

Opportunity Title: USDA-ARS Postdoctoral Hydrology Remote Sensing Research Fellowship

Opportunity Reference Code: USDA-ARS-NE-2023-0111

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NE-2023-0111

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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. 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 5/26/2023 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 Hydrology and Remote Sensing Laboratory (HRSL) within the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), located in Davis, California.

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 Hydrology and Remote Sensing Laboratory (HRSL) at the USDA Agricultural Research Service (ARS) in Davis, California seeks applications for a post-doctoral researcher who can apply land surface models with satellite and aerial imagery for estimating evapotranspiration, soil moisture, net carbon exchange and compare model output with ground truth data, and where necessary refine algorithms to reliably estimate water balance from perennial crops, with particular focus on fruit and nut (primarily olive) tree crop and inter-row systems. The appointment requires a multidisciplinary approach collaborating with other USDA/ARS research centers, and other government agencies, universities and international collaborators, engaging in field research, analyzing remotely sensed data and publishing research results.



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Learning Objectives: The post-doctoral researcher will develop skills in the application of remote sensing-based land surface models for estimating water, energy and carbon fluxes from perennial crops with complex canopy structure and in the collection of micrometeorological and biophysical field data for model validation. Since the project will involve application of remote sensing over perennial crops in California, the selected candidate will be stationed at the USDA-ARS Sustainable Agricultural Water Systems (SAWS) Unit in Davis, California.

Mentor(s): The mentor(s) for this opportunity are William Kustas (bill.kustas@usda.gov) and Kyle Knipper (kyle.knipper@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 2023. 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 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.

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 September 30, 2023.

Preferred Skills:

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- Applicants should have a robust educational background related to remote sensing and land surface modeling.
- Strong mathematical and computing skills
- Knowledge of soils, vegetation water use and crop development is advantageous.
- Strong programming expertise analyzing large images using C, Fortran, R, python, IDL/Matlab or similar computing language is preferred, and familiarity with the Google Earth Engine programming environment will be beneficial.

**Eligibility
Requirements**

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 9/30/2023 11:59:00 PM.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** ([2](#) 👁)
 - **Earth and Geosciences** ([4](#) 👁)
 - **Engineering** ([7](#) 👁)
 - **Environmental and Marine Sciences** ([4](#) 👁)
 - **Life Health and Medical Sciences** ([6](#) 👁)
 - **Mathematics and Statistics** ([3](#) 👁)
 - **Physics** ([2](#) 👁)