National Park Service

MOSAICS in Science

MOSAICS IN SCIENCE
Diversity Internship Program

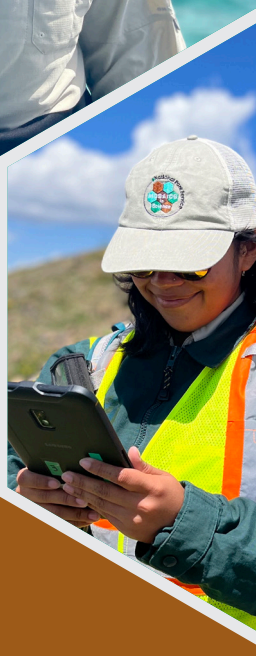
2022 Annual Report











World Migratory Bird Day
Environment for the Americas

SCIENTISTS IN PARKS
NATIONAL PARK SERVICE

NATIONAL PARK SERVICE

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MOSAICS in SCIENCE

The Mosaics in Science Diversity Internship Program provides youth underrepresented in natural resource science career fields (e.g., Latino, African American, Asian, Native American/Alaskan Native, and Pacific Islander/Native Hawaiian) with meaningful, on-the-ground work experience with the National Park Service.

Natural resource science disciplines covered in the Mosaics in Science Diversity Internship Program include air resources, biological resources, geologic resources, natural sounds and night skies, and water resources.

For more information about Mosaics in Science, visit our websites, at go.nps.gov/MIS or mosaicsinscience.org

ELIGIBILITY

- **18 to 30 years old, or military veterans up to age 35**
- **Be a US citizen or legal resident**
- **Have a strong interest — or relevant experience — in areas pertaining to science, technology, engineering, natural resources, or other related fields**
- **African American, Alaskan Native, Asian, Latino/Hispanic, Native American, Native Hawaiian/Pacific Islander, mixed race and recent graduates are strongly encouraged to apply**

BENEFITS

- **Obtain on-the-ground education and paid work experience**
- **Gain a sense of resource stewardship on public lands**
- **Complete meaningful science projects in our national parks**
- **Receive professional development training via webinars**
- **Gain exposure to networking opportunities**
- **Participate in an end-of-summer career workshop**
- **Eligible for Public Land Corps (PLC) Non-Competitive Hiring Authority or Direct Hire Authority - Resource Assistant**

Our main goals are to provide meaningful and relevant science-based internships for racially and ethnically diverse undergraduates, graduates, and recent graduates, and to support the NPS mission.

Executive Summary

The Mosaics in Science (MIS) Diversity Internship Program concluded its 9th year in the summer of 2022. During this time, 23 interns were placed in parks from 10 of the 12 Unified Regions of the Department of the Interior (DOI) and 3 of the inventory and monitoring networks. The interns from diverse cultural backgrounds supported the National Park Service (NPS) mission by completing natural resource science projects and gaining on-the-ground experience on public lands.

These talented college students and recent graduates worked on projects that ranged from inventory and monitoring, to research and presenting educational and interpretive programs, which combined summed to 349 weeks of contributing approximately 13,960 hours of service during their programs.

In 2022, the Mosaics in Science Diversity Internship Program accomplished the following:

- Provided job opportunities to 23 interns
- Conducted in-person site visits to 15 interns at parks in Florida, Connecticut, Washington, Utah, Colorado, Texas, and California
- Had the first post-Covid-19 in-person workshop in Washington, D.C.



NPS Natural Resource Stewardship and Science Directorate (NRSS)

The NPS Natural Resource Stewardship and Science Directorate provides scientific, technical, and administrative support to national parks for the management of natural resources. NRSS has a strong commitment to providing science-based on-the-ground youth career development opportunities through the management of the Scientists in Parks Program, which includes the Mosaics in Science Diversity Internship Program.

NPS Youth Programs Division (YPD)

The Youth Programs Division engages youth between the ages of 5 and 35 years old in various National Park Service programs to develop a life-long commitment to support our national parks and protect our natural environment and cultural heritage. Currently there are more than 25 youth programs operating throughout the National Park System. Youth programs encompass a wide range of missions and responsibilities, including the fostering of a strong relationship between youth and the natural and cultural resources managed by the NPS, and instilling a work ethic into our nation's youth.

Environment for the Americas (EFTA)

Environment for the Americas is a nonprofit organization committed to providing environmental education opportunities and materials throughout the Western Hemisphere, with the primary goal of improving public understanding of shared resources and their conservation. EFTA believes providing opportunities for youth to become involved in science and natural resource careers is key to ensuring the protection and future existence of quality public lands and wildlife habitat. EFTA is committed to increasing participation in environmental education and outdoor recreation across all demographics and has conducted research and efforts to reduce barriers to participation since 2009.
environmentamericas.org

About the Partner Organizations

The Mosaics in Science Diversity Internship Program is administered by the NPS Natural Resource Stewardship and Science Directorate in collaboration with the NPS Youth Programs Division and in partnership with Environment for the Americas.



Anjali Velamala,
Mammoth Cave National Park

The MOSAICS Team



George McDonald
Division Chief
Youth Programs Division



Ernestine White
National Youth Employment
Coordinator Youth Programs Division



Kiersten Jarvis
SIP Program Manager,
National Park Service



Chelsea Bitting
SIP Partnership Lead,
National Park Service

Program Objectives

Mosaics in Science connects students and recent graduates to valuable opportunities to learn the science skills they need. From gathering and recording data to conducting analyses, each new tool helps interns become more confident and proficient. MIS accomplishes the following:

- Provides meaningful and relevant science-based internships for racially and ethnically diverse undergraduate/graduate students and recent graduates, allowing the NPS to increase relevance, diversity, and inclusion
- Supports high-priority resource management and visitor education and interpretation projects in national parks
- Promotes the National Park Service mission



Sheylda Díaz-Méndez
Program Manager,
Environment for the Americas



Shanelle Thevarajah
Program Manager,
Environment for the Americas



Jorge Vargas-Barriga
Data Analyst,
Environment for the Americas



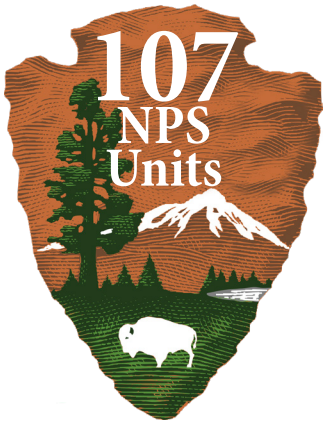
Edward Kin
Communications Lead,
Environment for the Americas

MIS Diversity Internship Sites: 2013 - 2022

Mosaics in Science has had a tremendous impact on interns, the work of the National Park Service, and on the many parks that have participated.

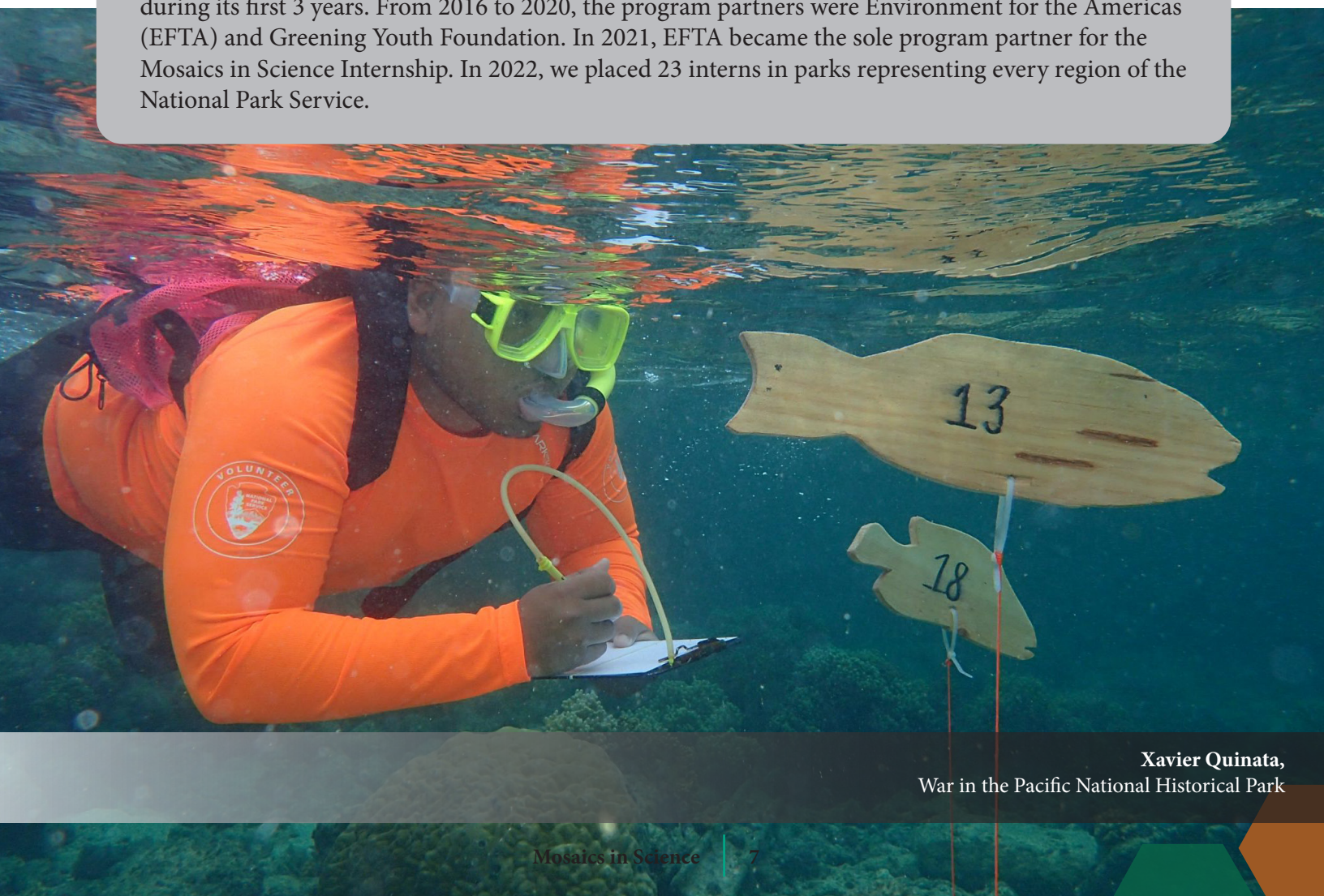






(10 new in 2022)

The Mosaics in Science Diversity Internship Program was created in 2013 as a collaboration between the NPS Natural Resource Stewardship and Science Directorate (Lisa Norby) and the Youth Programs Division (George McDonald). During its inaugural year, the Youth Programs Division had funding to place 12 interns in parks. The NPS partnered with the Geological Society of America during its first 3 years. From 2016 to 2020, the program partners were Environment for the Americas (EFTA) and Greening Youth Foundation. In 2021, EFTA became the sole program partner for the Mosaics in Science Internship. In 2022, we placed 23 interns in parks representing every region of the National Park Service.



