MOSAICS IN SCIENCE DIVERSITY
Internship Program

2020 PROJECT DESCRIPTION

NPS UNIT: MOUNT RAINIER NATIONAL PARK	PD #: 2020511

Position Title: Ecology Assistant
Position Type: DHA Resource Assistant
Primary natural resource discipline: Biological resources
Project keywords: wildlife, bats, disease, diet, stressors, microplastics
Park or Program Website: https://www.nps.gov/mora/index.htm
Location: Ashford, Washington

DIRECT HIRE AUTHORITY RESOURCE ASSISTANT (DHA-RA) OVERVIEW

The Mosaics in Science Diversity Internship Program is focused on persons who are under-represented in STEM fields. Students and recent graduates who are African American, Latino/Hispanic, Asian, Pacific Islander/Hawaiian Native, and Native American/Native Alaskan are encouraged to apply for these internships. In order to be eligible for a DHA-RA Internship, applicants must be a U.S. citizen or U.S. permanent legal resident ("green-card-holder") and enrolled in an undergraduate, graduate, or PhD degree program* from an accredited institution of higher education.
**Persons enrolled in a certificate program do not qualify for DHA positions.*

The DHA-RA is a unique internship opportunity within the Department of the Interior (DOI). The objective is to build a pathway to employment in the DOI for exemplary students in higher education. DHA-RA interns will apply natural resource science expertise to NPS management and build a network with federal employees throughout the internship. These rigorous internships require specialized expertise and typically are available to upper level undergraduate or graduate students or recent graduates. The internships are designed to develop the participant's technical and creative thinking abilities, leadership skills, and problem-solving capabilities. DHA-RA interns will receive a weekly stipend of $480, park-provided housing or a housing allowance, and paid travel expenses. DHA-RA interns who successfully complete the internship requirements receive a 2-year eligibility period starting from the date of their degree during which they can be non-competitively hired by the DOI. Successful completion of the internship does not guarantee that the participant will be hired in to a federal position.

PROJECT DESCRIPTION AND WORK PRODUCTS

Position Description: Millions of bats live in national parks and they are important to functioning ecosystems. Bats eat beetles, moths and mosquitos, including forest and agricultural pests. They rest in snags, talus, cliffs and buildings during the day and use excellent eye sight and echolocation to navigate the night skies. Bats fascinate visitors. Some migrate, and some hibernate. Each species is unique, except that they're all facing threats of some kind in their environments, including diseases and pollution. The intern will be a key member of the Mount Rainier wildlife crew with primary duties supporting our bat monitoring and white-nose syndrome (WNS) surveillance program.

The intern will be trained to conduct field-based surveys for bats by conducting emergence counts at bat colonies and acoustic monitoring to identify species, assisting with bat captures to screen for WNS, and evaluating the diet of bats at known colonies to determine 1) if microplastics are present in wetland habitats where bats are foraging, and 2) if bats are consuming and accumulating microplastics from insect prey. The intern will be

responsible for coordinating an established research project in collaboration with university partners evaluating bat guano as a tool for surveillance and early detection of the fungal pathogen that causes the disease white-nose syndrome, and if additional stressors, such as microplastics, may be affecting the fitness of bats that are vulnerable to WNS. Specifically, the student's research project will focus on monitoring bat populations over time at known maternity colonies, coordinating volunteers to assist with emergence counts, and evaluating bat guano and wetland habitat for the presence of microplastics. This includes an opportunity to work in Dr. Betsy Bancroft's laboratory at Gonzaga University to learn to identify microplastics that may be present in wetlands and emerging insects which serve as prey for bats, and evaluate microplastic accumulation in organisms of different trophic levels (i.e. primary, secondary and tertiary consumers; for example, Diepens NJ and AA Koelmans. 2018. Accumulation of plastic debris and associated contaminants in aquatic food webs. Environmental Science and Technology 52: 8510-8520.). The intern may also assist with additional wildlife program work, including bird banding at our constant-effort MAPS station and rare carnivore surveys.

Field work requires hiking up to 10 miles per day for multiple consecutive days in a remote, mountainous setting carrying pack that weighs up to 40 pounds. Up to 50% of work will occur at night. Emergence counts and acoustic driving transects occur in the evening hours and up to two hours after sunset. Overnight camping is occasionally required and all camping equipment is provided. The intern will also communicate project updates through weekly social media and blog posts, and summarize findings in a written report in the format of a scientific journal article.

