



# GEOLOGIC RESOURCES DIVISION

# **GEOLOGIC RESOURCES DIVISION**

# **Geoscientists-in-the-Parks**

# **Internship Program**

**Program Report**  
**Fiscal Year 2019**





Geoscientists-in-the-Parks Program Annual Accomplishments Report  
Fiscal Year 2019

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U.S. Department of the Interior  
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Natural Resource Stewardship and Science

ABOVE: GIP Jessie Bersson sets up monitoring equipment in Mount Rainier National Park, Washington. (NPS photo)  
ON THE COVER: GIP Emma Hall mapping vegetation near the Chisos Mountains in Big Bend National Park, Texas. (NPS photo)  
ON THE BACK: GIP Aria Mildice placing data loggers in Carlsbad Caverns National Park, New Mexico. (NPS photo)

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GIP Thurman Johnson roving on the Savage Alpine Trail in Denali National Park & Preserve, Alaska. (NPS photo)

# Executive Summary

In 2019, the Geoscientists-in-the-Parks (GIP) Program successfully completed its 23rd year and placed 173 interns in 72 parks in every region of the National Park Service, six Washington offices, five inventory and monitoring networks, and two regional offices. These talented college students and recent graduates supported the NPS mission by completing important natural resource science projects, gaining on-the-ground work experience, and obtaining an understanding of the importance of conservation and resource stewardship on public lands.

Over 30% of the projects focused on geologic resources, and the remainder on other natural resource science disciplines. Projects covered categories such as inventory and monitoring, research, GIS, and developing and presenting educational and interpretive programs. This year, 20% of the participants were racially diverse and 68% of the interns were female students or recent graduates. The GIP interns' work contributed 129,680 service hours or the equivalent of 62 years of full time work doing critical science projects for the NPS at a cost of approximately \$2.3 MM. In FY19 the GIP Program continued its affiliation with AmeriCorps and offered Segal Education Awards to its participants. The GIP Program is run in partnership with Stewards Individual Placement Program, a program of Conservation Legacy, and The Geological Society of America.



GIP Hannah Chambless preparing sound level meters as part of an acoustic monitoring project in Grand Canyon National Park, Arizona. (NPS photo)

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“There’s no experience like living and working in a National Park.”

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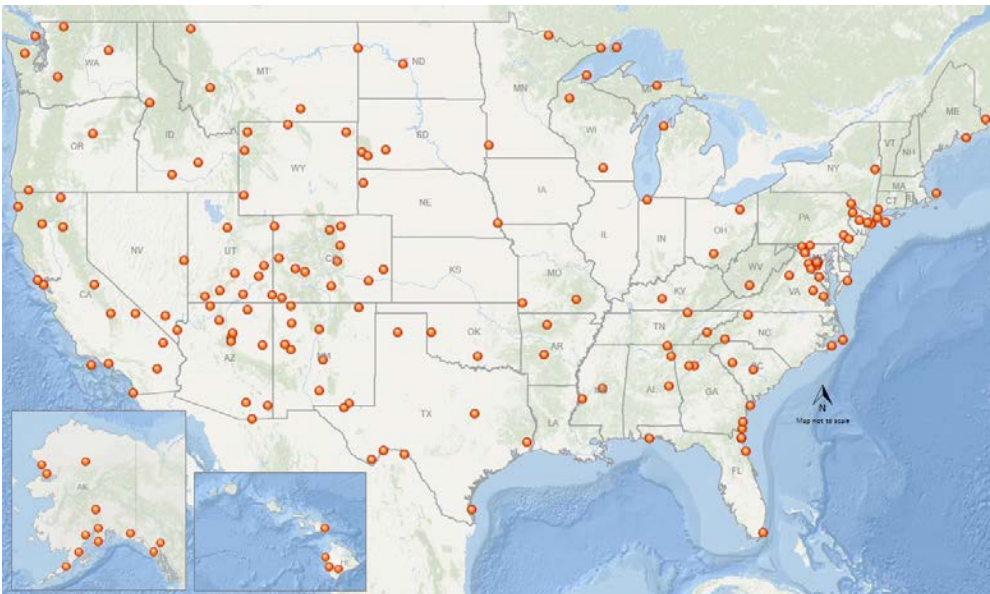
## Statement of Purpose

The Geoscientists-in-the-Parks Internship Program, developed by the NPS Geologic Resources Division in 1996, provides undergraduate/graduate students and recent graduates, 18 – 35 years old, with on-the-ground, natural resource, science-based work experience with the National Park Service. The program fulfills requests by park, network, and central office staff for assistance with natural resource science projects. GIP interns enable the National Park Service to complete important natural resource projects that would not be feasible without the interns' help. GIP projects address a broad array of natural resource science needs in air resources, biological resources, geological resources, natural sounds and night skies, water resources, and other integrated science topics. This multidisciplinary program provides many opportunities for persons to work on projects focusing on inventory and monitoring; research; curation of park natural resources; developing educational brochures, visitor materials, and educational curricula; and interpreting natural resource science information for park staff and the public.

Since the program's inception, 1,809 participants have worked with parks, networks, and central offices to further NPS resource management needs while gaining on-the-ground work experience.

In 2019, **173** GIP interns helped **85** NPS units and central offices fulfill their unmet natural resource science needs, while gaining practical job experience ranging from three months to one year. GIPs served a total of **129,680** service hours.

Since the program's creation twenty-three years ago, 1,809 participants have completed thousands of natural resource science projects in 207 parks, networks, and central offices and contributed to 943,468 hours to critical science projects. The number of program participants increases every year to accommodate the large number of NPS requests for natural resource science technical assistance. The Geoscientists-in-the-Parks Program is run in partnership with Stewards Individual Placement Program (Stewards) and The Geological Society of America (GSA), in collaboration with the National Park Service's Natural Resource Stewardship and Science offices and divisions.



**1,809**  
GIP interns



**943,468**  
Hours of service



**207**  
NPS parks, regions,  
central offices

## Program Objectives

- Provide on-the-job natural resource science training for undergraduate/graduate students and recent graduates 18-35 years old
- Introduce program participants to science careers in the National Park Service
- Build natural resource science technical capacity for parks and central offices
- Enhance the public's understanding of the natural resource sciences.

## Types of Positions

Three types of GIP positions were offered in FY19 - GIP interns, Guest Scientists, and Direct Hire Authority-Resource Assistants.

**GIP Intern** positions typically last for 3 months throughout the year. These are entry level natural resource science internships that focus on career exploration and building fundamental natural resource science skills in participants. GIP Intern positions are primarily for undergraduate students studying STEM fields. GIP Interns receive a weekly stipend of \$350, park-provided housing or a housing allowance, and a \$250 travel allowance.

**Guest Scientist** positions are more complex, may last from 3 months to one year, and are usually filled by students or recent graduates with a higher level of expertise or experience. These internships further develop the participant's technical and other professional skills. Guest Scientists receive a weekly stipend of \$400, park-provided housing or a housing allowance, and a \$250 travel allowance.

**Direct Hire Authority-Resource Assistant** positions target exceptional upper level undergraduate or graduate students who are interested in natural resource science careers with the federal government. These are rigorous internships that develop the participant's technical and creative thinking abilities, leadership skills, and problem-solving capabilities. These positions must last a minimum of 11 weeks during the summer. DHA Resource Assistants receive a weekly stipend of \$450, park-provided housing or a housing allowance, and a \$250 travel allowance.



GIP Henry Crawford backpacking at Grand Teton National Park, Wyoming, to analyze rockfall potential at backcountry campsites. (NPS photo)

## Support of the DOI Strategic Plan

This program supports the following Department of the Interior priorities and objectives outlined in the [DOI Strategic Plan for Fiscal Years 2018 – 2022](#):

### **Mission Area #1** – Conserving our Lands and Water

*Goal 1 – Utilize science in land, water, species, and habitat management supporting decisions and activities.*

GIPs Shelby Cutter and Jessie Bersson examined river and glacier responses to climate change by identifying and mitigating imminent flood threats to park roads and buildings at Mount Rainier National Park.

*Goal 3 – Foster partnerships to achieve balanced stewardship and use of our public lands.*

GIP Dominique Ong led field trips outdoors with school groups of up to fifty K-12 students at Death Valley National Park as well as assisted with school and community outreach events in order to engage the next generation of park stewards.

### **Mission Area #3** – Expanding Outdoor Recreation and Access

*Goal 2 – Enhance public satisfaction at DOI sites.*

GIPs Bret Buskirk and Alyssa Fjeld continued to update the workflow for Florissant Fossil Beds National Monument's photomonitoring of park fossil resources, to ensure they will remain present and intact for the enjoyment of future generations.

# Program Summary



The GIP Program is administered through a NPS youth cooperative agreement and annual task agreement with Conservation Legacy (Cooperative Agreement P15AC00024). This national youth agreement authorized under the Public Lands Corps Act (16 U.S.C. §§ 1721-1726) focuses primarily on 18-35 year olds. A key benefit of the GIP Program is that program participants may be non-competitively hired by the federal government after completing 640 hours of satisfactory service in one or more appropriate conservation projects (for the Public Lands Corps Non-Competitive Hiring Authority see [DOI Personnel Bulletin 17-03](#), May 23, 2017 and DOI Personnel Bulletin 12-13, January 22, 2013) or directly hired after successfully completing an 11-week summer DHA internship and graduating from an accredited college or university (see [DOI Personnel Bulletin 12-15](#)). The NPS strives to hire outstanding GIP alumni into NPS natural resource science positions.

The GIP Program continues to be affiliated with AmeriCorps, a program that engages individuals in intensive community service work with the goal of helping others and meeting critical community needs. GIPs are eligible for a \$1,612 to \$6,095 pre-tax AmeriCorps Segal Education Award upon successfully completing their internship. This award can be used for paying back student loans, continuing the participant's higher education, or for other qualifying educational expenses. In FY19 GIP interns were eligible to receive \$347,255 in AmeriCorps education awards at no cost to the NPS. The amount of each award is based on the hours worked with most interns receiving an award of at least \$1,566. In addition to the AmeriCorps affiliation, medical insurance can be provided to GIP interns if the position lasts 52 weeks.

In FY19, NPS staff and program partners conducted site visits at thirteen parks and regional offices. These site visits are important because they provide an opportunity for the program staff to answer the host site's questions, receive feedback on the program, evaluate the quality of the GIP projects and mentoring, explain the federal special hiring authorities available to GIP interns, and help create a more collaborative relationship between the GIP Program staff, host site, and interns.



GIP Allie Lalor (middle) poses with the Fire Effects Monitoring Crew at North Cascades National Park, Washington. Left to right: Martin Malate, Ian Woodruff, Allie Lalor, Cedar Drake, and Julia Bartley. (NPS photo)

# Program Costs

The table shown below summarizes the costs for the Geoscientist-in-the-Parks positions in FY19. These costs are for the GIP positions that started in FY19.

**Table 1.** GIP Program cost breakdown in FY19.

FUNDING SOURCE		COST	SUBTOTAL
NPS	Geologic Resources Division	\$188,784	\$2,062,300
	Inventory & Monitoring Program	\$58,014	
	NPS regional funding	\$25,190	
	Parks	\$1,587,302	
	WASO funding	\$203,010	
	<b>Subtotal Direct Costs - NPS</b>		
Partners	The Geological Society of America Foundation	\$24,000	\$117,480
	Park Associations	\$153,480	
	<b>Subtotal Direct Costs - Partners</b>		
<b>TOTAL DIRECT COSTS</b>			<b>\$2,239,780</b>
<b>Approximate In-Kind and Cash Contribution - Program Partners</b>			<b>\$559,945</b>

The NPS Geologic Resources Division shared the costs for one GIP position per park in FY19 (\$3,550 per park). In addition, GRD covered the cost differential in the stipends for all of the DHA positions (\$1,200 per position). Park associations, The Geological Society of America Foundation, inventory and monitoring networks, Washington offices, and regions also assisted parks with the costs for GIP interns.

