

POSITION ANNOUNCEMENT:

FUTURE PARK LEADERS of EMERGING CHANGE

The National Park Service (NPS) is pleased to support the *Future Park Leaders of Emerging Change* (FPL) program as a pathway for exemplary students in higher education (advanced undergraduate students and graduate 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 NPS efforts on emerging management issues. Successful students may be eligible for non-competitive hire into federal positions for which they qualify following completion of all academic requirements.

Bacterial Water Quality Monitoring Coordination

Bacterial Water Quality Monitoring Coordinator
Hopkins, SC

INTERNSHIP PROJECT BACKGROUND

Congaree National Park (www.nps.gov/cong) protects >27,000 acres of the lower Congaree River valley, including 11,000+ acres of old-growth floodplain forest; 15,010 acres of federally protected Wilderness; and a fringe of forested uplands that include longleaf pines. The park, recognized as a RAMSAR Wetland of International Significance and a UNESCO Biosphere Reserve, welcomes >160,000 visitors annually. While the combined Congaree and Wateree river watersheds total >14,000 mi², visitor experience and floodplain ecohydrology are largely dominated by smaller floodplain tributaries. Cedar Creek, for example—the largest such system, with a 68 mi² watershed—is recognized as one of the park’s “fundamental resources and values” and protected as “Outstanding National Resource Waters.”

Improving water quality monitoring is in the top 20% of park priorities in the current five-year strategic plan. Local development pressures are driving changes to the tributary watersheds, and collection of baseline data is key. Bacterial water quality, including excursions of *E. coli* and fecal coliform bacteria, represent a specific concern with direct implications for public health—for staff, visitors, sport anglers, and sport paddlers alike. Staffing levels limit in-house monitoring, but the park has a robust Volunteers-in-Parks (VIP) program with significant science and fieldwork interest.

INTERNSHIP PROJECT DESCRIPTION

Congaree National Park needs a dedicated summer leadership position to help establish a volunteer-based bacterial water quality monitoring program. This intern will be a champion to help navigate diverse partnerships and complex considerations as they develop and implement the plan. This plan will simultaneously (1) optimize data quality, volunteer engagement, and fiscal sustainability, and (2) allow for timely safety notices, detection of concerning trends, and cohesive partnerships to address

underlying issues. The work will require professional interactions with stakeholders, park staff, and volunteers as well as technical capacity for data synthesis, field sampling, laboratory analysis, and reporting. Partners from the United States Geological Survey and the University of South Carolina are committed to providing technical assistance for this project.

Tasks include:

- **Becoming familiar—both academically and personally—**with the park, local watersheds, local communities, park research archives, and partner networks
- **Collecting bacterial water quality data**, including field sampling and IDEXX analysis
- **Working with park staff to develop and edit a plan.** This document will present and strategically consider various alternatives regarding cost, sampling strategies, protocols, data management, and communications.
- **Developing and implementing a training plan** that will include multi-media materials, live presentations/workshops, and a research summary

Deliverables include:

- **Bacterial water quality monitoring plan:** This plan will recommend a detailed, justified vision for a program at Congaree National Park
- **“CongaReeSearch” Summary:** This 2-page semi-technical document, which will be part of an established publication series at Congaree National Park, will inform staff, partners, and visitors about bacterial water quality science, policy, and previous park research.
- **Training materials:** Multi-media materials (likely a paired manual and PowerPoint) will detail day-to-day program operations including safety, sampling locations, field protocols, and lab protocols
- **Training sessions:** Present at least two ~3-hour volunteer training sessions that will use the training materials
- **Lunch and Learn presentation:** The park sponsors a popular monthly series of semi-formal, one-hour lectures for staff, visitors, and partners. The intern will summarize their project at the August 2019 program.

QUALIFICATIONS

1. **A minimum of sixteen (16) hours of advanced coursework** (preferably level 400+ equivalent) relevant to microbiology, hydrology, toxicology, water quality, public health, watershed studies, and/or stream ecology
2. **Capacity for scientific research**, including data collection, management, and analysis as well as reporting. Relevant experience may include thesis work (undergraduate or graduate), research assistantships, or extended participation in citizen science projects
3. **Capacity for professionally representing the National Park Service** in interactions with partners, stakeholders, and the general public; relevant experience may include previous internships and

conference presentations as well as previous positions related to education, communications, customer service, outreach, etc.

4. **Capacity for technical writing and editing;** advanced MS office skills (using styles, the navigation pane, VBA macros, etc.) and publication experience preferred
5. **Documented experience as a volunteer or citizen scientist**
6. **Ability to safely and enthusiastically conduct fieldwork** in a remote, sub-tropical, back-country floodplain forest wilderness; relevant experience may include research fieldwork, outdoor on-the-job duties, and personal recreation experience
7. **A valid driver's license and personal vehicle;** while government vehicles will be used for fieldwork and official meetings, Congaree National Park is remote enough (and not accessible through public transportation) such that individuals need their own transportation.

LEADERSHIP DEVELOPMENT

NPS staff at the Old-Growth Bottomland Forest Research and Education Center have a long tradition of working with diverse youth interns since 2006. The success of this internship will rely on the intern's professionalism, initiative, and ability to synthesize the many aspects of the project. This includes leveraging leadership skills in the areas of:

1. **Professional networking:** The intern will be responsible for independently initiating, preparing, and responding to professional e-mails, calls, and meetings with a variety of staff, partners, and volunteers.
2. **Project management:** This project requires the intern to appreciate the project arc, with multiple phases that (A) necessitate good time management, and (B) may vary the nature and pace of the work. An early phase will focus on orientation, background reading, and meeting partners. A middle phase will focus on preparing materials and planning events while coordinating feedback. A final phase will focus on polishing materials and delivering programs.
3. **Synthesizing a plan:** Preparation of a plan requires the intern to simultaneously navigate, assimilate, and synthesize a staggering array of variables and tasks, ranging from laboratory protocols to volunteer scheduling to technical writing and much more.

DATES OF POSITION

The target start date is May 20, 2018. This is not significantly flexible, as the park hopes to coordinate a late-May orientation for multiple interns. Ideally the intern will work 480 hours between May 20 and August 9.

COMPENSATION

This initiative supports one student at \$16/hour for 12 weeks, or 480 hours.

HOUSING

Housing is not provided for this internship. The park area is rural, but there are abundant rental options given the proximity to the University of South Carolina campus in downtown Columbia, SC (the State Capital). A housing subsidy is available to support rent.

WORK ENVIRONMENT

Congaree National Park is situated in rural “lower” Richland County, SC. This is approximately 30 to 45 minutes southeast of downtown Columbia, which is the state capital and home to the University of South Carolina. Indoor work will involve office, laboratory, and presentation space at both the Old-Growth Bottomland Forest Research and Education Center and the Harry Hampton Visitor Center. Summers are hot and muggy in this flat (albeit forested and swampy) landscape. Triple-digit heat indices are not uncommon, nor are late-afternoon thunderstorms. Potential environmental hazards that will be addressed during orientation include heat, wind (falling tree limbs), venomous snakes, stinging insects, poison ivy, and mosquitoes. Additional safety training for this project will focus on streamside operations, wading, and laboratory procedures. All PPE will be provided and required.

CONTACT INFORMATION

Park Service Supervisor:

Dr. David C. Shelley

david_shelley@nps.gov

803-647-3966

Project Advisor:

Dr. Paul Bradley

pbradley@usgs.gov

803-750-6125