

**Opportunity Title:** USDA-ARS Insect Ecology Fellowship

**Opportunity Reference Code:** USDA-ARS-2021-0227

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

**Reference Code** USDA-ARS-2021-0227

**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
- 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. All transcripts must be in English or include an official English translation. 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** 10/19/2021 3:00:00 PM Eastern Time Zone

**Description** \*Applications may be reviewed on a rolling-basis.

**ARS Office/Lab and Location:** A research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Beneficial Insects Introduction Research Unit located in Newark, Delaware.

**Research Project:** The Newark ARS laboratory conducts research on biological control of invasive insect pests, including the brown marmorated stink bug (BMSB) which is a significant pest of numerous specialty crops. One of its key native natural enemies in Asia, the samurai wasp, has been introduced into North America and has the potential to significantly reduce BMSB populations, but it does not yet have a widespread distribution in the U.S. The project goal is to accelerate this reduction by promoting wider regional establishment and distribution of the samurai wasp (*Trissolcus japonicus*).

The participant will be involved with the research unit to address this problem with the following objectives:

- Evaluate the influence and impact of kairomone traces deposited on host plant foliage by BMSB and select non-target species on parasitism by *T. japonicus* under laboratory and field conditions.
- Conduct surveys for the presence of endosymbiotic *Wolbachia* in North America *T. japonicus* populations, and if found, determine their impact on parasitoid efficacy in lab assays.
- Determine the numbers of parasitoids to be field-released and the corresponding BMSB host density for optimal parasitoid establishment at a given location.

**Learning Objectives:** Skills and techniques to be learned and applied



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include:

- experimental techniques for studying insect chemical ecology (including identification of bioactive chemicals)
- molecular assays for insect symbionts
- statistics appropriate for analysis of behavioral experiments

The project will provide growth opportunities to interact with scientists at collaborating institutions and participate in professional workshops and conferences through discussions and presentation of research.

**Mentor(s):** The mentor for this opportunity is Kim Hoelmer ([kim.hoelmer@usda.gov](mailto:kim.hoelmer@usda.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date:** **October 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@orau.org](mailto:USDA-ARS@orau.org) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received a master's or doctoral degree in one of the relevant fields.

Preferred skills/experience:

- Broad knowledge of entomology, including ecology and behavior
- Skills and training in biological control of pests and biology of parasitoid wasps
- Skill in data management and statistics for data analysis

**Eligibility** • **Citizenship:** U.S. Citizen Only

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- Requirements**
- **Degree:** Master's Degree or Doctoral Degree.
  - **Discipline(s):**
    - **Environmental and Marine Sciences** ([2](#) 👁)
    - **Life Health and Medical Sciences** ([8](#) 👁)