Opportunity Title: Advanced Data Science Simulation and Machine Learning
Opportunity Reference Code: DOE-MSIPP-21-5-SRNL

Organization	U.S. Department of Energy (DOE)
Reference Code	DOE-MSIPP-21-5-SRNL
How to Apply	• Completion of all required fields in the application and successful application submission • Undergraduate or graduate transcripts as appropriate • Two recommendations

If you have questions, send an email at MSIPPInternships@orau.org. Please include the reference code for this opportunity in your email.

For Technical information, contact Jeff Pike at Jeff.Pike@srnl.doe.gov.

Certification:

I certify that I am at least 18 years of age and a US citizen, and am currently enrolled as a student in a degree seeking undergraduate or graduate program in a STEM field at an accredited Minority Serving Institution (MSI).

Application Deadline	1/29/2021 11:59:00 PM Eastern Time Zone
Description	The Minority Serving Institutions Partnership Program (MSIPP) Internships is a new program to promote the education and development of the next generation workforce in critical science, engineering, technology, and math (STEM) related disciplines that complement current and future missions of DOE national laboratories. The MSIPP Internship program is designed to provide an enhanced training environment for next generation scientists and engineers by exposing them to research challenges unique to our industry.

MSIPP Interns will be given the opportunity to complete Summer Internships aligned with ongoing U.S. Department of Energy Office of Environmental Management (DOE-EM) research under the direction of a host national laboratory. The internship will be performed at the host national laboratory, utilizing their facilities and equipment under the guidance of a research staff member.
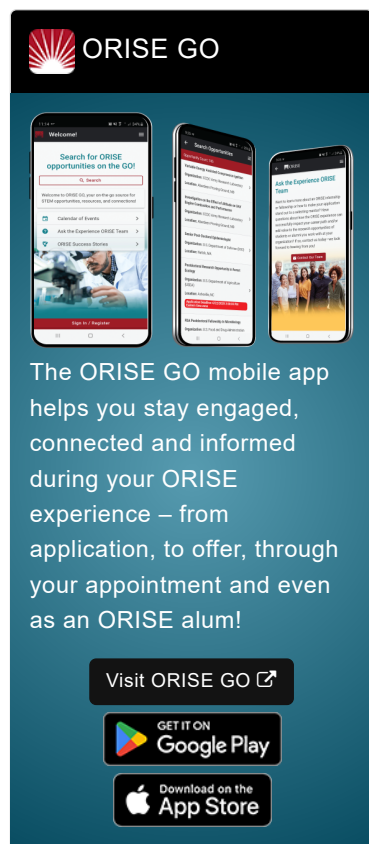
Minority Serving Institutions are institutions of higher education enrolling populations with significant percentages of undergraduate minority students.

Project: The Digital Transformation/Chief Information Office Directorate at Savannah River National Laboratory (SRNL) seeks interns for development of unsupervised machine learning methods for forecast analysis of large-scale open data sources.

The Advanced Modeling, Simulation, and Analytics group in the Digital Transformation directorate is at the forefront of work at DOE's Savannah River Site (SRS); playing an essential role in SRNL, and an increasingly important role in the success of DOE's broader national program. We are focused on developing and deploying real solutions that address our client's most critical problems. Our innovative approaches for improving and validating critical processes touch a broad range of EM, NNSA, OS and other research activities.

For this internship, the selected candidate will:

• Develop code to implement machine learning and apply data analytics

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technologies to create dynamic, complex models for event forecasting
- Creatively use numerical simulation tools to solve problems
- Work with a diverse multidisciplinary team of engineers and scientists from SRNL and Data Analytics Center at Virginia Tech.
- Collaborate closely with senior level engineers
- Develop custom computational model
- Develop critical thinking skills

The intern will typically work closely with senior level engineers to develop code to implement models or perform evaluations that explore the viability of the application of forecasting technologies. An intern at SRNL will be exposed to engineers and scientists working in many disciplines. Interns will have the opportunity to network with other interns and learn about the many opportunities at the SRS in addition to that of SRNL.

Salary: Selected candidate will be compensated by either a stipend or salary, and may include one round trip domestic travel to and from the host laboratory. Stipends and salaries will be commensurate with cost of living at the location of the host laboratory. Housing information will be provided to interns prior to arrival at the host laboratory, and will vary from lab to lab.

Qualifications Eligible applicants must:

- Be a citizen of the United States,
- Be at least 18 years of age,
- Currently enrolled as a full-time undergraduate or graduate student at an accredited Minority Serving Institution, https://orise.orau.gov/msipp/documents/approved-msi-school-list.pdf,
- Working toward a science, technology, engineering, or mathematics (STEM) degree,
- Have an undergraduate or graduate cumulative minimum Grade Point Average (GPA) of 3.0 on a 4.0 scale, and
- Pass a drug test upon selection to participate in the MSIPP *The process and timing for drug testing varies from lab to lab.Use of Marijuana/Cannabis or its derivatives if prescribed is legal in some states. However, having these drugs in your system is NOT legal at United States Federal Contractor sites and National Laboratories.

Required Knowledge, Skills, Work Experience, and Education

Successful candidates will:

- Be a rising junior or senior undergraduate or graduate student studying Computer Science, Data/Information Science, Statistics or closely related field.
- Demonstrated understanding of latest machine learning technologies and methods

Desired Knowledge, Skills, Work Experience, and Education

It is desirable for the candidate to have:

- Experience or knowledge of the nuclear fuel cycle or meteorological models used in weather forecasting

- Developed software applications/tools for technical users
- Advanced mathematics skills include Bayesian statistics
- Strong communication and writing skills.

Eligibility Requirements	- **Citizenship:** U.S. Citizen Only
	- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 6 months or currently pursuing.
	- **Overall GPA:** 3.00
	- **Discipline(s):**
	   ○ **Computer, Information, and Data Sciences** (3 👁)
	   ○ **Engineering** (1 👁)
	   ○ **Mathematics and Statistics** (1 👁)

Affirmation	**Certification:** I certify that I am at least 18 years of age, a US citizen, and currently enrolled as a student in a degree seeking undergraduate or graduate program in a STEM field at an accredited Minority Serving Institution (MSI). Click here to verify that you are enrolled at a current MSI.