Opportunity Title: EPA Postdoctoral Fellowship on Ecotoxicology: Double-Stranded RNA Biopesticide Formulations
Opportunity Reference Code: EPA-ORD-CPHEA-PESD-2023-11

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CPHEA-PESD-2023-11

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. Click here for detailed information about recommendations.

All documents must be in English or include an official English translation.

Application Deadline 12/22/2023 3:00:00 PM Eastern Time Zone

Description ***Applications may be reviewed on a rolling-basis and this posting could close before the deadline.** Click here for information about the selection process.

EPA Office/Lab and Location: A research training opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health and Environmental Assessment (CPHEA), Pacific Ecological Systems Division (PESD) in Corvallis, Oregon.

Research Project: Biopesticides are regulated by EPA's Office of Pesticide Programs (OPP) under the Federal Insecticide, Fungicide, and Rodenticide Act and other Acts. Currently, biopesticides are being engineered through genome editing, synthetic biology, metabolic engineering, and other molecular methods for open release into the environment with various intended uses. When these biopesticides have unique properties and uncertain potential for risks to human health and the environment, they pose regulatory challenges for the Agency. The Office of Research & Development (ORD) is leading research to improve the certainty and timeliness of biotechnology risk assessments made by OPP.

Under the guidance of the mentor, research activities may include:

- Developing methods for standardized dsRNA formulation exposures.
- Design and execution of experiments on how formulations change the persistence, uptake, and toxicity of exogenously applied dsRNA biopesticides intended for RNA interference (RNAi) in target pests.
- Design and execution of experiments on how formulations change the persistence, uptake, and toxicity of exogenously applied dsRNA biopesticides through RNAi in nontarget animals and plants.
- Conducting scientific synthesis, data analysis, literature searches and

manuscript preparation.
- Publishing and presenting their research to the broader scientific community.

Learning Objectives: The research participant will have opportunities to collaborate with a team of ORD scientists within the Chemical Safety for Sustainability, National Research Program and external partners on research to inform risk assessments of variously formulated double-stranded RNA (dsRNA) biopesticides. The research participant will have the opportunity to gain experience designing policy-driven research and interacting with shareholders / research partners across sectors. There will be opportunities to develop skills in designing and execution of innovative experiments on the impacts of formulants on exogenously applied dsRNA biopesticides.

Mentor(s): The mentor for this project is Dr. Jay R. Reichman (reichman.jay@epa.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: November 1, 2023. All start dates are flexible and vary depending on numerous factors. Click **here** for detailed information about start dates.

Appointment Length: The appointment will initially be for one year and may be renewed upon EPA recommendation and subject to availability of funding.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. Click **here** for detailed information about full-time stipends.

EPA Security Clearance: Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

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 EPA. Participants do not become employees of EPA, 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.

ORISE offers all ORISE EPA graduate students and Postdocs a free 5 year membership to the National Postdoctoral Association (NPA).

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

Questions: Please see the FAQ section of our website. After reading, if you have additional questions about the application process please email ORISE.EPA.ORD@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of

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the relevant fields (e.g. Ecotoxicology, Molecular Toxicology, Biological Engineering, Chemical Engineering, Synthetic Biology, Agricultural Sciences, Botany, Forestry Sciences, etc.), or be currently pursuing the degree with completion before the appointment start date. Degree must have been received within two years of the appointment start date.

Preferred skills/experience:

- RNAi
- Toxicology
- Plant/pest interactions
- Biopesticides
- Plant propagation
- Insectary maintenance
- Invertebrate development and physiology
- DNA/RNA extraction
- PCR/qPCR
- High-throughput sequencing library preparation
- Genomics and transcriptomics
- Bioinformatics and statistical analyses
- Risk analyses
- Excellent analytical, quantitative and verbal (oral and written) communication skills
- Demonstrated skills working in team settings

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 24 months or anticipated to be received by 11/1/2023 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (6 👁)
  - **Communications and Graphics Design** (1 👁)
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Engineering** (2 👁)
  - **Environmental and Marine Sciences** (2 👁)
  - **Life Health and Medical Sciences** (13 👁)
  - **Mathematics and Statistics** (2 👁)
  - **Other Non-Science & Engineering** (1 👁)
  - **Social and Behavioral Sciences** (1 👁)