Opportunity Title: USDA-ARS SCINet Research Opportunity in Data Science, Artificial Intelligence and/or Machine Learning for Agricultural Research
Opportunity Reference Code: USDA-ARS-SCINet-2023-0175

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-SCINet-2023-0175

How to Apply ***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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 6/23/2023 3:00:00 PM Eastern Time Zone

Description ***Applications are reviewed on a rolling basis and this posting could close before the deadline.**

ARS Office/Lab and Location: Multiple graduate student fellowship opportunities are currently available with research laboratories located across the US with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS).

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.

This research opportunity is part of the Artificial Intelligence (AI) Center of Excellence (AI-COE) and SCINet summer fellowship program at ARS. All fellowships are hybrid in-person/remote opportunities. Fellowships include travel support for each fellow to spend 2 weeks onsite at their mentor's research unit. These fellowships offer research opportunities for motivated participants interested in solving agricultural- and natural resource-related problems at a range of spatial and temporal scales, from the genome to the continent, and sub-daily to evolutionary time scales. One of the goals of the AI-COE initiative is to develop and apply new technologies, including artificial intelligence and machine learning (ML), to help solve complex agricultural problems that also depend on collaboration across scientific

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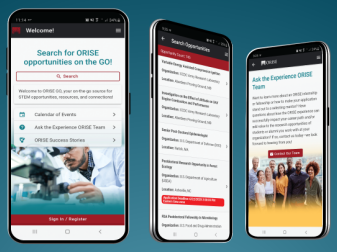
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disciplines and geographic locations. In addition, many of these technologies rely on the synthesis, integration, linkage, and analysis of large, diverse datasets that benefit from the high-performance computing (HPC) capabilities provided by the USDA-ARS SCINet Program. The objective of these opportunities is to facilitate high-impact agricultural research and the participants' professional growth via collaborative research, professional mentoring, and training.

Research Project: Scientific research in the USDA ARS encompasses a broad range of exciting, high-impact research areas, including human nutrition, food safety and quality, animal and crop production and protection, natural resource management, and sustainable agricultural systems. In all of these research areas, there is increasing need to leverage large datasets, high-performance computing hardware and algorithms, and cutting-edge methods from artificial intelligence and machine learning. Fellowship participants will collaborate closely with a mentor to contribute to a major research project within one or more of ARS's main research areas, with a focus on applying modern computational tools to help answer key research questions.

Learning Objectives: Selected participants will have the opportunity to develop and apply data science skills in a real-world, scientific research setting. They will also have the opportunity to learn additional computational skills needed for modern agricultural research and data analyses in an HPC or cloud computing environment. Participants will also be able to learn about one or more relevant scientific disciplines and how scientific research is conducted in a leading scientific research agency. Participants will gain perspective, experience, and guidance to help them plan for the next stage of their careers.

Mentor(s): The mentor will be selected based on the Fellow's specific research interests.

Anticipated Appointment Start Date: 2023; Internships will take place over the summer but the exact start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will be for ten weeks.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. **The current stipend range for this opportunity is $85,000 - $95,000/year plus a supplement to offset a health insurance premium.**

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

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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.

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g., facial covering, physical distancing, testing, vaccination).

Questions: Please visit our Program Website. After reading, if you have additional questions about the application process, please email ORISE.ARS.SCINet@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a bachelor's degree and be currently pursuing a master's or doctoral degree in one of the relevant fields.

Preferred Skills:

- Proficiency in at least one programming language (Python and/or R preferred)
- Knowledge of AI, machine learning, and/or other data science-related skills
- Basic knowledge of applied statistics
- Experience working with databases and large datasets
- Ability to effectively collaborate and work with others
- Strong oral and written communication skills

Eligibility Requirements

- **Degree:** Currently pursuing a Master's Degree or Doctoral Degree.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (7)
  - **Earth and Geosciences** (3)
  - **Engineering** (1)
  - **Environmental and Marine Sciences** (3)
  - **Life Health and Medical Sciences** (26)
  - **Mathematics and Statistics** (3)