

Opportunity Title: USDA-ARS Postdoctoral Fellowship on Remote Sensing

Applications for Precision Agriculture

Opportunity Reference Code: USDA-ARS-2022-0402

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0402

How to Apply

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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.

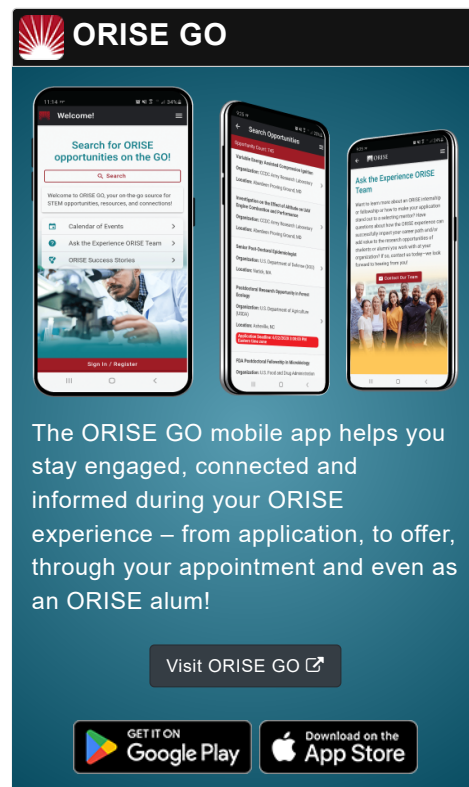
Application Deadline 1/16/2023 3:00:00 PM Eastern Time Zone

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), Grassland, Soil and Water Research Laboratory (GSWRL) located in Temple, Texas.

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 project involves field- and laboratory-based research focused on the applications of remote sensing and geographic information systems (GIS) for the advancement of precision agriculture. The ORISE post-doc will have opportunity to obtain experiential-based learning of remote sensing/GIS technologies and methods across various crops and agroecosystems. Remote sensing technologies will include the use of the hyperspectral and multispectral data collected from *in-situ*, unmanned aerial vehicles (UAVs), and satellite platforms.



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The researcher will have opportunity to collect data with some of the platforms in the field (*in-situ* and UAVs) or via web-based obtainment (satellite). Moreover, hands-on processing and analytics of the data will be a significant portion of the experiential-based learning that has potential to lead to peer-reviewed publications, if desired. Models will be used to advance precision agriculture related to estimation of vegetation health, forage quality, and biophysical/biochemical status of crops via remote sensing/GIS and machine learning methodologies.

Typical Research Activities Will Include:

- Collects and processes field/laboratory data for experiments
- Summarizes and takes notes during/after data collection
- Collaborates with researchers across the USDA-ARS to further remote sensing/GIS research network
- Conducts analytics of measurements via coding and collaboration with laboratory professionals
- Writes, edits, and contributes towards manuscripts for publication from the data collected, processed, analyzed, etc.

Learning Objectives:

- Learn skills associated with various remote sensing/GIS sensors, platforms, and processing software
- Learn skills regarding the various methods of remote sensing data collection (*in-situ*, UAV, and satellite)
- Learn skills in data analytics and the application of coding languages and GIS software
- Learn skills focused on precision agriculture advancement

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

Anticipated Appointment Start Date: January 2023. 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 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 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.

ORISE Information: This program, administered by ORAU through its contract with

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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.Plains@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:

- Ability to conduct field research
- Some coding experience and/or general knowledge of computer science
- Knowledge of basic mathematics and data processing procedures
- Some exposure to remote sensing/GIS technologies
- Ability to collaborate with others in a diverse team environment
- Ability to communicate orally and in writing at a high level
- Ability to edit data and to adapt to various coding format needs
- Ability to efficiently operate personal computers

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** (2 )
 - **Earth and Geosciences** (2 )
 - **Engineering** (4 )
 - **Environmental and Marine Sciences** (2 )
 - **Life Health and Medical Sciences** (2 )
 - **Mathematics and Statistics** (2 )
 - **Physics** (2 )
 - **Social and Behavioral Sciences** (1 )