trials, early generation headrow samples, OSU Cereal Extension Program trials, and cereal genetics mapping populations. Two new methods; to predict dough characteristics at early generations, and to predict dough water absorption from single kernel analysis system data are to be trialed and validated respectively. In particular, the first of these methods is a key component of our strategy to increase the likelihood of continued success in hard wheat variety development and it fits with national goals to find much more rapid, robust, and accurate (market-applicable) methods for estimating wheat-flour dough strength. The initial aim is to improve the predictions of dough strength for the breeding program, concurrently with increased speed of assessment. The anticipated direct benefit to OSU wheat breeding is an increase in the number of early generation breeding lines that can be screened for dough characteristics. The desired long-term outcome is to create a market-applicable tool that can be used in the supply chain. If successful, this will assist OR wheat growers to improve the consistency of dough characteristics between grain-lots, a factor that needs to be addressed aggressively to maintain and increase global competitiveness of OR and U.S. wheat. In-house quality testing in this iteration of the OWQP decreases the focus on end-products and increases focus on dough attributes, particularly extensibility. Dough extensibility is important to our export customers, and is measured by Australian breeders, but is not to our knowledge measured routinely by any U.S. public wheat breeding programs.