## Intern and Supervisor Webinars

In February and June the GIP Program led webinars to launch the spring / summer and fall / winter internships, respectively. The webinars provided information on the year's program changes and enhancements, AmeriCorps affiliation and requirements, roles and responsibilities, selection process, and costs. All current webinars are recorded and posted on the [GIP intranet website](#). In addition, the GIP Program hosted a Direct Hire Authority webinar to introduce the supervisors and interns to the requirements for DHA positions.

Stewards also conducts individual webinars for each GIP supervisor and intern to review program procedures and requirements. The supervisor's orientation covers Stewards and NPS supervisor's roles and responsibilities, program reporting, AmeriCorps benefits and requirements, and paperwork (enrollment and time-sheet approval). The GIP intern orientation introduces the participants to the GIP Program and Stewards, covers roles and responsibilities, AmeriCorps benefits and requirements, and paperwork requirements (background clearances, enrollment, and time-sheet submittal).



GIP Maggie Holahan prepares a bioacoustics recorder in Grand Canyon National Park, Arizona. (NPS photo)



# Demographic Information

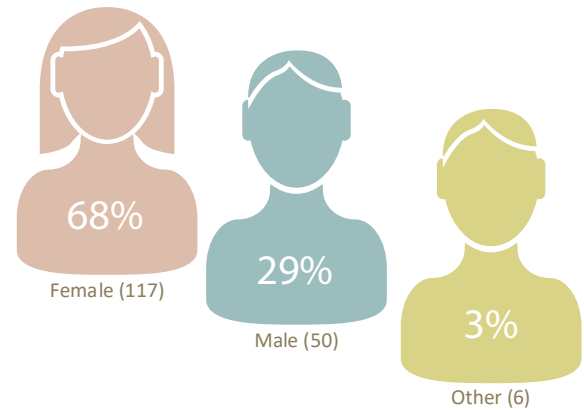
## Gender and Ethnicity of GIP Interns

Sixty eight percent of GIP interns in FY19 were women. Participation by women in the GIP Program is 13% higher than the percentage of women in the U.S. earning undergraduate degrees in science fields (55%) and over two times the percentage of women working in the U.S. science workforce (28%) ([National Science Foundation](#)).

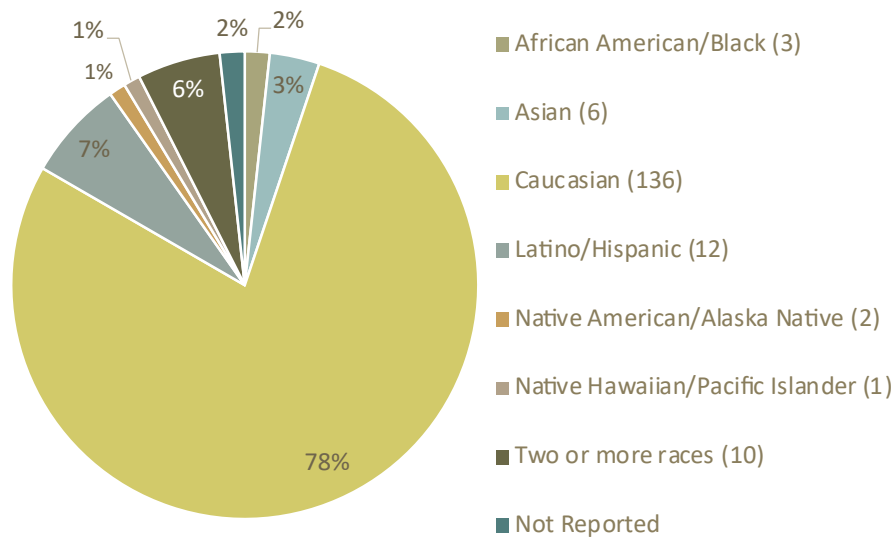
This year, 20% of GIP participants were from minority groups under-represented in STEM career fields. Participation by racially diverse students may be higher than is reported because 2% of the program participants chose not to disclose their race/ethnicity on their applications.

Overall, the 20% diversity in the GIP Program does not adequately represent the diversity of the U.S. population, however it is three times more than the US STEM workforce (6%) and is nearly seven times that of the NPS STEM workforce (3%). Table 2 lists the racial/ethnic diversity of the overall NPS workforce and in STEM fields. The NPS statistics were compiled from 2014 NPS employment data compiled by James Wiggins, NPS Equal Employment Opportunity Specialist.

*Distribution of GIP positions by gender identity*



*Distribution of GIP positions by race and ethnicity*



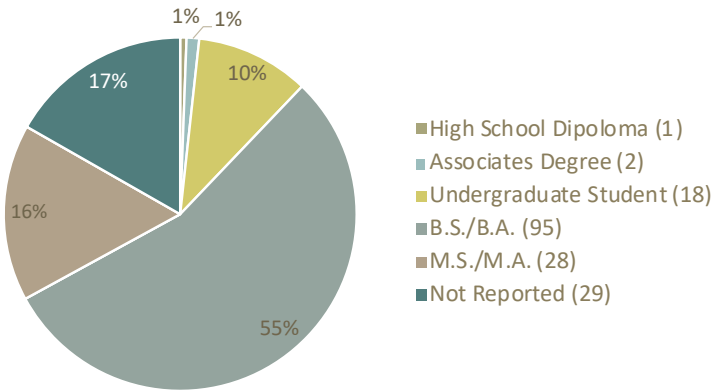
**Table 2.** Diversity of the overall NPS workforce and in STEM fields (2014 NPS data).

CATEGORY	# EMPLOYEES	%
NPS Employees	23,529	100%
NPS Racial/Ethnic Diversity (excluding Caucasian) of NPS Workforce	4,183	18%
NPS workforce - Caucasian	19,346	82%
NPS Workforce – STEM fields	5,054	21%
NPS Workforce – Racial /Ethnic Diversity in STEM Fields	698	14% of NPS STEM employees, 3% of total NPS workforce

## Educational Status of GIP Interns

Sixty six percent of program participants reported to be undergraduate students or had recently earned their associates or undergraduate degree. This year, 16% of the interns reported receiving a master's degree demonstrating the high caliber of participants in the program.

*Distribution of GIP positions by level of education*



GIP Kevin Jauregui explains the geology of the Big Stump at Florissant Fossil Beds National Monument, Colorado. (NPS photo)

## Schools Attended by GIP Interns

**Table 3.** Schools attended by GIP interns in FY19.

The table below displays the universities or colleges that had two or more GIP interns participating in this year's program.

COLLEGES & UNIVERSITIES
Arizona State University
Boston College
Carleton College
College of Charleston
Colorado School of Mines
Colorado State University
Cornell University
Eastern Michigan University
Fort Lewis College
Gustavus Adolphus College
Indiana University
Northern Arizona University
Ohio University
Portland State University
Stanford University
State University of New York (SUNY) - ESF
University of California, Santa Barbara
University of California, Berkeley
University of Hawaii at Hilo
University of Montana
University of Washington
Washington State University
Whitman College
Yale University

## Veterans

In 2019, 4 veterans who served in the US Armed Forces, military Reserves, or National Guard participated in the GIP program. The GIP Program is proud to host these veterans at National Parks throughout the year. Tristan Amaral, Jillian Brigham, McCall Daniels, and Christina Valdes - thank you for your service!

# List of Intern Projects

Geoscientists-in-the-Parks (GIP) positions for spring/summer are shown in Table 4. Positions for fall/winter are shown in Table 5. Guest Scientist (GS) and Direct Hire Authority (DHA) positions are marked in the position title column.

**Table 4.** GIP positions with spring or summer start dates in FY19.

NPS UNIT		POSITION TITLE		ID #
1.	Agate Fossil Beds National Monument (Nebraska)	Paleontology Assistant (Scott Kottkamp)		2019001
2.	Air Resources Division (Colorado), Shenandoah National Park (Virginia)	Natural Resource Management Assistant (Eric Wayman)	GS	2019087
3.	Alaska Regional Office (Alaska)	Natural Resource Management Assistant (Paula Pletnikoff)	GS	2019002
4.	Alaska Regional Office (Alaska)	Natural Resource Management Assistant (Egan Cornachione)	GS	2019003
5.	Alaska Regional Office (Alaska), Lake Clark National Park & Preserve (Alaska)	Paleontology Assistant (Mikaela Ruga)	GS	2019101
6.	Assateague Island National Seashore (Maryland, Virginia)	GIS Assistant (Hannah Wirth)	GS	2019004
7.	Badlands National Park (South Dakota)	Paleontology Assistant (Alexi Richmond)		2019005
8.	Badlands National Park (South Dakota)	Natural Resource Interpretive Assistant (Alexandra Ennes)		2019007
9.	Badlands National Park (South Dakota)	Natural Resource Interpretive Assistant (Nicholas Hernandez)		2019118
10.	Badlands National Park (South Dakota)	Paleontology Assistant (Jessica DeSmet)		2019119
11.	Badlands National Park (South Dakota), Florissant Fossil Beds National Monument (Colorado)	Paleontology Assistant (Bret Buskirk)		2019006
12.	Bandelier National Monument (New Mexico)	Natural Resource Management Assistant (Carolina May)	GS	2019008
13.	Big South Fork National River and Recreational Area (Kentucky, Tennessee)	GIS Assistant (Miranda McBride)		2019010
14.	Big Thicket National Preserve (Texas)	Natural Resource Management Assistant (Alexis Sienczak)	GS	2019011
15.	Big Thicket National Preserve (Texas)	GIS Assistant (Amber Gillis)		2019012
16.	Biological Resources Division (Colorado)	Biology Assistant (Samantha Mahoney)	GS	2019013
17.	Biological Resources Division (Colorado), Ocmulgee National Monument (Georgia)	Biology Assistant (Christina Valdes)		2019014
18.	Buffalo National River (Arkansas)	Biology Assistant (Dillon Freiburger)		2019015
19.	Buffalo National River (Arkansas)	Hydrology Assistant (Laura Yates)		2019016
20.	Canyonlands National Park (Utah), Capitol Reef National Park (Utah)	Geomorphology Assistant (Chris Benson)	GS	2019023
21.	Cape Cod National Seashore (Massachusetts)	Natural Resource Management Assistant (Jennifer Cramer)	GS	2019018
22.	Cape Cod National Seashore (Massachusetts)	Biology Assistant (Sarah Towne)	GS	2019019

