

**Opportunity Title:** Understanding the Food-Energy-Water Nexus' Effect on Women through GIS

**Opportunity Reference Code:** DOE-MSIPP-16-42-ANL

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

**Reference Code** DOE-MSIPP-16-42-ANL

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

- Completion of all required fields in the application
- Undergraduate transcripts
- One Recommendation (minimum)

If you have questions, send an email to Elizabeth Nelson at [Elizabeth.Nelson@orau.org](mailto:Elizabeth.Nelson@orau.org) . Please include the reference code for this opportunity in your email.

**Application Deadline** 3/16/2016 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.

The "food-energy-water nexus" has emerged as a new mode of thinking surrounding the sustainable use and development of necessary resources, as food, energy, and water can no longer be thought of as separate entities and remain environmentally sustainable. While this nexus has implications for all people regardless of gender or wealth, each of the factors in this nexus has unique implications for women, especially women in developing countries. Because women are often tasked with obtaining food for the family, as well as clean water to drink and energy fuel sources for use in cooking, their impact in the sustainable management of these resources cannot be underestimated. Earlier project tasks included a literature search and review into how the food-energy-water nexus directly affects women. The next goal is to geospatially visualize these




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resources with GIS data. The student will conduct geospatial data searches, first in the identified case study areas, then at a more global scale if time permits. Data of interest includes, but is not limited to, land use, agriculture use and type, surface water, energy generation, and demographics.

**Qualifications** The successful candidate should have some knowledge of geographic information systems (GIS), as well as an interest in the food-energy-water nexus and sustainability. An interest in the energy-water nexus and sustainability is a plus, as that is the subject matter we will be exploring. Proficiency with Esri's ArcGIS Basic (ArcView) and Microsoft Office products a plus. Experience with open source GIS software (QGIS, GRASS, etc) also of interest.





Eligibility Requirements:

1. Be currently enrolled as a full-time undergraduate or graduate student at an accredited Minority Serving Institution \*see criteria for Minority Serving Institutions here <http://srnl.doe.gov/msipp/internships.htm>
2. Be working towards a science, technology, engineering, or mathematics (STEM) degree
3. Have an undergraduate cumulative minimum Grade Point Average (GPA) of 3.0 on a 4.0 scale
4. Be a United States citizen
5. 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.
6. Reference must be received by March 6, 2016 at 11:59 PM ET

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:  
[www.orise.orau.gov/MSIPP](http://www.orise.orau.gov/MSIPP)






**Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree or Master's Degree.
- **Overall GPA:** 3.00
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 )
  - **Computer, Information, and Data Sciences** (16 )
  - **Earth and Geosciences** (21 )
  - **Engineering** (27 )

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- **Environmental and Marine Sciences** (14 )
- **Life Health and Medical Sciences** (45 )
- **Mathematics and Statistics** (10 )
- **Physics** (16 )
- **Science & Engineering-related** (1 )

**Affirmation** I certify that I am pursuing or have completed coursework towards a degree in science, technology, engineering, mathematics, or a related field.