Opportunity Title: Postdoctoral Research Opportunity in Plant Genetics
Opportunity Reference Code: ARS-CCRU-2018-546-0011

Organization U.S. Department of Agriculture (USDA)

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How to Apply A complete application package 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. Selected candidate must provide proof of completion of the degree before the appointment can start. Proof must be sent to ORISE directly from the academic institution including graduation date and degree awarded. All transcripts must be in English or include an official English translation. Click **Here** for detailed information about acceptable transcripts.
- A current resume/CV
- Two references – While two references are requested, applications will be considered without reference information. It is preferred that a complete application package contains a minimum of one reference.

If you have questions, send an email to USDA-ARS@orau.org. Please include the reference code for this opportunity in your email.

Description A postdoctoral research opportunity in plant genetics is available with the the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Red River Valley Agricultural Research Center, Cereal Crops Research Unit (CCRU) in Fargo, North Dakota.

Durum wheat is an important crop world wide and is used to make pasta products. The international durum wheat community has assembled a core durum wheat reference collection (DWRC) consisting of 960 durum wheat lines that are thought to represent most of the genetic diversity of the crop.

The research project for the ORISE candidate will involve the characterization of the DWRC lines for resistance to diseases and insect pests, and the identification of resistance genes using association genetics. The candidate will be trained in plant pathology and entomology to determine the reactions of the DWRC lines to various diseases and insects, followed by statistical analyses to identify genomic regions harboring genes of interest. The candidate will also be encouraged to identify and/or develop molecular markers associated with traits of interest, and to use the markers to monitor the transfer of genes of interest into adapted durum varieties through cross hybridization. Therefore, the candidate will also acquire extensive training in molecular genetics, plant breeding, and

quantitative genetics as well. The candidate will be a part of a world-renown wheat genetics team at Fargo, ND, and will receive direct guidance and training. The candidate will also be able to take full advantage of the mentor's connections and involvement with the international community.

The appointment is full-time for approximately 12 months, and may be renewed for a total of five years based upon recommendation of the ARS and availability of funding. The selected applicant will receive a monthly stipend as support for their living and other expenses during this appointment. Stipend rates are determined by ARS officials, and are based on the applicant's academic and professional background. The participant must show proof of health and medical insurance. Health insurance can be obtained through ORISE.

The participant will not enter into an employee/employer relationship with ORISE, ORAU, USDA, ARS, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

While participants will not enter into an employment relationship with ARS, this position requires a pre-appointment check and a full background investigation.

This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the **Guidelines for Non-U.S. Citizens Details** page of the program website for information about the valid immigration statuses that are acceptable for program participation.

For more information about the ARS Research Participation Program, please visit the **Program Website**.

Qualifications

To be eligible, applicants must have a Ph.D. in plant biology, genetics, plant breeding, genomics, molecular biology, or other related discipline.

Preferred Skills:

- Experience in wheat classical and molecular genetics
- Experience in wheat pathology and inoculating wheat plants
- Experience in association mapping or genome-wide association studies
- Basic molecular genetics laboratory skills including PCR, gel electrophoresis, DNA extraction, etc.
- Experience working with various types of molecular markers (e.g. SNP, KASP, SSR).
- Experience working with next-generation sequencing protocols and DNA sequence data

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- Experience growing and maintaining plants in the field and greenhouse
- Ability to work alone as well as in team environments
- Must have good verbal and written communication skills
- Experience using genetic and/or statistical analyses software packages such as JMP Genomics, QGene, JoinMap, Mapmaker, Structure, Tassle, Genome Studio, SAS, R, Microsoft Office, etc.

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Academic Level(s):** Postdoctoral.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (4 👁)