

Opportunity Title: USDA-ARS Postdoctoral Research Opportunity in Molecular Plant-Pathology

Opportunity Reference Code: USDA-ARS-NE-2023-0103

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NE-2023-0103

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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 6/9/2023 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 currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), within the Mycology and Nematology Genetic Diversity and Biology Laboratory (MNGDBL) located in Beltsville, 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 the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: The selected applicant will implement a combination of functional genomics/transcriptomics approaches to identify and select new target genes/gene pathways for the control of economically important plant-parasitic nematodes. The applicant will conduct gene silencing (RNAi) assays against nematode effector(s) gene(s) and potential gene(s) regulator(s). In addition, the applicant will conduct nematode gene effector(s) functional analyses to understand the role of these genes in interaction with the host plant. Plant-parasitic nematodes of interest include root lesion nematodes, beech leaf disease nematode, among others. No previous experience with nematodes is needed.

Learning Objectives: Throughout the course of this research project, the



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participant will have the opportunity to improve his/her knowledge on molecular plant-nematode interactions, comparative genomics/transcriptomics, gene silencing assays (RNAi), cell biology and gene/protein functional characterization. The participant will be encouraged to engage and present the results in scientific meetings.

Mentor(s): The mentor for this opportunity is Paulo Reis Vieira (paulo.vieira@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: As soon as a qualified candidate is identified. 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 extended upon recommendation of ARS and is contingent on the availability of funds.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant(s) will receive an annual stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR).

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.Northeast@ornl.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree with completion before the appointment start date.

Preferred skills:

- Relevant molecular biology experience.
- Experience with performing DNA and RNA extraction, PCR, qPCR, RT-qPCR analysis, western-blot.
- Proficiency in molecular cloning approaches such as restriction digestion, Gateway, Gibson assembly.
- Experience with RNA interference (RNAi) methodologies and RNAi gene target assays.
- Experience in next-generation sequencing platforms and related library preparation procedures (especially RNA-Seq), and inherent bioinformatic analyses.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree.

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- **Discipline(s):**
 - **Environmental and Marine Sciences** ([2](#) 👁)
 - **Life Health and Medical Sciences** ([11](#) 👁)