**NPS UNIT: DENALI NATIONAL PARK AND PRESERVE**

<table>
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<th>Position Title: Ecology Assistant (1)</th>
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<td><strong>Position Type:</strong> Guest Scientist</td>
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<td><strong>Primary natural resource discipline:</strong> Biological resources</td>
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<tr>
<td><strong>Project keywords:</strong> GIS, botany, vegetation, plants, snow, weather, climate change, research</td>
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<td><strong>Location:</strong> Denali Park, Alaska</td>
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**COVID-19 NOTICE**

This project description was developed prior to the onset of the COVID-19 outbreak. Therefore, 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 GIP Team will work with the park and project mentors to assess the situation and determine the best course of action at that time.

**PROJECT DESCRIPTION AND WORK PRODUCTS**

**Position Description:** The interaction between climate and vegetation is a major theme in the study of climate change, but there is still much to learn about the relationship between winter snowpack and vegetation. Winter in interior Alaska often spans 7 months, from early October through April, but very little vegetation ecology work takes place during this oft-overlooked winter season. The distribution of the snowpack affects the vegetation through insulation from cold and protection from wind. While simultaneously, the arrangement of plants on the landscape influences the accumulation of the snowpack altering moisture and nutrient conditions of the soil below.

This internship offers a chance to collaborate on a research project that will co-locate measurements of snow depth in areas where detailed measurements of vegetation already exist. The acquired data will help to answer ecological questions such as: (1) How does snow depth vary with vegetation, particularly across gradients of woody vegetation height, density, and species composition? (2) How does snow depth influence plant species richness and composition? And/or (3) What can we learn about vegetation ecology by visiting pre-existing study sites during their winter “dormancy” period?

The selected intern will focus on these and other related research questions surrounding the interaction between climate, vegetation, and snow depth. Daily tasks at the beginning of the internship will include literature review and summarization, planning logistics for field work, and gathering and processing remote sensing imagery. Field work will occur primarily in late February-March and will involve long days exposed to the elements measuring snow depths from skis or snowshoes. Snowmachine or dog team may support travelling deep into the park wilderness to collect such data. The final month of the internship will be spent processing field data, performing analyses, writing summary reports, and preparing captivating visual products for use in scientific outreach media.

Additional work on projects relating to several different aspects of vegetation monitoring, botanical research, and scientific outreach will also be required depending on the skillset of the selected intern, and
emergent botany program needs. For example, for someone with GIS skills, there is potential to develop a GIS analyses project related to understanding and protecting the park's vegetation.

Join our team of ambitious and passionate plant ecologists and opportunities abound. This rigorous internship will develop the participant’s creative thinking abilities, logistical planning of and execution of complex field work, technical writing and analysis skills, and understanding of subarctic ecology. The GIP’s work will be critical to the success of a research project(s) aimed at understanding the potential effects of climate change on the park’s vegetation resources.

This position is offered through the National Park Service’s Geoscientists-in-the-Parks (GIP) Internship Program in partnership with Stewards Individual Placement Program (Stewards) and The Geological Society of America (GSA).

**Work Products:**
1. An updated literature review related to planned research including identifying appropriate analysis and interpretation strategies
2. A successful and safe season of executed fieldwork and compilation of resulting data
3. Preliminary graphics and tables summarizing two years of data collection efforts
4. Interpretive media products for web display
5. A final report of work accomplished and lessons learned
6. Valuable assistance on other botanical research projects as needed

**QUALIFICATIONS**
Applicants must have completed a 4-year degree in the biological, ecological, or natural resource sciences with a preference for those candidates with completed coursework in botany, ecology, statistics, and/or GIS. Additional coursework in plant physiology, technical writing and/or climate studies will make the applicant most competitive.

Experience in winter travel, such as skiing and snowshoeing are required, with preference given to those with extensive summer backcountry travel experience as well. The applicant should have demonstrated abilities to work well independently in the office with limited supervision, and in the field with only a small crew. Comfort in the backcountry, in a rugged mountain environment, with constant exposure to the elements (i.e., wind, snow, below zero temperature) is expected.

***Demonstrated self-motivation and a passion for ecological research is critical to this position!!***

The applicant must be a U.S. citizen or U.S. permanent legal resident (“green-card-holder”) between the ages of 18 and 30 years old, inclusive, or veteran up to age 35. 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 may be required to drive a park vehicle.

A personal vehicle is **RECOMMENDED but not required for this position.** A personal vehicle is not required, but may add to the experience of the internship because of its location in a rural area. If flexible, opportunities for ride-sharing are usually available.

If the GIP is required to drive a park vehicle for their position, Stewards will perform a driving records search, and the GIP’s ability to drive a park vehicle during work hours will be contingent upon the results. GIPs will have to have had their license for 3 years or be over the age of 21 to be insured as drivers under Stewards insurance policy. Examples of things that will preclude a GIP from driving a park vehicle include: GIP under the age of 21 years old that has been licensed less than three years, DUls, multiple moving vehicle violations, suspended or revoked license, or three or more accidents (regardless of fault) in the last 3
years. If the driver’s search is favorable, Stewards will provide driver’s liability insurance while the intern is driving a NPS vehicle for their GIP position. If the GIP is denied coverage by Stewards, they will not be permitted to drive during work hours.