Xavier Quinata,
War in the Pacific National Historical Park

Funding Overview

Funds available in 2022 included some support that was not expended due to COVID restrictions, as well as the current funding. The National Park Service committed $350,000 to supporting intern recruitment, onboarding, and participation, and an additional $50,000 for program planning.



Sejal Rajamani,
Arches National Park, Canyonlands National Park, Northern Colorado Plateau

Federal Hires from MIS

Mosaics in Science tracks the success of its interns. Since 2013, 35 interns have been hired in permanent, seasonal, or term positions. Fourteen interns were hired by the NPS, and five of those used the Direct Hire Authority-Resource Assistant eligibility.

We provide training and tools for preparing a federal resume, and after their internship, we communicate any opportunities that come through our Environment for the Americas office. We provide interns with support before, during, and after their internship so that they find their way to a position in the conservation field. Our latest news was from a 2021 Mosaics intern, William Tsai, who was hired in a seasonal position at the Santa Monica Mountains as a park ranger on the interpretation and education crew.

MIS Hires 2015-2022

Permanent	Seasonal
18	14

Name / Year of Internship	Position	GS	Hire Term
Brenna Rodriguez / 2017	Haleakala National Park, NPS	5	Permanent
Brooke Su / 2021	Wildlife Biologist, U.S. Fish and Wildlife Service	7	Permanent
Chelsea N Collins / 2015	Realty Specialist at the BLM	11	Permanent
Dominique Sanchez / 2018	Park Guide, Mammoth Cave National Park, NPS	5	Permanent
Fabiane Barato-Speyrer / 2016	Gulf Cost Inventory & Monitoring Network, NPS	5	Permanent
Howasta (Howie) Tahiry / 2016	EPA in Washington	11	Permanent
Jay Stevenson Kim / 2013	Land, Chemicals, and Redevelopment Division with EPA	11	Permanent
Jeanie Lai / 2018	Wildlife Biologist, US Fish and Wildlife Service	*	Permanent
Katherine (Kat) Ko / 2018	Biologist, Air Resources Division, NPS	7	Permanent
Kayla Fermin / 2017	Biological Science Technician, Lewis and Clark National Historical Park, NPS	6	Permanent
Liliana N. Calderon / 2016	Wildlife Biologist, USFWS Portland Regional Office	9	Permanent
Rhys Reynaldo Placido Joaquin / 2018	Park Ranger, Big Cypress National Preserve, NPS	7	Permanent
Ricardo Escobar / 2017	Park Manager, BLM Coos Bay District Office	11	Permanent
Richard Duenas / 2015	Data Scientist at Census Bureau	12	Permanent
Sebastian Guillermo Alvarez Espinoza / 2018	Environmental Compliance Specialist at FEMA	IM-01	Permanent
Sophia Bass-Werner / 2017	Boston Harbor Islands National Recreation Area, NPS	9	Permanent
Stephen Roethle / 2014	Senior Project Manager	12	Permanent
Tania C Parra Ramirez / 2020	Grand Canyon National Park, NPS	7	Permanent

* Data not known

Name / Year of Internship	Position	Hire Term
Alianora Walker / 2014	Lawrence Livermore National Laboratories, National Nuclear Security Administration	Seasonal
Alisa Nicole Cloutier / 2018	Nashua PAL Coordinator at Americorps Vista	Seasonal
Caleb Ronald Bolin / 2020	Montezuma Castle and Tuzigoot National Monuments, NPS	Seasonal
Christian Knutson / 2019	Badlands National Park, NPS	Seasonal
Cory Steven Zaller-Edmonds / 2020	Biology Assistant at Mount Rainier, Mount Rainier National Park, NPS	Seasonal
Diego Antonio Morales / 2019	Paralegal, Environmental Protection Agency	Seasonal
Edwin Ali Torres / 2021	Biological Technician, Golden Gate National Recreation Area, NPS	Seasonal
Elizabeth Rico / 2017	Biological Science Technician, Southeast Coast Network, NPS	Seasonal
Jaylin Solberg / 2018	Biological Science Technician for Theodore Roosevelt National Park	Seasonal
Laura Palma / 2017	Biological Science Technician, Biscayne National Park, NPS	Seasonal
Maaz Fareedi / 2018	Geologist, Yellowstone National Park, NPS	Seasonal
Marissa Reis / 2013	Lead Interpretive Ranger, Sequoia National Park, NPS	Seasonal
Salvador (Eddie) Silahua / 2015	Biological Science Technician, Olympic National Park, NPS	Seasonal
William (Will) Hansell Tsai / 2021	Interpretive Park Ranger, Santa Monica Mountains National Recreation Area, NPS	Seasonal

“

The Mosaics in Science Program really helped me get my foot in the door into working for federal agencies. Having worked a season at a national park under my belt, I became a very competitive applicant when applying for additional federal positions. Ultimately my internship experience helped me land my current permanent position with the U.S. Fish and Wildlife Service.

- Brooke Su, 2021 Intern



Impacts of COVID-19

Impacts to the Coordinating Organization

- Staff verified vaccination status of each intern and facilitated guidance on the vaccination requirements of each park, which requires additional time and management.
- Because COVID restrictions were being lifted as the Career and Leadership Workshop was being developed, there was some difficulty in scheduling events and activities.
- Providing lunches was more difficult because the cafeteria was closed. Costs increased because caterers provided lunches, break food, and coffee.
- Some costs increased after COVID, especially airline tickets, gas prices, and lodging.

Impacts to the Interns

- Intern housing offsite experienced more challenges, such as changes in agreements and new pricing.
- 1 intern had trouble securing their housing on time, because of the general lack of available and affordable housing.



2022 Intern Demographics



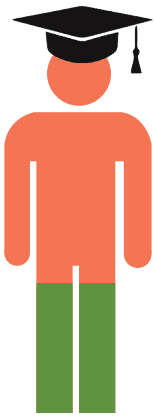
AGE

- 19-25 91% (21)
- 26-30 9% (2)



GENDER

- Female 48% (11)
- Male 43% (10)
- Genderqueer/Gender Non-Conforming 9% (2)



EDUCATION

- Bachelors 78% (18)
- Masters 22% (5)

FIRST GENERATION COLLEGE STUDENT/GRADUATE?

- NO 74% (17)
- YES 26% (6)

RACE / ETHNICITY

Mixesd Race 43% (10)

- Asian, White: 40 % (4)
- Latino/a, White: 20% (2)
- Black/African American, White: 10% (1)
- Latino/a, American Indian/Native Alaskan, White: 10 % (1)
- Latino/a, American Indian/Native Alaskan, Black/African American, Native Hawaiian/Pacific Islander, White: 10% (1)
- American Indian/Native Alaskan, Black/African American, Asian: 10% (1)

Asian 26% (6)

Latino/a 17% (4)

Black/ African American 4% (1)

Pacific Islander/Native Hawaiian 4% (1)

Middle Eastern 4% (1)

Examples of Projects Completed

Research

- Monitoring butterflies, insects inventory, science communication, and data analyses at Yosemite National Park in California
- Fog monitoring, science communication, data organization, and revegetation at Cabrillo National Monument in California
- Assessing and monitoring special-status species, field data collection, data management, and GIS mapping at Guadalupe Mountains National Park in Texas
- Species distributions, forest pathology, vegetation ecology, threatened species, and remote sensing at North Coast and Cascades Inventory & Monitoring Network in Washington
- Assisting with a fish diet study, capturing fish, habitat assessment/data collection, mudsnail inventory, and data entry/management at Fort Point/Muir Woods in California
- Assessing bleaching and water conditions on Guam's shallow coral reefs at War in the Pacific National Historical Park in Guam

Inventory and Monitoring

- Assessing fisheries resources in light of recent changes in fishing regulations at Biscayne National Park in Florida
- Coho and steelhead monitoring and a diet composition study at Point Reyes National Seashore in California
- Vegetation monitoring, field work, forestry management and monitoring, and data collection/management at Great Smoky Mountains National Park in Tennessee
- Data collection, hikes/camping, spring monitoring, and raptor monitoring at Arches National Park/Canyonlands National Park/Northern Colorado Plateau in Utah
- Assisting in reef surveys and coral tagging, coral disease management, research, in collaboration with other scientists at Buck Island Reef/Christiansted/Salt River Bay in the U.S. Virgin Islands

GIS and other technologies

- Assisting with an excavation, mapping limestone using ArcGIS, and science communication/education at San Antonio Missions National Historical Park in Texas
- Scanning digital photos/data, creating GIS products, compiling metadata, and summarize geospatial data at Denali National Park in Alaska

Education / Interpretation

- Visitor use and social trails impacts assessment along with resource mapping and community science, education, and scientific reading and writing at Rocky Mountain National Park in Colorado
- GIS, science communication, public/staff engagement, and education at Boston Harbor Islands National Recreation Area in Massachusetts
- Native plant education and restoration, resource management, and youth and community involvement in a hands-on project at North Cascades National Park in Washington
- Working as a science communication assistant with a component of field work, developing science/media communications and videography/photography at Golden Gate/John Muir/Pinnacles/Point Reyes in California
- Documenting light sources, educating the public, conducting monthly sky brightness monitoring, and media communications as a night skies assistant at Carlsbad Caverns National Park in New Mexico
- Developing and refining science communication materials, scientific media development, presentations/interpretive programs for visitors and occasionally working with field scientists at Olympic National Park in Washington

Multi-faceted

- Pollinator education and interpretation, citizen science data collection, data management/input, science communications/media at Isle Royale National Park in Michigan
- Cave inventory within park caves, GIS mapping, locating karst springs within the park, documenting fossil plants and avian monitoring at Mammoth Cave National Park in Tennessee
- Mesocarnivore monitoring and community-science data collection, including science communication and media, at Mount Rainier National Park in Washington
- Astronomy assistant working in data collection, resource interpretation and education, fieldwork with researchers, developing materials to present to the public at Olympic National Park in Washington