NPS UNIT		POSITION TITLE		ID #
23.	Cape Lookout National Seashore (North Carolina)	Biology Assistant (Elaina Sherman)		2019021
24.	Cape Lookout National Seashore (North Carolina)	Biology Assistant (David Brooks)		2019022
25.	Capitol Reef National Park (Utah)	Natural Resource Interpretive Assistant (Collin Jensen)		2019024
26.	Carlsbad Caverns National Park (New Mexico)	Natural Resource Management Assistant (Aria Mildice)		2019025
27.	Central Alaska Network (Alaska)	GIS Assistant (Jordan Pruszenski)	GS	2019020
28.	Chattahoochee River National Recreation Area (Georgia)	GIS Assistant (Samuel Moeller)	GS	2019026
29.	Congaree National Park (South Carolina)	GIS Assistant (Ethan Shafron)	GS	2019030
30.	Coronado National Memorial (Arizona)	Natural Resource Management Assistant (Brooke Kubby)	GS	2019031
31.	Coronado National Memorial (Arizona)	Resource Management Assistant (Erica Doody)		2019109
32.	Craters of the Moon National Monument & Preserve (Idaho)	Science Communication Assistant (Michael Murphy)		2019032
33.	Craters of the Moon National Monument & Preserve (Idaho)	Natural Resource Interpretive Assistant (Sara Lisac)		2019113
34.	Cuyahoga Valley National Park (Ohio)	GIS Assistant (Michael Lambur)	GS	2019033
35.	Delaware Water Gap National Recreation Area (New Jersey, Pennsylvania)	GIS Assistant (Weston Strubert)		2019042
36.	Denali National Park & Preserve (Alaska)	Geology Assistant (Robert Booth)	GS	2019035
37.	Denali National Park & Preserve (Alaska)	Biology Assistant (Wildlife) (Thurman Johnson)		2019036
38.	Denali National Park & Preserve (Alaska)	Biology Assistant (Wildlife) (Healani Brennan)		2019037
39.	Denali National Park & Preserve (Alaska)	Natural Resource Management Assistant (Amanda Richey)		2019038
40.	Denali National Park & Preserve (Alaska)	GIS Assistant (Nicholas Johnson)	GS	2019039
41.	Denali National Park & Preserve (Alaska)	GIS Assistant (Tristan Amaral)	GS	2019040
42.	Denali National Park & Preserve (Alaska)	Natural Resource Management Assistant (Samuel Bennett)	GS	2019041
43.	Denali National Park & Preserve (Alaska)	Biology Assistant (Entomology) (Ashley Powell)		2019115
44.	Denali National Park & Preserve (Alaska)	Biology Assistant (Alpine Wildlife) (Sean Burns)		2019116
45.	Denali National Park & Preserve (Alaska)	Biology Assistant (Alpine Wildlife) (Jackson Bates)		2019117
46.	Denver Service Center (Colorado)	Natural Resource Management Assistant (Priscilla Hare)	DHA	2019300
47.	Dinosaur National Monument (Colorado, Utah)	Paleontology Assistant (Julia Anderson)		2019043
48.	Dinosaur National Monument (Colorado, Utah)	Paleontology Assistant (Kellyn McKnight)		2019111
49.	El Malpais National Monument (New Mexico)	Cave and Karst Assistant (Hunter Klein)		2019120
50.	Florissant Fossil Beds National Monument (Colorado)	Paleontology Assistant (Alyssa Fjeld)		2019044
51.	Florissant Fossil Beds National Monument (Colorado)	Education Assistant (Kevin Jauregui)		2019045

NPS UNIT		POSITION TITLE		ID #
52.	Fort Matanzas National Monument (Florida)	Natural Resource Management Assistant (Kyra Liedtke)		2019047
53.	Fort Pulaski National Monument (Georgia)	Hydrology Assistant (Jean Butchart)	GS	2019048
54.	Fossil Butte National Monument (Wyoming)	Natural Resource Interpretive Assistant (Carolyn Kocken)		2019046
55.	Gateway National Recreation Area (New Jersey, New York), Northeast Coastal and Barrier Network (Massachusetts)	Geomorphology Assistant (Jin-Si Over)	GS	2019049
56.	Geologic Resources Division (Colorado)	Geology Assistant (Chelsea Bitting)	GS	2019121
57.	Glacier National Park (Montana)	Biology Assistant (Nathanael Wold)	GS	2019050
58.	Glen Canyon National Recreation Area (Arizona, Utah)	GIS Assistant (Rebecca Odell)		2019051
59.	Glen Canyon National Recreation Area (Arizona, Utah)	Biology Assistant (Katherine Ko)		2019108
60.	Glen Canyon National Recreation Area (Arizona, Utah)	GIS Assistant (Grace Cushing)		2019112
61.	Grand Canyon National Park (Arizona)	Natural Resource Interpretive Assistant (Katherine Hensel)		2019053
62.	Grand Canyon National Park (Arizona)	Acoustic Assistant (Damian Johns)	GS	2019055
63.	Grand Canyon National Park (Arizona)	Acoustic Assistant (Margaret Holahan)	GS	2019104
64.	Grand Canyon National Park (Arizona)	Acoustic Assistant (Hannah Chambless)	GS	2019105
65.	Grand Portage National Monument (Minnesota)	Geomorphology Assistant (Sarah Combs)		2019057
66.	Grand Teton National Park (Wyoming)	Geomorphology Assistant (Sarah Newcomb)		2019058
67.	Great Basin National Park (Nevada)	Astronomy Assistant (Maria Palacios-Trujillo)		2019052
68.	Great Basin National Park (Nevada)	Astronomy Assistant (Reid Perkins)		2019441
69.	Greater Yellowstone Inventory and Monitoring Network (Montana, Wyoming, Idaho)	Hydrology Assistant (Megan Doughty)	GS	2019059
70.	Gulf Islands National Seashore (Florida, Mississippi)	Biology Assistant (Matthew Prioleau)		2019060
71.	Intermountain Region (Colorado)	Natural Resource Management Assistant (Tessa Buono)	DHA	2019304
72.	Jewel Cave National Monument (South Dakota)	Geology Assistant (Sierra Heimel)	GS	2019062
73.	John Day Fossil Beds National Monument (Oregon)	Paleontology Assistant (Lana Jewell)		2019063
74.	John Day Fossil Beds National Monument (Oregon)	Natural Resource Interpretive Assistant (Benjamin Shafer)		2019064
75.	John Day Fossil Beds National Monument (Oregon)	Geology Assistant (Anne Kort)	DHA	2019301
76.	Kaloko-Honokōhau National Historical Park (Hawaii)	Biology Assistant (Brienne Lauro)	GS	2019066
77.	Kaloko-Honokōhau National Historical Park (Hawaii)	Biology Assistant (Ashley Pugh)	GS	2019067
78.	Kaloko-Honokōhau National Historical Park (Hawaii)	Biology Assistant (Jon Ehrenberg)		2019106

NPS UNIT		POSITION TITLE		ID #
79.	Lassen Volcanic National Park (California)	Natural Resource Management Assistant (Carley Tsiamas)		2019069
80.	Lassen Volcanic National Park (California)	Natural Resource Management Assistant (Jillian Brigham)		2019070
81.	Lassen Volcanic National Park (California)	Natural Resource Management Assistant (Amanda Rohr)		2019445
82.	Manassas National Battlefield Park (Virginia)	Natural Resource Management Assistant (Kaleigh Keohane)		2019072
83.	Minute Man National Historical Park (Massachusetts)	GIS Assistant (James LeNoir)	GS	2019073
84.	Mount Rainier National Park (Washington)	Natural Resource Interpretive Assistant (McCall Daniels)		2019074
85.	Mount Rainier National Park (Washington)	Geomorphology Assistant (Jessica Bersson)		2019075
86.	Mount Rainier National Park (Washington)	Geomorphology Assistant (Shelby Cutter)		2019076
87.	Mount Rainier National Park (Washington)	Natural Resource Interpretive Assistant (Amaya McKenna)		2019110
88.	Mount Rainier National Park (Washington)	Astronomy Assistant (Catherine Burleaud)	DHA	2019302
89.	North Cascades National Park (Washington)	Biology Assistant (Alexandra Lalor)		2019078
90.	Northeast Coastal and Barrier Network (Massachusetts)	Science Communication Assistant (Edward Cascella)		2019077
91.	Olympic National Park (Washington)	Natur (Brynne Wilcox)		2019079
92.	Olympic National Park (Washington)	Natural Resource Interpretive Assistant (Anna Moser)		2019080
93.	Oregon Caves National Monument (Oregon)	Biology Assistant (Max Leveridge)		2019081
94.	Oregon Caves National Monument (Oregon)	Education Assistant (Zoe Dilles)		2019082
95.	Oregon Caves National Monument (Oregon)	Education Assistant (Paige Preston)		2019449
96.	Organ Pipe Cactus National Monument (Arizona)	Science Communication Assistant (Jonathan Olson)	GS	2019083
97.	Rocky Mountain National Park (Colorado)	Science Communication Assistant (Haley Stapleton)		2019084
98.	Saguaro National Park (Arizona)	Biology Assistant (Karly Chin)	DHA	2019303
99.	San Juan Island National Historical Park (Washington)	Biology Assistant (Kylie McLatchy)	GS	2019085
100.	San Juan Island National Historical Park (Washington)	Biology Assistant (Armando Rojas)	GS	2019114
101.	Shenandoah National Park (Virginia)	Natural Resource Interpretive Assistant (Amy Morris)		2019086
102.	Shenandoah National Park (Virginia)	Natural Resource Interpretive Assistant (Aubry Andreas)		2019088
103.	Sierra Nevada Network (California)	Hydrology Assistant (Kelly Bessem)		2019089
104.	Sierra Nevada Network (California)	Hydrology Assistant (Gordon Gianniny)		2019090
105.	Sierra Nevada Network (California)	Biology Assistant (David Barasch)		2019091
106.	Tule Springs Fossil Beds National Monument (Nevada)	Paleontology Assistant (Susan Hertfelder)		2019092

NPS UNIT		POSITION TITLE		ID #
107.	Urban Ecology Research Learning Alliance (Washington DC), Wolf Trap National Park for the Performing Arts (Virginia)	Hydrology Assistant (Sarah Gerenday)	GS	2019095
108.	Waco Mammoth National Monument (Texas)	Paleontology Assistant (Maree Yard)	GS	2019093
109.	Water Resources Division (Colorado)	Hydrology Assistant (Kelleen Lanagan)		2019096
110.	Wrangell-St Elias National Park & Preserve (Alaska)	Geology Assistant (Lia Lajoie)	GS	2019097
111.	Yellowstone National Park (Idaho, Montana, Wyoming)	Geology Assistant (Rebecca Steinberg)	GS	2019098
112.	Yellowstone National Park (Idaho, Montana, Wyoming)	Natural Resource Management Assistant (Ashton hooker)	GS	2019099
113.	Yellowstone National Park (Idaho, Montana, Wyoming)	Hydrology Assistant (Sally Goodman)	GS	2019100

There are a total of 113 spring/ summer GIP positions.

