Opportunity Title: Postdoctoral Research Opportunity in Plant Molecular Biology
Opportunity Reference Code: ARS-CIGRU-2017-534-0007

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 Research Opportunity is available with the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Western Regional Research Center (WRRC) Crop Improvement and Genetics Research Unit in Albany, CA through the ORISE Program to conduct experiments aimed at reducing the immunogenic potential of wheat flour.

Some of the same proteins that confer the unique viscoelastic properties of wheat flour are also responsible for a number of human health problems, including food allergies, celiac disease and non-celiac wheat sensitivity. The successful applicant will utilize targeted genome editing to create mutations that disrupt the expression of wheat genes encoding flour proteins known to be immunogenic. The research builds upon previous studies of the wheat flour proteome in which more than 230 closely-related proteins were identified by mass spectrometry and linked to specific gene sequences as well as studies in which RNA interference was used to silence specific genes in transgenic wheat plants.

The incumbent will be stationed in a laboratory at the Western Regional Research Center and carry out an independent project that includes 1) the identification of single guide RNA sequences that can be used to target specific genes within complex gluten protein gene families 2) the design and construction of plasmids for genome editing experiments using the CRISPR/Cas9 system and 3) the development of assays to detect specific mutations in wheat protoplasts and plantlets. Clear documentation of experiments is required and the incumbent will be expected to summarize data and prepare reports for publications, annual reports and presentations.

In the mentor's laboratory, the selected candidate will have the opportunity to learn about the complex families of wheat flour proteins and their roles in

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flour quality and human health, gain experience in genetic transformation of wheat, and become familiar with proteomic methods for the analysis of complex mixtures of proteins.

The appointment is full-time for 12 months and may be renewed based upon recommendation of the ARS mentor and availability of funding. The selected applicant will receive a 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

Candidate must have received a Ph.D. in biology, molecular biology, molecular genetics or plant/agricultural sciences within the past five years.

The successful applicant should have hands-on experience with molecular techniques for DNA and protein analysis in plant systems, plasmid construction, plant transformation and plant tissue culture. Experience with bioinformatics is also desired.

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Life Health and Medical Sciences** (9 👁)