Internship Host Sites



Map not to scale

- Arches National Park, UT
- Biscayne National Park, FL
- Boston Harbor Islands National Recreation Area, MA
- Buck Island Reef/Christiansted/Salt River Bay, Virgin Islands
- Cabrillo National Monument (DHA), CA
- Carlsbad Caverns National Park, NM
- Denali National Park, AK
- Fort Point/Muir Woods, CA
- Great Smoky Mountains National Park, TN
- Guadalupe Mountains National Park, TX
- Isle Royale National Park (DHA), MI
- John Muir/Pinnacles, CA
- Mammoth Cave National Park, KY
- Mount Rainier National Park, WA
- North Cascades National Park, WA
- North Coast and Cascades Inventory & Monitoring Network (DHA), WA
- Olympic National Park, WA
- Point Reyes National Seashore, CA
- Rocky Mountain National Park, CO
- San Antonio Missions National Historical Park, TX
- War in the Pacific National Historical Park, Guam
- Yosemite National Park (DHA), CA

Intern Positions

Region	Park	Project Description
Region 1: North Atlantic-Appalachian	• Boston Harbor Islands National Recreation Area	Science Communication Assistant: GIS, science communication, public/staff engagement and education
Region 2: South Atlantic-Gulf	• Biscayne National Park	Assessing fisheries resources in Biscayne National Park in light of recent changes in fishing regulations
	• Buck Island Reef/Christiansted /Salt River Bay	Natural Resource Management Assistant: Snorkeling, reef surveys and coral tagging, coral disease management, research, collaboration with other scientists
	• Great Smoky Mountains National Park	Ecology Assistant: Vegetation monitoring, field work, forestry management and monitoring, data collection/management
	• Mammoth Cave National Park	Cave and Karst Assistant: Cave inventory within park caves, GIS mapping, locating karst springs within the park, documenting fossil plants, avian monitoring
Region 3: Great Lakes	• Isle Royale National Park	Ecology Assistant: Pollinator education & interpretation, citizen science data collection, data management/input, science communications/media
Region 6: Arkansas - Rio Grande - Texas-Gulf	• San Antonio Missions National Historic Park	Geology Assistant: Research, potential for assisting with one excavation, mapping limestone using ArcGIS, science communication/education
	• Guadalupe Mountains National Park	Biology Assistant: Assessment and monitoring of special status species, field data collection, data management, GIS mapping
Region 7: Upper Colorado Basin	• Arches National Park, Canyonlands National Park, Northern Colorado Plateau	Ecology Assistant: Vegetation data collection, long hikes/ potential camping, spring monitoring, raptor monitoring
	• Carlsbad Caverns National Park	Night Skies Assistant: Documenting light sources, educating public, monthly sky brightness monitoring, media communications
	• Rocky Mountain National Park	Monitoring visitor use impacts on natural resources through community science

Region 8: Lower Colorado Basin	• Cabrillo National Monument	Natural Resource Management Assistant: Fog monitoring, science communication, data organization, revegetation
	• Fort Point/Muir Woods	Biology Assistant: Fish diet study, capturing fish, habitat assessment/data collection, mudsnail inventory, data entry/management
	• Golden Gate/John Muir/ Pinnacles/Point Reyes	Science Communication Assistant: Field work, developing science/media communications, videography/photography
Region 9: Columbia-Pacific Northwest	• North Cascades National Park Service Complex	Native Plant Propagation Intern
	• North Coast and Cascades Inventory & Monitoring Network	Vegetation monitoring, science communication/education, data visualization, presentations to volunteers/park staff
	• Mount Rainier National Park	Biology Assistant: Mesocarnivore monitoring, hiking for up to 10 miles a day, community science data collection, science communication/media
	• Olympic National Park	• Astronomy Assistant: Data collection, resource interpretation and education, fieldwork with researchers, developing materials to present to the public • Science Communication Assistant: Develop and refine science communication materials, scientific media development, presentations/interpretive programs for visitors, working with field scientists on occasion
Region 10: California Great-Basin	• Point Reyes National Seashore	Coho and steelhead monitoring and diet composition study
	• Yosemite National Park	Biology Assistant: Pollinator data collection/field work, science communication & outreach, data analyses
Region 11: Alaska	• Denali National Park	GIS Assistant: Scanning digital photos/data, creating GIS products, compiling metadata, summarize geospatial data
Region 12: Hawai'i, Guam, America Samoa	• War in the Pacific National Historical Park	Assessing bleaching and water conditions on Guam's shallow coral reefs

July 31 - Auguest 4, 2022
Washington, D.C.



Career and Leadership Workshop

MIS interns attended the Career and Leadership Workshop from July 31 to August 4, 2022. The goals of the workshop were many, including to give interns the opportunity to present their work, engage with distinguished scientists, and learn about federal career paths in public land management and how to get hired into those positions. Indirectly, we aimed to have a representation of diverse staff to inspire them in their careers.

Special guest James Edward Mills



Highlight:

Journalist and media producer James Edward Mills shared his experience as a member of the first all-African-American summit attempt on Denali, the highest point in North America, as chronicled in his book The Adventure Gap.

Part adventure story, part history, and part argument for the importance of inspiring future generations to value nature, Mr. Mills' keynote address sparked a dynamic discussion, complete with a question-and-answer session and a book signing.





Guest Speakers



George McDonald
Chief of Youth Program and Experience Services Program, NPS



Deb Haaland
Secretary,
U.S. Department of the Interior



Melissa Sims
Chief, HR Policy and Strategic Initiatives Workforce and Inclusion Directorate, NPS



Jennifer Ackerman
Director, Office of Human Capital
Deputy Chief Human Capital Office



Roseann Gonzales
Deputy Director, Administration and Policy, United States Geological Survey



Crystal Gailes
Human Resources Specialist, (Public Land Corps), NPS



Doug Hale
Human Resources Specialist (Direct Hire Authority Resources Assistant), NPS



Kathryn Troutman
The Resume Place President



James Edward Mills
Writer and Producer



Lisa Collins
President, Education Through Engagement, LLC



Jim Chu
Natural Resources Specialist, United States Forest Service



Sangita Chari
Program Manager, Relevancy, Diversity and Inclusion, NPS



Brooke Su
Wildlife Biologist, U.S. Fish and Wildlife Service



Charles F. Sams III
Director, NPS



Joan Mooney
President and CEO for the Faith and Politics Institute

15 Guest Speakers

Intern Presentations

Both Direct Hire Authority (DHA-RA) and Public Land Corps Hiring Authority (PLC) interns presented their park projects during the Mosaics in Science Career and Leadership Workshop. For the last 2 years, we have had success livestreaming our intern presentations, and this year was no exception. The presentations were hosted in Zoom and livestreamed to Instagram and Facebook pages. Site mentors, family members, friends, and others were able to view the presentations, as well as attend the workshop in person.



Andres Patino presented their poster with preliminary results on the distribution of the New Zealand mud snail at GOGA



Taro Katayama presents his work from Cabrillo National Monument at the Mosaics in Science Career and Leadership Workshop in Washington D.C.



Oral presentations

During the Career Workshop, the DHA-RA Interns presented their projects in an oral presentation. These are exemplary students in higher education who receive Direct Hire Authority after completing a rigorous, 12-week resource assistant internship. We had 4 successful presentations of interns that may be hired, after graduation, into permanent federal positions for which they are qualified after completing projects that demonstrate to be intense and rigorous, with challenging experiences and a demanding schedule. These interns completed a minimum of 11 weeks of full-time work with no built-in down time to make the work less demanding. They presented their project structure as well as their deliverables in a high degree of autonomy – they demonstrated that, ultimately, they were responsible for their own work.

We also had an oral presentation from one intern that will receive Public Lands Corps hiring authority. We think it is important to highlight that both hiring authorities in the Mosaics in Science Internship Program have competitive projects with rigorous requirements and that both can help interns achieve their goal of a position in the Department of the Interior.



Poster presentations

Public Lands Corps interns presented gave poster presentations during the workshop. The interns are eligible to be hired non-competitively for two years into a seasonal, term, or permanent position within the DOI.

A total of 18 MIS interns presented their posters around the Bison Bistro area at the Department of the Interior in Washington, D.C. A plethora of science techniques, skills, and specialized instrumentation among colleagues and peers was displayed to the participating audience.





Workshop Surveys

How valuable was the Federal Resume Preparation presentation?

88%

Good

How important were the topics covered to your interests and goals?

84%

Important

How helpful was it to see other interns' work in poster presentations?

79%

Helpful

Please rate the overall content of the Workshop

89%

Good



I had never been to Washington, D.C. before and was thrilled to get to go with such an amazing group of people. This unique opportunity that Environment for the Americas offered us is priceless in terms of the experiences we gained and the relationships that were formed. I will never forget the feeling of walking into the Yates Auditorium for the first time. I was amazed; I think we all were.

- Julia Wen Dahlquist

To what extent do you feel today's presentations will help you reach your personal and professional goals?

96%

Impactful

How much new information did you learn from today's presentations?

79%

Lots



I really enjoyed connecting and getting to know all of this year's Mosaics interns in D.C. I loved hearing about everyone's work projects in several national parks within the U.S.! It was a great experience to network and have discussions with Department of the Interior employees about future career opportunities and the future of parks.