**Table 5.** GIP positions with fall or winter start dates in FY19.

NPS UNIT		POSITION TITLE		ID #
114.	Alaska Region (Alaska)	Remote Sensing GIS Specialist (Claire Schmidt)	GS	2018455
115.	Alaska Region (Alaska)	GIS Assistant (Dana Hansen)	GS	2019401
116.	Badlands National Park (South Dakota)	Wilderness / Wildlife Intern (Jessica Millman)		2018406
117.	Big Bend National Park (Texas)	GIS Assistant (Kathleen Abbott)	GS	2019009
118.	Cape Cod National Seashore (Massachusetts)	Aquatic Ecology Assistant (Shari Rohret)	GS	2019102
119.	Capitol Reef National Park (Utah)	Hydrology Assistant (Connor Gallagher)		2019405
120.	Carlsbad Caverns National Park (New Mexico)	Cave Technician (Aria Mildice)		2018409
121.	Carlsbad Caverns National Park (New Mexico)	Cave Technician (Jake Tholen)		2018456
122.	Chaco Culture National Historical Park (New Mexico)	Paleontologist Assistant (Phillip Varela)		2018471
123.	Chaco Culture National Historical Park (New Mexico)	Natural Resource Management Assistant (Cait Conley)	GS	2019027
124.	Chattahoochee River National Recreation Area (Georgia)	Hydrology Assistant (Ashley Turner)		2018410
125.	Chattahoochee River National Recreation Area (Georgia)	Hydrology Assistant (Cheryl Lyn Watts)		2018464
126.	Chesapeake & Ohio Canal National Historical Park (District of Columbia, Maryland, Virginia, West Virginia), Geologic Resources Division (Colorado)	Geology Assistant (Jessica Lindsay)	GS	2019028
127.	Death Valley National Park (California, Nevada)	Physical Science Assistant (Rebecca Mitchell)		2018401
128.	Death Valley National Park (California, Nevada)	Education Program Instructor (Dominique Ong)		2018413

NPS UNIT		POSITION TITLE		ID #
129.	Denali National Park & Preserve (Alaska)	Avian Biological Technician (Christine Peterson)		2018414
130.	Denali National Park & Preserve (Alaska)	Night Skies Technician (Katherine Karnes)		2018415
131.	Denali National Park & Preserve (Alaska)	GIS Technician (Valerie Bauer)	GS	2018416
132.	Denali National Park & Preserve (Alaska)	Science Communicator (Laurel Mundy)		2018417
133.	Denali National Park & Preserve (Alaska)	Avian Biological Technician (Senna Robeson)		2018463
134.	Devils Tower National Monument (Wyoming)	Astronomy Assistant (Rhodes Smartt)		2019422
135.	El Morro National Monument (New Mexico)	Astronomy Assistant (Tristan Ashton)		2019426
136.	Florissant Fossil Beds National Monument (Colorado)	Education Intern (Kevin Jauregui)		2018468
137.	Florissant Fossil Beds National Monument (Colorado)	Paleontology Intern (Kacy Patrick)		2018469
138.	Fossil Butte National Monument (Wyoming)	Geology / Paleontology Education Assistant (Alexander Ruger)		2018421
139.	Gates of the Arctic National Park & Preserve (Alaska)	Biology Technician (Max Newton)	GS	2019107
140.	Gates of the Arctic National Park & Preserve (Alaska)	Biology Assistant (Abigail Kelly)		2019468
141.	Gates of the Arctic National Park & Preserve (Alaska)	Biology Assistant (Jordan Pruszenski)	GS	2019476
142.	Geologic Resources Division (Colorado)	GRD Youth Program Assistant (Margaret Lambert)		2018457
143.	Geologic Resources Division (Colorado)	Geology Assistant (Chelsea Bitting)	GS	2019056
144.	Glen Canyon National Recreation Area (Arizona, Utah)	GIS Assistant (Rebecca Odell)		2019478
145.	Glen Canyon National Recreation Area (Arizona, Utah)	GIS Assistant (Grace Cushing)		2019479
146.	Grand Canyon National Park (Arizona)	Wildlife Program Field Assistant (Tessa Corsetti)		2018451
147.	Grand Canyon National Park (Arizona)	Wildlife Program Field Assistant (Kirsten Fuller)		2018461
148.	Grand Canyon National Park (Arizona)	Paleontology Assistant (Klara Widrig)	GS	2018473
149.	Grand Canyon National Park (Arizona)	Paleontology Assistant (Diana Boudreau)	GS	2018474
150.	Grand Canyon National Park (Arizona)	Acoustic Assistant (Hannah Gershone)	GS	2019430
151.	Grand Canyon National Park (Arizona)	Natural Resource Interpretive Assistant (Julia Brazo)	GS	2019435
152.	Joshua Tree National Park (California)	Paleontology Communication Intern (Alaina Tocci)		2018427
153.	Joshua Tree National Park (California)	Geology Interpretation Intern (Callie Tominsky)		2018428
154.	Joshua Tree National Park (California)	Paleontology Assistant (Megan Gross)		2018472
155.	Joshua Tree National Park (California)	Paleontology Assistant (Megan Gross)		2019443
156.	Kings Canyon National Park (California)	Interpretation Assistant (Theodore Kuhn)		2018430
157.	Lassen Volcanic National Park (California)	Natural Resource Management Assistant (Carley Tsiamas)		2019446
158.	Mammoth Cave National Park (Kentucky)	Natural Resource Management Assistant (Bryce Belanger)		2019447
159.	Mesa Verde National Park (Colorado)	Database / GIS Specialist (Cole Rankin)		2018434



NPS UNIT		POSITION TITLE		ID #
160.	Mesa Verde National Park (Colorado)	Ethnobotanist (Laura Leventhal)		2018435
161.	Northeast Region (Pennsylvania)	GIS Specialist (Colleen Truskey)		2018436
162.	Redwood National Park (California)	Natural Resource Management Assistant (Jessica Druze)		2019452
163.	Redwood National Park (California)	Natural Resource Management Assistant (Mackenna Ellis)		2019453
164.	San Juan Island National Historical Park (Washington)	Resource Data Management Technician (Amishi Kumar)	GS	2018441
165.	Southwest Alaska Network (Alaska)	Water Quality Analyst (Paul Gabriel)		2018442
166.	War in the Pacific National Historical Park (Guam)	Natural Resource Management Assistant (Brittany Tominez)		2019456
167.	White Sands National Monument (New Mexico)	Interpretive Specialist (Joseph Montoya)	GS	2018443
168.	Yosemite National Park (California)	Geologist Intern (Mariah Radue)	GS	2018446
169.	Yosemite National Park (California)	GIS Intern (Kristen Jurica)		2018447
170.	Yosemite National Park (California)	GIS Intern (Design & Engineering) (Chrissy Livergood)		2018453
171.	Yosemite National Park (California)	GIS Intern (Vegetation & Ecological Restoration) (Garrett Fuelling)		2018454
172.	Yosemite National Park (California)	GIS Intern (Design & Engineering) (Jillian McKenna)		2018458
173.	Yosemite National Park (California)	GIS Assitant (Sean Smith)		2019103

There are a total of 60 fall/winter GIP positions.



GIPs Jillian McKenna, Kristen Jurica, and Chrissy Livergood test GPS devices in Yosemite National Park, California. (NPS photo)

## Regional Distribution of Projects

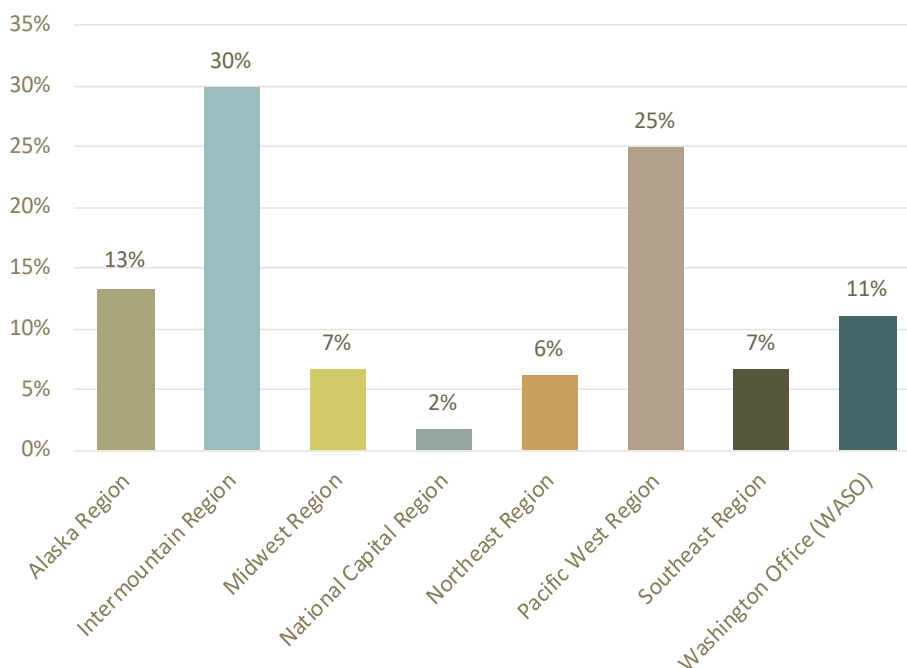
GIP interns worked throughout the National Park Service in 72 parks, six Washington offices, five inventory and monitoring networks, and two regional offices. Approximately half of the GIP positions were in the Intermountain and Pacific West Regions (30% and 25% respectively). The number of GIP positions by park and region is shown in Table 6 and the percentage distribution for each region is shown in the graphic below.

**Table 6.** Distribution of GIP positions by NPS region based on the FY19 NPS Regions. The number of positions is shown in parenthesis after the park program.

REGION	# POSITIONS	PARK
Alaska Region	24	AKRO (5), DENA (15), GAAR (3), LACL, WRST
Intermountain Region	54	BAND, BIBE, BITH (2), CANY, CARE (3), CAVE (3), CHCU (2), CORO (2), DETO, DINO (2), ELMA, ELMO, FLFO (5), FOBU (2), GLAC, GLCA (5), GRCA (10), GRTE, IMRO, MEVE (2), ORPI, ROMO, SAGU, WACO, WWSA, YELL (3)
Midwest Region	12	AGFO, BADL (6), BUFF (2), CUVA, GRPO, JECA
National Capital Region	3	CHOH, MANA, UERL, WOTR
Northeast Region	11	ASIS, CACO (3), DEWA, GATE, MIMA, NERO, SHEN (3)
Pacific West Region	45	CRMO (2), DEVA (2), GRBA (2), JODA (3), JOTR (4), KAHO (3), KICA, LAVO (4), MORA (5), NOCA, OLYM (2), ORCA (3), REDW (2), SAJH (3), TUSK, WAPA, YOSE (6)
Southeast Region	12	BISO, CALO (2), CHAT (3), CONG, FOMA, FOPU, GUIB, MACA, OCMU
Washington Office (WASO)	20	ARD, BRD (2), CAKN, DSC, GRD (4), GRYN, NCBN (2), NRSS (3), SIEN (3), SWAN, WRD

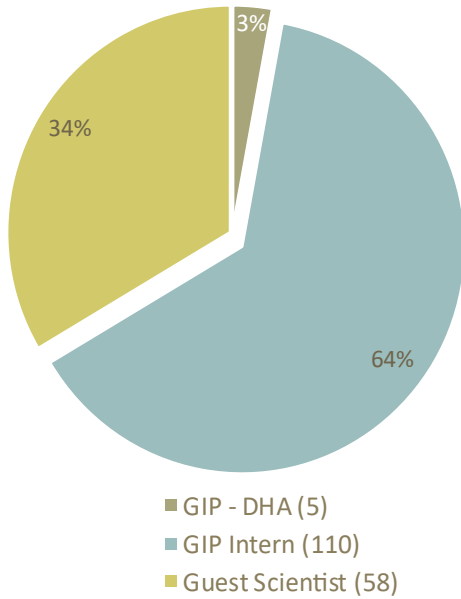
Note – the total number of GIP positions shown in this table may not correspond to the total number of positions for FY19 because some projects are associated with more than one park, network, or central office.

### Percentage Distribution of GIP positions by NPS region



## Distribution of Positions by Type

The majority of the GIP internships (64%) in FY19 were entry-level GIP intern positions, which is typical in most program years.

