

## **POSITION ANNOUNCEMENT:**

### **GEORGE MELENDEZ WRIGHT INITIATIVE FOR YOUNG LEADERS IN CLIMATE CHANGE**

The National Park Service (NPS) is pleased to announce the *George Melendez Wright Initiative for Young Leaders in Climate Change* (YLCC) to provide a pathway for exemplary students in higher education (graduate students and advanced undergraduate students) to apply their skills and ideas to park-based challenges and solutions. The Initiative offers 12-week paid internships which allow students to gain valuable work experience, explore career options, and develop leadership skills through mentorship and guidance while helping to advance the NPS response to climate change. Successful students may be eligible for non-competitive hire into federal positions for which they qualify following completion of all academic requirements.

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### **Monitoring Soil Moisture and Fuel Loads in the Recharge Zone: Climate Change Effects at Hot Springs National Park**

Hot Springs National Park  
Hot Springs, Arkansas

#### **INTERNSHIP PROJECT BACKGROUND**

The hot springs of Hot Springs National Park are its primary natural and cultural resource, the protection and preservation of which prompted the federal government to set aside the surrounding land as Hot Springs Reservation long before the National Park Service was created. Monitoring the impacts of climate change upon spring flows is critical to achieving the park's preservation mission. A recent analysis of climate trends and flow patterns within Hot Springs National Park has provided information about the changing seasonality and intensity of precipitation patterns in the park, which has a measurable effect on the quantity of flow as well as the temperatures of the hot springs. With these results, the park now also faces changes in water quality as climate change continues to impact conditions in the springs' recharge zone. The likelihood of increased wildfire and the resulting infiltration of contaminants into the hydrothermal system are of particular concern. Fire has been actively suppressed within park boundaries since 1832, and greater than 95% of the recharge zone has never experienced prescribed fire. This has led to increased fire danger for the community surrounding the park, in addition to creating water quality concerns, which are expected to increase with time as the projections of hotter, drier weather are experienced.

#### **INTERNSHIP PROJECT DESCRIPTION**

This internship will involve measuring and analyzing soil moisture, duff depth and moisture, and fuel loads and moistures within the recharge zone to establish a baseline for future monitoring, the results of which will inform management decisions for the allocation of resources for fire-fighting and water quality monitoring needs. The selected intern will complete the above measurements, create a database of the resulting information, develop graphs and charts of the data, and will author a resource brief for park management. Additionally, the intern will produce new print and electronic/web content about fire and its relationship to climate change and the hot springs for the public, and will develop and present

interpretive programming to park visitors with the same topics at least once per week as part of the park's new fire education and public communication plan. The intern will also be expected to present their monitoring data and analysis to internal (park management, Arkansas' NPS Fire Management Officer, park Fire Coordinator and red cards) and external (US Geological Survey, City of Hot Springs Fire Department, US Forest Service Fire staff, and other local cooperating fire-fighting agencies in surrounding communities) stakeholders.

Specific tasks and internship products will include:

1. Interpretive programming – Should include information on climate change, hot springs flow and temperature trends, water quality concerns, fire dangers and effects, and may include a demonstration of measuring duff or other fuel moisture, etc.
2. Resource brief – Should explain how climate change impacts fire patterns, provide a public-friendly explanation of the intern's findings, and detail how that might impact the hot springs in the future.
3. Website content – this will be a new page on the park's website detailing the same topics as #1, in the same plain language as #2. This may include a short video to highlight the intern's experience and the YLCC internship program.
4. Database, graphs, figures – these products will result from the input of collected data and should be provided as baseline information for future monitoring.
5. Report/presentation for park management – a summarization of the intern's findings, and any recommendations for management decisions that may result from the intern's analyses.
6. Stakeholder presentation – similar to #5, but to external audience(s).

## **QUALIFICATIONS**

Applicants must have at least 90 hours of undergraduate degree work, or be in a graduate degree program, in the natural sciences or a closely related discipline. Ideal candidates will have a background or strong interest in statistics, hydrology or hydrogeology, GIS, fire management, soil science, and data analysis, and will have strong written and oral communication skills. General computer skills are required. Applicants should be able to work well independently and as members of a team, both in the office and in the field, with little supervision.

The intern must also be willing to work outside under unfavorable weather conditions, in the presence of environmental hazards such as ticks and poisonous plants, and must be willing to share in-park housing with other interns and volunteers. Prior to starting this position, a government security background clearance will be required.

## **LEADERSHIP DEVELOPMENT**

The intern will be supervised and mentored by the park's Natural Resource Program Manager, and will have the opportunity to network with professionals from many scientific organizations. The park's Chief of Resource Management and Visitor Services will also serve as a mentor, helping the intern to develop interpersonal communication strategies for achieving desired results, especially with respect to park managers and external stakeholders. Weekly mentoring sessions will focus on professional development as the intern is asked to self-evaluate their previous week's project management successes, and will include constructive feedback to encourage the enhancement of the intern's problem solving and

critical thinking skills. The nature of the project and the high level of autonomy given to the intern will foster an environment for these skills to flourish. The intern will also be given the opportunity to develop leadership skills through interaction with other students and volunteers.

## **DATES OF POSITION**

The internship will begin May 23, 2016, and continue until the intern has completed at least 480 hours (12 weeks). The beginning date is not flexible due to the intern training schedule. The ending date is flexible up to several weeks, if necessary. All work should be completed no later than September 30, 2016.

## **COMPENSATION**

This initiative supports one student at \$15/hour for 12 weeks, or 480 hours.

## **HOUSING**

In-park housing will be provided to the intern at no cost. Currently, our intern housing is an eight bedroom duplex (four bedrooms per side), with shared kitchen and laundry facilities, as well as shared living and dining space. Parking is parallel, adjacent to the street, and is uncovered. The intern office space is a ten minute walk from the intern housing. Depending upon the number of interns hired, additional comparable housing may be made available.

Many shops, art galleries, and restaurants are within walking distance of the intern housing, but grocery stores and other entertainment options are several miles away. The city of Hot Springs, Arkansas, offers a wide variety of entertainment and recreation options, including a small amusement park, and the nearby lakes, forests, and rivers provide ample opportunity for outdoor adventures.

## **WORK ENVIRONMENT**

Hot Springs National Park is within the ZigZag area of the Ouchita Mountains, and the terrain of the park is narrow valleys and steeply inclined slopes topped with novaculite outcrops. The maximum elevation within park boundaries is just over 1200 feet. The park surrounds the north end of the City of Hot Springs, and there is considerable urban interface.

Summers in central Arkansas are very hot and humid, with heat index values often exceeding 105 for many consecutive days, and biting insects and other wildlife, poison ivy, and sunburn are likely field work risks. Interns will be expected to complete many physically challenging tasks in the conditions described.

The intern office space is within the Lamar Bathhouse, near the south end of Historic Bathhouse Row, a National Landmark District. Each intern will be provided with an individual workspace which will include a desk, desk chair, computer, and lockable storage.

## **CONTACT INFORMATION**

Park Service Supervisor:  
Shelley Todd, (501)620-6751, shelley\_todd@nps.gov