- Andrés Patino Lopez

Recognition of Outstanding Interns and Mentors

MENTORS



Best Supervisor
(as nominated by their intern)
Lillian Scoggins



Recognition of Long-Term Supervisor
Vanessa McDonough

INTERNS



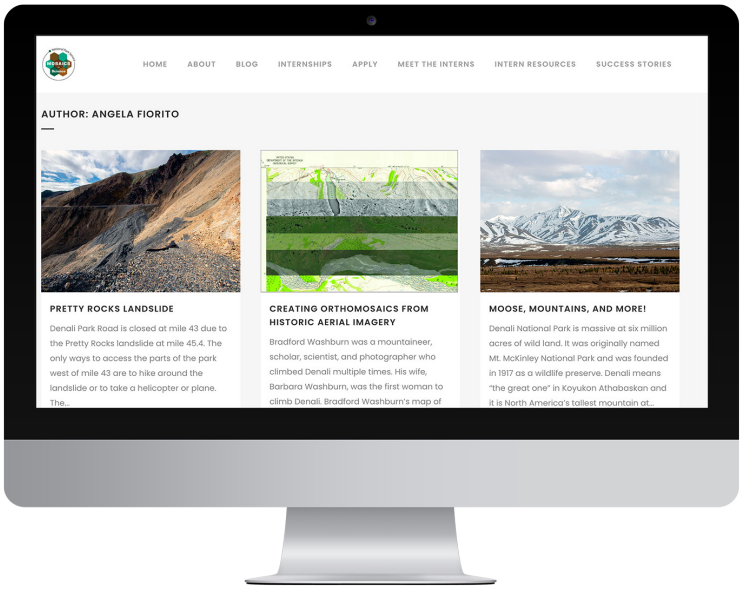
Best Blogger 2022
Angela Fiorito



Best Intern
(based on supervisor feedback)
Taro Katayama

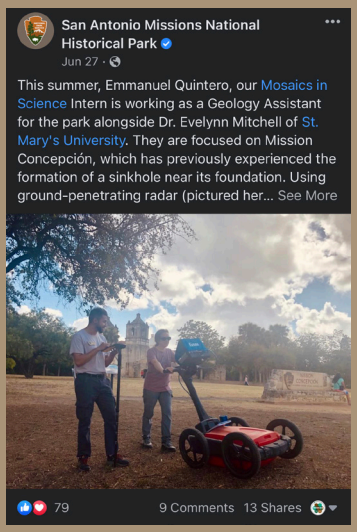


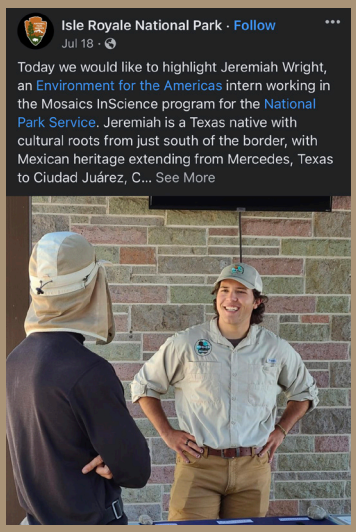
Best All-Around Intern
Kai Victor



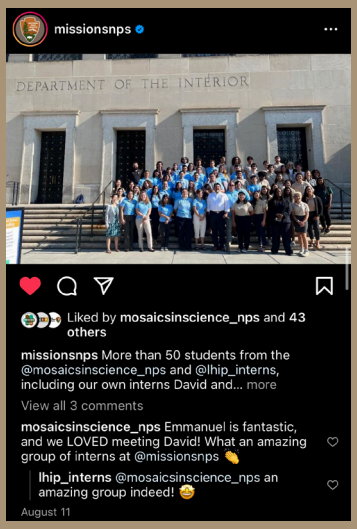
When you read Angela's blogs, you notice how she keeps topics relevant and informational. She was working in Denali National Park, and not only did she fill her blogs with interesting content, but she also designed them in such a way that you felt you were there! As readers, we are attracted to her clean structure and clear navigation through her text and photos.

Intern Media Highlights







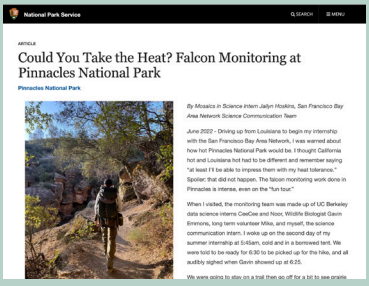


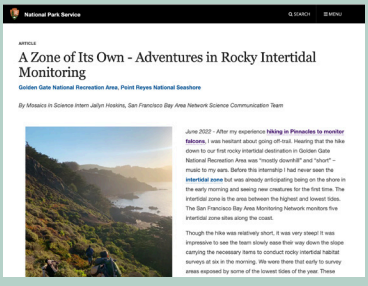


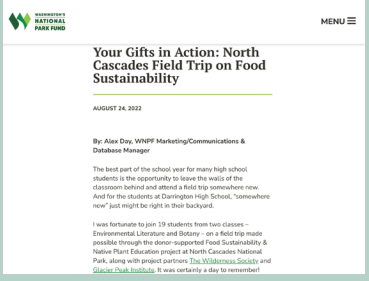


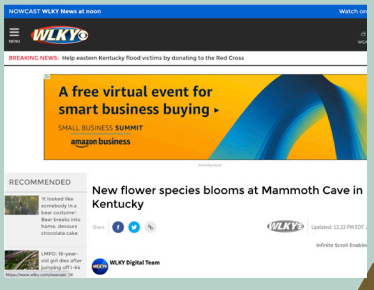
Articles

- Could You Take the Heat? Falcon Monitoring at Pinnacles National Park / National Park Service (nps.gov)
- A Zone of Its Own - Adventures in Rocky Intertidal Monitoring / National Park Service (nps.gov)
- Your Gifts in Action: North Cascades Field Trip on Food Sustainability / Washington's National Park Fund (wnpf.org)
- New flower species bloom at Mammoth Cave in Kentucky / WLKY News (wlky.com)









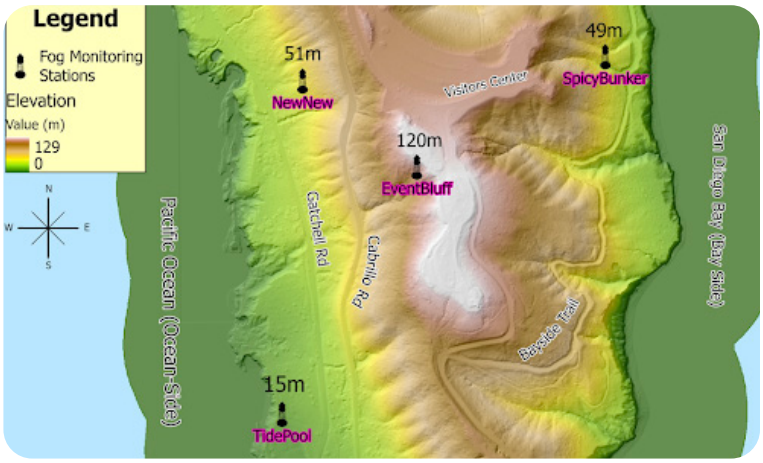
Project Highlights

Taro Katayama

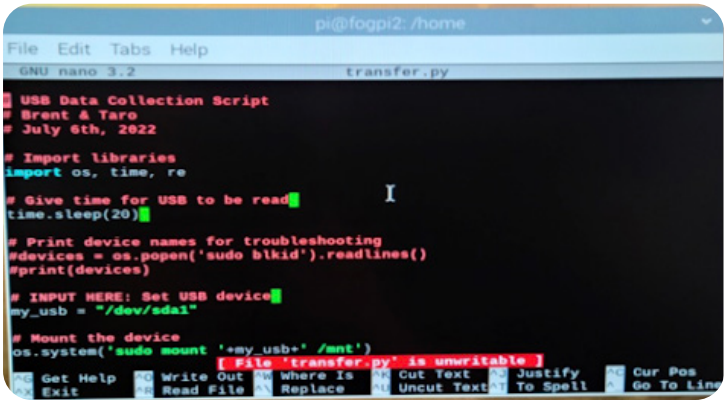
Cabrillo National Monument / Natural Resource Management Assistant

Taro was hired to set up a fog monitoring system, composed of cameras, weather stations, and leaf wetness sensors, to understand timing and abundance of fog at the park and determine park locations with the best chance for successful native plant revegetation. He was responsible for selecting sites in collaboration with the Chief of Resources and developing an SOP on how to retrieve data from the monitoring system. He also organized data from both the wildlife cameras and weather stations/leaf wetness sensors. He worked on data analysis of the fog monitoring data.

A noteworthy detail is that the park's goal was for the intern to set up only one system; Taro and his colleague managed to set up two functional systems! In the science communication front, he completed a short science communication piece, supported by the Southern California Research Learning Center.



Map produced by Taro Katayama to set up fog monitoring stations at Cabrillo National Monument.



Taro's presentation of the data collected by his fog monitoring station at Cabrillo National Monument.



Jackson Maldonado

Yosemite National Park / Biology Assistant

This past summer, Jackson Maldonado contributed to protocol development for a service-wide pollinator inventory program, gathering data on the distribution of pollinators within the park, and increasing participation of underrepresented groups in natural resource management. He worked for the summer season to document the distribution and abundance of pollinators and plants throughout the park, net collecting and photographing insects before releasing them back to the wild. He had an initial training with the Pollinator Hotshots in Colorado, then sampled from throughout the park all season. Along with other Scientists in Parks interns, they led a group of local interns from UC Merced in 4-5 larger sampling events, hosted a Pollinator Week, and worked with community volunteers to hunt for the Top Ten Most Wanted Pollinators of immediate conservation interest. He contributed to the analyses of pollinator responses to climate change in high elevation habitats across western North America.



Jackson Maldonado doing inventory on Yosemite National Park.



Keily Pineda

Rocky Mountain National Park / Natural Resource Management Assistant

Keily contributes data to collaborative research efforts within the Research Learning Center at Rocky Mountains National Park.



Keily's position allowed her to contribute to the park's visitor use management strategy by monitoring visitor impacts to natural resources and visitor trails with a focus on an ecosystem in the park where this research has not been conducted, the alpine tundra. The alpine tundra, or "land above the trees," is ROMO's highest elevation ecosystem beginning at ~11,500 feet above sea level. Cold temperatures, strong winds, and a short growing season result in a brilliant landscape inhabited by specially adapted plant and animal species and has a UNESCO International Man in the Biosphere Reserve designation.

To better understand visitor use impacts to the alpine tundra, Keily conducted a research project using methods from an established monitoring protocol. She quantified visitors' use impacts (social trails, vegetation loss/soil erosion, etc.) via field mapping sessions and did the analysis using ArcGIS protocols. The data she collected will be used to inform managers about these areas' visitor use capacity, ecological impacts, and aesthetic and safety effects on park resources and visitor experience. She helped to establish a protocol to map social trailing and soil loss from erosion/trampling using GPS-enabled tablets and GIS technology.

After finishing her internship, Keily successfully reported about existing data and findings. During her oral presentation at the workshop, she showed how she calculated social trailing density and estimated soil erosion loss or compaction from spatial data collected. The audience was able to appreciate and understand the level of impacts at ROMO.



