

Opportunity Title: USDA-ARS Insect Molecular Biology Internship

Opportunity Reference Code: USDA-ARS-2021-0111

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2021-0111

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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 5/24/2021 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 currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Pest Management and Biological Control Research Unit located in Maricopa, Arizona.

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: This research project aims to develop methods to further facilitate functional genomics approaches in non-model insect pests. Results from the study will provide insights into the endogenous molecular mechanisms that affect targeted gene silencing approaches and provide a basis for comparative analyses with other pest species. Overall, the project will use in vivo microinjections of eggs, nymphs, and/or adult insects in conjunction with various other delivery methods to assess the overall efficacy of gene silencing/editing.

Learning Objectives: Under the guidance of a mentor, the participant will gain practical laboratory experience in:

- adapting molecular methods (RT-PCR/qRT-PCR, gene cloning, RNAi, and/or CRISPR) to the study of non-model insect pests
- developing methods to facilitate delivery of DNA/RNA/protein cargo to various tissues and/or cells
- elucidating molecular mechanisms/pathways driving biology with opportunities for comparative analyses
- expanding skills and knowledge of working in a biological science



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laboratory

- applying modern molecular methods to entomological questions
- interacting with an interdisciplinary research team with expertise in molecular biology, physiology, endocrinology, and biochemistry
- contributing to manuscript and/or presentation preparation

Mentor(s): The mentor for this opportunity is Joe Hull (joe.hull@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 14, 2021. 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, 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 USDA-ARS@ornl.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a bachelor's degree in one of the relevant fields. Degree must have been received within the past five years.

Familiarity with general molecular techniques such as PCR, cDNA synthesis, and molecular cloning is preferred.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree received within the last 60 months or currently pursuing.
 - **Overall GPA:** 3.30
 - **Discipline(s):**
 - **Life Health and Medical Sciences** ([11](#) )