Opportunity Title: USDA-ARS Sensors for Crops Mortality and Soil Quality in Agriculture Fellowship
Opportunity Reference Code: USDA-ARS-MWA-2026-0061

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-MWA-2026-0061

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 4/10/2026 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 Ames, Iowa.

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.

The National Laboratory for Agriculture and the Environment (NLAE) generates information addressing critical problems in agriculture and watershed management to develop innovative solutions which increase the efficiency of agriculture systems and reduce environmental risk. Transdisciplinary teams address this through coordinated research in abiotic and biotic systems.

Research Project: Under the guidance of a mentor, the fellow will have the opportunity to participate in a project that address the challenges crop

producers in the US Midwest region face with associated losses of nutrients and nutrient use efficiency all of which affect crop productivity and mortality. This research will help close the nitrogen balance through careful measurements of N inputs and N outputs under different treatments and weather conditions. The research will utilize graphene sensors to measure N losses through the soil for the different treatments. Complementary measurements of crop leaf area index during the lifecycle of the crop will be taken.

Learning Objectives:

- Learn about nitrogen inputs
- Learn about fertilizer input/outputs
- Learn on how to draft technical articles
- Learn skills in collaboration

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

Anticipated Appointment Start Date: February 2026. 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 anticipated stipend range is $3,500 - $3,800 monthly.**

Citizenship Requirements: This opportunity is available to U.S. citizens 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 additional questions about the application process, please email ORISE.ARS.Midwest@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing a master's or doctoral degree in the one of the relevant fields. Degree must be

anticipated to be receive by 6/1/2026.

Preferred skills:

- Experience in developing ion-selective electrode (ISE) sensors for real-time nutrient monitoring

Stipend $3,500.00 – $3,800.00 Monthly

Point of Contact Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Currently pursuing a Master's Degree or Doctoral Degree.
- **Minimum Overall GPA:** 3.50
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (1 👁)