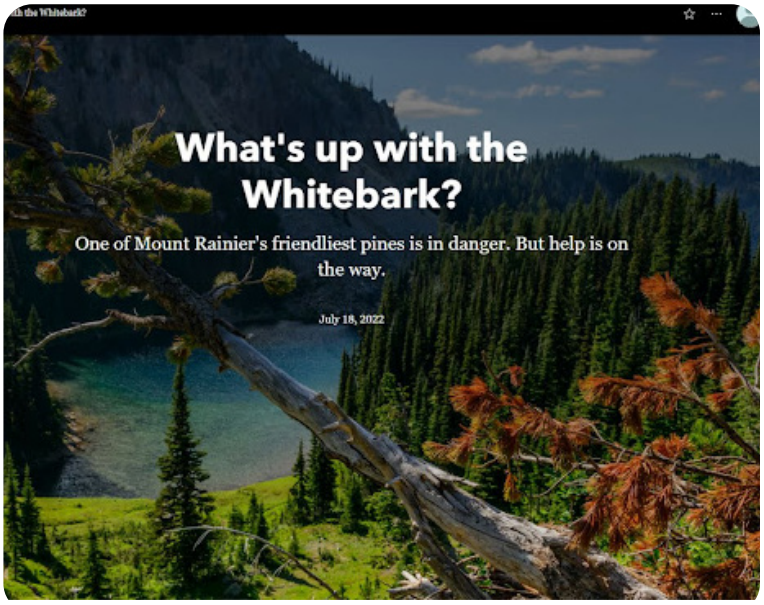
Mahika Rao

North Coast and Cascades Inventory & Monitoring Network / Natural Resource Management Assistant



With the dramatic changes happening all around us and the growing awareness of the climate crisis, it is important that park visitors connect with nature and also understand how certain aspects of the environment are changing. Vegetation systems such as alpine and subalpine meadows, mature and old-growth coastal and montane forests, and remnant prairies of the Puget Trough are foundational resources within the parks of the North Coast and Cascades Inventory and Monitoring Network (NCCN) and are among the primary features that many visitors seek to experience when planning a trip to the parks of the Pacific Northwest. These long-stable ecosystems are on the verge of significant changes that we seek to better understand through scientific inventory and monitoring efforts.

This summer, Mahika's role as a Mosaics in Science intern included vegetation monitoring, observing research efforts that the NCCN takes part in, and creating science communications snapshots to share with the public, NPS staff, and park visitors. Mahika worked to bridge the gap between work in the field and the importance of the park to each member of the community.



One of Mahika's work products, an ArcGIS Story Map about Whitebark Pine blister rust at Mount Rainier National Park.

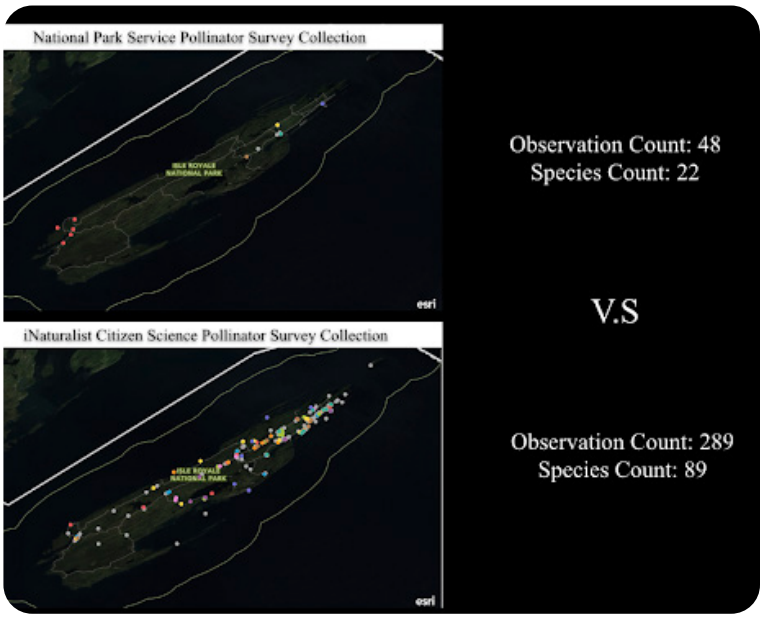


Jeremiah Wright

Isle Royale National Park / Ecology Assistant

Isle Royale National Park is a remote and isolated island in Lake Superior that is often viewed as a refugium for species in peril. Pollinator populations are threatened across the globe due to factors such as habitat loss, pesticide use, and climate change. Baseline pollinator data is lacking at Isle Royale because of a lack of resources and experts to identify species, the difficulty of accessing remote locations in the park, and the effort required to collect a comprehensive inventory of pollinators. Jeremiah worked with the natural resource and interpretation staff to launch a citizen science program focused on pollinators in summer 2022, in which he succeeded in engaging park visitors in collecting pollinator data and contributing to long-term research goals of Isle Royale. He created and staffed an interactive pop-up table at the visitor center, where he communicated and encouraged interest in participating. He also did field work consisting of surveys to supplement and ground truth citizen science data collection. This field work involved overnight trips documenting pollinators of interest. Jeremiah was also responsible for managing the project independently and communicating with park staff on project progress. Day-to-day tasks involved monitoring the iNaturalist project page, coordinating social media posts, connecting with subject matter experts, distributing an easy pollinator field guide for citizen scientists, conducting field surveys, and working with park staff on project objectives.

Results of his citizen science project combined with Jeremiah's field work to validate data.





> This program is truly a life-changing experience, with the combination of gaining incredible field skills and meeting some truly unique people. As someone from a low social-economic area with a love for natural resources, Mosaics in Science is helping my love become a passion in the workplace.

Intern Achievements



Emmanuel Quintero
San Antonio Missions National Historical Park / Geology Assistant

Sinking of Mission Nuestra Señora de la Purísima Concepción de Acuña's (Mission Concepción's) foundation is an ongoing issue for San Antonio Missions National Historical Park of Bexar County, Texas. The formation of a sinkhole several years ago near the southwest corner of the Mission's foundation, dissolution of the wall's lower exterior, and cracking of the walls in the southwest corner of the building all exemplify the need for understanding the compound's underlying geology. Currently, there has been little done to monitor the topography changes of this world heritage site's foundation. Emmanuel contributed with high-resolution coordinate and elevation data to better monitor the acute changes in elevation that can arise from the formation of underground hazards such as sinkholes, as well as a thorough survey of the area near the foundation using ground-penetrating radar. He reported preliminary findings and suggestions for better guiding the maintenance of the Mission Concepcion compound.

Emmanuel worked in research, assisting with one excavation, mapping limestone using ArcGIS, and science communication and education. He excelled in his outreach, which included collaborating with Latino Conservation Week.



Anjali Velamala
Mammoth Cave National Park / Science and Resource Management Intern

Mammoth Cave National Park preserves the longest known cave system in the world with more than 420 miles of passageways and hundreds of smaller caves throughout the park. In the caves are many archeological artifacts from Native Americans who used to live near, and mine gypsum from, the caves. There are also many other historic artifacts and stories from before the park was established in 1941. The ecosystem in the cave consists of bats, crickets, mice, salamanders, eyeless fish, shrimp, crawdads, and lots of microbiology. Above ground, the park has lots of plant and animal biodiversity, too.

Anjali's objectives were multiple this summer! She was involved in bat counts, firefighter training, night sky brightness monitoring, passerine monitoring, and dye tracing. Other projects she worked on included spring inventory; wildflower inventory; water quality sampling and monitoring, including using sondes and doing E-coli measurements in the lab; cricket counts; cave research crews for fossils and historic graffiti; cave radon level monitoring, checking camera footage for wildlife sightings; and setting up invasive moth species traps. Being able to work on so many different projects, and not hone in on only one, allowed Anjali to learn more about many different applications and uses of science to conservation work.

Intern Achievements



Xavier Quinata
War in the Pacific National Historical Park / Natural Resource Management Assistant

More than half of War in the Pacific NHP's lands are underwater, and much of this is submerged and home to coral reef communities. The park's coral reefs have been badly damaged and continue to be threatened by warming ocean waters, ENSO-related low tides, acidification, pollution, and overfishing. Widespread coral bleaching events in 2013, 2014, 2016, and 2017 caused massive mortality, particularly among shallow reef flat coral communities.

This summer, Xavier contributed to data collection on the park's coral reefs. This involved long days of snorkeling to assess reef conditions so that the park can take action to preserve them. In addition, Xavier worked on developing and modifying data collection processes for reef fish population surveys. It is important to have consistent methodology to ensure reliability of the data, and in turn, data-driven decisions relating to resource management. A large component of this work was to conduct volunteer training for local folks interested in participating in this research. Xavier trained volunteers to size fish using their own body parts (i.e., forearm, leg, etc.) and used Quizlet as a resource for identifying reef fish.



Andrés Patino Lopez
Fort Point National Historic Site, Golden Gate National Recreation Area, Point Reyes National Seashore / Biology Assistant

Andrés was hired into the Mosaics internship to help support the field, lab, and data management activities with the park's wetland and aquatics programs. The largest component of their duties included a two-year fish diet study at Redwood Creek that is focused on the food preferences of two federally listed fish: coho salmon and steelhead trout. They were responsible for the final year of non-lethal fish sampling that involved flushing the stomachs of collected fish and then looking at the gut contents under a microscope to identify and count food items.

They also conducted a water quality profile along the length of Redwood Creek focusing on isolated pools to help evaluate physical differences between pools (e.g., substrate characteristics) and location (e.g., steep headwater versus low gradient stream sections). For this, they collected data of the dissolved oxygen, water temperature, and substrate size classes.

The final piece of their project was to conduct an inventory of the non-native New Zealand mudsnail in the park. Andrés helped in surveying aquatic sites to determine if there were new locations and any changes in distribution where New Zealand mudsnail were present.

Andrés presented their project, as well as their work products, at the career workshop and participants learned how they completed the fish diet study and saw the data report summarizing results. They conveyed findings from field investigations of the New Zealand mud snail in a distribution map.

Words From Mentors/Supervisors



- **Paige Lambert / Rocky Mountains National Park**
  We had a pretty good applicant pool for this position, which I attribute to EFTA's recruitment.

- **Sarah Karinen / Northern Colorado Plateau Network**
  I don't really have the words to say how much growing, learning, and teaching happened this summer. And how much it meant to me and how much learning and growing I did, too.

- **Luke Gommerman / 2022 Acting Biologist at Southeast Utah Group-Arches, Canyonlands, Hovenweep and Natural Bridges**
  I hope to stay involved with this program for years to come!

- **Jared Low / Olympic National Park**
  Overall, very organized and professional communication and staff. Great experience!



Mahika Rao,
North Coast and Cascades Inventory & Monitoring Network

Words From MIS Interns

Jailyn Hoskins / Golden Gate/John Muir/Pinnacles/Point Reyes
My mentor really was awesome as was my living situation! Those combined really gave me a life-changing experience this summer.

Sejal Rajamani / Arches National Park, Canyonlands National Park
My internship influenced my career goals because it really showed me what areas I like and dislike in the conservation and environmental fields. This internship helped me to narrow my focus of what I would like to pursue after I graduate from college.

Angela Fiorito / Denali National Park
This internship has given me enough experience to apply to jobs that I otherwise wouldn't have felt experienced enough to apply for. It was an incredible experience and I think it will help me launch my career!

