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Opportunity Title: USDA-ARS Postdoctoral Fellowship in Transcriptomics of Aflatoxin Biocontrol
Opportunity Reference Code: USDA-ARS-PWA-2026-0138

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-PWA-2026-0138

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

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

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Application Deadline 5/22/2026 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), within the Pest Management and Biocontrol Unit of the Arid Land Agricultural Research Center, located in Tucson, Arizona.

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.

Research Project: Aflatoxin, a mycotoxin produced by *Aspergillus flavus* and closely related fungi, contaminates crops and is a threat to food and feed safety. The overall research goal of the lab is to develop, improve, optimize, and disseminate aflatoxin biocontrol technologies to growers. The goal of the current project is to elucidate genetic and genomic traits associated with enhanced displacement of aflatoxigenic fungi by non-aflatoxigenic *Aspergillus* in soils and on crops that can be used for selection of superior biocontrol strains. Specifically, you help will utilize transcriptomics to identify changes in gene expression during competition between aflatoxigenic *A. flavus* and non-aflatoxigenic *A.*

tamarii that are associated with different competitive outcomes under a variety of biotic and abiotic conditions. Anticipated outcomes of the project include criteria for selection of fungal genotypes that will be developed into new biocontrol products for mitigation of crop aflatoxin contamination.

Learning Objectives: Through this fellowship, you will gain valuable hands-on experience and develop expertise in laboratory research and bioinformatics. You will have the opportunity to learn and enhance skills in the following areas:

- **Fungal Biology:** You will learn how to manipulate and assess competition between fungal isolates under controlled experimental conditions. This will include gaining skills and knowledge in fungal ecology, physiology, and genetics.
- **Experimental Design:** You will gain experience in hypothesis-driven experimental design. This will include selection of biologically relevant treatments to assess impacts of biotic and abiotic factors on competition between *Aspergillus* genotypes and implementation of experiments under controlled laboratory conditions.
- **Transcriptomics:** You will gain experience generating, analyzing, and interpreting transcriptomic data collected from fungal competition experiments. This will include extraction of fungal RNA from crop and soil substrates, data analysis in a High Performance Computing environment, and utilization of bioinformatics pipelines.
- **Translational Research:** You will learn how to translate fundamental research findings into practical solutions for U.S. agriculture. Specifically, the participant will contribute to development of criteria for biocontrol strain selection that will be used to develop new aflatoxin control products with improved efficacy.
- **Scientific Communication:** You will gain experience in disseminating research findings through peer-reviewed journal articles, technical reports, and presentations at scientific and stakeholder meetings, building skills in professional communication and knowledge sharing.

Mentor(s): The mentor for this opportunity is Kenneth Callicott (ken.callicott@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: August 3, 2026. 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. **The anticipated stipend is $76,095 annually.**

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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 ORISE.ARS.PacificWest@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should be currently pursuing or have received a doctoral degree in the one of the relevant fields (Plant Pathology, Mycology, Microbiology, Bioinformatics, Population Genetics, Ecology, Computational Biology, or related disciplines). Degree must have been earned within the past five years or be currently pursuing.

Preferred skills:

1. Experience in molecular biology, genomics, and transcriptomics.
2. Familiar with analyzing data in a High Performance Computing environment.
3. Experience in preparation of manuscripts for publication in peer-reviewed journals.

Stipend

$76,095.00 Yearly

Point of Contact

Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (51)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).