

Opportunity Title: USDA-ARS Postdoctoral Fellowship for Chemical Ecology in Insect-Plant-Microbe Interactions

Opportunity Reference Code: USDA-ARS-PWA-2026-0196

Organization U.S. Department of Agriculture (USDA)

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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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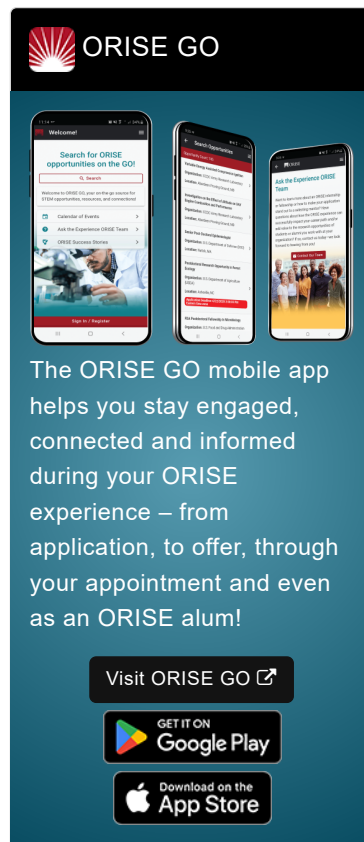
Application Deadline 8/28/2026 3:00:00 PM Eastern Time Zone

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), within the Tropical Crop and Commodity Protection Research Unit located in Hilo, Hawaii.


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 Tropical Crop and Commodity Protection Research Unit is to develop pre- and postharvest technologies and management strategies for invasive pests, and to open and maintain market access and improved quality of tropical fruit, vegetable and ornamental crops grown in the Pacific Basin. This project emphasizes ecological and experimental approaches to olfactory mediated insect–host–microbe interactions, including studies involving physiological state,


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gnotobiotic systems, and manipulations of olfactory and ionotropic receptor pathways to test causal relationships between sensory perception and behavior.

Under the guidance of a mentor, the participant will engage in team-based research on the chemical ecology of invasive Tephritid fruit flies, with the overarching goal of understanding how plant host, microbial, and food derived volatiles influence fruit fly ecology, foraging behavior, and reproduction. Research activities will include the behavioral characterization of relevant odor sources; isolation and identification of behaviorally active chemical cues from host plants, food substrates, and microbes; identification of key compounds that mediate behavior in specific physiological states; and the development of candidate compounds or blends with potential application as lures for surveillance or management of fruit flies. Microbial ecology approaches, including profiling of microbe derived volatiles, will be used as complementary tools to link microbial communities with insect behavioral responses.

Learning Objectives: Through structured mentorship, the participant will gain experience in planning research activities, experimental design, data interpretation, and scientific dissemination. This opportunity also provides exposure to cutting edge methods in chemical ecology, insect-microbe interactions, and microbial ecology, with additional opportunities to learn functional genomics techniques and strengthen scientific writing skills. This training will prepare the participant for independent research in integrative chemical ecology, insect-microbe interaction biology, or applied ecological and molecular sciences.

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

Anticipated Appointment Start Date: **September 1, 2026.** 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 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,

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

Qualifications The qualified candidate should be currently pursuing or have received a doctoral degree in the one of the relevant fields (e.g. Entomology, Microbiology, Chemistry, etc.).

Preferred skills:

- Experience with chemical ecology approaches and techniques
- Experience in insect behavioral research
- Experience in isolating and identifying behavior-modifying chemical compounds
- Experience in isolating, identifying, and culturing yeasts and bacteria
- Experience working with insect antennae, maxillary palps, and associated receptor systems

Point of Contact [Janeen](#)

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Doctoral Degree.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) 👁)
 - **Environmental and Marine Sciences** ([14](#) 👁)
 - **Life Health and Medical Sciences** ([51](#) 👁)
 - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).