James Puentes / Biscayne National Park
Beautiful reefs filled with a vibrant array of animals and the colors they possess, greetings on the water and at the docks from locals and boaters around the world, a stellar team willing to help and support you, and the duty to keep track of the beautiful marine resources of Biscayne National Park. That's what it means to intern in Biscayne National Park's Resource Management Division.



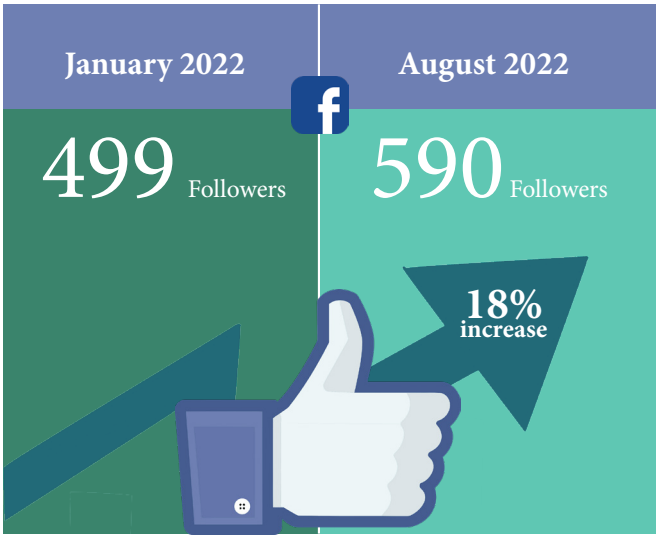
Ivan Bossert,
Guadalupe Mountains National Park

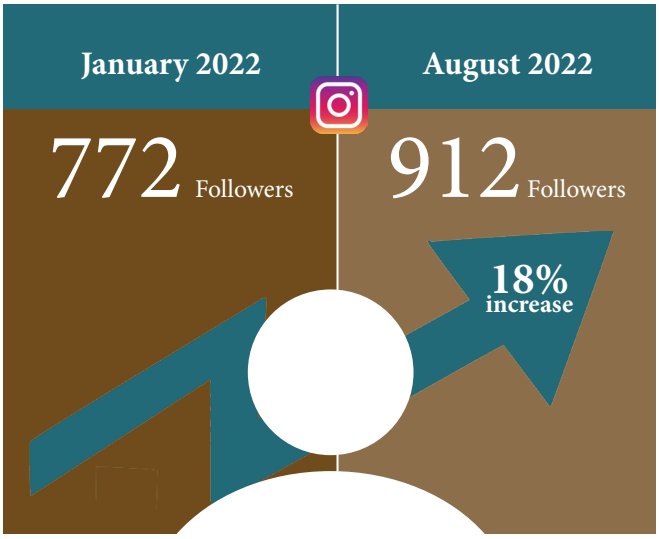
Mosaics Social Media Accounts

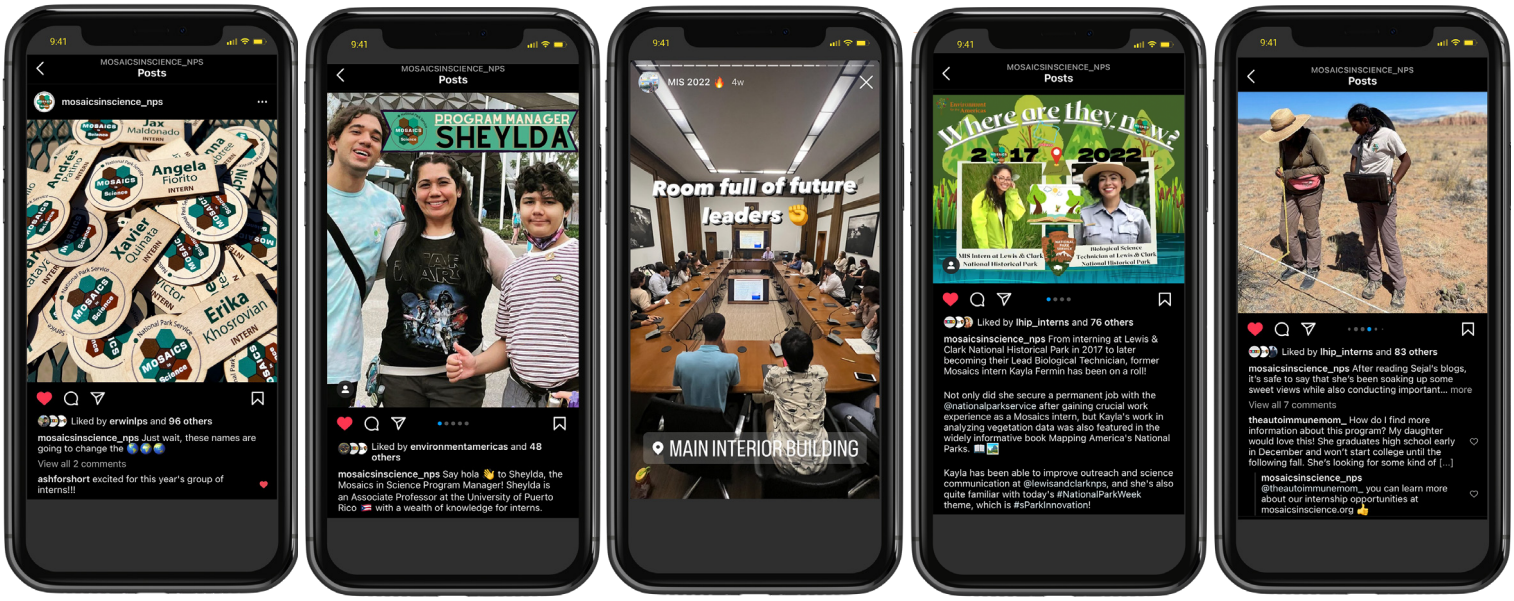
In 2022, EFTA's communications team revamped and professionalized media content on MIS social media platforms to provide more in-depth looks at previous and current MIS interns projects and accomplishments.

Mosaics in Science social media accounts

Facebook	@MosaicsinScienceinternship
Instagram	@mosaicsinscience_nps

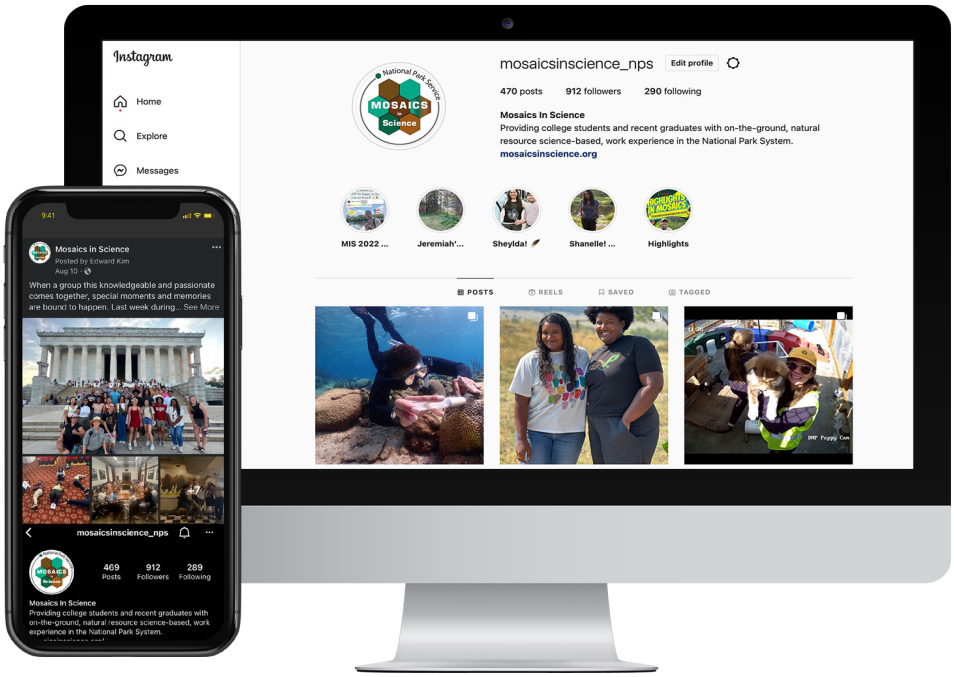




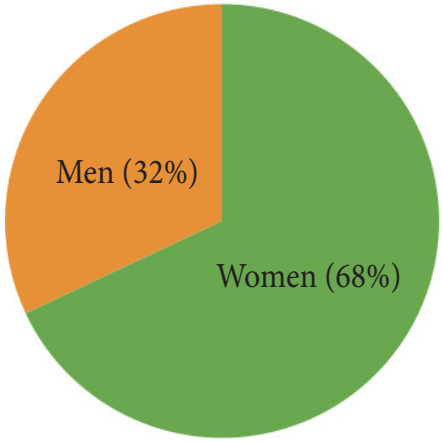


Breakdown of Mosaics social media audience demographics

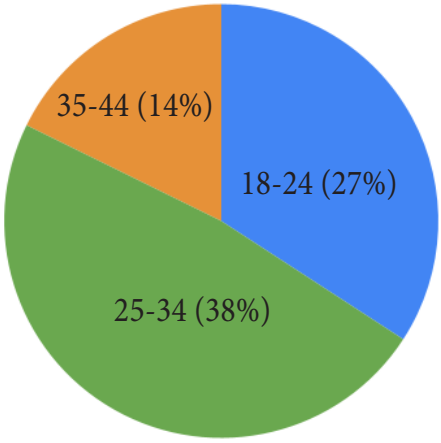




While showcasing program partners and previous interns' accomplishments, each MIS intern in the 2022 cohort was featured on the Mosaics social media accounts through personalized intern introduction graphics, #HighlightsInMosaics posts, and creatively designed stories.



