

Opportunity Title: USDA-ARS Research Opportunity in Biopesticides for Insect Pests and Plant Diseases

Opportunity Reference Code: USDA-ARS-MW-2023-0457

Organization U.S. Department of Agriculture (USDA)

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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. 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 3/1/2024 11:59:00 PM Eastern Time Zone

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

ARS Office/Lab and Location: A research opportunity is currently available within the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) with the Crop Bioprotection Research Unit located in Peoria, Illinois.

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: The successful candidate will participate in collaborative interdisciplinary research within the Crop Bioprotection Research Unit to discover new environmentally friendly biopesticides for managing insect pests and plant diseases. The appointment will include designing and conducting field and laboratory experiments, data management, and maintenance of laboratory equipment. The research activities associated with this appointment include:

1. Maintaining insect colonies.
2. Setting up and maintaining field and laboratory experiments.
3. Identification and processing of field-collected insect populations.
4. Prepare test solutions, culture media, and reagents.



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5. Identify insects, microbes, and plant compounds using a variety of molecular, microbiological, and chemical ecology techniques.
6. Maintain proper labeling, handling, storage, use and disposal of solutions, biohazard and hazardous waste, and microbiological cultures.
7. Document and record accurate data using laboratory information management system.
8. Perform other duties within the scope of this appointment.

Learning Objectives: As a result of this training, the participant will learn various scientific skills including maintaining insect colonies, designing field and laboratory experiments, collecting and managing datasets, identification of insects and microbes using morphological and molecular techniques, and maintaining laboratory equipment.

Mentor(s): The mentor(s) for this opportunity is Ephantus Muturi (Ephantus.Muturi@usda.gov). If you have questions about the nature of the research project, please contact the mentor(s).

Anticipated Appointment Start Date: **February 2024.** 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 current stipend for this opportunity is \$37,000 - \$40,000 per year depending on experience.**

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR).

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 this opportunity.

Qualifications The qualified candidate should have received a bachelor's or master's degree in one of the relevant fields. Degree must have been received within the past five years.

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Preferred Skills:

- 1. Experience working with insects.
- 2. Experience in various molecular biology skills such as DNA/RNA isolation, polymerase chain reaction, preparation of DNA/RNA libraries, and sequencing.
- 3. Experience in operation of Gas-Chromatograph Mass Spectrometry (GC-MS), HPLC, and Flash chromatography equipment.
- 4. Experience in microbial culture.
- 5. Good communication skills both written and spoken.
- 6. Attention to details and ability to learn new skills.

- Eligibility Requirements**

- **Citizenship:** LPR or U.S. Citizen
 - **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
 - **Overall GPA:** 3.00
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([2](#) 👁)
 - **Environmental and Marine Sciences** ([3](#) 👁)
 - **Life Health and Medical Sciences** ([12](#) 👁)
 - **Science & Engineering-related** ([2](#) 👁)
 - **Age:** Must be 18 years of age