Opportunity Title: Advanced Modeling of Radionuclide Fate and Transport in Soil and Groundwater

Opportunity Reference Code: DOE-MSIPP-17-2-SRNL

Organization	U.S. Department of Energy (DOE)
Reference Code	DOE-MSIPP-17-2-SRNL
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 Kerri Fomby at kerri.fomby@orau.org . Please include the reference code for this opportunity in your email.

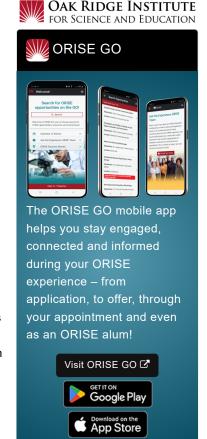For technical questions, please contact Vivian Cato at vivian.cato@srnl.doe.gov.

Application Deadline	3/27/2017 12:00:00 AM 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: An internship in the environmental modeling group at Savannah River National Laboratory will generally involve use of numerical simulation tools to model flow and solute transport phenomena in support of US Department of Energy Performance Assessments of radionuclide waste disposal. The intern will typically modify existing and/or develop new models of rainfall infiltration, groundwater flow, vadose zone flow, and/or transport of radionuclides and chemicals through waste forms, engineered caps and barriers, and/or environmental media (air, groundwater, soil). Model simulations may be performed to provide best-estimate forecasts of waste disposal performance, determine model sensitivity to input parameters, and/or quantify uncertainty in model predictions. Insights and results gained from modeling will be documented in one or more technical reports and posters.

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The main project for this internship will involve use of the commercial GoldSim Monte Carlo Simulation Software and public-domain HELP (Hydrologic Evaluation of Landfill Performance) code to predict evapotranspiration, infiltration, run-off, and drainage through soil and geosynthetic membranes and liners. Additional projects may involve aqueous electrolyte thermodynamics and require application of geochemical modeling software such as OLI Flowsheet or The Geochemist's Workbench.

Location: This internship will be located at Savannah River National Lab.

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: March 27, 2017

Expected Start Date: June 5, 2017

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, http://orise.orau.gov/sepreview/msipp/Approved%20MSI%20School%20List%202017.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 current rising senior or graduate student in Chemical or Environmental Engineering, Environmental Science, Geochemistry, or related field.

Desired Knowledge, Skills, Work Experience, and Education

It is desirable for the candidate to have:

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- A strong background in fundamentals of chemical/environmental engineering (fluid flow, transport, mass transfer, thermodynamics, numerical simulation, etc.) and familiarity with uncertainty/error analysis, aqueous chemistry, and/or Python/Fortran programming experience.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Currently pursuing a Bachelor's Degree or Master's Degree.
- **Overall GPA:** 3.00
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Earth and Geosciences** (5 👁)
  - **Engineering** (10 👁)
  - **Environmental and Marine Sciences** (4 👁)

Affirmation

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).