Gender



Main age ranges

Top cities engaged
New York
Saginaw
Martinsville
Oakland
San Francisco

Acknowledgements

This program could not have happened without the vision and dedication of our many partners.
We gratefully acknowledge the work and support of the following:



Recruiting Partners

- Benedictine College
- Cornell University
- Duke University
- Fordham University
- Humboldt State University*
- Johnson and Wales University
- Nova Southeastern University*
- San Francisco State University*
- Stanford University
- Texas A & M University, College Station
- Texas Tech University, Lubbock*
- Truman State University
- University of California, Berkeley
- University of Colorado, Boulder
- University of Florida, Gainesville
- University of New Orleans
- University of the Virgin Islands
- University of Washington, Seattle
- Washington State University
- Washington University, St. Louis

**Hispanic Serving Institutions*

MIS Host Sites

- Arches National Park, Canyonlands National Park
- Northern Colorado Plateau
- Biscayne National Park
- Boston Harbor Islands National Recreation Area
- Buck Island Reef/Christiansted/Salt River Bay
- Cabrillo National Monument
- Carlsbad Caverns National Park
- Denali National Park
- Fort Point/Muir Woods
- Golden Gate/John Muir/Pinnacles/Point Reyes
- Great Smoky Mountains National Park
- Guadalupe Mountains National Park
- Isle Royale National Park
- Mammoth Cave National Park
- Mount Rainier National Park
- North Cascades National Park
- North Coast and Cascades Inventory and Monitoring Network
- Olympic National Park
- Point Reyes National Seashore
- Rocky Mountain National Park
- San Antonio Missions National Historical Park
- War in the Pacific National Historical Park
- Yosemite National Park

Intern Profiles



Ivan Bossert
Truman State University
Guadalupe Mountains National Park - Biology Assistant
I am a student at Truman State University where I am graduating with bachelor's degrees in biology and Spanish. I've been increasingly aware of the lack of diversity in STEM, especially in conservation, so this program seemed like a natural choice. I'm excited to experience the day-to-day operations of a national park and to get connected with professionals in the field. Aside from that, I'm excited to work outside. I plan to eventually go to grad school after I know more about what I want to do. I want to be a role model in the field for others like me. I want students to be able to see someone like them succeeding in the field they are passionate about. This internship will allow me to gain insight into how my current education will relate to the job field and any further education I will need.



Amy Carrillo
Fordham University
Boston Harbor Islands National Recreation Area - Science Communication Assistant
I attended Fordham University and graduated with a bachelor's in environmental studies. I'm highly interested in Mosaics, because I will be using GIS and developing maps that will help to improve communication with the public. A lot of my work will also include learning about Boston's coastal geography and geology. From there, I will create maps that will predict and showcase the Boston Harbor landscape in the upcoming decades. After completing my internship, I have an interest in continuing my education and graduating with a master's degree in GIS.



Jenna Collett
Texas A&M University
Carlsbad Caverns National Park - Night Skies Assistant
I am a third-year student at Texas A&M University where I am pursuing a bachelor's in environmental studies and renewable natural resources with a focus on regulation and compliance. I am a part of the Aggie Speleological Society, Aggie Grotto, and I work for the Department of Residence Life. I am also a member of the United States Army Reserve and currently serve as a religious affairs specialist. Carlsbad Caverns was the first national park I visited at twelve years old, and ever since then, I have been captivated by caves and bats. I have now visited 12 national parks in the American Southwest. I am looking forward to living, learning, and working in a place that I enjoy so much. I am very intrigued by the effects of human interaction with the environment and cannot wait to document various nighttime sky pollution. Additionally, it will be interesting and rewarding to be a part of a team that prepares an International Dark Skies Park application for Carlsbad Caverns. To integrate my love of national parks with my future career, I hope to practice law for the National Park Service in some capacity. I hope this internship will provide networking opportunities and hands-on experiences to make my dream of working in and around national parks come true.



Julia Dahlquist
Washington State University
North Cascades National Park - Natural Resource Management Assistant
I graduated from Washington State University in 2019 with a major in wildlife ecology and conservation and minors in geographic information systems, sustainable development, and forestry. I grew up north of Seattle, and I'm excited to broaden my knowledge with the National Park Service in the North Cascades! I have experience identifying native flora and fauna of the Pacific Northwest and hope to expand my understanding of the unique ecosystems in my home state. I'm eager to help with restoration and conservation efforts through horticulture. Last summer, I was part of a research team helping gather data to understand the impacts of outdoor recreation on black bears in a changing climate. It was during this project that I realized how much I loved the Pacific Northwest and how little I had explored it. I am considering going back to school to receive a postgraduate degree. I believe this program will give me some valuable tools related to restoration, adaptability, and sustainability projects.



Nicholas C. Durgadeen
University of the Virgin Islands
Buck Island Reef/Christiansted/Salt River Bay - Natural Resource Management Assistant
I graduated from the University of the Virgin Islands with a major in marine biology. From the age of nine, I knew I wanted to study this field. I have tailored my experiences and studies to match my interest and will be a Mosaics in Science intern at the National Park Service in Christiansted, US Virgin Islands. I have over five years of experience in coral restoration. My experience includes scuba diving to treat infected corals, maintaining coral nurseries, and coral fragmentation. I am eager to apply the knowledge that I have learned in the classroom, and the skills I have acquired from the various internships and jobs relating to coral restoration and husbandry. From my marine biology course work, I am familiar with most reef organisms and their ecological interactions. In addition, I have amassed well over one hundred dives, with a significant number of those being scientific diving. The primary purpose of those dives was to restore and protect corals for organization both locally and overseas. I look forward to applying my knowledge as a Mosaics in Science intern with the National Park Service.



Angela Fiorito
University of Illinois at Urbana-Champaign
Denali National Park - GIS Assistant
I attended Waubonsee Community College and obtained a bachelor's in geology with a minor in integrative biology at the University of Illinois at Urbana-Champaign. I worked at the Illinois State Geological Survey as a student research assistant. There I developed skills in GIS mapping, analyzing data, and working independently. I am currently attending Texas Tech University for a master's in geosciences and a graduate student certificate in geographic information sciences and technology (GIST). Field experience is one of my strengths and knowing how to map in the field is an asset for digital mapping. As a half-Filipino and half-white woman, I know that I am in the minority when it comes to the geoscience community. I believe that this disparity in geosciences can be addressed by having more minorities visible in government positions, especially in national parks, because the general public will see that geologists come in all genders and ethnicities. I am interested in being an intern at Denali National Park, because I am eager to start a career in geographic information systems and technology. Additionally, I have always wanted to visit Denali National Park due to its incredible biodiversity and history. My career interest is to integrate my geology experience with GIST to perform research at a state geological survey or the USGS. Mosaics in Science is an amazing program that gives minority students a chance to pursue their goals.



Ben Fujita
California State Polytechnic University of Humboldt
Point Reyes National Seashore - Golden Gate National Recreation Area
I am currently an undergraduate at California State Polytechnic University of Humboldt where I am studying fisheries biology with a concentration in fresh water. I am also minoring in environmental policy. I am so honored and excited to have this opportunity to work at Point Reyes National Seashore. The Mosaics in Science program is really a dream come true for me. My specific interest in the field of fisheries is anadromous salmonids, which happen to be the species that my position is focused on. I find them to be fascinating species that have extremely high economic, social, and cultural value to many people in our country. The opportunity to work with the management of Coho Salmon and Steelhead Trout during my internship is exactly what I am interested in and is hopefully what I can dedicate the rest of my professional career to. The management and the recovery of anadromous salmonid populations along the West Coast is important work that I am excited to be a part of.



Liza Hafner
Stanford University
Olympic National Park - Science Communication Assistant
I am a recent graduate from Stanford University, where I spent my undergraduate career as an earth systems major, environmental communications coterminal master's candidate, and translation studies minor. I earned my first junior ranger badge as an enthusiastic 5 year old at Kenai Fjords National Park, and throughout my childhood, I went on to earn more than 30 more at national parks and monuments around the country. I consider a life working with the Park Service and think back to the spark of passion I felt during a visit to Yosemite National Park. As I look to my long-term career goals after completing my master's, I have many options based on my interests and skills including natural resource management, environmental policy, outdoor education, and climate journalism are just a few.



Jailyn Hoskins
University of Guam
Golden Gate National Recreation Area/Point Reyes National Seashore/John Muir National Historic Site/Pinnacles National Park - Science Communication Assistant
I am a graduating biology student at the University of New Orleans. I've always wanted a career path that continuously challenges me, satisfies my constant desire to learn and grow, and allows me to give back to the community. I am excited for the opportunity to be a science communication assistant through Mosaics in Science because it combines many of my interests: conservation, research, photography, and sharing knowledge with others. I want to help make the sciences more accessible to underserved communities and provide environmental education to the public. This position will provide me with invaluable field experience and help me to continue to pursue my dream career path.



Taro Katayama
Colby College
Cabrillo National Monument - (DHA)Natural Resource Management Assistant
I have a Bachelor of Arts from Colby College in environmental science and am currently a first-year Master of Environmental Management student at Duke University's Nicholas School of the Environment. I am an aspiring scientist interested in building climate change resilience. I hope to continue a career in the government to further protect and conserve our natural environment and wish to use my platform to inspire others. I'm thrilled to work at scenic Cabrillo National Monument, a unique ecosystem that has a rich diversity of life. I'm also excited to utilize my data science skills to conduct meaningful research. I look forward to establishing professional connections to peers in the Mosaics program, and I hope to continue a career in the government to further protect and conserve our natural environment.



Erika Khosrovian
University of Washington Seattle
Olympic National Park – Astronomy Assistant
I am an undergraduate at the University of Washington Seattle pursuing degrees in biology and English. My interest in this program stems from a love of biology's interdisciplinary nature and a desire to learn how all the subfields of biology interact as a whole, as well as how other natural sciences (including astronomy) interact with biology. I intend to combine my skills in English and biology to communicate and educate the public on current research, and this internship will set me on the path to doing so. It will also allow me to explore the different professional fields and opportunities present within the parks, which will assist me in pursuing a career with them in the future, particularly in researching conservation from a genetic perspective.



Jackson Maldonado
Benedictine College
Yosemite National Park - (DHA)Biology Assistant
I am a junior at Benedictine College in Atchison, Kansas, where I study biology and psychology. I am also the president of the Eco-Stewardship Club and the treasurer of the Psychology Club. I work on a native wildflower and pollinator project for research at my school and am passionate about these important relationships. We primarily study bees and wildflowers with some emphasis on butterflies and moths. I will be working at Yosemite National Park as part of the Pollinator Hotshot Crew. I am interested in restorative ecology, so this position is the perfect fit. I especially love bees, with my favorite being the Xylocopa genus. I am passionate about spreading awareness about native pollinators and the vital role they play in our ecosystems. I enjoy marine biology, herpetology, and of course, entomology. My current plan is to receive a master's in wildlife biology and serve our national parks. I enjoy fieldwork and research, as well as public education. I love backpacking and being in the wilderness, along with reading, playing guitar, and spending time with loved ones. I am working on learning Spanish to connect with my heritage. I am excited for this summer with Mosaics in Science.



