GEOSCIENTISTS-IN-THE-PARKS
Internship Program

PROJECT DESCRIPTION
2020 SPRING/SUMMER

NPS UNIT: YELLOWSTONE NATIONAL PARK | PD #: 2020014

Position Title: Geology Assistant (1)
Position Type: Guest Scientist
Primary natural resource discipline: Geologic resources
Project keywords: Volcanology, Geothermal, Hydrothermal Monitoring, GIS, Data science, geohazards
Location: Mammoth, Wyoming

PROJECT DESCRIPTION AND WORK PRODUCTS

Position Description: Our Guest Scientists are an integral part of Yellowstone National Park’s Geology Program team. Beyond the Geology Program team, our Guest Scientists interact with people from almost all of our Park divisions and many of the stakeholders that make this park special. Based on a Guest scientist’s knowledge and experience, duties may include:

Conduct geologic fieldwork:

- Maintain and retrieve data from hydrothermal monitoring stations
- Collect rock, water and gas samples
- Collect pH, temperature, conductivity and other measurements related to the inventorying of the Park’s hydrothermal features
- Gather field data with Collector for ArcGIS and other ESRI products
- Provide field assistance to our research collaborators
- Maintain and use field equipment

Create, manage, analyze and visualize datasets:

- Use ArcGIS ESRI products to manage and visualize collected data
- Write scripts in Python and other languages/packages to manage and analyze data
- Create maps with ESRI ArcGIS software
- Create reports describing field and laboratory work findings and share these findings with Park management and other vested parties

Assist interpretive, law enforcement and other Park staff:

- Create print and web-based science content to educate visitors and increase geologic literacy for the park
- Assist in law enforcement investigations of resource damage
- Assist in geologic questions related to park infrastructure

Guest Scientists are given the opportunity to develop and manage projects relevant to Geology Program work based on their experiences. Guest scientists are also encouraged to learn a new skill while part of the Yellowstone Geology Program team.
Our interns have been integral in creating and completing projects essential to our mission to monitor and inventory Yellowstone’s volcanic features and protect other geologic resources that make the world’s first national park extraordinary.

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:**
- Create and present geologic datasets
- Create content for visitor interpretive displays and presentations
- Create and display datasets on maps with GIS software
- Create reports describing work findings and share these findings with Park management and other vested parties

**QUALIFICATIONS**
The applicant must possess an undergraduate degree in geology, geophysics or a related geoscience degree by the start of the internship. A candidate either in possession of or in the process of obtaining a Master’s degree or PhD in geology or geophysics is preferred. Experience with geologic field work is required. A solid proficiency with the Microsoft Office suite (Excel, Word, PowerPoint, etc.) is required. Demonstrated skills in programming (Python is preferred) and database management is also necessary. Experience with mobile mapping software such as ArcCollector and Survey 123 is preferred, and proficiency in ArcGIS 10.x or ArcGIS Pro is necessary. Experience with geologic field data collection is required. An applicant must have the ability to work both independently and as part of a team, and be able to hike 10 miles with a 30 pound pack over steep or uneven terrain. Applicants must have a valid driver license.

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 LICENSE REQUIREMENTS**

**Applicant must have a valid driver license and a good driving record.** The intern will drive Park vehicles to and from fieldwork, laboratories, and the office.

**A personal vehicle is RECOMMENDED but not required for this position.** Our Guest Scientists would greatly benefit from having a vehicle as their mode of transportation. While there is a small general store and gas station in Mammoth, basic amenities are 5 miles away in the small, gateway town of Gardiner, Montana. Larger towns of Livingston and Bozeman, Montana are 1 hour and 1.5 hours north of Mammoth, respectively.

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.

