# GEOScientists-in-the-Parks Internship Program

## PROJECT DESCRIPTION

### 2020 SPRING/SUMMER

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<th>NPS UNIT: SAN ANTONIO MISSIONS NATIONAL HISTORICAL PARK</th>
<th>PD #: 2020062</th>
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<tr>
<td><strong>Position Title:</strong> Hydrology 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> Water resources</td>
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<td><strong>Project keywords:</strong> creek, watershed, stream morphology, weather</td>
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<td><strong>Location:</strong> San Antonio, Texas</td>
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## PROJECT DESCRIPTION AND WORK PRODUCTS

**Position Description:** The west arch of the Espada Aqueduct has experienced some undercutting from Piedras Creek and there is concern that it might be due, in part, to modifications to the creek channel through the years which has built up colluvial deposits on the east side of the creek and restricted flow.

The Guest Scientist will determine the stream morphology of Piedras Creek and make recommendations for how to mitigate impacts. The Guest Scientist will:

a) Evaluate the watershed for Piedras Creek (e.g., watershed development over time, available historic stream flow measurements, changes in stream morphology over time through historic aerial photos, etc.).

b) Evaluate local weather data for any trends occurring with respect to precipitation. Are there more episodic storms as projected in the 2017 National Climate Assessment?

c) Conduct field measurements to classify Piedras Creek (channel slope, channel materials, width/depth ratio, entrenchment ration, sinuosity, etc.) and to assess channel conditions (Rosgen, 1996).

d) Make appropriate recommendations to mitigate impacts identified in the stream morphology analysis (e.g. rock weir installation, planting riparian vegetation), while also protecting Espada Aqueduct’s west arch foundation.

The Espada Aqueduct is an National Historic Landmark and one of the significant contributing features of the San Antonio Missions World Heritage Site. It was completed ca. 1744 and is the only aqueduct of its kind in the United States. This project addresses an important management issue of erosion of this significant resource and will provide data needed to appropriately mitigate impacts.

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:** The final product will be a report that summarizes the evaluation of the watershed, weather data, and field measurements with recommendations for mitigation actions.
QUALIFICATIONS
An upper level undergraduate or graduate student in hydrology/geomorphology who has had coursework in watersheds. GIS and other graphing and mapping skills are a plus.

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. Intern will be driving a park vehicle.

A personal vehicle is RECOMMENDED but not required for this position. San Antonio is a car city. While bus transit has greatly improved in the last few years, most people prefer to have their own car. We did have an international intern last summer and she managed fine taking the city bus.

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 NOT available and the intern will be responsible for finding housing in the nearby area. San Antonio is the 7th largest city in the US. There are many options. They can range from as little as $300/month for a studio/suite to much higher.

INTERNSHIP DATES
Start Date: 5/11/2020
Number of weeks: 26 weeks
Flexibility of dates: Yes

LIVING ALLOWANCE
26 weeks ($525/week = $13,650)

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 $1,638 - $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.
### NATURAL & PHYSICAL WORK ENVIRONMENT

**Natural Environment:** This is an urban park with close proximity to grocery stores etc. The summer weather is extremely hot, with many days above 100 degrees with humidity.

**Physical Work Environment:** The Guest Scientist will be working in an office setting and out in the field. The creek has poison ivy, brush, trees, and ragweed but is within a few feet of a parking lot.

### MENTORING AND LEARNING GOALS

**Mentoring:** The Guest Scientist will be supervised by the park archeologist but will also have the opportunity to meet with local scientists at the six major universities in the city. In addition, the San Antonio River Authority is a leader in waterway restoration and the park works closely with them.

**Learning Goals:** The intern will learn about the interface between natural and cultural resources as well as hone their skills in field measurements and mitigation strategies for watersheds. The intern will learn how to work in a multi-disciplinary, multi-agency and partner situation as the park is managed through a series of cooperative agreements.

### SUPERVISORS/MENTORS

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<tr>
<th>Primary Supervisor/Mentor:</th>
<th>Secondary Supervisor/Mentor:</th>
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<tr>
<td>Susan Snow</td>
<td>Gregory Mitchell</td>
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<tr>
<td>Archeologist</td>
<td>Natural Resource Manager</td>
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<tr>
<td>(210) 534-8833</td>
<td><a href="mailto:susan_snow@nps.gov">susan_snow@nps.gov</a></td>
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