# PROJECT DESCRIPTION

## 2020 FALL/WINTER

<table>
<thead>
<tr>
<th>NPS UNIT: YOSEMITE NATIONAL PARK</th>
<th>PD #: 2020412</th>
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<tbody>
<tr>
<td><strong>Position Title:</strong> Geomorphology Assistant (1)</td>
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<td><strong>Position Type:</strong> Guest Scientist</td>
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<td><strong>Primary natural resource discipline:</strong> Geologic resources</td>
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<tr>
<td><strong>Project keywords:</strong> geomorphology, geohazards, rockfalls, glaciers</td>
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<tr>
<td><strong>Location:</strong> El Portal, California</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 GIP Guest Scientist will assist the Park Geologist with geology-related projects in Yosemite National Park, and will work both in the field and in the office. The field portion will primarily be spent assisting with a range of rockfall studies in Yosemite Valley, including assessing geologic hazards beneath Yosemite Valley cliffs, documenting rockfall events as they happen (Yosemite typically experiences several rockfalls each winter/spring), developing and analyzing the park’s rockfall database, and working with remote sensing data to quantify the distribution of rockfall deposits. Other work related to geomorphology, including studies of modern glaciers, Pleistocene glaciers, and fluvial sediment transport, may be possible. Field outings may include long hikes and days in less than ideal conditions (rain, hail, snow, high winds) with the possibility of backcountry overnights. In the office, the participant will organize and compile and analyze geologic data, draft digital maps, and assist in geologic report writing. Developing written content for the web and other media is also a possibility. |
| **This project will focus on geological studies in Yosemite National Park, including geological hazards such as rockfalls. Rockfalls are a potent geological process in Yosemite Valley, but they also pose risk to park visitors and employees. The GIP will contribute to improved understanding of geology and geological hazards, which will increase visitor appreciation of the park and improve visitor and employee safety.** |
| 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:** Final deliverables will include field notes, photos, GIS-based maps, data tables, and short reports. Many prior Guest Scientists in Yosemite have been co-authors on peer-reviewed maps and publications. |
| **QUALIFICATIONS** |
| The applicant must have completed at an undergraduate degree in the geosciences or earth sciences. Current or recent graduate students are strongly encouraged to apply. Previous geologic field research and writing experience are desirable, as is coursework in geomorphology. The applicant should be able to work well independently both in the office and in the field, have basic map reading and GPS orientation skills, and must be |
comfortable hiking cross-country in a rugged mountain environment. Computer skills are required, including working with ArcGIS. Experience working with lidar and/or Structure-from-Motion cloud data is a big plus.

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 GIP will be required to drive a park vehicle for this position, and government vehicles will be available for all work-related travel.

**A personal vehicle is RECOMMENDED but not required for this position.** Park housing is within biking or walking distance to the office, so a personal vehicle, though helpful, is not required. Public transportation options exist for accessing the park and surrounding communities.

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, DUIs, 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.** Park housing consists of a shared apartment (private room) in El Portal, with kitchen and bathroom facilities and coin laundry.

**INTERNSHIP DATES**

**Start Date:** 10/5/2020  
**Number of weeks:** 20 weeks  
**Flexibility of dates:** Yes

**LIVING ALLOWANCE**

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

**RELOCATION ALLOWANCE**

$250

**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: Yosemite National Park is famous for its soaring cliffs, spectacular waterfalls, deep glacial valleys, and rugged wilderness. Yosemite Valley includes such geologic landmarks as Half Dome, El Capitan, and Yosemite Falls, the tallest waterfall in North America. The elevation of the park ranges from 2,127 ft. in the western foothills to 13,114 ft. at the crest of the range. Yosemite National Park is in the center of the Sierra Nevada Mountains, which were formed during two phases of mountain building. The Yosemite landscape consists of primarily granitic rocks with sparse metamorphic roof pendants. Small glaciers and snowfields still cling to the highest peaks and feed clear rushing creeks and rivers. The 11,000 feet of altitudinal variation in the park supports a wide variety of life forms.

Physical Work Environment: During the dates this position is open, much of the high country above 8,000 feet is under snow, but Yosemite Valley and the Merced River Canyon are generally snow-free for much of the winter. Most of the fieldwork will take place in these areas. The job may involve strenuous physical activity (steep hiking for several hours at altitude), and exposure to heights and to weather extremes. The participant will receive training in backcountry safety, travel, and navigation. Mariposa, the nearest community, has a large grocery store, hospital, public library, etc. Smaller versions of these facilities are also located in Yosemite Valley. Fresno (~90 miles away) is the nearest large (university) town with a full range of amenities, including Fresno-Yosemite International Airport. Yosemite National Park has almost unlimited hiking, snowshoeing, and backcountry skiing opportunities in the winter, and hosts a small ski resort at Badger Pass.

MENTORING AND LEARNING GOALS

Mentoring: The GIP will work directly with the Park Geologist to learning new field and analytical skills, and will also interact with other NPS staff working in the physical sciences in Yosemite (e.g., hydrology, water and air quality, fire). There will be opportunities for presentation of research findings both to park staff and potentially also to park visitors.

Learning Goals: The GIP will learn new and cutting-edge field and analysis skills in geologic and geomorphic research, and will also see first-hand how quantitative science is put to use in managing complex issues in one of the world’s most popular national parks.

SUPERVISORS/MENTORS

Primary:
Greg Stock
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https://www.nps.gov/yose/learn/nature/geology.htm

Secondary:
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https://www.nps.gov/yose/learn/nature/rockfall.htm