Andrés Patino
San Francisco State University
Fort Point National Historic Site/Golden Gate National Recreation Area/Muir Woods National Monument - Biology Assistant

I am a first-generation Queer Latin(x) master's student in integrative biology (merging ecology, evolution, and conservation) at San Francisco State University. Born in Colombia and raised in New England, I received my bachelor's degree in natural resource conservation from the University of Massachusetts Amherst. I am currently part of the Vredenburg Lab in San Francisco where I study disease ecology of amphibians. My interest in the Mosaics in Science program stems from wanting to improve racial equity and diversity within conservation agencies that have historically been less inclusive. I hope to participate in identifying areas of improvement that cultivate a welcoming environment for not just employees, but park visitors of diverse backgrounds, so that everyone can enjoy the amazing wildlife that exists in our national parks. I also hope that this internship will enable me to break through some of the entry barriers at future conservation agencies that can often be inaccessible to Queer Black, Indigenous, and People of Color (QBIPOC). My interest in Mosaics also stems from wanting to obtain more hands-on experience working with federally listed species and gaining skills to implement in my own graduate research project. My career goal is to become a wildlife ecologist working in an urban-rural gradient environment where I can apply my skills to manage and protect endangered species at both the federal and state level. I believe that by working with environmental professionals, I can both learn and work towards a successful career in conservation.



Keily Pineda
Texas A&M University
Rocky Mountain National Park - (DHA) Natural Resource Management Assistant

I am a fourth-year student majoring in renewable natural resources at Texas A&M University. I took a great interest in the Mosaics in Science program, because I believe it is important to diversify the field. Allowing people with different upbringings and backgrounds to apply their knowledge and give their perspectives is the best way to increase awareness. Any information that I learn during my internship will help me develop as a professional. Even if I play only a small role in the overall progress of the program, I will at least know that I am contributing to the protection of the environment and will utilize what I have learned to further preserve the land for future generations to appreciate. I hope with the experience I gain from the internship that I will be able to apply it to different areas of the environmental industry whether it be forestry, water management, or clean energy. I hope to be able to grow from the experience and be able to go to countries such as Mexico that need new environmental protocols to protect the natural environment, so that future generations can appreciate it and protect it.



James Puentes
Nova Southeastern University
Biscayne National Park - Biology Assistant

I am double majoring in marine biology and education at Nova Southeastern University, where I have built bridges between the Fischler Academy of Education and Halmos College of Arts and Sciences. I became the Fischler Academy's first marine educator and founded the Fischler Marine Education Initiative. As a sophomore, I collected data from fish videos to determine schooling sizes, nearest neighbor distances, responses to stimuli, and how to interpret outliers. I also had the opportunity to work in a fish and avian lab during my junior year. Consequently, my interest in Mosaics in Science rests upon the foundation of my marine education mindset and career aspirations in marine conservation biology. I wish to become both an educator of the marine environment as well as a researcher, to further our knowledge of poorly known marine and aquatic ecosystems. Getting selected for this position as the Mosaics in Science intern at Biscayne National Park puts me closer to integrating the research and education sides of marine biology. Being involved in the research efforts will allow me to gain further insight into my own research aspirations and help my mentors complete their research goals. Through the surveys I'll be conducting, I will enhance my knowledge of understanding how to communicate with and educate the general public on laws, regulations, and the Biscayne marine environment.



Xavier Quinata
Johnson & Wales University
War in the Pacific National Historical Park - Natural Resource Management Assistant

I am a third-year undergraduate student at Johnson & Wales University in Providence studying data analytics with a minor in psychology. Although I spent most of my life on the island of Guam, I have found living in the continental United States to be a wonderful learning experience. As an indigenous Chamorro, values such as sustainability and respect for the environment have always been deeply embedded in my culture. These values motivated me to participate in local programs that expanded my knowledge of natural resource conservation, coral reef conservation, and marine ecosystems. The burning passion I have to serve my native island and protect its natural resources has, and always will be, a constant in my life. The work I will be doing in Mosaics in Science is in line with my university education and my passion for conservation. I intend to sharpen my technical skills through experiential learning opportunities such as jobs and internships. Then I plan to earn a master's degree in data science and work in the government, either at the local or federal level. Mosaics in Science is a rare opportunity that will help my academic and career goals while aligning with my cultural and moral values.



Emmanuel Quintero
University of California, Berkeley
San Antonio Missions National Historical Park - Geology Assistant

I am a recent graduate of the University of California, Berkeley with a master's in earth and planetary science. My interests are in geology and geospatial technology and representation, so I'm excited to be a part of Mosaics in Science as a geology assistant. As a Mexican American from South Los Angeles, I take great pride in knowing more than one culture and plan to represent my roots to the world of conservation with honor. By researching the depositional environment of the San Antonio site and implementing my knowledge of GIS and remote sensing, I plan to aid the professionals in San Antonio National Historical Park in studying and mapping the limestone quarry under the Mission Concepción compound. In addition, by gaining practical experience in San Antonio National Historical Park, I hope to refine the skills I will need to become a professional geoscientist.



Sejal Rajamani
Washington University
Arches National Park, Canyonlands National Park, Northern Colorado Plateau - Ecology Assistant

I am currently in my third year at Washington University in St. Louis. I am working towards a bachelor's degree in environmental biology along with minors in psychology and legal studies. I am incredibly excited to participate in Mosaics in Science. Growing up, my parents instilled in me a love of nature and the outdoors that I have carried into my adult life. I want to transfer that passion into the real world in a tangible way while working towards preserving the outdoor spaces that have had such a significant impact on my life. After completing the Mosaics in Science program and my bachelor's degree, I hope to continue my education and obtain a master's degree and possibly a PhD in wildlife or marine biology. I hope to eventually pursue a career in conservation and environmental research and to be a role model for young women of color who are also passionate about the environment. I look forward to gaining valuable field work experience for the first time, and I believe that the skills and knowledge that I gain will be very beneficial to me in the future.



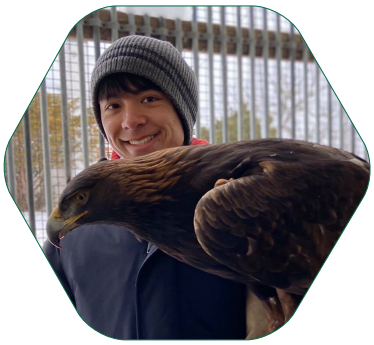
Mahika Rao
University of Washington in Seattle
North Coast and Cascades Inventory & Monitoring Network (DHA) - Natural Resource Management Assistant

I am a third-year student at the University of Washington in Seattle studying economics and environmental science with a minor in data science. I have worked in outdoor recreation and education, which have together sparked my love of personal connection, applied natural research, and engaging science communication. I look forward to getting to know the connected ecosystems of the Pacific Northwest mountains, as well as the people that visit and value the parks. I'm excited to be joining the ranks of Scientists in Parks through the Mosaics in Science program, which focuses on centering equity in outdoor spaces, developing science communication to reach underserved populations, and conducting hands-on research in the field. I'm doubly thrilled to be working with the National Park Service, as it has been a lifelong dream of mine to do so. By studying the changes in tree populations and the subsequent shifts in related organism behaviors, I hope to learn about how we can develop a healthy relationship with the earth and its resources. In the future, I hope to work in education or policy, communicating the needs of the environment to the public and sharing the gifts of the outdoors.



Anjali Velamala
University of Colorado Boulder
Mammoth Cave National Park - Cave and Karst Assistant

I am a third-year student at the University of Colorado Boulder majoring in environmental engineering and applied mathematics with a minor in art practices. After my undergrad, I plan to obtain a master's in environmental engineering, and then pursue law school or a PhD program in soil engineering. I want to go into politics to better environmental and social justice or be an engineer working in regenerative agriculture. In my work, I make sure to use not only my engineering problem-solving skills, but also my creativity and care for aesthetics. As a child, my parents took my siblings and me to national and state parks every summer. We would go on one- to two-week-long road trips, camping at different parks along the way. These are some of the most impactful experiences of my life, as they are the seeds to my passion for the environment. These trips defined my education and career choices. I applied to the Mosaics in Science program because I love national parks, and it has been a goal of mine since I was a child to work at one. Conducting research to learn more about the environment aligns with my values and passions. I appreciate this opportunity with Mosaics in Science to grow and learn new things!



Kai Victor
Cornell University
Mount Rainier National Park - Biology Assistant

I'm a recent graduate from Cornell University and majored in environment and sustainability with a concentration in environmental biology and applied ecology. I'm fascinated with wildlife conservation, and I'm excited to learn more about this field during my internship at Mount Rainier National Park. I've always been passionate about protecting natural areas and species, and I'm looking forward to the opportunity to hone my wildlife research skills while monitoring mesocarnivore populations in the park. I plan to pursue a career in reintroduction biology and translocation ecology. This field is devoted to conserving imperiled species through monitoring, habitat manipulation, translocations, or reintroductions. I can't wait to gain essential skills and experiences that will prepare me for work in this field.



Jeremiah Wright
Texas A&M University
Isle Royale National Park (DHA) Ecology Assistant

I am an undergraduate student studying wildlife and fisheries sciences with a minor in environmental soil science at Texas A&M University. In addition to my studies, I am the education chair of the Texas A&M Chapter of the Wildlife Society. I found this opportunity with Mosaics in Science to study pollinators in such an isolated location incredibly interesting. I cannot wait to gain a better understanding of the dynamics of the pollinators on Isle Royale as well as gain new skills relating to this career field, hone my current skills, meet talented individuals, and display this new information to the natural resources community. I am ecstatic to see how this data collected on Isle Royale will not only benefit the area, but also increase understanding of how pollinators function as a unit. I am excited to present this data to the community, as community outreach has always been a passion of mine, specifically with low-socioeconomic communities that are critically in need of exposure to the field of natural resources and wildlife. I look forward to seeing how this internship will impact my future career as I pursue a position as a federal fish and wildlife biologist.



Kaitlin Yap
University of Florida
Great Smoky Mountains National Park - Ecology Assistant

I am a third-year environmental science major and sustainability studies minor at the University of Florida in Gainesville. I am very excited to be a Mosaics in Science intern with Environment for the Americas at Great Smoky Mountains National Park this summer. I look forward to working in the field and conducting data collection. I'm excited to gain more hands-on, science-based experience in the field. I also have an interest in forestry, so I am grateful that this project will allow me to take forestry measurements and study the types of vegetation in the park. I enjoy plant identification, being introduced to a new type of forest ecosystem (spruce-fir forests), and learning about the different plants located in the Smokies. This will be an entirely new experience for me. I hope that this internship will provide me with more insight on what kind of career path I may want to pursue. I am considering working towards a master's degree and potentially focusing more on forestry. I hope to have a job that allows me to work outdoors. I am extremely grateful to have this opportunity, and look forward to working this summer!



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