

Opportunity Title: USDA-ARS Postdoc Fellowship on Vegetable Genetics,
Genomics and Breeding

Opportunity Reference Code: USDA-ARS-MWA-2024-0338

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-MWA-2024-0338

How to Apply *To submit your application, scroll to the bottom of this opportunity and click **APPLY**.*

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.
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
- A copy of an abstract or reprint of an article

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

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Application Deadline 11/22/2024 3:00:00 PM Eastern Time Zone

Description ***Applications are 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), Vegetable Crops Research Unit (VCRU) located in Madison, Wisconsin.

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 of the agency is to provide global leadership in agricultural discoveries through scientific excellence.

The mission of VCRU at Madison, WI is to furnish genetic, genomic, and bioinformatic tools, information, and genetic resources to enhance American agricultural productivity and ensure a high quality, safe supply of food, fiber, feed, ornamental, and industrial products. The Cucumber Improvement Program of VCRU aims to understand the genetic basis of traits important for growers and customers and to develop enhanced germplasm using classical and biotechnological approaches.



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Research Project: This appointment is supported by the USDA-ARS Vegetable Crop Research Project in Madison, WI. The participant in a team effort will collaborate on research on understanding the genetic basis of horticulturally important traits in cucumber to accelerate genetic gains in cucumber. Specific objectives and learning activities include:

- Bioinformatic analysis of genome sequencing data for population genomics analysis and variant calling.
- Conduct QTL analysis in both biparental and natural populations to understand the genetics of traits of interest focusing on disease resistances, fruit quality and plant architecture.
- Analyze, and publish research outcome as a scientific article(s).

Learning Objectives: In this fellowship, the participant will learn to:

- Apply transdisciplinary approaches from the fields of Genetics, Genomics, and Bioinformatics to characterize cucumber at the genetic and phenotypic levels, establish marker-trait associations.
- Develop skills in molecular mapping/cloning, and functional characterization of horticulturally important genes or QTL in cucumber.
- Apply marker-assisted selection (MAS) and genomic selection (GS) methods for accelerating cucumber germplasm enhancement.

Mentor: The mentor for this opportunity is Dr. Yiqun Weng (yiqun.weng@usda.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: December 2024, but the start date is flexible.

Appointment Length: The appointment will be 6 to 9 months, 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 and Lawful Permanent Residents (LPR) 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 ORISE.ARS.Midwest@orau.org and include the reference code for

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this opportunity.

Qualifications Qualifications

The qualified candidate should be currently pursuing or already received a doctoral degree within the past two years in the one of the relevant fields: Plant Genetics and Breeding, Genomics, Molecular Biology, Bioinformatics, and/or a related discipline.

Preferred skills:

- Knowledge of plant genetics, breeding, molecular biology, genetics,
- Ability to plan and conduct research experiments to understand genetics underlying traits of interest.
- Ability to perform statistical analysis of experimental data, and conduct bioinformatic analysis of genome sequencing data.
- Experience in analysis of high throughput genotyping or phenotyping data is a plus.
- Statistical and bioinformatics tools applied to conducting genome-wide association studies (GWAS) or genome selection (GS).

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree received within the last 24 months or currently pursuing.
- **Discipline(s):**
 - **Life Health and Medical Sciences** ([4](#) 👁)