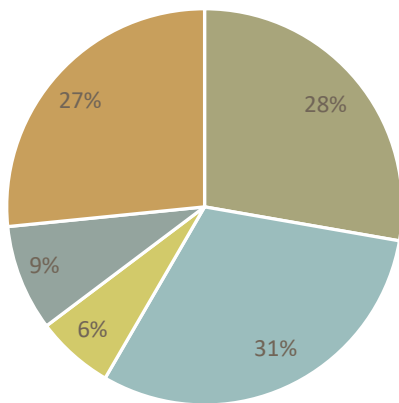


GIP Jin-Si Over holding a female diamondback terrapin at Sandy Hook National Recreation Area, New Jersey. (NPS photo)

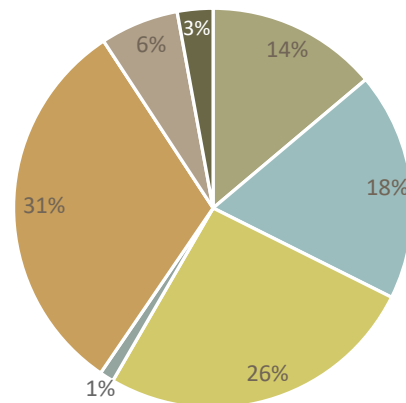
## Distribution of Positions by Discipline and Category

In fiscal year 2019, GIP participants represented a broad range of natural resource science disciplines from biology to geology to hydrology. Thirty-one percent of the projects focused on geologic resources, followed by biology (28%) and multi-disciplinary projects (27%). The majority of the projects were multi-faceted (31%) followed by inventory and monitoring (26%), and interpretation / education (18%) category.

*Distribution of GIP positions for each natural resource science field (left) and by project category (right)*



- Biological Resources (48)
- Geological Resources (53)
- Natural Sounds & Night Skies (11)
- Water Resources (15)
- Multi-disciplinary (46)



- GIS and other technologies (24)
- Interpretation/Education (32)
- Inventory and Monitoring (45)
- Mitigation (2)
- Multi-faceted (54)
- Research (11)

## Site Visits

A total of 13 site visits were conducted this year by NPS and Stewards staff. During the site visits, the staff met with the GIP interns and supervisors to answer questions, obtain feedback on the program, learn about the GIP projects and mentoring, assist with field work, and help to create a more personal relationship between the GIP Program staff, host site, and interns.

**Table 7.** GIP site visits conducted in FY19.

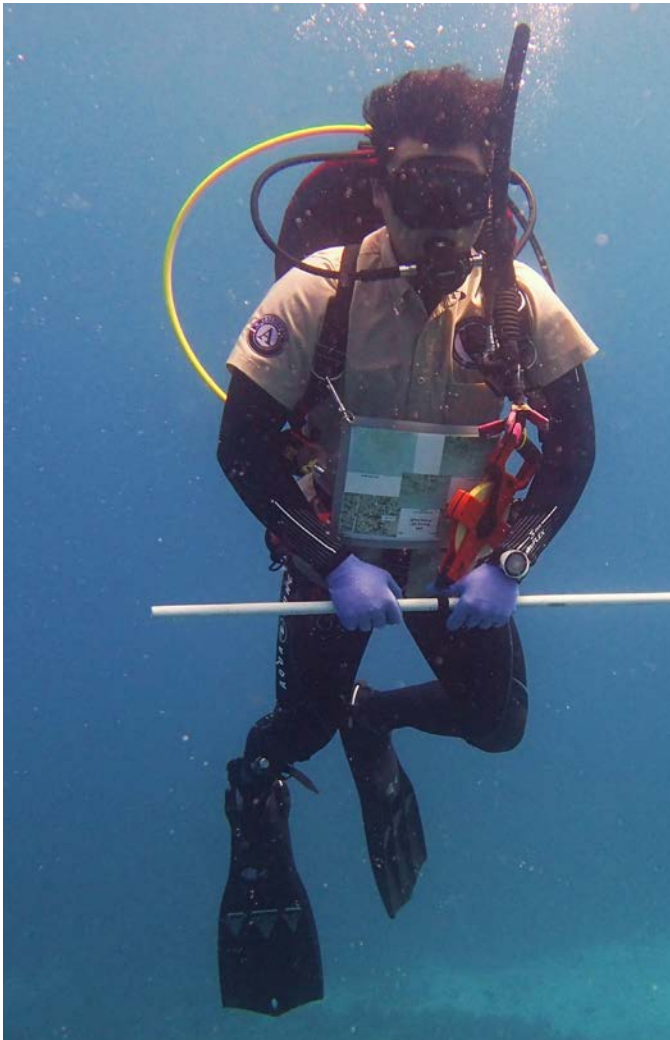
NPS UNIT	GIP NAME	SUPERVISOR NAMES	CONDUCTED BY
Alaska Regional Office	Claire Schmidt	Chad Hultz Tahzay Jones	Krista Rogers
Alaska Regionional Office and Lake Clark National Park and Preserve	Mikaela Ruga	Amanda Lanik	Krista Rogers
Badlands National Park	Alexi Richmond Alexandra Ennes Nicholas Hernandez Jessica Millman Jessica DeSmet	Wayne Thompson Ellen Starck Aaron Kaye Ed Welsh Eddie Childers	Limaris Soto
Biological Resources Division and Ocmulgee National Park	Christina Valdes	Allen Huckabee Kiersten Jarvis	Kiersten Jarvis
Denali National Park and Preserve	Nick Johnson	Sarah Stehn	Krista Rogers
Denver Service Center	Priscilla Hare	Nancy Shock Steve Degrush	Limaris Soto and Paige Lambert
Florissant Fossil Beds National Monument	Alyssa Fjeld Bret Buskirk Kevin Jauregui	Herb Meyer Conni O'Connor Jeff Wolin	Limaris Soto and Paige Lambert
Glen Canyon National Recreation Area	Rebecca Odell Katherine Ko Grace Cushing	John Spence Lonnie Pilkington	Spencer Lynch
Grand Canyon National Park	Margaret Holahan Damian Johns Katherine Hensel Diana Bourdreau Klara Widrig Cody Lane Kirsten Fuller	Mike Kearsley Mandi Toy Mark Nebel Miranda Terwilliger	Katie Nemmer Hilary Webster Allie Burdick
Intermountain Regional Office	Tessa Buono	Susan McParland	Limaris Soto and Paige Lambert
Mount Rainier National Park	Jessie Bersson Shelby Cutter	Taylor Kenyon	Paige Lambert
Olympic National Park	Anna Moser Brynne Wilcox	Chris Eckard	Paige Lambert
San Juan Island National Historical Park	Kylie McLatchy Armando Rojas	Sara Dolan	Paige Lambert

# Participant and Project Highlights

A few of the outstanding projects completed by this year's GIP interns are described below. This is a small representation of the great work that GIPs are doing in NPS units.

## *Jon Ehrenberg, Biology Assistant Kaloko-Honokōhau National Historical Park, HI*

Jon Ehrenberg spent his term at Kaloko-Honokōhau National Historical Park in Hawai'i surveying various aquatic species. In order to survey and study coral reefs, Jon completed 33 scuba diving surveys. Coral were studied within park waters to calculate percent cover of different species along a specific transect. In addition to fieldwork, Jon assisted with resource briefs, or reports that are meant to inform visitors about the status of different resources within the park. Coral reefs are very important to Hawai'i's culture, ecology, and economy, which Jon explained to groups of visitors throughout his term. Although Jon's studies have found significant decrease in coral cover at the park, partially due to coral bleaching, he gained a sense of hope after attending a Hui Loko (Fish pond) meeting, where participants discussed the restoration work being done on Hawai'i Island with the goal of restoring Hawaiian ecosystems.

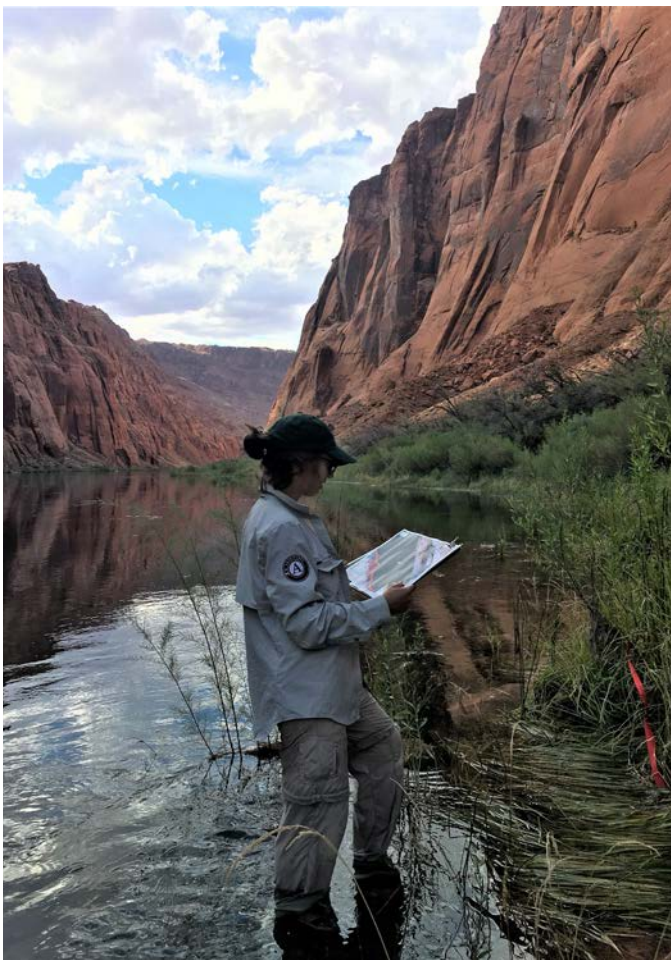


GIP Jon Ehrenberg floating in the water column after finishing an urchin survey and waiting for the end of his safety stop in KAHO waters (left photograph). Jon and GIP Ashley Pugh preparing the lines for docking procedures at the Honokōhau Harbor (right photograph). (NPS photos)

## *Rebecca Odell, GIS Assistant*

### *Glen Canyon National Recreation Area, UT and AZ*

Rebecca Odell applied her GIS technical skills to monitor ecosystem and rangeland health, as well as reorganize and interpret important data at Glen Canyon National Recreation Area. Recreation Areas have a variety of uses, and at Glen Canyon that includes cattle grazing. Rebecca spent part of her term performing a Grazing Infrastructure Assessment in Glen Canyon and surrounding Bureau of Land Management (BLM) land by developing an application that works offline for rangers collecting field data. Another area of focus for Rebecca was the North American Bat Project where she helped deploy bat call recorders and mist nets at Glen Canyon. Important data collected on the bats included size, health, and reproductive status. This vital information will help the park monitor bat populations and ecosystem health at Glen Canyon National Recreation Area.



GIP Rebecca Odell in the Colorado River at Glen Canyon National Recreation Area, Arizona mapping vegetation monitoring transects (left photograph). Rebecca and coworkers kayaking on the Colorado River in Glen Canyon while mapping aquatic invasives (right photograph). (NPS photos)

## *Phil Varela, Paleontology Assistant*

### *Chaco Culture National Historical Park, NM*

At Chaco Culture National Historical Park, Phil Varela focused on paleontological resources in the park, creating a [comprehensive report](#) of these resources. This involved summarizing and evaluating field data to assess scientific significance, providing an overview of all paleontological work and making management recommendations at Chaco Culture National Historical Park. This process included updating site databases, working with the park's paleontology collections, compiling comprehensive taxa list, completing a thorough literature review, and providing descriptions of significant paleontological localities. The comprehensive 119-page report that Phil completed will guide future paleontological research and interpretation at the park. In addition to completing this extensive overview, Phil conducted field checks of paleontological sites, where he gathered photographs, data, and completed site condition assessments.



GIP Phil Varela curating fossil specimens at Chaco Culture National Historical Park, New Mexico (left photograph). Phil with New Mexico Congresswoman Debra Haaland during a congressional delegation visit to Chaco Culture National Historical Park (right photograph). (NPS photos)

## *Maria Palacios-Trujillo, Astronomy Assistant*

### *Great Basin National Park, NV*

Maria Palacios-Trujillo was at Great Basin National Park during her term, working with the night skies program. Maria provided solar observing for the public, telescope operation for nighttime astronomy programs, took night sky quality measurements, and shared the results of her measurements with the park. Maria compared the sky quality measurements she collected at Great Basin to measurements she collected from Las Vegas, Nevada, and found Las Vegas to be 1,500 times brighter than the park. With this information and data, Maria developed strategies to engage the public in meaningful conversations about astronomy and the night skies, with the hope that visitors would depart with a better understanding of the night sky as a resource to be protected.



