

**Opportunity Title:** USDA-ARS Sustainable Agriculture Research Fellowship

**Opportunity Reference Code:** USDA-ARS-NE-2024-0115

**Organization** U.S. Department of Agriculture (USDA)

**Reference Code** USDA-ARS-NE-2024-0115

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

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

**Application Deadline** 4/26/2024 11:59:00 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), located in Beltsville, Maryland.

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 participant will be involved in a number of projects related to soil microbial ecology and biological pest control. Under the guidance of a mentor, the participant will assist with:

- Determining the dispersal and activity patterns of fungi, bacteria and archaea with depth and across environmental gradients in agricultural systems and help determine their impacts and influence on soil organic matter sequestration.
- Developing a quantitative understanding of the impact of crop Genetics x Environment x Management strategies (G x E x M) on crop productivity as influenced by enhanced biological nitrogen fixation (BNF) and fuller understanding of the soil/plant/microbiome symbiosis in



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leguminous cash and cover crop systems.

- Enhancing and using *Rhizoctonia solani* pangenomic database to help improve pathogen identification accuracy and characterize pathogenic mechanisms.
- Researching the impact of cropping system and soil edaphic factors on populations of pathogenic and non-pathogenic soilborne fungi.
- Developing biological control agents for soil-borne pathogens, including *Rhizoctonia solani*, of field and nursery crops.

**Learning Objectives:** The participant will have a chance to apply their skills to a number of questions in soil microbial ecology and learn new techniques relevant to the projects listed above. The participant will take an active role in the experiment design, activity evaluation in the laboratory and field, and communicating research findings through publications and presentations. By reporting research progress regularly in meetings with the mentor, they will gain expertise in technical communication and better appreciate team-based research efforts.

**Mentor(s):** The mentor for this opportunity is Michel Cavigelli ([michel.cavigelli@usda.gov](mailto:michel.cavigelli@usda.gov)). If you have questions about the nature of the research, please contact the mentor(s).

**Anticipated Appointment Start Date:** April 11, 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.

**Citizenship Requirements:** 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.

**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.Northeast@orau.org](mailto:ORISE.ARS.Northeast@orau.org) and include the reference code for this opportunity.

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**Qualifications** The qualified candidate should have received a doctoral degree in one of the relevant fields (chemical ecology, microbiology, molecular biology or related fields). Degree must have been received within the past five years.

Depending on the research project objectives, the selected candidate may need to operate a government owned vehicle (GOV) and will be required to show proof of a valid U.S. State Driver's License and provide proof of an active U.S. auto insurance policy.

**Preferred skills:**

- The individual should possess a Ph.D. in an agronomy, soil science, crop science, agricultural engineering or closely related field that provides scientific understanding of subjects affecting cropping systems productivity.
- The individual should possess a good understanding of plant and crop development, crop nutrient and water uptake, and how management and climate interact to affect crop production.
- The candidate should have experience with simulation models and numerical methodology to address project objectives. Should be familiar with database management (SQL), and programming skills to write and debug computer code.
- Programming proficiency in R, Python, Perl, C/C++, Java, and SAS are highly desirable. Should be able to communicate effectively with a diverse group of scientists at multiple locations across the US and Canada.

- Eligibility Requirements**
- **Degree:** Doctoral Degree received within the last 60 month(s).
  - **Discipline(s):**
    - **Life Health and Medical Sciences** ([2](#) )

**Affirmation** I affirm that:

- I am a US Citizen, OR
- I am a non-US Citizen currently living in the United States