

Opportunity Title: USDA-ARS Postdoctoral Research Fellowship in Weed Physiology/Molecular Biology/Genomics

Opportunity Reference Code: USDA-ARS-SEA-2025-0218

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-SEA-2025-0218

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 3/27/2026 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), located in Stoneville, Mississippi.

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: We are looking for a recent Ph.D. graduate who will be a postdoctoral research fellow at the USDA-ARS Crop Production Systems Research Unit, Stoneville, MS. The fellowship will involve collaborating with USDA-ARS scientists on research programs focusing on understanding the molecular, physiological, biochemical, and genetic basis of invasive and herbicide resistant weeds, weedy traits, and the underlying herbicide resistance mechanisms (target and non-target site). This research is a component of ARS National Programs 305 (Crop Production) and 304 (Crop Protection & Quarantine).

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The successful candidate will learn about project management by being a part of research aimed at identifying critical differences between wild-type and herbicide-resistant weed biotypes, with emphasis on physiology, biochemistry, growth traits, photosynthetic capacity, adaptability, competitiveness, stress responses, and other fitness-related factors. The postdoctoral candidate will learn to characterize novel biochemical, metabolic, molecular, and transcriptomic features of aggressive, invasive weeds that impart or define “weediness” via in-depth weed genomic studies. This includes evaluating weed control, herbicide efficacy, and comparison of whole-plant physiological processes of herbicide-resistant weed populations with corresponding susceptible populations under growth chamber conditions. The fellow will help develop novel molecular herbicides to control problematic weeds in US cropping systems. The selected candidate will gain experience in laboratory, growth chamber, and greenhouse studies and establish new experiments to investigate weed control and herbicide resistance mechanisms.

Learning Objectives: Under the guidance of a mentor, the participant will:

- Develop expertise in designing and conducting experiments in laboratory, growth chamber, and greenhouse settings to address problematic weeds in Mississippi cropping systems supporting all stakeholders.
- Acquire skills in collecting, processing, and analyzing weed samples, including characterizing herbicide resistant weeds using molecular, physiological, and genomic approaches.
- Build proficiency in operating and maintaining laboratory instrumentation such as pipettes, qPCR machines, centrifuges, spectrophotometers, and other equipment essential for controlled environment data collection.
- Gain writing and communication skills through publications and presentations of research findings.

Mentor(s): The mentor for this opportunity is Krishna Reddy (krishna.reddy@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: February 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 range is \$73,939 - \$76,403 annually.**

Citizenship Requirements: This opportunity is available to U.S. citizens

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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@ornl.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should have received or be pursuing a doctoral degree in one of the relevant fields (Plant Molecular Biology/Genomics, Plant Science/Crop Science, or a related field). Degree must have been received within the past five years or is anticipated to be received by the appointment start date.

Preferred skills:

- Candidates with experience in laboratory, growth chamber, and greenhouse research will be given preference.
- Demonstrated ability to collaborate in diverse and interdisciplinary teams.
- Evidence of ability to conduct independent and collaborative research.
- Demonstrated ability to publish research findings in peer reviewed journals.
- The postdoctoral fellow will have a strong background in conducting molecular and genomic research under laboratory conditions.
- Knowledge of crop production systems of major crops/weeds.
- Hands-on experience conducting qPCR, Next Generation Sequencing (NGS) using RNA-Seq, and RNAi approaches for weed or pest control.
- Competency in the use of biological, physiological, ecological, and genetic techniques and instrumentation.
- Experience in interacting and exchanging knowledge with agricultural research groups.
- Excellent communication and interpersonal skills, strong statistical skills.
- Strong statistical skills with R, SAS, or other statistical programs.

Stipend \$73,939.00 – \$76,403.00 Yearly


Point of Contact [Sara Beth](#)

Eligibility • **Citizenship:** U.S. Citizen Only

Requirements • **Degree:** Doctoral Degree.

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- **Discipline(s):**
 - **Life Health and Medical Sciences** ([8](#) )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).