

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship in Integrated Postharvest

Biology

**Opportunity Reference Code:** USDA-ARS-2022-0254

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

**Reference Code** USDA-ARS-2022-0254

**How to Apply** *Connect with ORISE...on the GO!* Download the new ORISE GO mobile app in the [Apple App Store](#) or [Google Play Store](#) to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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** 3/31/2023 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 postdoctoral research opportunity is available with the US Department of Agriculture (USDA), Agricultural Research Service (ARS), Beltsville Agricultural Research Center (BARC), Food Quality Laboratory located in Beltsville, Maryland.

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 project's ultimate goal is to develop knowledge and readily available technology for solving quality (in its broader meaning) issues associated with fresh and fresh-cut fruits and vegetables that can result in higher consumption and the reduction of fresh-produce loss and waste.

Relevant objectives for this research will be one or two of the following (or alternatives related to them):

1. determine pre-harvest factors that condition status of prevalent microbial communities on harvested food products, including chemicals, environmental factors (i.e. in CEA, conventional and Urban Ag), plant metabolites and as a result of the interaction with other microorganisms
2. assess postharvest practices, biological process and environmental conditions that impact shelf life of retailed fresh foods, in order to support development of microorganism and/or plant-based active compounds to extend produce's shelf life
3. determine the potential of using nature-base nanoparticle coatings on equipment and food products to optimize postharvest operations,



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reduce the use or loss of production resources and maximize shelf life of food products

Under the guidance of a mentor (or mentors), the selected participant will play a role in a multi-disciplinary research team. The particular role of the participant can be tailored based on the participant's technical strength:

- An postdoctoral fellow with a microbiology strength will be involved in designing and conducting research studies involving selected-natural occurring microorganisms, that are associated with intrinsic food qualities (uptake of nutrients by consumers) and/or that limit postharvest shelf life and/or with studies that track surrogate pathogen's dynamics from seeds to fresh-cut processing, while learning new skills on food processing, plant physiology and produce postharvest handling.
- An postdoctoral fellow with a background in plant and postharvest physiology and technology will be involved in targeted metabolomics of plants-base foods gaining additional knowledge on microbial communities interaction with plant's nutrition and defense mechanisms and processing operations that alter shelf life of foods.

**Learning Objectives:** There will be plenty of opportunities for the participant's training and testing in different methodologies, using diverse facilities, including laboratory spaces that are well established and other that are initiating research work, as well as pilot food processing plants, growth chambers and greenhouse units.

**Mentor(s):** The mentors for this opportunity are Jorge Fonseca ([Jorge.fonseca@usda.gov](mailto:Jorge.fonseca@usda.gov)) and Dr. Bin Zhou ([bin.zhou@usda.gov](mailto:bin.zhou@usda.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date:** 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.

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**Questions:** Please visit our [Program Website](#). After reading, if you have additional questions about the application process please email [ORISE.ARS.Northeast@orau.org](mailto:ORISE.ARS.Northeast@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.

Candidates with a proven track record of publication in peer-reviewed journals, grant writing skills, and experience with delivering oral presentations are highly desirable.

Preferred skills:

- solid wet laboratory skills
- excellent written and oral communication skills, evidenced by presentations at professional society meetings
- ability (or potential) to determine when and what to monitor to identify gaps of information that can result in potential use for industry and society

**Eligibility** • **Degree:** Doctoral Degree.

- Requirements** • **Discipline(s):**
- **Communications and Graphics Design** ([1](#) 👁)
  - **Life Health and Medical Sciences** ([48](#) 👁)
  - **Science & Engineering-related** ([1](#) 👁)