

Opportunity Title: USDA-ARS Postdoctoral Fellowship on Corn Seed
Metabolites/Proteins for Enhancing Resistance to Mycotoxin Contamination

Opportunity Reference Code: USDA-ARS-SE-2023-0396



Organization U.S. Department of Agriculture (USDA)

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A complete application consists of:

- An application
- Transcripts – [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 11/10/2023 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 within the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), with the Food and Feed Safety Research Unit at the Southern Regional Research Center located in New Orleans, Louisiana.

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 mission of the Food and Feed Safety Research Unit is to safeguard U.S. agricultural commodities (e.g., corn, cottonseed, peanut, and tree nuts) from aflatoxin contamination using a multidisciplinary approach. Under guidance of the mentor, the participant will perform research pertaining to USDA-ARS project 6054-42000-027-00D entitled "Development of Aflatoxin Resistant Corn Lines Using Omic Technologies".

Objectives of the project include:

1. Help identify and characterize corn seed metabolites/proteins for enhancing resistance to mycotoxin contamination.
2. Co-develop and evaluate transgenic corn lines.
3. Co-develop a system to forecast mycotoxin contamination of corn.

The participant in this project will assist the ARS scientists at the Food and Feed Safety Research Unit to perform functional biology experiments targeting resistant genes/molecules/proteins of interest in the plant-fungal interaction focusing on resistance to pre-harvest mycotoxin contamination. Under guidance from the mentor, the participant is expected to perform plant physiology, plant biochemistry and plant molecular biology research as well as general data, statistical analysis and prepare manuscripts for publication.

Learning Objectives: The participant will receive ample mentorship, training, and is expected to assist in studying

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the responses in plant-fungi interactions at a physiological, biochemical, and molecular level. They will receive training in development of greenhouse experiments, corn transformation and care, mycotoxin detection and data analysis. The participant is expected to learn fungal/microbial contaminants, toxins from fungal sources (e.g., aflatoxin, fumonisin and others), analysis of microbial toxins and quantitation and reporting in scientific journals. Many opportunities are available at the Southern Regional Research Center to interact with a diverse group of scientists.

Mentor(s): The mentors for this opportunity is Kanniah Rajasekaran (kanniah.rajasekaran@usda.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: **Late 2023 to January 2024.** Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for three years, 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 current stipend for this opportunity is \$69,100 per year.**

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


Qualifications

The qualified candidate should have received a doctoral degree in one of the relevant fields (e.g., Plant Sciences, Plant Pathology), or be currently pursuing the degree with expected date of completion prior to start of appointment.

Preferred Skills:

- Knowledge in plant physiology and plant biochemistry/molecular biology
- Knowledge and skills in experimental practices related to plant biology/ecophysiology
- Knowledge in experimental design and statistics
- Knowledge and skills in fungal biology or microbiology
- Analytical ability to quantify toxins using HPLC and other methods is desired but not required (the Research Unit can train the participant on analytical procedures (HPLC) for fungal toxins and corn transgenics)

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Life Health and Medical Sciences** (6 )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).