

Opportunity Title: Remote sensing of river deltas
Opportunity Reference Code: DOE-MSIPP-21-9-LANL

Organization U.S. Department of Energy (DOE)

Reference Code DOE-MSIPP-21-9-LANL

- 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 Cassandra Casperson at Casperson@lanl.gov.

Certification:

I certify that I am at least 18 years of age, a US citizen, and have received a Bachelor's Degree or Master's Degree within the last 12 months or currently pursuing a Bachelor's Degree, Master's Degree or Doctoral Degree in a STEM field at an accredited Minority Serving Institution (MSI). Click [here](#) to verify that you are enrolled at a current 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: River deltas are critically important landscapes that host vibrant ecosystems and connect the continents to the ocean. We seek to understand how the structure and function of river deltas varies across latitudes by comparing Arctic and non-Arctic delta morphologies. You will participate in ongoing research working to quantify delta morphologies by identifying, collecting, and classifying remotely sensed multispectral imagery of non-Arctic deltas to compare with existing classifications of Arctic deltas. You will create and analyze binary masks of delta islands and channels for further analysis. Finally, you will collaborate to compare morphometrics across deltas and across latitudes to determine whether non-Arctic deltas are fundamentally different from Arctic systems. You will gain hands-on experience with multispectral imagery classification, python, and geospatial software and will help advance our understanding of river delta dynamics.

This project can be conducted entirely remotely if necessary.

Salary: Selected candidate will be compensated by either a stipend or salary, and may include one



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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:

Experience with one or more programming language; college-level math coursework; interest in river, delta, and/or coastal hydrology and/or geomorphology; strong communication skills (written and oral)

Desired Knowledge, Skills, Work Experience, and Education

Modern software development experience (e.g. GitHub)

It is desirable for the candidate to have:

- 3+ years of college-level coursework or Bachelors degree in Geoscience, Geography, Environmental Science, Civil/Environmental Engineering, or any related field; experience with python and/or geospatial software; college-level coursework in geomorphology and/or hydrology; experience with remote sensing
- GPA 3.0 for undergraduate
- GPA 3.2 for graduate

- | | |
|---------------------------------|---|
| Eligibility Requirements | <ul style="list-style-type: none">• Citizenship: U.S. Citizen Only• Degree: Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 12 months or currently pursuing.• Overall GPA: 3.20• Academic Level(s): Graduate Students or Undergraduate Students.• Discipline(s): |
|---------------------------------|---|

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- **Earth and Geosciences** ([6](#))
- **Engineering** ([9](#))
- **Environmental and Marine Sciences** ([5](#))
- **Physics** ([2](#))
- **Social and Behavioral Sciences** ([1](#))

Affirmation Certification:

I certify that I am at least 18 years of age, a US citizen, and have received a Bachelor's Degree or Master's Degree within the last 12 months or currently pursuing a Bachelor's Degree, Master's Degree or Doctoral Degree in a STEM field at an accredited Minority Serving Institution (MSI). Click [here](#) to verify that you are enrolled at a current MSI.