Opportunity Title: USDA-ARS Research Opportunity on Germplasm Conservation
Opportunity Reference Code: USDA-ARS-NE-2023-0447

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NE-2023-0447

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 3/29/2024 3:00:00 PM Eastern Time Zone

Description ***Applications are reviewed on a rolling-basis.**

ARS Office/Lab and Location: A postdoctoral research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), 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 of the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: Ex situ storage and maintenance of plant genetic resources is imperative to address research and conservation needs including crop improvement and the survival of threatened and endangered species. Although seeds are known to be the optimal means for capturing maximum genetic diversity at with comparatively lower cost and space requirements, seeds of many important taxa are incapable of traditional seed-storage approaches because the reduced moisture levels required for cold storage are lethal. These desiccation-intolerant ('intermediate' and 'recalcitrant') seeds include many families and genera containing highly threatened species that are important for ecosystem services as well as the US nursery and landscape industries, including Fagaceae, Lauraceae, and Magnoliaceae. Research is needed to develop protocols or new strategies that allow for efficient, long term storage and recovery of desiccation-intolerant plant germplasm.

The participant will co-lead and collaborate in research that identifies vulnerable species and helps develops protocols for efficient storage and

recovery of plant genetic resources. Under the guidance of a mentor, this will include the collection and preparation of plant germplasm (seeds, embryos, and somatic organs) within in-vitro and cryogenic cultures, testing optimal methods for long-term storage and regeneration, and disseminating the results via scientific publications. The participant will utilize data from conservation organizations and the National Plant Germplasm System GRIN-Global database to inform taxonomic priorities and identify potential collaborators for germplasm acquisition, protocol testing, and long-term, backup germplasm storage.

Learning Objectives: The participant will learn about conservation needs for temperate woody plants, in particular those indigenous to the United States. They will learn about challenges and needs of a diverse stakeholder base for woody plants, encompassing conservation, horticulture, and research; conduct gap analysis for in situ and ex situ genetic resources; and prioritize species and populations for conservation. The participant will learn and improve their skills in tissue culture, cryobiotechnology, seed biology and ecology, and scientific communication.

This opportunity will provide significant exposure and professional development through direct communication and involvement with the National Plant Germplasm System's GRIN Global database and specialty crop curators that manage plant genetic resources; by participating in relevant small working groups managed by the Botanic Gardens Conservation International, for which there are regular virtual meetings for conservation genetics, plant cryopreservation, and plant propagation; by directly collaborating with select arboreta and botanical gardens that will provide germplasm and data for research, including the US National Arboretum; and by publishing scientific research in peer-reviewed journals.

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

Anticipated Appointment Start Date: 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. **The stipend range is $6,550-$7,850 per month.**

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU through its

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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@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 more than five years ago.

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Business** (11)
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (6)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (27)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (51)
  - **Mathematics and Statistics** (11)
  - **Other Non-Science & Engineering** (13)
  - **Physics** (16)
  - **Science & Engineering-related** (2)
  - **Social and Behavioral Sciences** (30)