Opportunity Title: USDA-ARS Postdoctoral Fellowship in Boxwood Blight Epidemiology
Opportunity Reference Code: USDA-ARS-NE-2023-0491

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NE-2023-0491

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
- 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 2/2/2025 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), located in Frederick, Maryland.

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: Boxwoods were considered low-maintenance plants until 2011, when boxwood blight disease was detected. Plants may be killed or defoliated, rendering nursery stock unsalable and destroying established landscape plantings. In North America, the disease was first reported in Connecticut, North Carolina, and Oregon and has since spread to 28 other states. The fungi responsible, *Calonectria pseudonaviculata* (*Cps*; the species currently found in the U.S.) and *C. henricotiae* (*Che*; so far only reported from Europe), survive long-term as microsclerotia. A number of studies have been done to determine the efficacy of fungicides on boxwood blight, and in Europe, to compare the sensitivity profiles of *Cps* and *Che*. However, these were not designed to look for the development of resistance in the U.S. or the introduction of new populations of the pathogen with different sensitivity to fungicides. The current study is designed to access the current state of fungicide efficacy in the country while also looking for evidence of the second *Calonectria* species (*Che*) in the US. There is also a major

knowledge gap in our understanding of how boxwood blight severity interacts with the environment. Boxwood blight researchers in California and Oregon have reported hard-to-see symptoms risking the shipment of invisibly infected plants to other states. Studies of cultivar susceptibility run in different states have given contradictory results, suggesting a poorly understood environmental variable was affecting susceptibility. Effects of temperature, relative humidity, and cultivar on sporulation of C. *pseudonaviculata* (both European and US populations) and *C. henricotiae* will be examined under controlled conditions.

Learning Objectives: The fellow, ideally someone with a Ph.D. in a plant-related field, will have some knowledge of sterile technique, but will learn the complete diagnostic process from collecting samples, incubating them, isolating the pathogen and moving it to pure culture and getting it to sporulate. In this lab, the participant will also be at one of a very few centers of downy mildew research, learning techniques that few other plant pathologists have mastered. The participant will help design and analyze experiments under the guidance of a mentor, and collaborate with scientists with expertise in statistical, molecular and bioinformatic skills. These collaborators will be happy to communicate these skills. Because this research is part of an extramural project, it will give the participant experience in how to be part of such collaborative efforts, which are increasingly required in any academic or government research program.

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

Anticipated Appointment Start Date: January 29, 2024. 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 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

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additional questions about the application process, please email ORISE.ARS.Northeast@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields. Degree must have been received within the past five years.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Life Health and Medical Sciences** (5 👁)