Opportunity Title: Postdoctoral Research Opportunity in Groundwater Hydrology and Engineering

Opportunity Reference Code: USDA-ARS-2020-0113

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-ARS-2020-0113
How to Apply	A complete application consists of:

- An application
- Transcripts – <u>Click here for detailed information about acceptable transcripts</u>
- 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.

If you have questions, send an email to <u>USDA-ARS@orau.org</u>. Please include the reference code for this opportunity in your email.

Application Deadline	7/31/2020 3:00:00 PM Eastern Time Zone
Description	***Applications will be reviewed on a rolling-basis.**

A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Sedimentation Laboratory located in Oxford, Mississippi.

The research will address the feasibility of artificial recharge in the Mississippi River Valley Alluvial Aquifer through a pilot project under construction by USDA. Research will contribute to developing an understanding of the engineering challenges and feasibility of groundwater injection as a component of managed aquifer recharge in the region. Modeling tools developed in collaboration with U.S. Geological Survey will be used to evaluate the pilot project and support decision making for water resources management in the region.
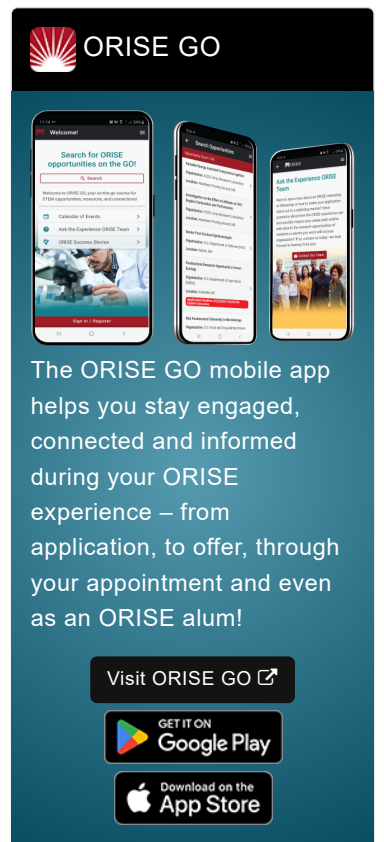
Under the guidance of a mentor, the participant will be involved in the following research activities:

- Collaborate with USDA-ARS research scientists in all phases of operation and evaluation of the pilot project well field
- Seek out relevant data and review literature for existing knowledge related to riverbank filtration and groundwater injection
- Collaborate with USDA-ARS research scientists to develop operational parameters for sustained groundwater injection
- Collaborate with USDA-ARS scientists to implement a monitoring plan to evaluate groundwater storage benefits and potential risks for stakeholders

Learning objectives of this appointment include:

- The participant will gain valuable experience collaborating with a multi-agency interdisciplinary research group
- The participant will become proficient at integrating disparate data sources and modeling techniques
- The participant will gain valuable experience in the process of conducting scientific research, synthesizing data, and publishing the results in peer reviewed journal articles

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. The initial appointment is for one year, but may be renewed upon recommendation of ARS and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at ARS in the Oxford, Mississippi, area. Participants do not become employees of USDA, ARS, DOE or the program administrator, and there are no employment-related benefits.

This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR) only.

For more information about the ARS Research Participation Program, please visit the **Program Website**.

Qualifications

The qualified candidate should have received a doctoral degree in one of the relevant fields.

Preferred skills:

- Specific knowledge of groundwater dynamics, well hydraulics, and groundwater modeling
- Broad knowledge of groundwater geophysics, environmental water chemistry, agriculture, time series analysis, and statistics
- Additional knowledge of or experience with current methods used in riverbank filtration, aquifer storage and recovery, or other artificial recharge technologies
- Use of MatLab or Python Programming Language, Excel, and Geographic Information Systems
- Operation and utilization of GPS systems for navigation
- Operation and utilization of hydrology and water quality sensors and instruments
- Operation of four-wheel drive vehicles and watercraft
- Planning and execution of hydrologic data collection using a variety of field methodology
- Collection, identification, preparation, and data analysis of water samples for trace metal, elemental, and stable isotope analyses
- Planning and execution of tracer studies

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Earth and Geosciences** (2 👁)
  - **Engineering** (2 👁)
  - **Environmental and Marine Sciences** (3 👁)