**HOUSING**

**Park housing is available and will be provided at no cost to the participant.** Housing is a short and pleasant walk from the office. Housing consists of a comfortable 20’ x 20’ cabin shared with one other person. The kitchen, dining, and living space are shared and bedrooms are private. Kitchens are stocked with dishes and basic cookware. Bedding for a twin mattress is needed. Cabins are “dry” meaning without running water, but water is available in the nearby communal bathroom/laundry/shower house.

Periods of fieldwork may involve temporary (<2 weeks) housing in remote wood-heated cabins and/or tents/huts along the Denali Park Road corridor. Some camping gear (backpack, sleeping bag, stove cooking pots, etc.) for work-use can be supplied by the park.

**INTERNSHIP DATES**

Start Date: 12/7/2020  
Number of weeks: 20 weeks  
Flexibility of dates: Yes

**LIVING ALLOWANCE**

20 weeks ($400/week = $8,000)

**RELOCATION ALLOWANCE**

$1000

**PROFESSIONAL DEVELOPMENT ALLOWANCE**

$1000

**AMERICORPS PROGRAM**

AmeriCorps is a program that engages individuals in intensive community service work with the goal of “helping others and meeting critical needs in the community”. The GIP Program is supported through AmeriCorps by providing a Segal Education Award in addition to the GIP’s living stipend and relocation allowance.

Upon successful completion of the GIP position, the GIPs (AmeriCorps members) are eligible for a $1,612 - $6,095 pre-tax education award that can be used for paying back student loans or for continuing their education. The amount of the education award is based on the length of the position.

AmeriCorps limits the number of terms an individual can serve to 4 terms. If an applicant has previously completed 4 GIP or other AmeriCorps positions, they will not be eligible to apply for an additional GIP position.

**NATURAL AND PHYSICAL WORK ENVIRONMENT**

**Natural Environment:** Denali National Park and Preserve is located in Interior Alaska and offers unparalleled opportunities for solitude and exploration in a largely untouched landscape. Hiking, skiing, snowshoeing, and otherwise enjoying Denali’s wild landscape in the least visited season—winter—is an opportunity of a lifetime. This position offers the chance to immerse oneself in the extremity of subarctic winter, experience the northern lights, view natural landscapes in transition, and live in one of the least populated areas of the country.

Some food and community services are available in Healy (15 miles north of park) year round. Larger city services are located in Fairbanks, 120 miles north of the park entrance. There are limited shopping opportunities after arrival, so it is very important to come prepared.

**Physical Work Environment:** The work required by this position will be physically challenging, consisting of long days recording vegetation and snow data with only a small crew while being exposed to the
elements of subarctic winter. It is important that crew members have good common sense for working in the remote back-country in winter, get along well in sometimes stressful small group situations, and possess attention to detail and a passion for winter fieldwork and ecological research. Field work days will be spent skiing, mushing, or snowshoeing, with a 30-40 lb. backpack, and a high probability of encountering challenging conditions (i.e., deep snow, open water, glare ice, windblown snow, extreme cold to -40 degrees), thus moderate to strenuous physical exertion should be expected. Candidates should be skilled at caring for themselves in cold and wet conditions (i.e., layering clothing, keeping toes and fingers warm). Interfacing with the Denali Sled Dog Kennels team is likely, so being comfortable around dogs is a must. Field stints may involve multiple overnight cabin stays, where even mundane daily tasks such as cooking and cleansing require creativity and tolerance of physical discomfort. Exposure to wildlife (i.e. bears, wolves, and moose) is common, and precautions are taken seriously, training provided.

Office work days will be spent in a collaborative environment at park headquarters with other seasonal employees (shared office) under direct supervision from one of the park’s botanists. Although supervision and support are available, it is critical that applicants be self-motivated, innovative, and willing to ask for help promptly when assistance is needed.

MENTORING AND LEARNING GOALS

Mentoring: The participant will have the opportunity for mentoring from Denali staff and others. One of the park botanists will serve as the direct mentor, and there may be additional opportunities to interface with the regional plant ecologist and larger vegetation management team. Additionally, we expect that the participant will have opportunities to receive mentoring from other NPS and agency staff, visiting researchers, and a vibrant community of entry-to mid-level peers.

Learning Goals: The intern will gain valuable experience planning for and conducting fieldwork, analyzing ecological data, and writing reports aiming to answer relevant and timely questions about vegetation, snow distribution, and change in subarctic Alaska. The skills and analysis routines gained through the project will prepare the intern for possible future employment in the fields of ecology and biology or GIS analysis. The possibility exists for particularly motivated and skilled interns to be a co-author on scientific publications resulting from their work on their independent project.

SUPERVISORS/MENTORS

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<tr>
<th>Primary:</th>
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<tbody>
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<td>Sarah Stehn Botanist</td>
<td>Carl Roland Plant Ecologist</td>
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