GIP Maria Palacios-Trujillo setting up her telescope in preparation for an Astronomy Interpretive Program at Great Basin National Park, Nevada. (NPS photo)



## *Aria Mildice and Jake Tholen, Cave and Karst Assistants*

### *Carlsbad Caverns National Park, NM*

At Carlsbad Caverns National Park, GIPs Aria Mildice and Jake Tholen coordinated on several projects, including their primary focus of designing and implementing a Broken Speleothem Inventory. This involved creating a framework for inventories, coordination of over 30 volunteers, recording of broken cave formations, and subsequently writing a report on findings and further guidance. The Broken Speleothem Inventory that they completed from inception to report was the most comprehensive in the park's history. Jake and Aria also collaborated on impact mapping for public parts of the cave, assisted with a cave survey and sample collection, and a climate monitoring project.



GIP Aria Mildice marking a broken speleothem in a cavern at Carlsbad Caverns National Park, New Mexico (left photograph).

GIP Jake Tholen navigates a technical squeeze through a backcountry cave in Carlsbad Caverns National Park while conducting a winter bat count (right photograph). (NPS photos)

# DHA Intern Highlights

A Direct-Hire Authority (DHA) is an appointing (hiring) authority that the Office of Personnel Management (OPM) can give to Federal agencies for filling vacancies when a critical hiring need or severe shortage of candidates exists. The DHA Resource Assistant internship (DHA-RA) is a unique internship opportunity within the Department of the Interior (DOI), with the objective of providing meaningful internship experiences. DHA-RA interns have the opportunity to apply natural resource science expertise to public land management in the NPS and build a network with federal employees throughout the internship. These rigorous internships require specialized expertise and typically are available to upper level undergraduate or graduate students. The internships are designed to develop the participant's technical and creative thinking abilities, leadership skills, and problem-solving capabilities. DHA-RA interns are eligible to be hired directly into a permanent federal position after fulfilling the requirements of the DHA Authority.

## Catherine Burleaud, Astronomy Assistant - Mount Rainier National Park, WA



Catherine Burleaud attended the University of North Texas where she studied Recreation Management. During Summer 2019, Catherine worked as an Astronomy Assistant at Mount Rainier National Park. There, she had the privilege of running the park's Star Parties where she helped visitors explore the night sky through telescopes and astrophotography, and interpreted the importance of dark night skies and how to prevent light pollution. Catherine loves helping others connect to the amazing resource and inspiration that is our night sky!

## Karly Chin, Biology Assistant - Saguaro National Park, AZ



Karly Chin spent her summer as the Biology Assistant at Saguaro National Park in Tucson, Arizona where she spent most of her time in backcountry field sites in the Rincon Mountains.

Up in the high elevation biome, Karly focused on two main projects: aspen and spring surveys. The purpose of the aspen surveys was to assess the ecological health of the park's numerous groves. Saguaro National Park's aspen stands are unique in that unlike most other aspen stands, they do not face elk herbivory. Aspen surveys entailed locating the often remote stands via GPS, and surveying various plots within each stand. For each plot, Karly assessed variables including canopy cover, vegetation composition, and age distribution of trees.

Karly's other project was surveying backcountry springs. Springs are an important ecological and cultural resource—in addition to hosting unique riparian plant life, they are also often in close proximity to historic sites. Working with the park's Resource Managements crew, Karly adapted a protocol from the Springs Stewardship Institute to suit the park's needs. Conducting spring surveys involved recording the spring's geomorphology, microhabitat distribution, soil characteristics, vegetation cover, and wildlife. Throughout the summer, Karly was able to develop technical field skills while simultaneously contribute to the park's understanding of high elevation ecology.

### *Priscilla Hare, GIS Assistant - Denver Service Center, CO*



Priscilla Hare grew up in Thousand Oaks, California right next to Santa Monica Mountains National Recreation Area where she spent many weekends hiking. She spent her summers growing up traveling to various National Parks. After volunteering through the Student Conservation Association (SCA) at Denali National Park and Preserve, Pictured Rocks National Lakeshore, and Chugach National Forest, she decided to pursue a degree in environmental science. She graduated from the University of California, San Diego in 2018 with a Bachelor of Science in Environmental Systems, Earth Science and a certificate in Geographic Information Systems.

Priscilla was placed on the natural resources team of the Denver Service Center (DSC) Planning Division to assist with different aspects of Resource Stewardship Strategies (RSS) for Wind Cave National Park, Chaco Cultural National Historic Site and Aztec Ruins National Monument, Cape Lookout National Seashore, and Cabrillo National Monument. She also conducted a review of the RSS program by reaching out to parks that have completed RSSs in the past 5 years. Her review was presented at the RSS National Working Group meeting.

After her internship with DSC, Priscilla will return to Santa Barbara to complete her master's degree this year. She hopes to return to work for the National Park Service post-graduation.

### *Anne Kort, Paleontology Assistant - John Day Fossil Beds National Monument, OR*



Anne grew up in Minnesota with a great love of science and the outdoors. She attended the University of Minnesota and got her B.S. in Earth Science in 2016. After a gap year working as a GIS technician, she began graduate school in Earth and Atmospheric Sciences at Indiana University with a focus in paleontology. She received her Masters in Science in May 2019 and is now continuing onto her PhD program at Indiana University. Over the past two summers, she has worked as GIP at John Day Fossil Beds National Monument and enjoyed helping to preserve and understand the fossil resources of the National Parks.

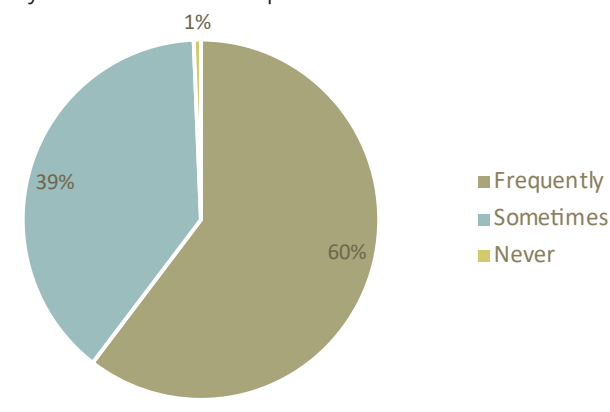
# Program Evaluations

GIP Program participants were asked to complete pre-internship and post-internship evaluations in order to help the NPS understand the participants' backgrounds, experiences, and to improve the program and interns' experiences.

## Pre-Internship

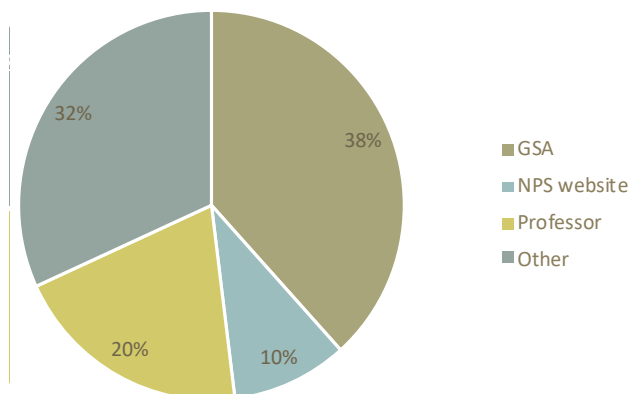
*Prior to this internship, had you ever visited a National Park?*

Prior to their internships, nearly all of the GIPs (99%) had previously visited a national park, with the majority of participants (60%) having frequently visited a national park before the start of their internships.



*How did you first hear about this internship?*

Thirty-eight percent of participants learned about the GIP Program from information provided by The Geological Society of America, and the remainder of the GIP interns heard about the program from their professors (20%), NPS websites (10%), and other sources (32%). Other sources specified include NPS employees or affiliates, previous GIP program participants, university and conservation related job boards, and social media posts.

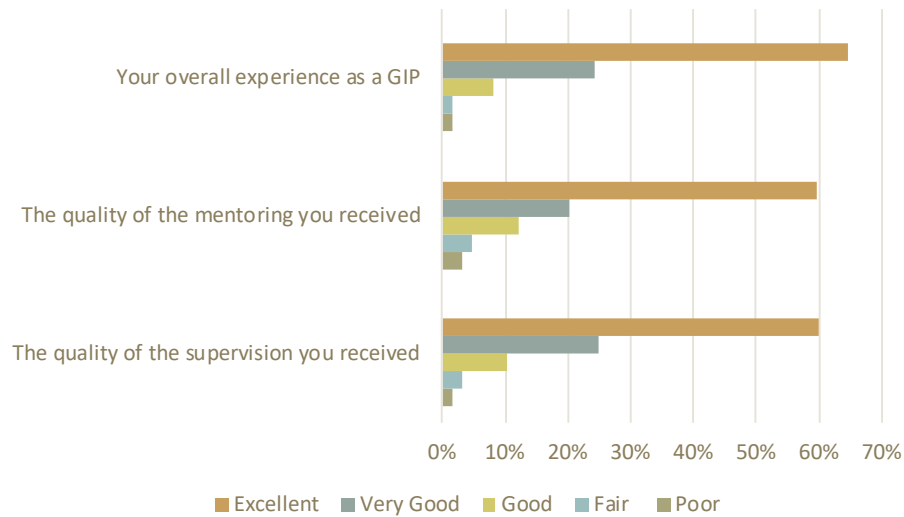


GIP Amy Morris leading a Meadow Walk Ranger Program at Shenandoah National Park, Virginia. (NPS photo)

## Supervision and Mentoring

When asked to rate the quality of supervision and mentoring GIPs received during their internship experience, the majority of participants (60%) reported receiving excellent quality supervision and mentoring. Sixty-five percent of participants reported having an excellent overall experience as a GIP. In addition, 82% of participants reported having discussions about their career goals with their supervisors and 96% of participants reported that staff members in addition to their supervisor were available to provide guidance and support to the project.

