2017 – GEOSCIENTISTS-IN-THE-PARKS
PROJECT DESCRIPTION

NPS UNIT: ALASKA REGIONAL OFFICE	PD #:2017002

Position Title: Remote Sensing and GIS Specialist
Position Type: GIP Intern
Primary natural resource discipline: Multidisciplinary
Location: 240 W. 5th Ave
Anchorage, AK 99501

PROJECT DESCRIPTION AND WORK PRODUCTS

Position Description: The Alaska National Park Service manages large protected areas, but has poor resolution topographic information. The participant will assist with a coastal ecological project as a data manager and GIS specialist. In particular, the participant will use structure from motion (SfM) photogrammetry techniques applied to aerial imagery. The SfM data will be used to develop a detailed digital elevation model (DEM) of the coast to integrate with other datasets.

Coastal DEM information is necessary to understand sea level changes and their impacts on the coastal environments throughout Alaska where relative sea levels are changing in both directions because of sea level rise and isostatic rebound, having direct implications on the jurisdiction of park management authorities and ecosystem effects from coastal activities.

The coastal ecological project is an integrated coastal resource effort updating datasets for environmental sensitivity assessments of coastal parks throughout the Alaska region; and in particular, an assessment of the intertidal flora and fauna of lower Cook Inlet. Changes in relative sea level, coastal resource use, offshore extraction activities, and maritime vessel operations adjacent to Alaskan National Park lands is increasing the necessity for understanding extents of potential influences from the collective resource utilization activities. Integrated coastal elevation information is critical to the evaluation process.

The participant will help expand SfM capabilities for the Alaska Region by applying the technology to the coastal project and topographic needs of parks. The participant will work with partners from other agencies and university collaborators to develop a robust SfM system that can be shared across the region.

Upon successful completion of the GIP internship, the participant is eligible for an AmeriCorps Education Award. This position is offered through the National Park Service's Geoscientists-in-the-Parks Internship Program in partnership with Environmental Stewards and The Geological Society of America.

Work Products: Digital elevation (DEM) maps, orthorectified photos, SfM system developed with instruction manual and protocols, project reports.

QUALIFICATIONS

Applicants must have completed an undergraduate degree in the geosciences by the start of the appointment. Masters or PhD student or graduate preferred.

Coursework required: Remote Sensing and GIS (or demonstrated proficiency).

Surveying and RTK GPS skills desired.

Technical expertise and ingenuitive problem solving is a necessary qualification. The collection of the data may require long periods of flying in small planes while monitoring photographic, GPS, and computer equipment. A strong stomach is necessary. These datasets will be very large and time-consuming to process, so the ability to work with large datasets is a necessity.

Documentation: Transcripts (unofficial is acceptable), and two support letters from professors or geoscience employers.

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.

VEHICLE/DRIVER'S LICENSE REQUIREMENTS

Applicant must have a valid driver's license and a good driving record.

If the GIP is required to drive a park vehicle for their position, a driving records search will be performed and the GIP's ability to drive a park vehicle will be contingent upon the results. Examples that will preclude a GIP from driving a park vehicle include DUIs, multiple moving vehicle violations, suspended or revoked license, or three or more accidents (regardless of fault) in the last 3 years.

HOUSING

Park housing is not available. The participant will most likely have to find a place to rent in Anchorage, which has a tight rental market. Assistance will be provided for examining housing to secure a place to rent before arriving. Craigslist is the best source for looking for rentals in Anchorage. A housing allowance of $600 per month will be provided.

INTERNSHIP START/END DATES

Start Date: 5/1/2017
End Date: 4/27/2018
Number of weeks: 52
Are these dates flexible? Yes

STIPEND PAYMENT

$15,600 for 52 weeks

HOUSING PAYMENT

$600 per month

TRAVEL ALLOWANCE

$1,000

PHYSICAL/NATURAL & WORK ENVIRONMENT

Physical/Natural Environment: The work will be conducted at the Alaska Regional Office, which is located in downtown Anchorage. Anchorage is similar to any small city in the US, with malls, grocery stores, and other typical amenities. The city has great trails for running, road biking, and mountain biking. There are many parks within the city and just outside the city for hiking and backcountry camping (moose are commonly seen along the trails). Sea Kayaking is available out of Whittier, only an hour out of town. Whitewater kayaking and rafting is available on creeks and rivers within an hour drive from town.

Typical summertime temperatures range from approximately 55 to 78 degrees. The weather is sub-arctic maritime, so it is typically cloudy and light rain is common. However, there is 24 hours of light during the summertime, and with so many easily recreational activities available, it is difficult to find time to sleep.

Wintertime is dark and cold, but there are ample outdoor winter activities available. There are over a hundred miles of groomed ski trails in the Anchorage area, many of which are lit. Off-trail XC ski, hiking, and fat tire biking trails thread through the forest and reach the mountain tops. The Alyeska ski resort is less than an hour out of town. Backcountry skiing opportunities are endless.Three lakes in town are plowed for ice skating and wilderness ice skating can be enjoyed throughout the season.

Work Environment: Work will primarily be in a typical office environment. Long hours will be spent working on a computer processing data, making maps, and writing reports. Some fieldwork opportunities may be available, which will be conducted in remote environments requiring travel in bear country, riding in boats in the ocean or in large lakes, flying in small aircraft, and hiking in remote areas carrying a heavy pack in inclement weather.

MENTORING AND LEARNING GOALS

Mentoring: There are three scientists in the Alaska Regional Office involved with the coastal project, so the participant will be exposed to subject specific and a broad range of natural resources scientists. The participant will receive direction and assistance with co-authoring reports. Mentoring for SfM and GIS will be provided.

Learning Goals: The participant will learn about the natural resources of the Alaska parks and their importance to managers. They will become familiar with the coastal ecology and geology of large parts of Alaska. They will learn technical skills related to structure from motion (SfM) photogrammetry, which will include photography, data management, GPS, and GIS.

SUPERVISORS

Primary Supervisor: Tahzay Jones	**Secondary Supervisor:** Chad Hults
Title: Coastal Ecologist	**Title:** Geologist
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