

**Opportunity Title:** USDA-ARS Post Bachelor's Research Training - Plant Genetics

**Opportunity Reference Code:** USDA-ARS-2021-0046

**Organization** U.S. Department of Agriculture (USDA)

**Reference Code** USDA-ARS-2021-0046

**How to Apply** *Connect with **ORISE...on the GO!*** Download the new ORISE GO mobile app in the [Apple App Store](#) or [Google Play Store](#) to help you stay engaged, connected, and informed during your ORISE experience and beyond!

A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. All transcripts must be in English or include an official English translation. Click [here](#) for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations

All documents must be in English or include an official English translation.

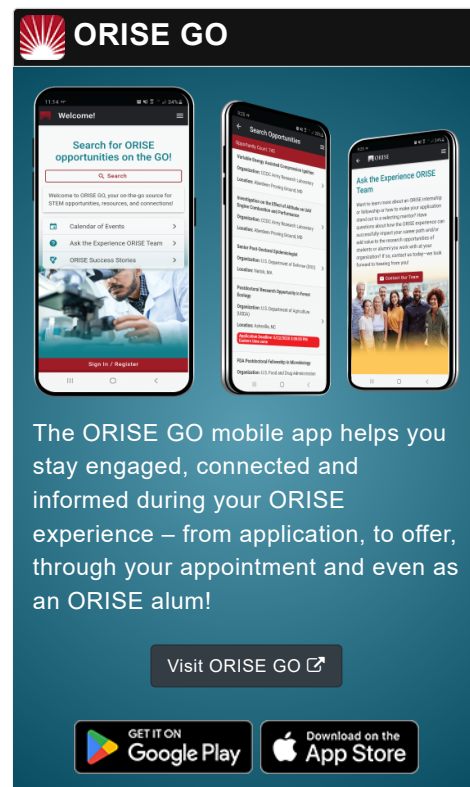
**Application Deadline** 5/14/2021 3:00:00 PM Eastern Time Zone

**Description** \*Applications may be reviewed on a rolling-basis.

**ARS Office/Lab and Location:** A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) located in Fargo, North Dakota.

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's chief scientific in-house research agency with a mission to find solutions to agricultural problems that affect Americans every day from field to table. ARS will deliver cutting-edge, scientific tools and innovative solutions for American farmers, producers, industry, and communities to support the nourishment and well-being of all people; sustain our nation's agroecosystems and natural resources; and ensure the economic competitiveness and excellence of our agriculture. The vision the agency is to provide global leadership in agricultural discoveries through scientific excellence.

**Research Project:** Wheat is one of the most important food crops world wide, and it provides more calories for human consumption than any other crop. The USDA-ARS laboratory hosting this training opportunity conducts genetic research on wheat to gain understanding of genes and genetic networks governing resistance to diseases and pests. The knowledge acquired in these areas is used to develop conventional and molecular tools to expedite the development of new wheat varieties with improved performance and disease resistance. The research project for the selected participant will involve the characterization of wheat lines for resistance to fungal diseases and the identification of new resistance genes using classical and molecular genetic technologies. The participant will receive training in greenhouse-related aspects of conducting research such as growing and maintaining plants, artificial inoculation of plants with fungal pathogens, collecting data on disease



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responses, and basic genetic analysis methods. In the laboratory, the participant will receive training in basic molecular biology techniques such as DNA isolation, polymerase chain reaction (PCR), gel electrophoresis, gene cloning, and other recombinant DNA techniques.

**Learning Objectives:** The participant will receive broad training in several disciplines including plant genetics, molecular genetics, plant pathology, and microbiology. In addition, the participant will learn to function in team environments as well as how to conduct research independently. The participant will also be trained to organize and lead small teams to assist in the achievement of research objectives. The participant will be a part of a world-renown wheat genetics team at Fargo, ND, and will receive direct guidance and training. The participant will also be able to take full advantage of the mentor's connections and involvement with the international community.

**Mentor(s):** The mentor for this opportunity is Justin Faris ([Justin.faris@usda.gov](mailto:Justin.faris@usda.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date:** Spring 2021. Start date is flexible and will depend on a variety of factors.

**Appointment Length:** The appointment will initially be for one year, but may be renewed upon recommendation of ARS and is contingent on the availability of funds.

**Level of Participation:** The appointment is full-time.

**Participant Stipend:** The participant will receive a monthly stipend commensurate with educational level and experience.

**Citizenship Requirements:** This opportunity is available to U.S. citizens only.

**ORISE Information:** This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and ARS. Participants do not become employees of USDA, ARS, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

**Questions:** Please visit our [Program Website](#). After reading, if you have additional questions about the application process please email [USDA-ARS@ornl.gov](mailto:USDA-ARS@ornl.gov) and include the reference code for this opportunity.

**Qualifications**

The qualified candidate should have received a bachelor's degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by the end of May 2021. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Degree in Biology, Plant Sciences, or related discipline
- Experience in growing and maintaining plants
- Experience or coursework in standard recombinant DNA practices

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- Good organizational skills and attention to detail
- Highly motivated
- Good written and oral communication skills
- Desire to learn

**Eligibility  
Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or anticipated to be received by 5/31/2021 11:59:00 PM.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (18 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).