

Opportunity Title: USDA-ARS Improving Nitrogen Use Efficiency Fellowship

Opportunity Reference Code: USDA-ARS-CERCA-2025-0023

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-CERCA-2025-0023

How to Apply *To submit your application, scroll to the bottom of this opportunity and click **APPLY**.*

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. 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.

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Application Deadline 7/4/2025 3:00:00 PM Eastern Time Zone

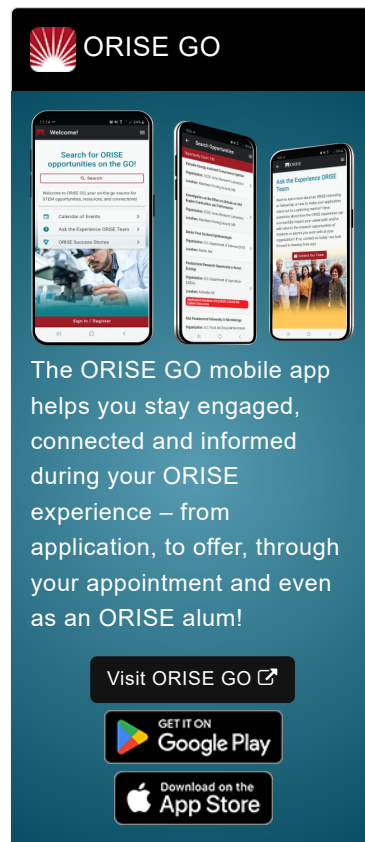
Description ***Applications are reviewed on a rolling-basis.**

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 Urbana, Illinois.

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: The vision of this project is to transform US grain farmland into a net-negative component of a circular bio-economy and reduce global greenhouse gas emissions. Research aims to create a Circular Economy that Reimagines Corn Agriculture (CERCA), converting maize to an earlier season annual crop with reduced environmental impacts through increased uptake and recycling of nitrogen and phosphorus fertilizer.

Under the guidance of a mentor, the participant will help with field



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experiments to screen diverse maize germplasm for candidate traits that will lead to increased nitrogen use efficiency and reduced nitrous oxide emissions. The participant will be involved with helping in the design of field trials, planting field trials, measurements of germination, development, growth, elemental analysis, chlorophyll fluorescence, photosynthesis, and pigment analysis. The participant will learn about biological mechanisms contributing to nitrogen use.

The participant will collaborate closely with the USDA ARS CERCA team and participate in CERCA meetings as well as ARS unit meetings.

Learning Objectives: The participant will gain experience in field research, including experimental design, planting field trials, data collection and analysis. They will learn how use and maintain equipment for measuring gas exchange, fluorescence and N₂O emissions. They will gain knowledge on the biological mechanisms contributing to cold tolerance and/or nitrogen use efficiency.

Mentor(s): The mentor for this opportunity is Matthew Brooks (matthew.d.brooks@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: April 2025. 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, 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. Foreign national candidates may have a mandatory in-person requirement depending on visa status.

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

Qualifications The qualified candidate should be currently pursuing or have received a bachelor's or master's degree in the one of the relevant fields.

Preferred skills:

- Prior experience in a plant biology or crop sciences laboratory as well as field experience with row crop agriculture.
- Experience collaborating in a team to accomplish scientific goals.
- Experience with farm equipment is preferred.
- Experience measuring photosynthesis and/or leaf optical properties is preferred.
- Familiar with field research, data collection and organization, and communication with a team of researchers.

Point of Contact [Janeen](#)

- Eligibility**
- **Degree:** Bachelor's Degree or Master's Degree.
- Requirements**
- **Discipline(s):**
 - **Engineering** ([1](#) )
 - **Environmental and Marine Sciences** ([1](#) )
 - **Life Health and Medical Sciences** ([13](#) )

Affirmation I affirm that:

I am a US Citizen, OR;
I am a non-US citizen currently living in the United States