

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Food Chemistry

Opportunity Reference Code: USDA-ARS-SE-2023-0254

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-SE-2023-0254

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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 8/4/2023 3:00:00 PM Eastern Time Zone

Description *Applications are reviewed on a rolling-basis and this posting could close before the deadline.

ARS Office/Lab and Location: A research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) 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 the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: The participant will perform research pertaining to USDA-ARS Project 6054-41000-107-00D entitled "Nutritional Benefits of Health-Promoting Rice and Value-Added Foods". Objectives of the project include:

1. Develop methods to induce phytoalexins and bioactive compounds (polyphenols and others) in rice, soybean, and sugarcane.
2. Identify phytoalexins in plant extracts utilizing UPLC-MS (Waters QToF).
3. Isolation of individual compounds using analytical HPLC and Preparative HPLC.

Specifically, the activity of the participant will address one sub-objective of the project:

Sub-objective 1.3: Production of activated foods from rice for applications in human diets to promote good health: Develop methods for the induction of phytoalexins and bioactive compounds in rice for comparison against soybean and sugarcane. Completed, this research will result in food products enriched with bioactive compounds. In addition, individual



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bioactive compounds will be isolated from treated plant materials to determine biological activities of the components. Several analyses of plant extracts and foods will include: phytoalexin content, polyphenolic components, total phenolics, soluble and insoluble fiber, and starch digestibility.

Learning Objectives: The selected candidate will receive extensive training in the analysis of plant compounds using UPLC-MS and utilization of HPLC and Preparative HPLC. Additionally, they will receive training in the development of plant sprouts for induction of phytoalexins for production of foods. The participant will be involved in a research team that includes a plant physiologist and a sensory scientist. The participant will also collaborate with researchers at Tulane Medical School that will be conducting cell-based experiments on plant extracts and isolated compounds.

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

Anticipated Appointment Start Date: **October 2023.** 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 and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields or be currently pursuing the degree with completion by December 31, 2023.

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- Eligibility**
- **Degree:** Doctoral Degree.
- Requirements**
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([5](#) )
 - **Life Health and Medical Sciences** ([7](#) )

Affirmation I have received a doctoral degree or am currently pursuing the degree and will reach completion by December 31, 2023.