Opportunity Title: Postdoctoral Research Opportunity in Aquatic Ecology
Opportunity Reference Code: USDA-ARS-2020-0124

Organization U.S. Department of Agriculture (USDA)

ORISE

Reference Code USDA-ARS-2020-0124

How to Apply

A complete application consists of:

- An application
- Transcripts – 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.

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

Application Deadline 7/15/2020 3:00:00 PM Eastern Time Zone

Description

***Applications will be reviewed on a rolling-basis.**

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

The research will address challenges and management solutions for insuring long term sustainability of Lower Mississippi River Basin agroecosystems. Research will contribute to develop stressor-response relationships between nutrients and sediments and key measures of ecosystem structure and function in agricultural watersheds within the Mississippi Alluvial Plain (MAP) region. Results will support development of indicators or new approaches to monitoring the long-term response of stream ecosystems to changes in agricultural best management practices within alluvial plain landscapes.

Under the guidance of a mentor, the participant will be involved in the following research activities:

- Collaborate with USDA-ARS and U.S. Geological Survey (USGS) scientists to define environmental gradients across stream/bayou sites in the MAP using existing physical, chemical and biological data to quantify spatial and temporal variability of conditions among stream/bayou habitats
- Collaborate with USDA-ARS and USGS scientists to design and conduct new field and experimental studies that measure ecological structural and functional measures (diatom community structure, stream metabolism, extracellular enzyme responses, nutrient uptake, denitrification, etc.) across field sites and experimental mesocosms representing environmental gradients in MAP streams
- Collaborate with USDA-ARS and USGS scientists to explore stressor-response relationships between water quality and valued ecological attributes (measures of ecological structure, function, ecosystem services) among streams representing observed nutrient enrichment gradient within the MAP landscape that can be used for assessing change in water quality or ecosystem services in response to agricultural activities within the MAP region of Mississippi

The learning objectives of this appointment include:

- The participant will gain valuable experience collaborating with scientists from multiple federal agencies to address applied ecological questions related to improving water quality within agricultural landscapes.
- The participant will become proficient at integrating and interpreting results based on a wide variety of field, lab, and data analysis methods related to stream ecology.
- 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. **The annual stipend rate will be $64,009 and a health insurance allowance will**

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also be provided. 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, 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.

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.

Some combination of the following skill sets are preferred:

- Use of R Programming Language and Geographic Information Systems
- Frequentist and Bayesian statistical analysis for complex univariate and multivariate responses
- Collection and preparation of water, algal, and plant tissue samples for estimates of biomass and elemental nutrient concentrations
- Collection and preparation of algal samples for taxonomic identification (experience with diatom taxonomy not required)
- Collection and analysis of N2 and O2 dissolved gases using Membrane Inlet Mass Spectrometry (MIMS) for estimating gas flux rates using laboratory incubations or in situ techniques
- Collection of stream habitat or geomorphology data
- Planning, execution, and maintenance of data streams using a variety of high frequency sensors (dissolved oxygen, PAR, stage, nitrate, etc) in stream habitats for metabolism measures
- Planning and execution of tracer studies
- Operation of four-wheel drive vehicles and watercraft

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Engineering** (3 👁)
  - **Environmental and Marine Sciences** (13 👁)
  - **Life Health and Medical Sciences** (10 👁)