*Please rate the follow about your experiences with supervision, mentoring, and the internship as a whole:*



*"The quality of supervision I received was above what was expected; my supervisor always made sure I was comfortable with the team I was working with and also made it clear that he trusted me when I worked independently."*

*"[I experienced] the perfect balance of guidance and the freedom to pursue projects at my own discretion. It is a powerful feeling, to be taught something and then be able to demonstrate your abilities."*

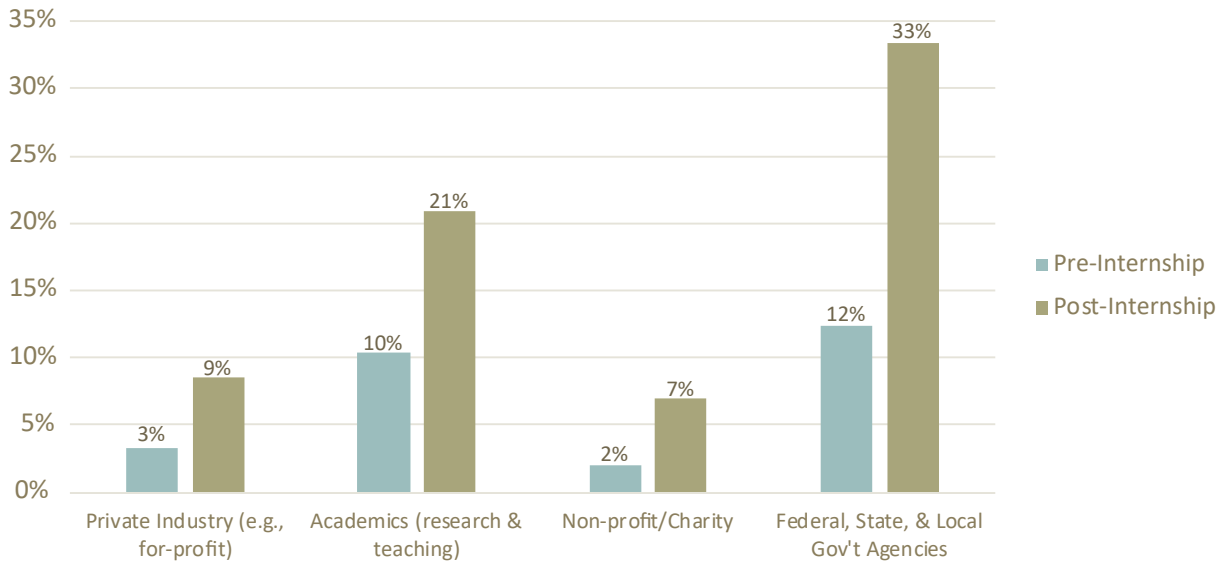


Dr. George Davis (left) with GIPs Courtney King (middle) and John He (right) discussing the geology of Saguaro National Park, Arizona. (NPS photo)

## Knowledge and Interest in Federal Careers

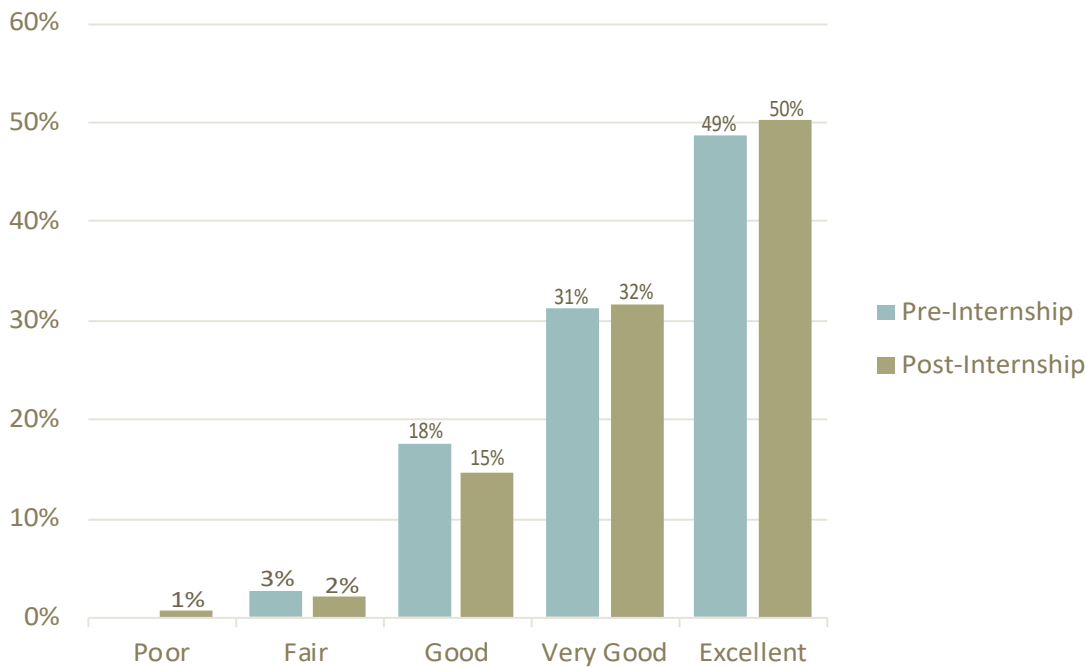
Participants were asked to report their knowledge of job opportunities and their interest in pursuing a federal career in both the pre-internship and post-internship surveys. The number of participants who reported an *Excellent* knowledge of job opportunities nearly tripled from pre-internship to post-internship survey results.

*GIP interns that reported an Excellent knowledge of job opportunities pre-internship and post-internship*



*GIP interns that reported an interest in pursuing a federal career pre-internship and post-internship*

Participants were asked to provide their likelihood to pursue a federal career pre-internship and post-internship. In the categories of *Very Good* and *Excellent*, the number of response increased after the completion of internships.



## Quotes from Participants

### Did you enjoy working with the NPS unit that hosted your project?

- Yes, Dinosaur National Monument was honestly more beautiful, the people more kind, and the project more rewarding than I ever expected.
- Yes, it was a great experience working out of the regional office. Working at this level, I really got to learn a big picture view of the state as a whole and the challenges the NPS faces here and the types of work that is done across the region.
- Absolutely! El Morro is a small park, but those who staff it are kind and dedicated to preserving it. I'm very thankful for the people who keep this park safe.
- Yes, the staff was wonderful and [the park] hosts some amazing natural features which I had opportunities to explore firsthand. I felt I made a lasting impact and was valued by my team and the park as a whole.

### Please describe your favorite aspect of your experience as a GIP participant.

- I feel like I've contributed to a longer legacy of work, and that the things I did in this internship will truly be felt by people coming for many years after me.
- The research itself has been the most interesting aspect of my internship. The massive size of the glaciers and the mountain compounded with the effects of climate change within the park set the stage for inflated geomorphic processes and hazards. Trying to capture the threats the river systems currently pose to park infrastructure given this dynamic nature is a challenge, to say the least, but extremely important for park planning and hazard mitigation.
- My favorite aspect of being a GIP participant was the opportunity to truly explore my interests. Prior to this program, I had never had an internship that pertained to environmental science. This really gave me insight into my field of study and helped me really create a long-term career plan based upon my experience working for a government agency.
- My favorite aspect as a GIP intern was to help with establishing a new national monument, and to see firsthand all of the work that goes into building a park.



GIP Jessica DeSmet with the Paleontology team at Badlands National Park, South Dakota. (NPS photo)

### Do you feel that your work through the GIP Program contributed to the NPS Mission?

- I feel that my work made a contribution towards the mission of the National Park Service by: 1) incorporating members from the local community in several work projects and 2) educating the youth in that community of current work projects and the goals/objectives that will carry onto the future for those projects.
- I have created a protocol that will be used to monitor how fires are impacting interior Alaska spruce forests. This work will give NPS biologists another metric by which to monitor changing forests as climate change continues to increase fire frequency.
- The work I and the other interns did and do is important for the preservation of the Island Marble Butterfly species. The lab rearing method employed boosts survival rates in order to complement the wild population and keep the species alive, contributing towards the mission of the NPS.
- Absolutely. I was able to work with lots of different scientists and departments during my short time here, completing many science communication projects that will be seen not only by a wide NPS audience within the park, but will be displayed throughout the park as well as published for public consumption. Many will see my work and I hope it will help them to understand a variety of science and conservation messages.

### If you could make one recommendation to the Director of the National Park Service on how to better engage young people/adults and diverse communities what would you say?

- Make opportunities well-known: hiring authorities, Pathways program, and other partnerships that exist should be better advertised to demonstrate that you have a commitment to diversifying the workforce.
- It is important to not simply emphasize traditional interpretation and conservation attitudes, but how the national parks have a broader impact -- for example, as sources of wildlife that disperses over wider areas, or to preserve significant features of the national landscape that are part of public memory.
- I would highly recommend the Director to talk to the local communities nearby National Parks and try to understand what challenges they really face.
- Representation is everything. If people don't see others like themselves in a role, they are less likely to feel it is possible for them. I think allowing diverse communities into the park service through programs like GIP, Mosaics in Science, AmeriCorps, etc. and allowing them to feel important and empowered through their own passion projects, consistent feedback, and examples of other people who are like them are essential to keeping people around.



GIP Brooke Kubby on an orientation hike at Chiricahua National Monument, Arizona. (NPS photo)

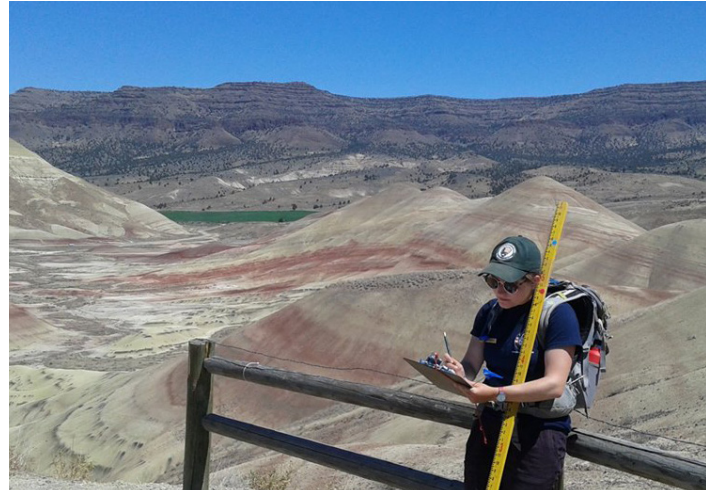


# Program Publicity

The following are examples of promotional materials, articles, and videos prepared about this year's GIP participants.

## John Day Fossil Beds National Monument, OR

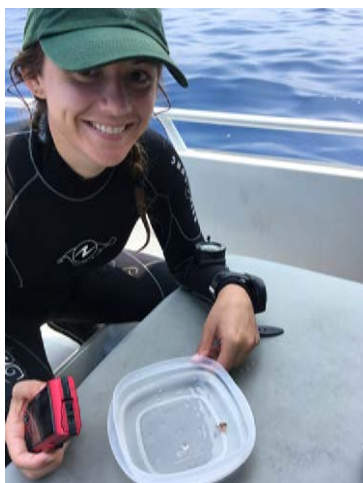
GIP Mary Connors spent 12 weeks at John Day Fossil Beds National Monument where she worked to assess park trails for accessibility according to Architectural Barriers Act (ABA) Accessibility Standards and provide interpretive programming to park visitors. To read more about Mary's summer, visit: <https://blogs.agu.org/onthejob/2018/10/15/interning-for-the-national-park-service-through-geoscientists-in-the-parks/?fbclid=IwAR1hEVwn1t-uFMUEfzKwU9XidfmKmgypSEEtX322EE-tmUD-fryGPgkYDA>



GIP Mary Connors performs trail surveys and assessments for accessibility standards at John Day Fossil Beds National Monument, Oregon. (NPS photos)

## Kaloko-Honokōhau National Historical Park, HI

As part of her work as a Biology Assistant, Ashley Pugh assisted with field monitoring and data management activities associated with the Park's water resources such as coral reefs, anchialine pools, and Hawaiian fishponds. While doing field work, Ashley recovered the baby octopus pictured below from plastic waste picked up at her field site. The story and photos quickly garnered attention on the Park's social media platforms and with other media publications. To read the full story, visit: <https://www.livescience.com/63927-tiny-baby-octopus-hawaii.html>



GIP Ashley Pugh poses with the baby octopus she found while diving at her field site in Kaloko-Honokōhau National Historical Park, Hawai'i. (NPS photos)

## Glen Canyon National Recreation Area, AZ and UT

GIP Kat Ko returns to Glen Canyon National Recreation Area for her second summer as the program lead for the Dragonfly Mercury Project, a citizen science program that strives to connect people to parks while providing baseline data to better understand the spatial distribution of mercury, a globally distributed contaminant that can harm human and wildlife health. To accomplish this, Kat and her citizen scientists spent the summer sampling dragonfly larvae throughout the Intermountain Region. To listen to Kat discuss her work on the Dragonfly Mercury Project, visit <http://sevenknotspod.buzzsprout.com/> or read about the project at <https://www.scsparkecience.org/planning-for-the-future-of-the-dragonfly-mercury-project/>.



