Opportunity Title: USDA-ARS Postdoctoral Research Fellowship in Insect Chemosensory Biology
Opportunity Reference Code: USDA-ARS-P-2024-0244

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-P-2024-0244

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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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 Manhattan, Kansas.

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 fellow will learn to use cutting-edge and emerging molecular and chemical ecology techniques to identify and functionally characterize the role of chemosensory receptors (and related gene families) in stored product insects, such as Tribolium castaneum, Rhyzopertha dominica, Prostephanus trunctaus, and Plodia interpunctella. Many of these insect species are attracted to (or are repelled by) similar pheromones or the same volatile compounds from grain or mold and the fellow will have the opportunity to determine whether chemosensory genes coded by these diverse insect species have similar features that allow them to recognize the same volatiles. Under the guidance of a mentor, the fellow will use techniques such as GC-EAD (gas chromatograph-electroantennography), RNAi, RNA-Seq, whole genome resequencing, GC-MS, high throughput behavior assays (with Ethovision or other software) and/or CRISPR/cas9 to investigate these research questions. The fellow will have the opportunity to publish results of these studies in scientific journals, present results at national and

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regional scientific meetings, and form collaborations with other scientific researchers at the USDA-ARS Center for Grain and Animal Health Research/Stored Product Insect and Engineering Research Unit in Manhattan, KS and neighboring Kansas State University that are researching molecular mechanisms of chemosensation in insects.

Learning Objectives: Under the guidance of a mentor, the research participant will learn to integrate chemical ecology techniques with advanced functional genomics approaches to study functions of chemosensory genes in stored product insects. The participant will be encouraged to publish these results in peer reviewed scientific journals, present data to scientific contemporaries at national society meetings, and learn to establish collaborations in conjunction with other USDA scientists at the USDA-ARS Center for Grain and Animal Health Research working in the fields of chemical ecology and molecular biology and at other USDA ARS labs.

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

Anticipated Appointment Start Date: August 2024. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for two 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.

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR) 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.Plains@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be pursuing or have received a doctoral degree in one of the relevant fields (entomology, molecular biology, genetics, bioinformatics/genomics, biochemistry, or a related discipline). Degree must have been received within the past four years or is being

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pursued and anticipated to be received by start of appointment.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree received within the last 48 months or currently pursuing.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (7 👁)