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<th>HOUSING</th>
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<td><strong>Park housing is available and will be provided at no cost to the participant.</strong> Housing for Guest Scientists is either dormitory-style living with communal kitchen and bathroom, a private bedroom with shared kitchen and bathroom, or a private apartment with a private kitchen and bathroom. Guest Scientists will need to bring their own linens and bedding as well as pots, pans, dishes and eating utensils. Personal access to the internet or satellite television is not provided at this time. A personal vehicle is needed to drive from park headquarters to nearby towns.</td>
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<th>INTERNSHIP DATES</th>
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| **Start Date:** 5/3/2020  
**Number of weeks:** 26 weeks  
**Flexibility of dates:** Yes |

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<th>LIVING ALLOWANCE</th>
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<td>26 weeks ($400/week = $10,400)</td>
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<th>RELOCATION ALLOWANCE</th>
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<th>AMERICORPS PROGRAM</th>
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| 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 $1,638 - $6,195 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. |

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<th>NATURAL &amp; PHYSICAL WORK ENVIRONMENT</th>
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| **Natural Environment:** Visitors and employees alike enjoy the diverse geology displayed within Yellowstone National Park. Rocks from Precambrian through Cenozoic time can be seen. The Laramide Sevier Orogenies, which formed the current Rocky Mountains, and the early Cenozoic, Absaroka Volcanics have profoundly impacted the Yellowstone landscape. But, it is the numerous volcanic eruptions of the Yellowstone Volcano and glaciers that constructed and finally sculpted the diverse landscape that we see today. The numerous hydrothermal features are the surface manifestations of heat from Yellowstone’s active volcanic system. Our efforts to preserve Yellowstone’s unique geologic resources and natural processes is the main reason why we still see a large concentration of hydrothermal features within the world’s first national park.  
  
Weather varies greatly from the low elevation of Mammoth (~6,200 feet) to moderate elevation around Yellowstone Lake (~8,000 ft). High elevation (11,000-12,000 ft), rugged mountains surround Yellowstone Lake. Within Yellowstone, passing storms can drop snow at any time of the year. At Mammoth, summer, temperatures can vary from lows in the 30’s to highs in the 90’s. Dressing in layers is highly recommended for Yellowstone’s extremes in temperature.  
  
Located immediately outside of Yellowstone’s north entrance, the town of Gardiner, Montana is the closest community to Mammoth. In Gardiner, amenities include a market, gas station and several restaurants. The town of Livingston, Montana is approximately 50 miles north of Mammoth. Bozeman, Montana is a 90-
minute drive from Mammoth and the home of Montana State University, major shopping centers, movie theaters and the Museum of the Rockies.

Physical Work Environment: This Guest Scientist position is stationed in Mammoth, Wyoming (park headquarters). The approximate ratio of office work to field work is 65/35 office/field in the summer field season but may vary depending on which project(s) the Guest Scientist works. Field work can include hiking up to 15 miles per day carrying a 30-pound backpack. Overnight stays at government dorms/trailers in the Old Faithful area may be a possibility; overnight backpacking may also be a possibility. Yellowstone is known for its wildlife, including large animals such as bears, bison, moose, wolves and elk. The selected participant will be encouraged to take seasonal safety training for working in Yellowstone's wildlife-rich habitat.

MENTORING AND LEARNING GOALS

Mentoring: The intern will be supervised directly by the Yellowstone National Park Geologist. The intern will have many opportunities to interact and learn from collaborating researchers involved in a range of geologic/geophysical investigations related to geology and park management issues. The intern will also attend and participate in staff meetings, park-level trainings and seminars, and have many opportunities to network with land management and education professionals working throughout the Greater Yellowstone Ecosystem.

The Geology Program team will provide the Guest Scientist:

- Daily interaction with and support from other members of the Yellowstone Geology Program team to assess progress, answer questions on the Guest Scientist’s projects.
- Shadowing opportunities with other Park staff and/or partners tailored to the intern’s interests.
- Opportunities to attend a Yellowstone Forever field seminar.

Learning Goals: Our Guest Scientists will receive training and development in a variety of skills that include geologic field research and management practices, ESRI GIS field software packages and database management techniques. They will also work on a weekly basis with Park Rangers and interpretive staff as well as educators, ranger professionals to gain a broad understanding of NPS careers.

The intern will:

- Participate in planning and staff meetings to understand the day-to-day management activities of Yellowstone NP.
- Gain a working knowledge on Yellowstone National Park databases.
- Become familiar with Yellowstone Geology Program research and monitoring processes.
- Use GIS equipment to support resource management activities.

SUPERVISORS/MENTORS

Primary Supervisor/Mentor: Jefferson Hungerford

Park Geologist
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Secondary Supervisor/Mentor: Erin White

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