GIP Kat Ko sampling dragonfly larvae at Lily Lake in Rocky Mountain National Park, Colorado (left photograph). Youth sampling dragonfly larvae at Elves Chasm in Grand Canyon National Park, Arizona during a Grand Canyon Youth Partners in Science river trip (right photograph). (NPS photos)

## Saguaro National Park, AZ

GIP intern Jessie Pearl worked as a Groundwater Geochemistry Assistant to explore the connection between Saguaro National Park's structural geology and ground water processes. This combined study will help park managers understand if base flow into springs may be threatened by groundwater withdrawal outside park boundaries or by changes in temperature or precipitation regimes. Jessie's work was featured in a short video created by Conservation Legacy which can be found at <https://www.youtube.com/watch?v=b8Vn1dJQhXo>.



GIP Jessie Pearl takes a GPS point of a bedrock tinaja in Wild Horse Canyon, Saguaro National Park, Arizona (left photograph). Jessie records flow rate on a seep catchment (right photograph). (NPS photos)

# Conclusion



GIP Philip Conrad assists with monitoring a Herring River wetland at Cape Cod National Seashore, Massachusetts. (NPS photo)

The National Park Service successfully completed the 23rd year of the Geoscientists-in-the-Parks Program and has provided demonstrable benefits to NPS units, program participants, and the public. Since the program's inception, 1,809 interns have completed 943,468 hours of critical natural resource science work in 207 parks and central offices.

With the completion of 173 important science projects in 2019 totaling 129,680 service hours in parks and central offices, the NPS has been able to move science-based decision-making and resource management forward for the National Park Service. GIP interns gained valuable on-the-ground training, personal and professional development skills, and an increased awareness of conservation and environmental stewardship on public lands. Many interns qualified for the Public Lands Corps Non-Competitive Hiring Authority or the Direct Hire Authority. A program goal is to use these special hiring authorities to hire outstanding GIP graduates into the NPS workforce.

Funding from the NPS Geologic Resources Division, Natural Resource Stewardship and Science Directorate, Intermountain Region, parks, networks, central offices, park associations, and the substantial cost share by the program partners has leveraged NPS funding to complete highly critical science projects for the NPS, training for America's youth, and furthering the NPS mission. These internship opportunities will help grow a stronger and more diverse STEM workforce in the NPS and throughout the American workforce.

The program partners offered innovative ideas that have improved the GIP Program in 2019, have recruited highly talented participants, and effectively managed the day-to-day program operations. The NPS is looking forward to another successful year in 2020 with Stewards Individual Placement Program, The Geological Society of America, NPS staff, and our future scientists!



The 2019 GIP Team during The Geological Society of America's annual meeting in Phoenix, Arizona. Left to right: Chelsea Bitting, Krista Rogers, Rhea Johnson, Limaris Soto, Paige Lambert, Lesley Petrie, and Matthew Dawson. Not pictured: Emma Savely, Kiersten Jarvis and Joey Ruehrwein. (NPS photo)

## Acknowledgments

The NPS would like to gratefully acknowledge the outstanding efforts and contributions of its 173 program participants this year. Every person who worked as a GIP intern contributed valuable work, perspectives, and completed essential natural resource science work that furthers the goals and objectives of the National Park Service and grows each participant personally and professionally.

NPS supervisors and mentors also provided essential support for the program by identifying projects, overseeing the participant's work, ensuring project success, and providing mentoring and guidance to help the interns grow personally, technically, and professionally.

Park associations, parks, NPS Directorates, networks, and regions provided funding for GIP positions throughout the Service. This funding greatly increased the park's ability to bring interns to parks and central offices while gaining valuable work experience and complete critical natural resource science projects.

The NPS Youth Programs Division provided valuable input and guidance to help improve and grow the GIP Program. Special thanks to Youth Programs Division Chief, George McDonald, for his continued support and feedback on the program.

The GIP Program would like to thank Dave Steensen, Chief of the NPS Geologic Resources Division, for his ongoing support of the program. Without GRD's financial and administrative support, the GIP Program would not be as successful as it is.

David Joseph, NPS retiree, updated and maintained the NPS program database which is greatly appreciated. His work made it easy to respond to NPS data calls, track program costs and expenditures, and other information.

GSA provided excellent support advertising and recruiting candidates to help the NPS find the best and brightest interns, and managed the program's online application system. The NPS sincerely appreciates the great work of Matt Dawson and Lesley Petrie and the generous support of the GSA Foundation (GSAF).

We also acknowledge Stewards for partnering with the GIP Program and providing outstanding support from completing all enrollment paperwork with the interns, to working closely with the supervisors and GIPs to ensure success of the program, and administering the AmeriCorps component of the program. We appreciate the excellent work of Joey Ruehrwein, Krista Rogers, Emma Savely, Lisa Callahan, and many others at Stewards.

# Special Thanks to Sally and Bob Newcomb

When Sally and Bob Newcomb decided to support the Geoscientists-in-the-Parks Program through the Geological Society of America Foundation (GSAF), they hoped to engage young scientists in once-in-a-lifetime experiences that would challenge their skills and open up new horizons. Alaska's Denali National Park and Preserve was the ideal environment to launch this effort in 2007. Over the past twelve years, the Newcombs have partnered with GSAF and supported more than 40 GIPs in a wide range of projects, including glaciology, geologic hazards, river morphology, new fossil discoveries, resource monitoring, and visitor education. Sally and Bob enjoy rediscovering Denali through the eyes of GIP participants each year. The unique backdrop of the park is entirely different from their home in Silver Spring, Maryland. For Sally, the connections she makes with GIP alumni continue to inspire her involvement with the program as a long-time GSA member.

*"Keeping up with the interns, reading their reports, going to their papers and posters at GSA meetings, all have been very rewarding as well as just plain fun, giving us a view of the world we could never otherwise have, as well as introducing us to a series of talented and dedicated young people." - Sally Newcomb*

The program would like to recognize Sally and Bob Newcomb for their sincere and ongoing support of the GIP mission for more than a decade.



Bob and Sally Newcomb (center) visiting with Denali GIPs Andrew Collins (left) and Sandra Cronauer (right) from during the 2015 GSA Annual Meeting in Baltimore.

## Financial Contributions

Each year, a number of GIP positions are funded through the generous donations of Park Associations and Friends Group. In FY2019, four Park Associations contributed to GIP projects throughout the service. The GIP program would like to thank the Badlands Natural History Association, Eastern National, the Grand Canyon Conservancy, and the Shenandoah National Park Trust.

In addition, The GIP Program would like to thank Don Weeks at the NPS Intermountain Region for his continuous support of geology projects across the region, as well as providing GIPs in the Intermountain Region with travel grants to attend and present at The Geological Society of America's 2019 Annual Meeting in Phoenix, Arizona.



# Thank You to Lisa Norby

**In December 2018, former GIP Program Manager Lisa Norby retired after 26 years of federal service. During that time, Lisa was, and continues to be, a champion for students and early career professionals in natural resource sciences, and for increasing diversity in the NPS workforce.**



Lisa's 26 year career with the NPS has spanned many different programs and projects including park planning, petroleum geology, and overseeing youth programs. In her most recent role in the NPS Geologic Resources Division, Lisa managed two Service-wide natural resource science internship programs - Geoscientists-in-the-Parks and Mosaics in Science Diversity Internship Program, in addition to serving as the Branch Chief for the Energy and Minerals Branch, which oversees energy and minerals projects in all National Parks.

The NPS Geologic Resources Division created the Geoscientist-in-the-Parks Program and began placing geoscientists in parks in 1996. Lisa assumed leadership of GIP in 2007 and through her tireless efforts and close coordination with partners, she has grown the program steadily from an average of about 50 GIPs per year in 2007 to 182 in 2018.

In 2010-11, Lisa completed a detail that established the George Melendez Wright Initiative for Young Leaders, supports paid internships to highly accomplished undergraduate and graduate students and recent graduates to work in national parks for approximately 12 weeks on projects in scientific research, interpretation, park operations, policy development, and other fields.

In 2012, Lisa won the prestigious Geological Society of America (GSA) Distinguished Service Award, which recognizes individuals for exceptional service to the Society and to the geosciences. Lisa received this award due to her dedication to providing STEM opportunities, particularly in the geosciences, to diverse youth.

In 2013, Lisa created the Mosaics in Science Program with George McDonald, Chief of the NPS Youth Programs Division. The Mosaics Program is funded by the NPS and is managed in partnership with Environment for the Americas and the Greening Youth Foundation. The Program's objectives are to provide meaningful and relevant science-based internships for racially and ethnically diverse young adults; support high priority resource management and visitor education and interpretation projects in national parks; increase relevance, diversity, and inclusion in the NPS workplace; and promote the National Park Service mission.

In 2018, Lisa was awarded the Superior Service Award - an award for career employees of the Department who have made significant achievements and/or performed acts, or services that materially aid the mission of the Department of the Interior.

In 2019, Lisa was named the 21st Century Conservation Service Corps (21CSC) Champion of the Year. This Award recognizes individuals from agencies and organizations that partner with 21CSC programs to help engage the next generation of conservation and community leaders in service, education and training.

Lisa is recognized as a national leader in engaging the next generation of conservationists on public lands because of her hard work, dedication, and lifelong passion for youth programming. As the Energy and Minerals Branch Chief, she took the lead of two large natural resources science internship programs designed for young adult engagement, while simultaneously juggling her primary responsibilities. Lisa has been a dedicated and enthusiastic advocate for youth programming for decades, and the partnerships developed through her ingenious creativity and efforts have provided priceless experiences for young adults and helped preserve precious public lands.

# Coordinating Organizations

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## National Park Service, Geologic Resources Division

The Geologic Resources Division assists the National Park Service and partners in the Service-wide coordination, support, and guidance necessary to understand and implement science-informed stewardship of geologic and associated park resources; reduce impacts from energy, mineral, and other development; and protect visitor values. The Division created and manages the GIP Program and cost shares positions with NPS units. GRD manages two Service-wide internship programs – the Geoscientists-in-the-Parks and Mosaics in Science Programs.



**For more information about GIP:** <https://go.nps.gov/gip>

NPS intranet website: <https://sites.google.com/a/nps.gov/in2-preserve-landscapes-and-natural-systems/home/ge/gip?pli=1>

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## Stewards Individual Placement Program

Stewards Individual Placement Program offers land and water management agencies and other non-profit organizations opportunities to accomplish specific projects by providing individual placements (internships) on public lands. Stewards is responsible for administering the GIP Program once the interns have been hired (enrollment, payment of stipends, travel, and housing allowance, issue resolution, and preparation of final program report).



**For more information about Stewards:** <https://www.stewardslegacy.org/>

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## The Geological Society of America

The Geological Society of America (GSA) is a global professional society with a growing membership of more than 26,000 individuals in 115 countries. GSA provides access to elements that are essential to the professional growth of earth scientists at all levels of expertise and from all sectors: academic, government, business, and industry. The Society unites thousands of earth scientists from every corner of the globe in a common purpose to study the mysteries of our planet (and beyond) and share scientific findings. GSA is responsible for advertising, recruiting, and managing the application system for the GIP Program. GSA Foundation annually supports two or more positions in Alaska.



**For more information about GSA:** [www.geosociety.org](http://www.geosociety.org)

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[go.nps.gov/gip](https://go.nps.gov/gip)