This position was created to support and implement the NPS Pacific West Region White-nose Syndrome Response Plan. Mount Rainier and the North Coast Cascades Network is identified as the highest priority area in the region for WNS surveillance and bat monitoring.

This position is offered through the National Park Service's Mosaics in Science Diversity Internship Program in partnership with Environment for the Americas.

Work Products: The intern will be responsible for coordinating community-based monitoring at bat colonies, sample collection, data entry and sample/data delivery to university researchers at Oregon State University, and learning to process samples for microplastics at Gonzaga University. Project goals and updates will be reported weekly via social media and blog posts. Intern will prepare a presentation for the park management team, and a manuscript in the format of a scientific journal article.

QUALIFICATIONS

The intern will work 40-hours per week both independently and as part of a team. Candidates must be able to hike over uneven terrain carrying a 40 pound backpack for up to 15 miles. Successful candidates will: have a keen interest in wildlife and wilderness, be highly motivated and well organized, have excellent verbal and written communication skills, be an enthusiastic learner, be engaging with the public, have experience backpacking and camping, and have a strong commitment to safety. Experience/coursework in ecology, field methods, mammalogy, ornithology, biology (with lab), molecular biology, environmental policy, and GIS are highly desired.

The applicant must be a U.S. citizen or U.S. permanent legal resident ("green-card-holder"). Prior to starting this position a government security background clearance will be required.

VEHICLE AND DRIVER LICENSE REQUIREMENTS

Applicant must have a valid driver license and a good driving record. The intern will need to drive a park vehicle to accomplish work duties.

A personal vehicle is RECOMMENDED but not required for this position. A personal vehicle is not required but highly recommended to commute between housing and the worksite and to access groceries and other needs on

days off. The nearest grocery store is a 30 minute drive from the park. Carpools can be arranged but some people may feel challenged or isolated without a personal vehicle.

HOUSING

Park housing is available and will be provided at no cost to the participant. Shared park housing is available (house or apartment). Single rooms depend on availability, double occupancy should be expected. Shared housing units are typically assigned by gender. Housing is furnished with furniture and major kitchen appliances but personal items such as linens, dishes, etc. are not provided. Housing may be a 25 minute drive from the main office location. Some front country and back country camping will be required. All camping gear will be provided. Pets are not allowed.

INTERNSHIP START/END DATES

Start Date: 5/18/2020
End Date: 7/31/2020
Eleven weeks of the internship will be in the park. A mandatory Career Workshop will be held in Washington, D.C. from August 2 – 6, 2020.
Are these dates flexible? Yes

STIPEND PAYMENT

$5,760, all travel and housing costs will be covered

NATURAL & PHYSICAL WORK ENVIRONMENT

Natural Environment: Mount Rainier National Park is about two hours from Seattle, WA; Portland, OR and Yakima, WA by car. The park is approximately 236,000 acres, with six major areas of development and attractions. These are: Nisqually Entrance, Longmire, Paradise, Ohanapecosh, Sunrise/White River, and Carbon River. These areas are some distance apart, and commercial transportation is not available. Large grocery stores, malls and movie theaters are at least a 45 minute to one hour drive from almost every area of the park. Although bicycles are not permitted on the trails in the park, they are permitted on the roads, and with nearly 150 miles of road in the park, there are cycling opportunities. However, be aware that park roads are narrow with no bike lanes. The park has 240 miles of hiking trails to explore on your days off.

Weather in Washington State and around the park is unpredictable. A chance of rain from May through the middle to end of July is not uncommon. Generally, the temperature is cold when it rains, and strong and gusty winds can occur. We suggest you bring warm clothing (wool and synthetics) and rain gear. Our spring and summer weather does not mean we do not experience occasional summer heat during the day. A list of essential items to bring will be provided before the season starts.

Physical Work Environment: 75% field work, 25% office. Field work requires hiking up to 10 miles per day for multiple consecutive days in a remote, mountainous setting carrying pack that weighs up to 40 pounds.

PRESENTING PROJECT RESULTS (REQUIRED for DHA Resource Assistant projects only)

The intern will prepare an oral presentation to report results to park staff and management, and a manuscript following a format for publication in a scientific journal.

LEADERSHIP DEVELOPMENT (REQUIRED for DHA Resource Assistant projects only)

The intern will gain experiences to be a leader in bat research and environmental sampling by becoming proficient in the current techniques used to study bats and pollution such as microplastics in a variety of landscapes and settings. The intern will also gain exposure to the policies and planning efforts that direct our work. Performance will be assessed by establishing an Employee Performance Appraisal Plan and an Individual Development Plan.