

**Opportunity Title:** A disturbed future: hydrology and ecosystems in a no-analog future

**Opportunity Reference Code:** DOE-MSIPP-19-12-LANL

**Organization** U.S. Department of Energy (DOE)

**Reference Code** DOE-MSIPP-19-12-LANL

**How to Apply** A complete application must include the following to be considered:

- 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 to us at [MSIPPinternships@orau.org](mailto:MSIPPinternships@orau.org). Please include the reference code for this opportunity in your email.

For Technical information, contact Richard Middleton at [rsm@lanl.gov](mailto:rsm@lanl.gov)

**Application Deadline** 1/21/2019 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.

For more information about The Minority Serving Institutions Partnership Program (MSIPP) Internships, please visit <http://srnl.doe.gov/msipp/internships.htm>.

To see all MSIPP position postings visit: <https://orise.orau.gov/msipp/>

#### **Project:**

The candidate should have an interest in hydrology and environmental disturbances such as extreme temperatures, drought, floods, and wildfire. The candidate should have some familiarity with one or more environmental modeling codes, such as hydrology and ecosystem models, but no specific modeling experience is required. Computer skills—collecting and managing data, visualization, writing, presentations, etc.—are key to success. The position requires working in a friendly and dynamic team as well being prepared to learn new techniques and ask





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questions. DOE's Environmental Management (DOE-EM) is critically dependent on natural resources including vegetation, water availability, and land.

DOE-EM is also charged with sustainably maintain these resources. In the future, these resources will be increasingly challenged by environmental disturbances such as extreme temperatures, drought, floods, and wildfire. Future conditions will not necessary have past observations, hence "A disturbed future: hydrology and ecosystems in a no-analog future."

This project examines the impact of future disturbances on vegetation, surface and subsurface water resources, and land management. We use publicly-available ecosystem and hydrology models to explore and quantify the impact of disturbances on the environment and the DOE-EM mission. The candidate will work in a dynamic team, leaning new techniques across a range of subjects including hydrology, hydrogeology, GIS/GIScience, and high-performance computing. The candidate will participate in all aspects of the project including data collection and management, simulations, visualization, and writing up results in a report or scientific paper.

**Location:** This internship will be located at Los Alamos National Laboratory.

**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.

**Application Deadline:** January 21, 2019

**Expected Start Date:** May 28, 2019

**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.

**Knowledge, Skills, Work Experience, and Education:**

Undergraduate or Graduate background in hydrology, environmental

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science, civil/ environmental engineering, geography/GIS (or related field) and have an interest in hydrology and environmental disturbances such as extreme temperatures, drought, floods, and wildfire. The candidate should be familiar with one or more environmental modeling codes, such as hydrology models, but no specific model experience is required.

**Preferred skills:**

The candidate should have an interest in hydrology and environmental disturbances such as extreme temperatures, drought, floods, and wildfire. The candidate should be familiar with one or more environmental modeling codes, such as hydrology models, but no specific model experience is required.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Currently pursuing an Associate's Degree, Bachelor's Degree, Master's Degree, or Doctoral Degree.
  - **Overall GPA:** 3.00
  - **Discipline(s):**
    - **Earth and Geosciences** ([21](#))
    - **Engineering** ([27](#))
    - **Environmental and Marine Sciences** ([14](#))
    - **Life Health and Medical Sciences** ([2](#))

**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.