



# MOSAICS IN SCIENCE

## Diversity Internship Program

### 2021 Project Descriptions

<b>NPS UNIT: MONOCACY NATIONAL BATTLEFIELD</b>	<b>PD #: 2021501</b>
<p><b>Project Title:</b> Hydrology Assistant <b>Position Type:</b> Mosaics DHA <b>Primary natural resource discipline:</b> Biological Sciences <b>Project keywords:</b> Hydrology, Steam Monitoring, Rosgen Method, Field Work, Data Collection <b>Location:</b> Frederick, Maryland</p>	
<b>COVID-19 NOTICE</b>	
<p>As the COVID-19 pandemic continues to change and evolve, project timelines and structure remain flexible and it may be necessary to postpone start dates, begin work remotely, or reformulate the project's description. Should any development in the COVID-19 outbreak impair a project's timeline or results, the SIP Team will work with the park and project mentors to assess the situation and determine the best course of action at that time.</p>	
<b>PROJECT DESCRIPTION AND WORK PRODUCTS</b>	

**Position Description:** Monocacy National Battlefield preserves 1,647 acres of forested areas, agricultural fields, meadows, and waterways that make up its six historic farmsteads. The park lies three miles south of the city of Frederick – the second largest city in Maryland – and has approximately two miles of the Monocacy River running through it. The park is home to fifty-two historic structures, several archeological sites, over five-hundred species of vascular plants, one-hundred species of birds, and almost eighty species of mammals, reptiles, amphibians, and fish.

In 2010, a survey was conducted on a 700-foot reach of Harding’s Run, an intermittent stream in the park, to aid in monitoring stream morphology and to potentially document erosion and sedimentation impacts. For this project, TWO hydrology assistant interns will be hired for summer 2021. Each intern will be assigned a stream reach within the park to assess its physical habitat characteristics and stressors. Assessments will use the Rosgen Stream Classification system to document Harding’s Run and the Gambrill Mill Creek.

The two stream reaches to be assessed are:

- 700 ft Harding’s Run - This reach was last assessed in 2014. New data needs to be collected to help monitor for change.
- Harding’s Run at West Lewis - This reach will be newly created during summer 2021. This stream reach is being created to track changes to the stream further upstream from the existing reach.

Interns will be responsible for:

- Revisiting and organizing the data for the Harding’s Run stream reach.
- Performing field investigations to become familiar with hydrological characteristics of the park.
- Installing missing bank pins at Harding’s Run and new pins at Harding’s Run West Lewis.
- Creating new stream sketches to note changes from previous assessments.
- Conducting cross-section and longitudinal profile surveys of the stream reach.
- Taking various measurements and collecting data for discharge, stream habitat, pebble counts, etc.
- Performing mathematical computations involving the use of algebra and geometry. Using a calculator, mathematical tables, and graphs in making calculations.
- Using spreadsheets to plot survey and substrate data.
- Determining Rosgen stream type and writing a final report about the current habitat conditions and stressors of the stream.
- Collecting ArcGIS data on stream features.
- Assisting with planning for modifying potential new trail bridges and stream crossings.
- Participating in check-in meetings with supervisor.
- Assisting park natural resource staff with natural resource related projects as needed.

## NATURAL & PHYSICAL WORK ENVIRONMENT

Natural Environment: Monocacy National Battlefield is a 1,647 acre park located in Frederick, Maryland, approximately 40 miles North of Washington, DC. The park is composed of farmland, forest, and grasslands, and is adjacent to the city of Frederick. Summers in Maryland are hot and humid, winters are very cold.

Physical Work Environment: Work will be heavily field based. Office work be required for data organization and analysis, and writing the final report. Interns may be spending considerable time standing and must be comfortable traversing and working within a stream. Interns may be subject to full sun, high heat, biting and stinging insects, and the potential for dehydration. Hiking and carrying of tools and supplies (up to 50 pounds) will be required.

## QUALIFICATIONS

The interns should have bachelor's degree in hydrology or other closely related field. Some experience working or recreating outdoors is required. Interns should be proficient in MS Office software, and have technical writing experience, and excellent written/oral communication skills. Interns must have the ability to work in a team environment. Experience with ArcGIS and AutoCAD, and completion of Rosgen training is preferred.

The applicant must be a U.S. citizen or U.S. permanent legal resident ("green-card-holder") between the ages of 18 and 35 years old. Prior to starting this position a government security background clearance will be required.

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## VEHICLE AND DRIVER LICENSE REQUIREMENTS

**Applicant must have a valid drivers license and a good driving record.**

**A personal vehicle is RECOMMENDED but not required for this position.**

## HOUSING

Park housing is NOT available. The intern will be responsible for finding housing in the nearby area, with some assistance by their park supervisor. Furnished park housing may be available. Private room in three bedroom co-ed house with shared sitting area and kitchen. Kitchen is supplied with dishes/pans. Intern will need to bring all personal items including toiletries, laundry detergent, pillows, and linens. Housing has cable and wifi.

## INTERNSHIP START/END DATES

**Start Date:** 5/17/2021

**End Date:** 7/30/2021

Eleven weeks of the internship will be in the park. A mandatory Career and Leadership Workshop will be held in Washington, D.C. from August 1 – 5, 2020.

**PLEASE DIRECT ANY QUESTIONS TO ENVIRONMENT FOR THE AMERICAS**

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