

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship in Host-Pathogen Interactions

**Opportunity Reference Code:** USDA-ARS-SE-2024-0235

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

**Reference Code** USDA-ARS-SE-2024-0235

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

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

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**Application Deadline** 1/3/2025 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), Dale Bumpers National Rice Research Center, located in Stuttgart, Arkansas.

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:** This project is designed to investigate the molecular basis of evolutionary biology of rice *Oryza sativa* and its interactions with biotic stressors including fungi *Magnaporthe oryzae* and *Rhizocotonia solani*, and other pathogenic microbes. Specifically, the participant will be involved in studying DNA sequence analysis, protein and protein interactions, ligand and receptor binding using the yeast two and three hybrid systems, in vivo binding, and signaling transduction leading to robust defense responses of rice to pathogens. The participant will be a part of a

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multi-disciplinary team investigating of host-pathogen interactions for development of strategies to manage rice diseases.

**Learning Objectives:** Under the guidance of a mentor, the participant will develop the skills for:

- Protein and protein interactions in vitro and in vivo;
- Recombinant DNA technology and protein;
- DNA engineering and molecular evolutionary biological processes;
- Crop disease resistance breeding techniques.

**Mentor(s):** The mentor for this opportunity is Yulin Jia ([yulin.jia@usda.gov](mailto:yulin.jia@usda.gov)). If you have questions about the nature of the research, please contact the mentor(s).

**Anticipated Appointment Start Date:** **March 1, 2025.** 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.Southeast@orau.org](mailto:ORISE.ARS.Southeast@orau.org) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received a doctoral degree in one of the relevant fields. Degree must have been received within the past 48 months.

**Preferred skills:**

- Experience on rice blast system and yeast two hybrid

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- BIFC, DNA, and protein analysis of rice plants.

- Eligibility Requirements**
- **Degree:** Doctoral Degree received within the last 48 month(s).
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([12](#))
    - **Communications and Graphics Design** ([2](#))
    - **Computer, Information, and Data Sciences** ([17](#))
    - **Earth and Geosciences** ([21](#))
    - **Engineering** ([27](#))
    - **Environmental and Marine Sciences** ([14](#))
    - **Life Health and Medical Sciences** ([51](#))
    - **Mathematics and Statistics** ([11](#))
    - **Physics** ([16](#))
    - **Science & Engineering-related** ([2](#))
    - **Social and Behavioral Sciences** ([29](#))

**Affirmation** | I affirm that:

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