

Opportunity Title: USDA-ARS Postgraduate Research Opportunity in Plant Pathology

Opportunity Reference Code: USDA-ARS-SEA-2024-0255

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-SEA-2024-0255

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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 1/3/2025 3:00:00 PM Eastern Time Zone

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

ARS Office/Lab and Location: A postgraduate research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Crop Genetics Research Unit (CGRU) located in Stoneville, Mississippi.

The mission of the Crop Genetics Research Unit is to (1) develop knowledge of the biology of cotton and soybean plants including their genetic, physiological, and pest resistance interactions with the environment; (2) discover heritable plant characteristics that confer resistance or tolerance to adverse environmental pressures, pests and diseases and improve quality; (3) coordinate the National Cotton Variety Tests and the Uniform Soybean Tests for the southern U.S.; (4) maintain and evaluate a soybean germplasm collection; (5) release improved germplasm, and use this knowledge and new germplasm to enhance production and improve the environment.

Research Project: The selected participant will learn and conduct basic and applied studies on soybean pathology. Specific objectives of the research for this opportunity are to (1) Recover stored *Phakopsora pachyrhizi* isolates and collect new and previously collected soybean rust disease leaf samples (Mississippi and other Southern states) from ARS or university scientists; (2) Test the viability and virulence of recovered isolates of *P. pachyrhizi* on susceptible soybean; (3) Test the responses of isolates of *P. pachyrhizi* different genotypes of soybean with known and unknown resistant genes; (4) to improve current *P. pachyrhizi* maintenance methods and establish cryo- preservation for long-term storage; (5) Analyze genetic and pathogenic variations of Mississippi isolates of *P. pachyrhizi*.

Under the guidance of a mentor, the participant will be conducting research



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experiments, recovering *P. pachyrhizi* from stored plant tissues, performing pathogenicity tests in growth chambers, tabulating and evaluating data, and writing technical reports of the results.

Learning Objectives: The participant will learn research techniques and approaches used in both basic and applied research that focuses on phytopathological research.

Mentor: The mentor for this opportunity is Shuxian Li (shuxian.li@usda.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: 2024. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for six 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 (40 hours/week) or part-time (20 hours/week).

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 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.Southeast@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be pursuing or have received an associate's, bachelor's, or master's degree in one of the relevant fields (e.g. Biology, Plant Sciences, Microbiology), or be currently pursuing the degree and will reach completion by the start date of the appointment. Degree must have been received within five years of the appointment start date, or be currently pursuing the degree.

Experience in taking care of soybean or soybean pathological experiments will be desirable.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Associate's Degree, Bachelor's Degree, or Master's Degree.
 - **Discipline(s):**
 - **Communications and Graphics Design** ([2](#) 👁)
 - **Life Health and Medical Sciences** ([5](#) 👁)
 - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).