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Opportunity Title: USDA-ARS Using Artificial Intelligence-Based Structural Modelling to Predict Plant-Pathogen Protein-Protein Interactions for Crop Improvement
Opportunity Reference Code: USDA-ARS-HQ-2026-0026

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-HQ-2026-0026

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 St. Paul, Minnesota.

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 USDA Cereal Disease Lab strives to reduce losses in wheat, oat, and barley to cereal rusts and Fusarium head blight. Researchers at this unit discover, characterize, and deploy new sources of durable host resistance, investigate pathogen biology, genomics, and metabolomics, and conduct virulence monitoring of domestic and international isolates. The research project entails using artificial intelligence-based structural modelling to predict plant-pathogen protein-protein interactions for crop improvement. Additionally, the participant will contribute to genetic, genomic, molecular biology, and plant pathology

approaches to understand specific recognition processes and downstream signaling.

Learning Objectives: The participant will gain skills in bioinformatics, genetics, data analysis, statistics, and artificial intelligence-based methods for protein modelling. The participant will develop a comprehensive research methodology that uses complementary approaches to understand and evaluate the predictive power of current state of the art approaches in protein modelling. Throughout the course of the project, they will gain in-depth knowledge of issues and the latest research at the intersection of plant pathology and plant breeding with a focus on cereal rusts and Fusarium through exposure to the lab's researchers, as well as academic and industry collaborators.

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

Anticipated Appointment Start Date: May 2026. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will be for two years.

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 is $6,784.58 monthly.**

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

Qualifications The qualified candidate should have received or be currently pursuing a doctoral degree in the one of the relevant fields. Degree must have been earned within the past four years or is anticipated to be received by March 31, 2026.

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Stipend $6,784.58 Monthly

Point of Contact Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 48 months or anticipated to be received by 3/31/2026 12:00:00 AM.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (11 👁)